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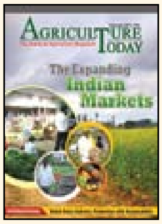

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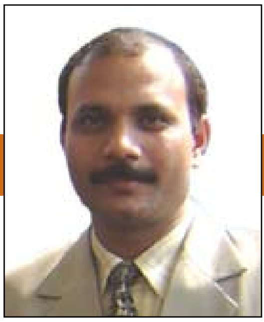
From the Editor's Desk



Food Processing Industry can transform Rural India

The food processing industry forms an important segment of the Indian economy in terms of contribution to GDP, employment and investment, and is a major driver in the country's growth in the near future. This industry contributes as much as 9-10 per cent of GDP in agriculture and manufacturing sector.

PHD Chamber of Commerce and Industry and Technopak have forecast that Indian food processing industry is likely to register a consistent growth rate of over 10 per cent from 2015 onwards in view of its emerging potential, in which the private sector has already begun to invest, responding to the call of Make in India given by Prime Minister Narendra Modi. Currently, Indian food processing industry is growing at an average growth rate of 8.4 per cent. A joint sturdy " India: World's Emerging Food Leader " has also projected that India's food processing sector, which ranks fifth presently in the world in terms of production, growth, consumption and export is likely to reach $194 billion by the end of 2015.

Indian has a rich resource base to offer for food processing. Despite being a number one producer in many farm products, only two per cent of the farm produce is processed in India. India loses a considerable amount of agriculture produce due to lack of proper post harvest infrastructure.

The government has therefore been focusing on commercialization and value addition to agricultural produce, minimizing pre/post harvest wastage, generating employment and export growth in this sector, through a number of regulatory and fiscal incentives. The Government has formulated and implemented several schemes to provide financial assistance for setting up and modernizing of food processing units, creation of infrastructure, support for research and development and human resource development in addition to other promotional measures to encourage the growth of the processed food sector.

India's wide diversity and throbbing domestic market have invited attention from foreign investors. Liberalization and the growth of organized retail have made the Indian market more attractive for global players. With a large agricultural sector, abundant livestock and cost competitiveness, India is fast emerging as a sourcing hub of processed food.

Rising income levels and a growing middle class is an important factor that has been changing India's dietary patterns. Besides, the government has also created a favourable environment for foreign investors to carry forward the momentum of the sector as they not only bring in investments but also know how and technology.

The massive amounts of losses of farm products post harvest has been due to the shortage of suitable infrastructure such as cold chain, packaging centres, value added centre, modernized abattoirs etc. Realizing the significance of infrastructure in developing the food processing sector, the Government has implemented several schemes for infrastructure development.

Apart from strengthening schemes to establish infrastructure facilities, measures to widely popularize them among farmers are crucial. The farmers' traditional means of storage, transport and marketing has to be further bolstered by technology, know how and financial support. Food processing has huge potential to dramatically improve rural livelihoods by raising farm incomes through value addition in agricultural produce.

Dr. MJ Khan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Editorial Comments

Everything That Shines Need Not Be Gold

There are many options other than golden rice to combat VAD

Malnutrition is a malaise that India has been dealing with long before independence. Scientific data from different sources have authenticated this problem and somehow it still lies dormant in the Indian society. The problem has received attention equally from successive governments. While Modi wanted to tackle the situation on a 'Mission Mode', Manmohan Singh called it a 'National Shame'.

But how acute is this problem? Apparently, it is far above the emergency threshold for acute malnutrition as per UNICEF classification. According to UNICEF, every year one million children under five die due to malnutrition related causes in India. Vitamin A deficiency is a significant health problem of over 75 countries worldwide. Vitamin A Deficiency (VAD) can cause severe visual impairment, blindness, and increased risk for diseases like diarrhoeal disease and measles in children. The extent to which it is prevalent among children is evident from many statistics. 14 million pre-schoolchildren have some eye damage due to VAD. 350,000 (or more pre-school children become partially or totally blind every year from VAD. About 60 percent of these children die within a few month of going blind. Half of all childhood corneal blindness in developing countries is caused by VAD.

India has its own share of nutiritonal programme to combat the Vitamin deficiency among children. The 'National Prophylaxis Programme for Prevention of Blindness due to VAD', being implemented since the 1970s, currently targets all infants (6-11 months) with a single dose of 0.1 MIUs and all children in the one to five age group with 0.2 MIUs every six months. Since the prevalence of the clinical symptoms of VAD has been reported to be highest in the one to three age group, the national programme accords the highest priority to universal coverage in this age group. But this approach has its share of cons as once happened in Assam, the high doses of Vitamin A took lives of 14 children and 953 children exhibited symptoms of Vitamin A toxicity. The incident led many experts to rethink the strategy adopted to address VAD. Many experts suggested food based approach.

On March 16, 2015 a campaign was planned to allow golden rice for tackling Vitamin A deficiency in children.This is part of the Allow Golden Rice Campaign Now, headed by co-founder of Greenpeace, Patrick Moore. The campaign for the golden rice was also launched in the Philippines and in Bangladesh recently. Proponents of golden rice say that the rice containing beta carotene, thanks to bacteria and maize genes spliced into it, will significantly reduce Vitamin A deficiency cheaply and efficiently than the long-standing Vitamin A supplementation programme.

While the campaign seems a logical retort to pertinent issue, the approach of depending on genetically modified crops to attain the objective is questionable specially since no country has garnered enough courage to allow cultivation of the golden rice.

Obviously, the campaign has been opposed by a group of 20 non-governmental organisations across the world under the banner of "Stop Golden Rice Alliance".The Alliance alleges that the campaign for launching the Vitamin A-enriched golden rice is a covert attempt to win wider approval for genetically modified food. According to the Alliance, Vitamin A deficiency, like other problems of malnutrition and hunger, is not caused by the lack of the vitamin in food, but by people's inability to achieve a balanced diet. The Alliance is more concerned about the increased complexity of the gene constructs of golden rice as it makes it more hazardous than the existing genetically modified plants.

While there are many inexpensive sources of Vitamin A available in abundance, the approach of resorting to a GM crop especially at a point of time when there is considerable resistance to the concept in India is confusing. As the UNICEF and the Food and Agriculture Organisation have stated, variety and diversifying food is the key to solving vitamin deficiency; in countries where people eat more than 200 gm of vegetables per day, Vitamin A deficiency is not a major problem. Under such circumstances, this approach looks like a bit too far fetched and fancy and does not in a strict practical sense be a solution to the issue at hand.

Editorial Comments

No Man's Land

The new amendments to LARR has sown seeds of discontent among farmers

Land disputes are a common phenomenon in India especially since the country heavily relied on the Land Acquisition Act of 1894which enabled the government to grab land arbitrarily in the name of public purpose. Country became a hotspot for many protests. In the recent years, the debate became very intense after the SEZ Act 2005 was implemented in February 2006. Land for Special Economic Zones was acquired in various parts of the country by the governments under Land Acquisition Act 1894, which was a colonial legislation. This invited strong protest movements in the various parts of the country such as farmers mobilisation at Nandigram and Singur in West Bengal, mining areas in Odisha, especially against PASCO, BhattaPalsaur in UP to name a few. In fact, most of the states faced farmers' protest movements against land acquisition for SEZ or other projects in mining, manufacturing and infrastructure.

This sore area found some relief when the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR Act), was enacted by the erstwhile United Progressive Alliance (UPA) government.The passing of the 2013 Act satisfied the farming community and paved the way for fairness in land acquisition. In December 2014 the present government promulgated an ordinance which made substantial changes to the LARR act which again provoked a series of protests.

The amendments have not gone down well with the protestors. Protests stems from the legitimacy of trying to push this legislation through the means of an ordinance, the diluted social impact assessment and consent clauses, for profit hospitals and educational institutions being exempt from said social impact assessment, etc. Also the amendment suggests the possibility of the Government in public interest, by notification exempt the acquisition of irrigated multi-cropped land for various public purposes or for industrial corridors and infrastructure development including under public private partnership.

The Ordinance has thus opened the doors for land acquisition for private hospitals and private educational institutions and projects under public-private partnership or for developing industrial corridors. It has virtually done away with social impact assessment study and opened scope for lack of clearly defined public purpose process. It has abolished consultation with Panchayati Raj Instituions or Urban Local Bodies, local communities and consent of land owners. The food security safeguards have been dispensed with for acquiring of irrigated multi-cropped land. The provision of land return if not used for five years have been compromised. Not only transparency in land acquisition has been done away, the official committing offence has been provided a shield in the form of procuring prior approval of the appropriate government for proceeding against them in courts by landowners, NGOs or farmers' organisation.

The supporters on the other hand point out that the LARR act was too rigid and would have dissuaded investors from investing in big ticket projects by making the process of land acquisition too costly, time consuming and prone to bureaucratic and political meddling.Support for the ordinance also stems from the glaring fact that India is a country direly in need of robust infrastructure. It needs roads, bridges and working ports if it seeks to fuel growth. The pace of infrastructure growth has been abysmally slow because of policy paralysis and bureaucratic indifference in the previous regime.

So the government has done away with all the 'difficult' and unwieldy parts of the law and tweaked their own amendments to smoothen and hasten the infrastructure development of the country. The ordinance has been issued to circumvent the pro-rural/farmers' provisions in this Act. It has already sparked protests among the people and has all the makings of a confrontation that can blow up to epic proportions. Development is a key for any country. But it should also take the interests and aspirations of the community affected. No government can bulldoze the rights of their citizens.

More Power to States

States from this year will have more say in agriculture Schemes

One of the highlights of this financial year's budget is the increased tax devolutions awarded by the 14th Finance Commission. This year states will be more in action and Centre will take a back seat in many projects.

As part of this new strategy, the centre's total outlay for the agriculture sector declined by 10.4 per cent, from Rs.31,322 crore in 2014-15 to Rs.28,050 crore in 2015-16. The budget increased the target for rural credit substantially but lowered the centre's share under irrigation and other centrally sponsored schemes such as the Rashtriya Krishi Vikas Yojana (RKVY) and the National Food Security Mission (NFSM) by nearly Rs.5,500 crore, hoping that the states will chip in with increased tax devolutions.

According to the 14th Finance Commission's recommendation, the sates would see a quantum jump in the share of Central tax revenues going to the states - from 32 per cent to 42 per cent. This would translate into states receiving an additional Rs 1,41,742 crore in 2015-16 over the budget estimates for the current fiscal. But the higher tax devolution would be partially offset by reduced Central assistance for state plans, so that the net resource transfers will go up by only Rs 63,997 crore or 8.2 per cent. Still the arrangement works out to be a good deal, overall, for states, since they now get more money untied to schemes designed by the Centre. The freedom to spend funds on programmes and priorities set by the states rather than Center's ditkat is something the states had been longing for.

In this approach, states can invest in their niche areas as they understand their areas of concern much better than the Centre. This will give more flexibility to the states and more monetary leverage to work on their areas of concern. They don't have to clamour for support from the Centre each time the states wish to address their issues.

While greater flexibility is welcome, certain concerns also arise from this situation. The most obvious one relates to the Centre divesting from programmes deserving support, in the belief that the states would fill the void. The programme in question is the the Rashtriya Krishi Vikas Yojana (RKVY), till now a fully Centrally funded scheme that many recognise as having played a useful part in boosting India's agricultural growth to 4.3 per cent a year during the 11th Five Year Plan (2007-12), from the earlier 2.5 per cent average. The budget has made it a partially state-funded scheme, with the Centre's allocation slashed from Rs 9,954 crore to Rs 4,500 crore. Ironically, a primary motive behind introducing the RKVY was to reverse the states' own declining investments in agriculture.

Similarly another programme, Pradhan Mantri Krishi Sinchai Yojana (PMKSY), which was intended to irrigate the field of every farmer and improving water-use efficiency, also saw reduced allocation. As the finance minister urged the states to chip in substantially in this vital sector, it remains to be seen how effectively the states can involve in this scheme. However, the budget document was optimistic about the states willingness to spend this area as it quite enthusiastically noted that as the states will get money in tax devolution from the Centre, total resources for the programmes will not change. "States' funding pattern will change in view of FFC (fourteenth finance commission) award to ensure that total resources for the programme are not changed," it said. The assumption is that the state governments will provide the money to compensate for the loss in central funding.

Under this system, the states have to take charge of many core agriculture programmes. Given the strained economic balance sheet of the states, it is doubtful whether they will approach the schemes in the expected manner. Choices of the most state governments have always been political with scant interest in developing the states' economy. Very few states have been able to distance from parochial views. That is the reason only a few states have been able to emerge as 'developed' while the others still lag behind them. Agriculture is a state subject, but at the same time at a time when we are discussing ambitious campaigns like Make in India, we are working towards a common goal. Under this system it will be overly optimistic to believe that states will work in the same vein.

Editorial Comments

Forcefully United

Center has the powers to create National Market without the consent of states

Finally, the budget proclaimed it. A Unified National Agriculture Market is in the anvil which will be hammered out soon.

A national market was in the wish list of the agri sector for a long time. Finance Minister during his budget presentation expressed his displeasure the way which farmer's produce not receiving the best national price. Through National agricultural market, he seems to achieve the twin objectives of increasing the incomes of farmers and moderating price rises. The scheme will help bring better realisation for the farmers. It can remove the state imposed controls and create a barrier free flow of goods transcending regional barriers. Agriculture in the country is a State subject and thus all the States have set up Agricultural Produce Marketing Committees (APMC) to regulate the marketing of agricultural commodities.Thus, APMCs have been considered an inhibiting factor for establishment of a national agriculture market.

According to the official Economic Survey for 2014- 15, there are 2,477 principal regulated markets based on geography (the APMCs) and 4,843 submarket yards regulated by the APMCs. The Centre aims to link all these, to create one market.The first step has been to get each state to change its APMC law, to allow private market yards or markets. Some states have denotified fruit and vegetables from their Act.

So far, States where APMCs have been performing poorly took refuge under Model APMC Act and were introducing reform measures according to suggestions in a phased manner.Not many States have been successful to demonstrate a better result even after introducing such reforms.

The Model APMC Act 2003 which was circulated to all states for adoption, failed to address monopolistic and uncompetitive practices in inter- state trading of agricultural products. Some states have introduced barriers to trade within the country through taxation and technical requirements. The Essential Commodities Act 1955, an enabling Act which gives powers to states, is incompatible with an integrated competitive national market for food.

Removing market distortions will create greater competition in markets and will promote efficiency, growth and facilitate the creation of a national agriculture market. Parliament has the power to legislate a national market under the Constitution, which gives it the ability to legislate the freedom to buy and sell, for farmers and traders across state lines. This law can override state APMC laws and restrictions that have been placed on the farmer's right to sell food within and outside the state. Under such a law, Agricultural Produce Marketing Committees (APMCs) would become one among many trading venues in a competitive market. The Parliament can also legislate the creation of a Commission that monitors anti-competitive practices across the country.

Economic Survey said that the Centre will make attempts to persuade State governments to introduce required amendments, it also clearly mentions: "If persuasion fails (and it has been tried for a long time since 2003), it may be necessary to see what the Centre can do, taking account of the allocation of subjects under the Constitution of India".The Survey acknowledges that the Constitution empowers the states to enact APMC Acts, but also says that if the States will not be co-operating then the Centre may take action in lieu of List III of the Seventh Schedule (Concurrent List) in the Constitution which empowers the Union to enact legislation for setting up a national common market for specified agricultural commodities, viz., Entry 33 which covers trade and commerce and production, supply and distribution of foodstuffs, including edible oilseeds and oils raw cotton, raw jute, etc. The other major hurdle in the form of legislative barriers to interstate trade has also been touched in the Survey. It states that "Entry 42 in the Union List, viz., 'Interstate Trade and Commerce' also allows a role for the union".

So it is clear. There will be no dilly dallying on the issue. If the states concede or not, national market will become a reality for which the Centre can go to the extreme ends. There are only two outcomes for the APMCs – either to modernize or to perish.

Weak glyphosate prices add to Monsanto India's woes

Apart from weak maize prices, its impact on crop acreage and seed sales, Monsanto India Ltd will also have to contend with a worsening environment for the glyphosate business. Glyphosate is a herbicide used to kill weeds. According to analysts, the company has the highest share in the domestic glyphosate market. Agrochemicals contributes around 37% of Monsanto India's annual revenue, with the rest coming from the seeds business. Tracking the slump in global commodities, glyphosate prices are falling. Over the last two-three months, selling prices are down by almost 30%. With raw material prices also falling at a similar pace, glyphosate sellers are cushioned to some extent. But where they will feel the pinch is in revenue growth. Low international prices encourage imports. This will not only keep Trade in services prices in check, but can also intensify the competition. "Lower glyphosate prices are likely to impact industry's topline (revenue) growth in FY16E," said one domestic broking firm. But in a falling prices scenario, the firm will have no option but to forego a portion of the margins in the form of price cuts to protect its market share. "Import prices of glyphosate have declined by 40%, hence pricing and margins in this segment are expected to be under pressure in 1QFY16," Motilal Oswal Securities Ltd said in a note. The price drop comes at an inopportune time. The performance of the company is already under pressure. As maize acreage fell in some states and demand for herbicides softened, Monsanto India reported a 27% Current account balance drop in revenue for the December quarter. In the first three quarters, revenue was down almost 4%. "Key markets for this (glyphosate) product are Maharashtra, Gujarat and Tamil Nadu. Sales volume in Maharashtra, Gujarat and Andhra Pradesh in 3QFY15 stood at a fraction of what it was last year, mainly because of: 1) Relatively poor moisture, 2) High channel inventory on hope of a follow through monsoon," Nirmal Bang Equities Pvt. Ltd said in a note. The weak performance triggered earnings cuts and a correction in the stock price—the stock has lost around 8% since the December quarter results announcement. Motilal Oswal lowered its earnings per share estimate for the current and next fiscal years by 19% and 10%, respectively. Compared with 18% in 2012-13 and 31% in 2013-14, the broking firm expects Monsanto India's sales growth to drop 2% in the current fiscal year. If the situation does not improve in the coming months, one can expect more such cuts in earnings estimates.

MONSANTO imagine

Disappointment for fertiliser producers

The government has allocated Rs72,968 crore towards fertiliser subsidy payable in 2015-16. While this is similar to the 2014-15 Budget estimate of Rs72,970 crore, it is marginally higher than the revised estimate for the current fiscal. The subsidy on imported and indigenously manufactured urea has been kept at Rs50,500 crore; Rs22,468 crore has been provided towards concession payable on complex fertilisers. Contrary to expectations, the Budget has remained silent on the much-awaited urea investment policy and roadmap to de-control of urea. Lifting controls on urea price fixation is critical given the ballooning subsidy burden and consequent fiscal strain.

Camson Bio to demerge seed biz

Camson Bio Technologies has filed an application with the Karnataka High Court as part of the process to demerge its seeds business into a different entity.The company has already received the observation letter from the SEBI and the BSE in this regard.The shareholding pattern of Camson Seeds, the new demerged entity, will reflect the shareholding pattern of CBTL, said the company in a statement.Existing investors of the company will get one equity share of Camson Seeds for every share held in Camson Biotech. The final approval from High Court will see the formal launch of a separate business entity.Santosh Nair, CEO, Camson, said the process is part of Camson's efforts to unlock and improve shareholder value."The demerger is designed to ensure improved focus to the rapidly growing agri-biotech business while providing shareholders direct participation in the seeds business," he said.

Industry body sets up teams to assess mustard crop damage

With reports of heavy showers pounding the mustard growing regions last week, mainly in Rajasthan, Gujarat and Uttar Pradesh, the Solvent Extractors Association of India (SEAI) has formed teams to survey the extent of damage. The industry body will present its findings at the annual Rabi convention hosted by the Central Organisation of Oil Industry and Trade, which is scheduled to be held on March 15 at Jaipur. "There is no estimation of the damage yet but we are hearing that certain areas have benefited where there was late sowing such as the Sri Ganganagar belt (in Rajasthan). Our teams are already surveying key areas and the report will be presented at the convention," said BV Mehta, Executive Director, SEAI. There are a total of 7-8 teams comprising between six and eight members that have been deployed across various States. While Uttar Pradesh, Madhya Pradesh and Gujarat will be tracked by one team each, there are four squads assessing damage in Rajasthan which accounts for between 45 and 47 per cent of domestic rapeseed-mustard output. While agreeing that the recent showers could benefit the crop in areas where it was planted in late-November, industry officials believed the damage was between 15 and 20 per cent with most of the crop being harvest-ready. Punjab, Haryana and northern Rajasthan, they said, were hit particularly hard. It could have an impact on prices that could rise by 4-5 per cent. Mustard oil is currently priced between Rs. 70-110/litre. "Yield per hectare will reduce due to which mustard oil prices would rise. This increase would see people deviating to other economical refined oils such as soya oil, while also resulting in mustard oil being blended with other oils to keep prices low," said UmeshVerma, spokesperson, Puri Oil Mills. Rapeseed/mustard is the third largest oilseed grown in India after soyabean and groundnut and is generally sown between October and December and harvested by March-April.

Private banks stare at stiff farm lending target

Private sector banks, which have failed to meet sub-targets for agricultural sector lending, may have to brace for a tougher challenge if the Reserve Bank of India accepts the recommendations of an internal panel. Recently, an internal working group set up by the central bank has suggested a sub-target of 8 per cent within agricultural credit for small and marginal farmers to be achieved in a phased manner. At present, the banks have to lend 40 per cent of their adjusted net bank credit to priority sectors such as agriculture, micro & small enterprises and housing. Of this 40 per cent, a sub-target of 18 per cent have been fixed for agriculture. Domestic banks have been able to meet the aggregate target of 40 per cent but missed the sub-target. The panel, headed by RBI chief general manager Lily Vadera, has recommended that the sub-limit be retained but the division of the 18-per-cent limit between direct (13.5 per cent) and indirect loans (4.5 per cent) be done away with. It, however, suggested a new sub-target for small and marginal farmers. Experts feel private sector lenders who have a relatively lower branch presence than their PSU peers will face difficulties in meeting this new requirement. At present, domestic banks have given only 12 per cent of their total advances as direct agriculture credit. Private banks could meet 9.5 per cent as direct farm credit. "While banks (especially private banks) have regularly defaulted in meeting the sub-targets of the weaker sections, they would now find it difficult to meet the new sub-target of 8 per cent under agriculture for small/marginal farmers," Parag Jariwala and Vikash Mundra, analysts at Religare Capital Markets, said. The target for the weaker sections under priority sector lending has also been retained at 10 per cent. Private banks have regularly failed to meet this requirement. One of the key recommendations of the panel to enable lenders to meet their targets is to allow banks that overshoot their priority sector lending to issue certificates to those lagging in the segment. These certificates can be traded on the electronic platform. The deficient lender will have to pay a price/fee to the seller bank for purchasing a specified amount of priority lending obligation. These certificates will be applicable for a particular date, following which they will be automatically extinguished. State-owned IDBI Bank is planning to sell its entire 5 per cent stake in the NSE in the next fiscal as part of its capital raising exercise by exiting non-core businesses, reports PTI. At the end of the quarter ending September 2014, the bank held nearly 23 lakh shares of the NSE, representing a 5 per cent stake.

NBFC-bank parity will boost farm credit availability

The proposal to treat non-banking finance companies (of above Rs. 500 crore) on a par with banks and financial institutions for the purpose of recovery of debts and applicability of the SARFAESI (Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest) Act is a welcome and positive step for NBFC companies. The focus on farm credit is clearly visible as the government has set a target of Rs. 8.5 lakh crore under this segment which reflects the need and opportunity for loan against agricultural products. Not only banks but NBFCs too will be able to contribute towards wider availability of agriculture credit. The fund allocation to Nabard will help in further increasing the support to the agriculture sector, where NBFCs can play a vital role.

Agri credit target raised by Rs 50,000 cr

In a bonanza for farmers and agriculture, Finance Minister Arun Jaitley's Budget raised the agriculture credit target by Rs 50,000 crore to Rs 8.5 lakh crore for 2015-16 fiscal and also announced financial support to enhance irrigation and soil health for higher agriculture productivity. "Farm credit underpins the efforts our hardworking farmers and I have therefore set up an ambitious target of Rs 8.5 lakh crore of credit during the year 2015-16. I am sure banks will surpass (this target)," Jaitley said. To support the agriculture sector, the FM said: "I propose to allocate Rs 25,000 crore in 2015-16 to the corpus of Rural Infrastructure Development Fund set up NABARD." Jaitley also announced an allocation of Rs 15,000 crore for long-term rural credit fund, Rs 45,000 crore for short-term cooperative rural credit refinance fund and Rs 15,000 crore for short-term RRB (regional rural banks) refinance fund. To boost irrigation and soil health, Jaitley said, "I propose to support the Agriculture Ministry's organic farm scheme Parampara Krishi Vikas Yojana and Pradhan Mantri Gram Sinchai-Yojana (PMGSY)...I am allocating Rs 5,300 crore to support micro irrigation watershed programmes and PMGSY."

Cheaper coffee may hit loan recovery

State-run Coffee Board proposes to formulate an action plan to assist bankers in recovering the dues, outstanding for a long time, from growers in Karnataka. However, the downward trend in coffee prices in recent months on improving crop prospects in Brazil could pose a challenge to the recovery process. The issue of non-performing assets (NPAs) and recovery in coffee loans figured for the second time at the 130th meeting of the State Level Bankers Committee. Seeking details of defaulters from bankers, Coffee Board's Director of Finance Ararti Dewan Gupta said the Board was planning an action plan to assist bankers in initiating the recovery. Coffee prices are down by over a tenth over the past four months on improving prospects in Brazil and the price movement in New York. "The declining trend in coffee prices could dampen the growers' repayment capacity," said K Kurian, Chairman of the Karnataka Planters Association. It is a paradox that despite a lower Arabica crop, the prices are lower, he said.

Centre to infuse Rs300 cr capital in Nabard in FY'16

The government has proposed Rs 300 crore fund infusion in 2015-16 for National Bank for Agriculture and Rural Development (Nabard) to augment its capital base. Budget has allocated the amount towards subscription to share capital of Nabard, official documents said. The government had made provision for infusion of similar amount in the rural development lender during the current fiscal. Nabard was set up with an initial capital of Rs 100 crore in 1982. Consequent to the revision in composition of share capital between Government of India and RBI, the paid up capital as on March 31, 2013, stood at Rs 4,000 crore with Government of India holding Rs 3,980 crore (99.50 per cent) and Reserve Bank of India 20 crore (0.5 per cent). To support the agriculture sector through effective and hassle-free agriculture credit, with a special focus on small and marginal farmers, Budget 2015-16 has proposed to allocate Rs 25,000 crore to the corpus of Rural Infrastructure Development Fund (RIDF) set up in Nabard. Besides, it also made allocation of Rs 15,000 crore for Long Term Rural Credit Fund; Rs 45,000 crore for Short Term Cooperative Rural Credit Refinance Fund and Rs 15,000 crore for Short Term RRB Refinance Fund.

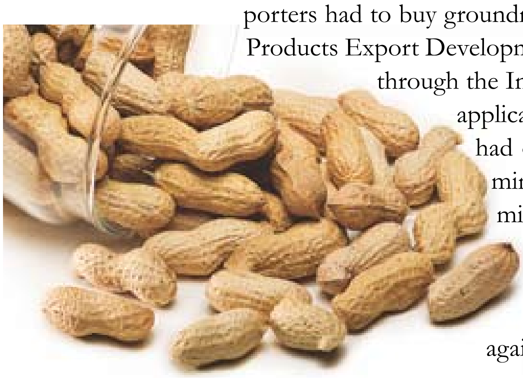
Private banks may have to lend to priority sector

Multinational and private banks will have to stretch their rural reach and lend to small farmers and micro enterprises to meet the new priority sector norms proposed by Reserve Bank of India. The new norms also give a boost to medium enterprises, renewable energy, healthcare and sanitation which, are included in priority sector under the proposed norms. The positive news for private and foreign banks is that the RBI proposes to implement the norms in a phased manner, which means the banks will have two to three years to develop a strategy to lend to this segment. A panel headed by RBI chief general manager Lily Vadera, which has recommended this norms, has also introduced some innovations such as the priority sector lending certificates, which will enable banks meet their targets even when they stick to their core competency. The panel has recommended that the agri lending target be retained at 18% of net bank credit. But it has also recommended a sub-target of 8% of net bank credit for small and marginal farmers to be achieved in a phased manner. At the same time, more flexibility has been recommended for banks to lend the remaining 10%. Those who do not meet the norms will be subject to the same penal provisions that are applicable now, which include subscribing to government-sponsored funds where the rate of return is much lower than the cost of funds for banks. "The Indian economy has changed since priority sector lending guidelines were conceived. There is a need to reorient guidelines towards today's growth and inclusion agenda," RBI said in a statement. Bankers, however, feel that the proposals are not in keeping with the new reality of the Indian economy. "The Indian economy is dominated by the service sector. Also, there are big challenges in lending to small farmers. We were hoping that infrastructure would have a larger share of priority sector loans," said a senior executive with a private bank. While the norms now extends lending to medium-scale industries in addition to small scale, it has included a sub-limit of 7.5% for lending to micro-enterprises, which is to be achieved in a phased manner. On education loans, the committee has recommended a limit of Rs 10 lakh for domestic as well as overseas studies. At present, the limit is Rs 10 lakh for domestic and Rs 20 lakh for overseas.

Govt to help growers expand coffee acreage

Farmers in traditional coffee growing regions of Karnataka, Tamil Nadu and Kerala will now get subsidies to bring in new areas under cultivation. After over three decades, the Government has decided to subsidise expansion of area under coffee in these three traditional States, which account for some 83 per cent of the total acreage of 4.15 lakh hectares. While coffee acreage has expanded significantly in the non-traditional areas such as Andhra Pradesh, Odisha and the North-East, expansion has been rather sluggish in traditional States. The non-traditional areas in Andhra Pradesh and Odisha account for about 15 per cent of the acreage and the North-East about 1.5 per cent. The State-run Coffee Board believes in long-term potential of coffee as consumption has picked up while production has begun to stagnate. Domestic coffee consumption is pegged at around 1.15 lakh tonnes and is growing around 5-6 per cent annually. According to a survey by the Board, there is ample potential to bring in an additional 18,000 hectares under coffee, said Jawaid Akhtar, Chairman, Coffee Board.

Compulsory registration rule relaxed for groundnut exports



The Union Commerce ministry has abolished the compulsory registration rule for groundnut shelling units to export to countries outside the European Union. The move, industry sources say, might increase shipments from India. Till now, exporters had to buy groundnut from shelling units registered with the Agricultural and Processed Food Products Export Development Authority (Apeda), while shelling units had to get themselves registered through the Indian Oilseed and Produce Export Promotion Council . This rule was made applicable in 2013. However, many shelling units from Gujarat and Andhra Pradesh had opposed this rule and were engaged in several discussions with commerce ministry and Apeda pressing for its removal. "We met the Union Commerce minister, commerce secretary and Apeda chairman a few times and informed them that compulsory registration is not necessary and export is going well without it. Thankfully, the officials agreed and removed the rule," said Mukund Shah, president, Gujarat Oilseeds Processors Association. It has been against compulsory registration since the beginning.

Agri e-auction where possible, Centre tells states

The central government has written to all state governments to opt, where possible, for e-auctions to procure agricultural commodities. This was done a few days before the Union Budget was presented. This is part of a plan to get going in a national common market for agri products, linking all the wholesale markets run by Agricultural Produce Marketing Committees (APMCs). According to the official Economic Survey for 2014- 15, there are 2,477 principal regulated markets based on geography (the APMCs) and 4,843 submarket yards regulated by the APMCs. The Centre aims to link all these, to create one market.

Govt revives plan for Iran urea plant

India has revived plans to set up a urea manufacturing plant in Iran with a capacity of 1.3 million tonnes (mt), junior chemicals and fertilizers minister Hansraj Gangaram Ahir said on Tuesday. Indian and Iranian companies will form a joint venture to set up the plant and output from the unit will be imported to India. Urea is the most consumed fertilizer in the country, with annual consumption jumping by around 50% to 30 million tonnes over the past decade. India produces 22 mt of urea a year, but has to import 8 mt more to meet growing domestic farm demand.

FCI to sell rice in open market from April

After a gap of several years, the government will sell its rice stocks in the open market in the next fiscal. According to sources, given the excess stocks, two million tonne of rice will be offloaded by the Food Corporation of India in the open market starting April 1. The food ministry has received the nod from the finance ministry to sell rice from the stocks to bulk buyers such as millers and traders, the sources added. The stocks would be sold through a weekly e-auction under the open market sale scheme (OMSS), currently in operation for selling wheat to bulk buyers by the FCI. Sources said rice would be offered to private buyers or traders at around R2,300 per quintal for the grade-A quality of rice procured by the FCI.

"The rice prices have been kept at the level, keeping in mind the minimum support price, MSP, for ruling out recycling of rice procured by the FCI and state agencies," an official said. Officials said that at the start of this month, the FCI has rice stocks of more than 15.2 million tonnes and another 8.8 million tonnes are still to be received from the millers.

As per the revised buffer stock norms for April, 2015, the FCI should hold rice stocks of around 13.5 million tonnes, thus rendering a chunk of rice stocks as 'excess'. Sources said the minimum and maximum auction quantity would be in the range of 50 tonne to 3,500 tonne. "The state governments would also be asked to participate in the e-auction for OMSS)," an official said. The FCI has been selling excess wheat stocks through OMSS to bulk buyers since 2009-10. It has sold 4.1 million tonnes of wheat in the open market till the end of February through weekly e-auctions. However, the government had set a target of uploading 10 million tonne of wheat under OMSS by March 2015, which is unlikely to materialise. In 2013-14, the FCI sold more than 6.1 million tonnes of wheat in the open market from its stocks. Meanwhile, the food ministry has also got a nod from the finance ministry to extend OMSS wheat till March end. Earlier, the OMSS wheat auction used to be held till end of February and March was meant for delivery of grain to bulk buyers. "We will hold weekly auction for selling wheat till March 26 and the delivery of grain would be done in April," an FCI official said. The FCI has asked the food ministry to launch OMSS for wheat stocks immediately after the procurement of grain for the 2015-16 season gets over by June 2015. While the wheat purchases from the farmers for the current rabi marketing season is set to commence from April 2015, the FCI has huge wheat stocks of close to 20 mt at the start of March 2015 while the buffer stocks norm is only 6.5 mt. The FCI conducts weekly auction to sell wheat in the open market using commodity bourse NCDEX platform. The government has set a reserve price of Rs 1,500 per quintal plus freight cost to the consuming locations.

India opposes move to reduce farm subsidies

As tempers fray among key members at the World Trade Organization (WTO) in talks to cut farm subsidies, India has hit out at what it has called the "dangerous suggestion" being advanced by some powerful countries that China and India must reduce the minimum agricultural support they are currently allowed. India says the disciplines for reducing farm subsidies in the agriculture negotiations cannot be changed just because some members—such as the US and Canada—find it hard to scrap their current trade-distorting domestic farm subsidies. At a closed-door meeting of a select group of trade envoys held at the WTO in Geneva, India criticized demands for reduction of so-called "de minimis"—minimal amount of domestic support—from countries that had not given commitments to reduce their own subsidies. The chair for the so-called Doha agriculture negotiations, John Adank, called the meeting with trade envoys from the US, the European Union, China, India, Brazil, Japan, Canada, Australia, Norway, Switzerland, South Africa, Indonesia, Argentina, Colombia and Mexico to prepare the blueprint for reducing trade-distorting domestic subsidies. During the meeting, the US and China also crossed swords, accusing each other of distorting global farm prices, particularly in cotton, a western trade envoy said on condition of anonymity. The US says China, with its one trillion dollar-farm economy, can now provide subsidies to the tune of $170 billion based on the current minimum entitlement of 17%. In turn, China told the US that it is willing to cap its farm subsidies at the same per capita level that is provided by Washington to its rich farmers—$57,000. WTO allows de minimis support of 5% of the value of agricultural production (VoP) for developed countries and 10% for developing countries. The issue here is whether developing countries like India which assist their farm producers through de minimis support programmes must also reduce the level of support from the 10% they are currently allowed. The 10% limit enables developing countries to provide product-specific support for each agriculture item up to 10% of the VoP as well as non-product specific items to the tune of 10%. The current Doha Round of trade talks, which began in 2001, are a successor to the Uruguay Round and are aimed at setting the rules of world trade.

AP presents separate agriculture budget

Aiming to give a boost to the farm sector, the Andhra Pradesh (AP) government presented a special agriculture budget for 2015-16 with an outlay of Rs.14,184.03 crore. "Our top priority is to make agriculture and allied sectors profitable and sustainable. Our rural economy will regain its lost glory only when these sectors flourish and our farmers are prosperous," state agriculture minister P. Pulla Rao said in his budget speech.

Maharashtra Govt Waives Farmers' Loans Taken From Money-Lenders

The state government has decided to waive loans taken by farmers from private money-lenders. Chief Minister Devendra Fadnavis announced this at the cabinet meeting during a discussion in both houses of the legislature. "We have been late in waiving these loans due to various reasons. But we have now decided that the money taken, not only by farmers directly but also in the name of their wives, sons, unmarried daughters, brothers and sisters will be waived off; provided they do not have a family member holding a government job," Fadnavis said in the Legislative Council on Thursday. "Around 2-2.5 lakh farmers would benefit from this," he said while he was replying to the discussion in the house on the motion of thanks to the Governor's address. The decision would incur a cost of around Rs 200 crore to the govt. exchequer, revenue minister Eknath Khadse informed the Legislative Council. "We are also planning to increase the compensation to kin of farmers who commit suicide to Rs 5 lakh from current Rs 1 lakh," Khadse told the house during question hour. The plan is to have them insured under group insurance schemes, he elaborated. Khadse also informed the house about several measures that the government is planning to stop farmers' suicides.

Haryana to get dry port for shipping agri-produce

The Haryana Government sought to allay farmers' fears over Food Corporation of India (FCI) decision not to procure wheat from the state this season, saying it will purchase the entire rabi crop. The state will also get a dry port to facilitate transportation of agricultural produce. Chief Minister Manohar Lal Khattar, while addressing farmers of the state after inaugurating the three-day Haryana Agri Leadership Summit, said they would soon identify and allot land for the port near a railway station. Union Minister for Road Transport and Highways Nitin Gadkari, while announcing a dry port for the state assured the farmers of taking all steps to ensure the agriculture sector didn't get affected by logistic or transportation problems. The agri-summit, which is the brainchild of Haryana Agriculture Minister OP Dhankar, aims at exhibiting the progress and opportunities in the state's agricultural sector. It also provides a platform to Haryana's farmers to garner technical and marketing know-how through interactive sessions with experts from across the country and fellow farmers. Khattar stressed the marketing of agricultural produce which would help increase the income of the farmers. Besides Gadkari, Dhankar and Khattar, Cooperation Minister Bikram Singh Yadav and the BJP state president Subhash Barala interacted with farmers from across the country. Gadkari said better understanding of marketing of agricultural produce was the only way to ensure the farmers' prosperity. Accompanied by the Chief Minister, Gadkari witnessed a live cattle show and interacted with cattle-rearers on the upkeep of cows of indigenous breed and Murrah buffalo. Seven special pavilions have been set up at the summit. Out of these, one pavilion has been dedicated to progressive farmers. It is for the first time that such a large number of farmers have visited an event along with their products.

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Virtual assistant Akeira helps farmers boost productivity

Akeira is similar to Siri, a virtual assistant available on iPhones. Akeira realizes that the farmer wants to know whether it will rain or not and immediately responds with a yes in Tamil. This virtual assistant can be used in any basic mobile phone. Uniphore Software Services Ltd has developed this virtual assistant, an upgraded version of its earlier one called Voicenet. The Chennai-based company has piloted this new version with farmers in Tamil Nadu, Punjab and Karnataka since 2014. It is still in the testing stages. Farmers were more comfortable with Akeira, which is more interactive, than with the earlier version, said Umesh Sachdev, co-founder and chief executive of Uniphore. Sending advisory voice messages through Voicenet, the Tamil Nadu government was able to reach 2 million farmers, out of which 70% listened to the messages completely and registered their feedback. Farm businesses across India, be it a government subsidiary or a private firm, face tough scenarios in terms of customer outreach. Farmers are typically spread across remote places, are often illiterate and prefer closely knit, trust-based business models. It is, therefore, crucial to pass on timely information to them to gain their trust and keep them updated on weather conditions, market prices, fertilizers and pesticide usage, etc., to improve farm productivity. All the earlier modes of communication by the government to reach farmers through radio, television and newspapers are turning out to be expensive and not providing desired results. Also, tracking information consumption is difficult. In addition to these technical challenges, farmers are spread across different states in India where they speak different languages. So, agri-businesses can't establish a single mode of communication to convey messages across boundaries. By understanding these challenges and technical constraints, Uniphore designed Akeira, which helps farmers have a more interactive conversation than just listen to advisory voice messages. Uniphore was incubated at the Indian Institute of Technology Madras in 2008 by two engineering undergraduates, Umesh Sachdev and Ravi Sarogi. The company is a leader in voice recognition, voice biometrics and offers Indian language enterprise mobility solutions.

Akeira uses speech as input; so, even when the farmer's query does not relate directly to weather, it is able to understand the intent and responds appropriately. The solution is based on Uniphore's multilingual speech recognition technology that understands and responds to the particular characteristics and nuances of 24 languages and over 100 dialects, said 29year-old Sachdev. The challenges witnessed by farmers was that they were used to automated voices and therefore, it took two to four months for them to get used this new way of conversation, he said. By using the solution, various state governments were able to send multilingual personalized voice messages to farmers with weather conditions, market prices, etc. They also secured feedback from farmers on different government schemes and techniques and sent voice-based surveys to farmers to capture real-time data. The use of the latest software has helped the government in reaching its messages to 75% of the farmers in the first call across different districts. It has also helped to cut costs on human resources and other channels that were used to reach farmers, said Sachdev. Government departments are now able to receive clear data reports on number of calls made, number of calls connected and numbers of farmers who listened to the complete message. The relevant departments were able to reach 1.8 million farmers in local languages within 24 hours. This constant stream of information helped farmers to enhance their yield and reduce their risk of crop failure. The investors in the company include Indian Angel Network, Rural Technology and Business Incubator, National Research Development Corporation and Villigro, a social enterprise incubator. In 2012, Deloitte named Uniphore as the 17th fastest growing technology in the country. Mint has a strategic partnership with Digital Empowerment Foundation, which hosts the mBillionth and Manthan awards.

Siraj Hussain is new agriculture secy

The Centre has appointed Siraj Hussain, an Uttar Pradesh cadre Indian Administrative Service (IAS) Officer of the 1979 batch, the new agriculture secretary. Hussain, who was earlier secretary in the Ministry of Food Processing Industries, takes over from Ashish Bahuguna who retired this month. The government also appointed Jugal Kishore Mohapatra, secretary in the Department of Fertilizers, the new rural development secretary in place of L C Goyal, who has moved to the home ministry. Ranglal Jamuda, an Odisha-cadre IAS officer from the 1981 batch, has been appointed the new secretary in the food processing ministry. Till now, Jamuda was special secretary in the Department of Agriculture & Cooperation. Besides, Panchyati Raj secretary Ashok Kumar Angurana has been appointed secretary in the Department of Animal Husbandry and Dairying, in place of Anup Kumar Thakur, who retires this month.

To plug leaks in PDS, Delhi government to launch e-ration cards for poor

Concerned over the delay in the delivery of ration cards to the economically weaker sections, the Delhi government has decided to provide an online link that will allow applicants to instantly print their cards. Senior Delhi government officials said the facility was likely to be launched by chief minister Arvind Kejriwal. Under the food security scheme, the eldest woman in a family can buy rice at a highly subsidised rate of ` 3 and wheat at ` 2 per kilogram. Families with an annual income more than Rs 1 lakh are not eligible for the benefits. Currently, smart cards are sent by post to the residence of applicants. "We decided to launch this facility as in a number of cases, people reported a delay in the delivery of cards. In a few cases, ration cards were not delivered at all. Without a ration card, they can't get food grain. In certain areas — including slum clusters — it is difficult to identify houses," said a senior Delhi government official. Sources said there were complaints against the postal department. The matter was taken up with senior officers of the department.

Once the e-ration card facility is in place, anyone — including MLAs and NGOs — working for the welfare of the vulnerable will be able to help the applicants to print the card. Individuals will be able to log on to the government's food and supplies website -- nfs.delhi.gov. in -- and print the card after providing basic information such as name, Aadhaar number and registered mobile number. "As a security measure, a onetime password will be sent to the registered mobile number," said a senior Delhi government official. More than 16,68,914 families have been covered under the food security scheme and 59,32,440 are getting the benefits. Beneficiaries will also be able to modify details online and print a new card.

Centre for potato to come up in Jalandhar

Punjab will set up an ultra modern Centre of Excellence for potato crop at village Dhogri of Jalandhar. It will be set up under the aegis of Indo-Dutch joint agriculture workgroup with a focus on quality seed potato, suitable farm mechanisation and proper disease management technologies. Spread over 23.5 hectares of land, this centre will be constructed at a cost of Rs 7.85 crore, said an official spokesman. The centre of excellence will have tissue culture, net houses, cold storage, laboratory for routine tests, drip fustigation, solar pumps, planting machines along grading and packing equipments, he said. This centre will become fully functional by the end of this year, he said. The spokesman said with the adoption of proposed technologies , the potatoes would remain free for 16 kinds of virus and its shelf life will also increase.

Araku shows the way for bio-dynamic farming: Naandi CEO

The Araku valley in Visakhapatnam district, known previously as only a hot tourist spot, has become famous for its coffee cultivation during the past 10-15 years and in the years to come it will also be recognised as a large bio-dynamic farming zone, according to Manoj Kumar, CEO of the Hyderabad-based Naandi Foundation. He said in an interview that so far "the focus has only been on chemical agriculture, or organic agriculture, but the future belongs to bio-dynamic agriculture which preserves bio-diversity and takes care of soil nutrition." The Girijans of Araku valley are practising bio-dynamic agriculture, he said, with the help of NGOs like Naandi. He said bio-dynamic farming would produce organic food, improve quality and yields of crops as well and enrich soil. "If we pursue bio-dynamic farming, there is really no need for GM crops," he said. He said the foundation would continue to encourage and help the Girijans in the valley to pursue coffee cultivation and in future it would also take up mango cultivation. "We will encourage them to grow Banganapalli variety of mango which is famous in AP," he said and the target was to have 40,000-50,000 tonnes of mangoes from the valley.

Sugar exports may be hit by weak Brazil currency

A weak Brazilian currency coupled with reports of a bumper crop and a glut in the world market could affect Indian sugar exports this season. With barely 50 days left for the crushing season to end, mills are not willing to produce raw sugar unless there are forward contracts — exporters want millers to go ahead and produce raw sugar in anticipation of a rally at some point in the season. International raw sugar prices have fallen to an all time low of 13 cents and in such depressed market conditions, both millers and exporters are not willing to take any kind of risk, top exporters said. In Pune for a sugar meet by the exporter community, Rahil Shaikh, MD, EDF & Man Commodities, painted a gloomy picture saying the industry is in a bad shape. "India is expected to produce around 26 million tonnes (mt) of sugar with domestic consumption at 25 mt with a stockpile of 6-7 mt from the last season. At this point, one can expect some 1.5 mt of raw sugar export. But no forward contracts are happening," Shaikh said. The Brazilian freight compares with our domestic freight, and as such, Brazilian sugar would be preferred by countries, he added. Several exporters felt the delay in declaring raw sugar export subsidy has been a failure.

An exporter from one of India's largest export houses blames this on glut in the markets across the world adding that Brazil, with devaluation and a bumper crop, will always remain ahead. In spite of very high interest rates, low recovery, higher freight and transit period, Brazil maintains 3 mt export per month. So far, Iran, India's biggest buyer last year with purchases accounting for almost half of the country's total raw sugar exports of more than 1 mt, has not placed an order, a dealer said that this time they had the advantage of making choices between India and Brazil. Traders blamed the fall in real after the announcement of the subsidy by the Centre for the current situation. After months of delay, the Centre decided to give mills a subsidy of Rs 4,000 ($64) a tonne for exports of up to 1.4 mt in an effort to reduce stockpiles after five years of surplus output. Indian mills have been contracted to export an extra 20,000 tonnes of sugar, some dealers said. Although, some mills sealed deals to export 50,000 tonnes of sugar since the subsidy was agreed, dealers expect the annual figure to be less than 500,000 tonnes. Indian raw sugar prices have fallen to $330-340 a tonne from $465 a few weeks ago. Some dealers feel Brazil has the advantage of rapid devolution in the last few months as their rate of exchange has fallen 20-25%. Brazil's maximum raw sugar exports are through trade houses, financed and hedged by investors and banks while India is dependent on exporters, a dealer said.

Sanjeev Babar, MD, Maharashtra State Cooperative Sugar Factories Federation, said that millers cannot store raw sugar for long since they form lumps and therefore factories will not make raw sugar unless they have contracts in hand. The federation has been awaiting a meeting with chief minister Devedra Fadnavis to resolve the issues.

Global food prices dip to 5-year low in Feb

Global food prices fell to a nearly five-year low in February this year on increased supply of key food items and strong US dollar, according to the United Nations food agency FAO. Food prices averaged at 179.4 points in February, down from 181.2 points in January and 208.6 points in February 2014, the Food and Agriculture Organization's price index showed. FAO's Food Price Index is a trade-weighted index that tracks prices of five major food commodity groups on international markets. It aggregates price sub-indices of cereals, meat, dairy products, vegetable oils and sugar. "Food Price Index declined to a 55-month low in February, dropping 1.0 per cent from January and 14 per cent below its level a year earlier," FAO said in a statement. Food Price Index, at its lowest level since July 2010, reflects robust supply conditions as well as ongoing weakness in many currencies versus the US dollar, said Michael Griffin, FAO's dairy and livestock market expert.

Kenyan drought drives down tea output

A drought in recent weeks in Kenya is driving down tea output and processing factories are receiving fewer deliveries from fields each week, the East African country's leading tea-producing group said. The Kenya Tea Development Agency, representing about 500,000 small-scale farmers who produce an average 60 per cent of the country's output, said all their growing areas had experienced below-average rains in January and February.

"Our projection is that if the adverse weather conditions continue, there will be a major shortage of tea in the coming months," Alfred Njagi, KTDA's general manager for operations, said in a statement, although he gave no forecasts. In the 2013/14 (July-June) financial year, KTDA produced 1.1 billion kg of the green leaf, roughly the same level as the year before. Kenya is the leading global exporter of black tea. Provisional data from the Kenya National Bureau of Statistics shows production rose to 445.11 million kg last year.

He said prices had improved marginally in January and February compared with December, but reduced volumes meant this would have limited benefit for farmers.

India and Iran to jointly review pesticide residue levels in teas

India and Iran will together review the issue of maximum residue levels (MRL) of pesticides in teas in order to increase India's exports of the commodity to the high-value market. During the visit of an official delegation, it was decided that a joint technical group would review this issue, at a time when Iranian importers are seeking increased level of orthodox tea exports from India, with an assurance on the MRL front. "They want more of our orthodox teas," a member of the delegation, which returned last month, told. The 18-member-delegation was led by the additional secretary, commerce, and comprised members of the exporting community, officials of Tea Board, Indian Tea Association and research scientists from the Tea Board and the Tea Research Association. Orthodox teas are made in the same way as crush tear and curl CTC teas, but with most of the leaf remaining in tact, they are subtly flavourful and are the beverage of choice of discerning tea drinkers the world over. They also fetch better prices. Detailed discussions were held on the MRL issue and the need to align the pesticides in use in India and Iran came to light. The Indian team pointed out that the Indian teas were accepted worldwide. Iran is an estimated 100 million kg market which is mostly serviced by Sri Lanka. Iran also produces some tea. India's presence was muted in view of the earlier U.S. sanctions on Iran, which led to payment problems. This problem was circumvented by entering into an arrangement of setting off Indian exporters' payments through the city-based UCO Bank against oil imports. Opportunities increased with the U.S. reviewing its earlier rigid position. Buoyed by these developments, in 2012, a 30 million kg export target was set. However, after peaking at 23.1 million kg in 2013, exports plummeted to 18 million kg in 2014. A four-member Iranian delegation had visited India in October, 2014 to discuss these issues. India earned Rs. 479.40 crores with a unit price of Rs. 265 a kg. The price was among the highest commanded in the exports market in 2014. According to official statistics, Indian tea exports fell between January-November, 2014. This was due to loss of Assam orthodox tea production (by almost 20 million kg) in the wake of delayed rains, and lower demand in the high-value markets such as the U.S., Iran and Russia. Availability of lower prices of teas from Africa at $2a kg.in the international market and decrease in demand from Bangladesh due to re-imposition of tariff from April, 2014 also contributed to the decline. India ranks second in world production of tea and fourth in the world market as tea exporting country.

Euro slide boosts EU wheat export prospects

The euro's fall against the dollar has brightened prospects for European Union wheat exports but lower crude oil prices may curb West Asian purchasing, market observers said. "The outlook for EU wheat exports is excellent with Russia and Ukraine imposing export restrictions and the weak euro giving a strong price lead against the United States. But some Middle East importing countries seem to have good stocks while the fall in crude oil prices is cutting their purchasing power," a German trader said. The European Union on Thursday granted export licences for 1.59 million tonnes of soft wheat, the second-largest weekly volume ever awarded by the bloc following the record 1.67 mt in February. The EU has recently made big sales to Egypt, Saudi Arabia, Algeria and non-traditional Asian clients including South Korea. "We are developing a huge EU export programme and more sales are likely from west EU producers and from the Black Sea," another trader said. West EU wheat for April shipment is about $16-18 a tonne fob cheaper than US Gulf soft red winter wheat, with this price difference EU wheat is finding new customers. Traders estimate France could ship around 600,000 tonnes of feed wheat to Asia in 2014/15.

Wheat exports may drop to 4-year low

Wheat shipments from India may drop next year to the lowest since 2011 as global prices near a four year low undercut exports from the world's second biggest producer. Exports will probably total 1.5 million tonnes (mt) in the year starting 1 April, according to the median of estimates from seven traders, analysts and industry officials compiled by Bloomberg.

Food Processing Industry

The Next Big Revolution

India is a land of opportunities and the new government is vehemently spreading that idea across the world. Needless to say, liberalization and a spate of free trade agreements have to a great extent increased the traffic of exports from India. India's vast agri diversity has facilitated the emergence of Food Processing Industry which even at its nascent stage is ranked fifth in terms of production, consumption, export and expected growth. Large disposable incomes and a strong league of consumers have further fuelled the industry's growth. However, the volume of food products for processing is still quite low. Infrastructure to support the sector is still under construction. But the prospects of the industry are very bright. Together with the Modi Government's 'Make in India' campaign the sector will emerge as India's strongest pillar of strength.

Indian agriculture has entered it to its next phase of evolution. The dependence on emerging technologies notwithstanding, agriculture sector in India has learned to navigate the shady corridors of excesses and gluts by converting the mundane agri produce into more useful products with extended shelf life. The emergence of a strong consumer society embedded deep into retail culture and keenness to try out new products has spurred the growth of a strong food processing industry in India.

PHD Chamber of Commerce and Industry and Technopak have forecast that Indian food processing industry is likely to register a consistent growth rate of over 10 per cent from 2015 onwards in view of its emerging potential, in which the private sector has already begun to invest, responding to the call of 'Make in India' given by Prime Minister Narendra Modi. Currently, Indian food processing industry is growing at an average growth rate of 8.4 per cent. A joint sturdy " India: World's Emerging Food Leader " has also projected that India's food processing sector, which ranks fifth presently in the world in terms of production, growth, consumption and export is likely to reach $194 billion by the end of 2015. Releasing its findings, president of PHD Chamber, Mr Sharad Jaipuria said: "On domestic front, demand for processed food and food products comprises a third of total demand. Thus, the growing population along with desire for convenience would drive the demand for processed food as India has already started its journey towards increasing its share in the global food trade. In 2012-13, India registered a 63 per cent growth in exports of agricultural products and processed foods which would naturally multiply in times to come". Make in India in food processing sector, in view of PHD Chamber, has begun to happen as private sector has already committed to invest in the expansion of its manufacturing units in the food processing sector as some of the key players in food processing industry have already committed thousands of crores of investment which will begin to fructify shortly.

Indian Food Processing Sector – So Far!

The food processing industry forms an important segment of the Indian economy in terms of contribution to GDP, employment and investment, and is a major driver in the country's growth in the near future. This industry contributes as much as 9-10 per cent of GDP in agriculture and manufacturing sector.

The Indian food industry stood around Rs 247,680 crore (US$ 39.03 billion) in 2013 and is expected to grow at a rate of 11 per cent to touch Rs 408,040 crore (US$ 64.31 billion) by 2018.

Indian agricultural and processed food exports during April-May 2014

stood at US$ 3,813.63 million, according to data released by the Agricultural and Processed Food Products Export Development Authority (APEDA).

India has 85,000 bakery units, of which 75,000 operate in the unorganised sector, garnering a 65 per cent market share. The per capita consumption of bakery products, stands around 1-2kg per annum.

The Indian dairy industry has grown considerably post the white revolution and reports suggest that with current growth rate of approximately 3 per cent-4 per cent, it is thought to grow to 185 million tonne and become a US$ 24 billion organised industry by 2020 and US$ 140 billion overall including the unorganised sector. In the dairy sector, most of the processing is done by the unorganized sector. Though the share of organized sector is less than 15 per cent, it is expected to rise rapidly, especially in the urban regions. Among the milk products manufactured by the organized sector, some of the prominent ones are ghee, butter, cheese, ice creams, milk powders, malted milk food, condensed milk and infant foods. Apart from these traditional milk based products, many corporate players are changing their focus to emerging segments such as Ultra Heated Treatment (UHT) and flavoured milk. Indian market has espoused UHT milk and the market is estimated at US$ 33.4 Million (Rs. 1.5 billion).

Fruit and vegetable processing in India is carried out almost equally by the organized and unorganized sectors, with the organized sector holding 48 per cent of the share.While products like juices, pulp concentrate, ketchups and jams are largely manufactured by the organized sector, the unorganized sector has been comfortable with more traditional products like pickles, sauces and squashes. By size, pickles form the strongest category. Over the last few years, the industry has seen a positive growth in ready-to-serve beverages, fruit juices and pulps, dehydrated and frozen fruits and vegetable products, pickles, processed mushrooms and curried vegetables.

Another category of produce which sees the bulk of processing is the food grains. India produces more than 200 million tonnes of different food grains every year. All major grains – rice, wheat, maize, barley and millets like jowar

(great millet), bajra (pearl millet) & ragi (finger millet) are produced in the country. About 15 per cent of the annual production of wheat is converted into wheat products. There are 10,000 pulse mills in the country with a milling capacity of 14 million tonnes, milling about 75 per cent of annual pulse production. The country is self sufficient in grain production and is the second largest rice producer in the world with a 20 per cent global share. Primary milling of rice, wheat and pulses is the most important activity in food grains processing. Branded rice is becoming popular in both the domestic as well as the export market. Indian Basmati rice commands a premium in the international market. This segment thus offers opportunities in marketing of branded grains, as well as grains processing.

Processing of meat and poultry products are also a part of India's food processing sector, albeit in a small scale. India has a livestock population of 470 million, which includes 205 million cattle and 90 million buffaloes. Processing of meat products is licensed under Meat Food Products Order,(MFPO), 1973. Total meat production in the country is currently estimated at 5 million tonnes annually. Only about 1-2 per cent of the total meat is converted into value added-products. The rest is purchased raw and consumed at home. Poultry pro-

cessing is also at anascent stage. The country produces about 450 million broilers and 33 billion eggs annually.Growth rate of egg and broiler production is 16 per cent and 20 per cent respectively.India has 3,600 slaughter houses, 9 modern abattoirs and 171 meat processing units licensed under Meat Products Order. A few modern pork processing plants are also coming up in the country. There is a large potential for setting up modern slaughter facilities and development of cold chains in the meat and poultry processing sector. Buffalo meat is surplus in the country and also has good export potential.The growing number of fast food outlets in the country has had a significant impact on the meat processing industry in India. As per capita incomes rise and urban families live in smaller units, the demand for processed meat products, which can be quickly cooked, has been rising. Most of the production of meat and meat products continues to be in the unorganised sector. Some branded products like Venky's and Godrej's Real Chicken are, however, becoming popular in the domestic market.

India is the third largest fish producer in the world and is second in inland fish production. The fisheries sector contributes US$ 4.4 billion to the national income, which is about 1.4 per cent of the total GDP. With its over 8,000 km of coastline, 3 million hectares of reservoirs, 1.4 million hectares of brackish water, 50,600 sq km of continental shelf area and 2.2 million sq km of exclusive economic zone, India is endowed with rich fishery resources and has vast potential for fishes from both inland and marine resources. Processing

of fish into canned and frozen forms is carried out almost entirely for the export market. It is widely felt that India's substantial fishery resources are under-utilized and there is tremendous potential to increase the output of this sector. Total investment in the sector since 1991 has been around US$ 600 million. With the liberalized policy, fish-processing sector has been attracting more foreign investments. Foreign investment up to 2003 has been US$ 122.5 million. The units in the fish processing sector are largely small scale proprietary/ partnership firms or fishermen co-operatives. In the past ten years, the corporate sector has increased its operations in preservation, processing and export of coastal fish.

Apart from this there is a whole section of Consumer food industry which includes packaged foods, aerated soft drinks, packaged drinking water and alcoholic beverages. Packaged includes bakery products, ready-to-eat snacks, chips, namkeens (salted snacks and savouries) and other processed foods/ snack foods. The market size of confectioneries is estimated at US$ 484.3 million growing at the rate of 5.7 per cent per annum. Biscuits have a market of US$ 373.4 million, growing at 7.5 per cent per annum. Other products like bread, chocolates are also growing at a significant rate. There is a demand for Indian snack food (Ready-To-eat) in overseas markets. The exports market is estimated at US$ 33.4 million and is growing at around 20 per cent annually. The packaged food industry has around over 60,000 bakeries, 20,000 traditional food units and several pasta food units. In the past decade several new biscuits & confectionery units, soya processing units and starch/glucose/sorbitol producing units have come up. Multinational Companies are coming up in confectionery and cocoa based products areas.The aerated soft drinks industry in India comprises over 100 plants across all States. It provides direct and indirect employment to over 125,000 employees. It has attracted one of the highest foreign direct investments in the country, amounting to around US$ 1049 million. Two of the biggest global brands in this segment are well established in India. Soft drinks constitute the third largest packaged foods segment, after packed tea and packed biscuits. Total export earnings of the industry are over US$ 156 million per annum. Penetration levels of aerated soft drinks in India are quite low compared to other developing and developed markets, an indication of further potential for rapid growth. India is the third largest market for alcoholic beverages in the world. The demand for spirits and beer is estimated to be around 373 million cases per annum. There are 12 joint venture companies producing grain based alcoholic beverages that have a combined licensed capacity of 33.9 million litres per annum. 56 units are engaged in manufacturing beer under license from the Government of India. The demand per annum for wine in the domestic market is estimated to be around 6 million bottles (750 ml), while the domestic production of wine is over 2.4 million bottles.

Food Processing Sector – Policy Wise

Indian has a rich resource base to offer for food processing. India was ranked No. 1 in the world in 2012 in the production of bananas, mangoes, papayas, chickpea, ginger, okra, whole buffalo, goat milk and buffalo meat. India ranks second in the world in the production of sugarcane, rice, potatoes, wheat, garlic, groundnut (with shells), dry onion, green pea, pumpkin, gourds, cauliflower, tea, tomatoes, lentils, wheat and cow milk. Despite a commendable production, only two per cent of the farm produce is processed in India. India loses a considerable amount of agriculture produce due to lack of proper post harvest infrastructure especially during times of glut. "Currently, there is Rs 44,000 crore of wastage and unless we work towards removing that, our growth story cannot be completed," acknowledges India's Food processing Minister, Harsimrat Kaur Badal.

The government has therefore been focusing on commercialization and value addition to agricultural produce, minimizing pre/post harvest wastage, generating employment and export growth in this sector, through a number of regulatory and fiscal incentives. The Government has formulated and implemented several schemes to provide financial assistance for setting up and modernizing of food processing units, creation of infrastructure, support for research and development and human resource development in addition to other promotional measures to encourage the growth of the processed food sector.

The Centre has permitted under the Income Tax Act a deduction of 100 per cent of profit for five years and 25 per cent of profit in the next five years in case of new agro processing industries set up to package and preserve fruits and vegetables. Excise Duty of 16 per cent on dairy machinery has been fully waived off and excise duty on meat, poultry and fish products has been reduced from 16 per cent to 8 per cent. Most of the processed food items have been exempted from the purview of licensing under the Industries (Development and regulation) Act, 1951, except items reserved for small-scale sector and alcoholic beverages.

Food processing industries were included in the list of priority sector for bank lending in 1999. Automatic approval for foreign equity up to 100 per cent is available for most of the processed food items except alcohol, beer and those reserved for small-scale sector subject to certain conditions.

"Currently, there is Rs 44,000 crore of wastage and unless we work towards removing that, our growth story cannot be completed," acknowledges India's Food processing Minister, Harsimrat Kaur Badal.

Zero duty import of capital goods and raw material for 100 per cent export oriented Units and sales of up to 50 per cent in domestic tariff area for agro based, 100 per cent export oriented units is allowed. Government grants have been given for setting up common facilities in agro Food Park. Full duty exemption on all imports for units in export processing zones has been done.

National Food Processing Policy aims to increase the level of food processing from 10 per cent in 2010 to 25 per cent in 2025. Food Processing is recognized as a priority sector in the new manufacturing policy of 2011.

The National Mission on Food Processing and the Ministry of Food Processing Industries have launched a new centrally sponsored scheme in April 2012, for implementation through state and union territory governments. The basic objective of the National Mission on Food Processing is decentralization of the implementation of food processing related schemes for ensuring substantial participation of state and union territory governments.

Securing Foreign Investments

India's wide diversity and throbbing domestic market have invited attention from foreign investors. Liberalization and the growth of organized retail have made the Indian market more attractive for global players. With a large agricultural sector, abundant livestock and cost competitiveness, India is fast emerging as a sourcing hub of processed food.

India has the highest number of youngsters i.e., 572 Million people under the age of 24 who are not averse to changes in the traditional food style and who are willing to welcome new products into their diet. Rising income levels and a growing middle class are other factors that have been changing India's dietary

100 per cent FDI is permitted for alcoholic beverages, with the requirement of an industrial license. For pickles, mustard oil, groundnut oil and bread – items reserved for the micro small and medium sector, 24 per cent foreign direct investment is allowed under the automatic route, with the requirement of prior approval from the Foreign Investment Promotion Board for FDI amounting to more than 24 per cen

patterns. It is estimated that one-third of the population will be living in urban areas by 2020. These changes in the past years have increased a good share of Indians' inclination to branded food wouldn't mind spending more. The country is driven towards packaged and ready-to-eat foods. The increasing awareness to wellness and health has also increased the demand for high protein, low-fat, wholegrain and organic food.

Besides, the government has also created a favourable environment for foreign investors to carry forward the momentum of the sector as they not only bring in investments but also know-how and technology. 100 per cent FDI is permitted in the automatic route for most food products except for items reserved for micro and small enterprises. 100 per cent FDI is permitted for alcoholic beverages, with the requirement of an industrial license. For pickles, mustard oil, groundnut oil and bread – items reserved for the micro small and medium sector, 24 per cent foreign direct investment is allowed under the automatic route, with the requirement of prior approval from the Foreign Investment Promotion Board for FDI amounting to more than 24 per cent.

Foreign direct investment (FDI) in the country's food sector is poised to hit the US$ 3- billion mark. In the last one year alone, FDI approvals in food processing have doubled. The cumulative FDI inflow in food processing reached US$ 2,804 million in March '06. In '05- 06, the sector received approvals worth US$ 41 million. This figure is almost double the US$ 22 million approved in 2004-05.

Nearly 30 per cent of FDI in this sector comes from EU countries such as Netherlands, Germany, Italy and France. Some of the successful ventures from EU countries are Perfetti, Cadbury, Godrej-Pilsbury, Nutricia International, Manjini Comaco, etc. The US-based private equity fund, New Vernon Private Equity Limited (NVPEL), has decided to invest Rs 450 million in Kochi-based masala major, Eastern Condiments, the flagship company of Eastern Group. America's largest chocolate and confec-

tionery-maker Hershey is acquiring 51 per cent stake in Godrej Beverages & Foods for US$ 54 million.

Turkish agro food processing machinery firms have also been recently reported in making their first major pitch to broaden their presence in the Indian market through joint ventures and customer contacts. These firms are primarily from the Corum province of Turkey, a major grain processing region, which accounts for almost 35 per cent of that country's annual exports of grain processing machinery and equipment exports.

Firming Up Infrastructure

The massive amounts of losses of farm products post harvest have been due to the shortage of suitable infrastructure such as cold chain, packaging centres, value added centre, modernized abattoirs etc. Realizing the significance of infrastructure in developing the food processing sector, the Government has implemented several schemes for infrastructure development.

As a part of the strategy to develop food processing infrastructure, the Ministry has been pro-actively pursuing the task of setting up of food parks in different parts of the country. In the food parks, common facilities like cold storage, food testing and analysis lab, affluent treatment plant, common processing facilities, packaging centre, power

supply, water supply, seminar / conference / training facilities etc. can be assisted. In a bid to boost the food sector, the Government is working on agrizones and the concept of mega food parks. Twenty such mega parks will come up across the country in various cities to attract Foreign Direct Investment (FDI) in the food processing sector. The parks would bring together farmers, retailers and processors and link agricultural production to market in order to maximise value addition, minimise wastage and improve farmers' income

Another undeniably relevant category of infrastructure is the packaging centers which are intended to provide facilities for packaging, which may help in enhancement of shelf life of food products and make them internationally acceptable. Schemes have been implemented to develop such facilities.

Integrated Cold Chain Facility is another area where considerable focus has been laid. The scheme is intended to improve viability of cold storages and enhance cold storage capacity. Value Added Centres on the other hand is intended to enhance value addition leading to enhanced shelf life, higher total realization and value addition at each level of handling and also to facilitate traceability. So far, three VACs i.e. one each in Maharashtra, Himachal Pradesh and Punjab have been sanctioned.

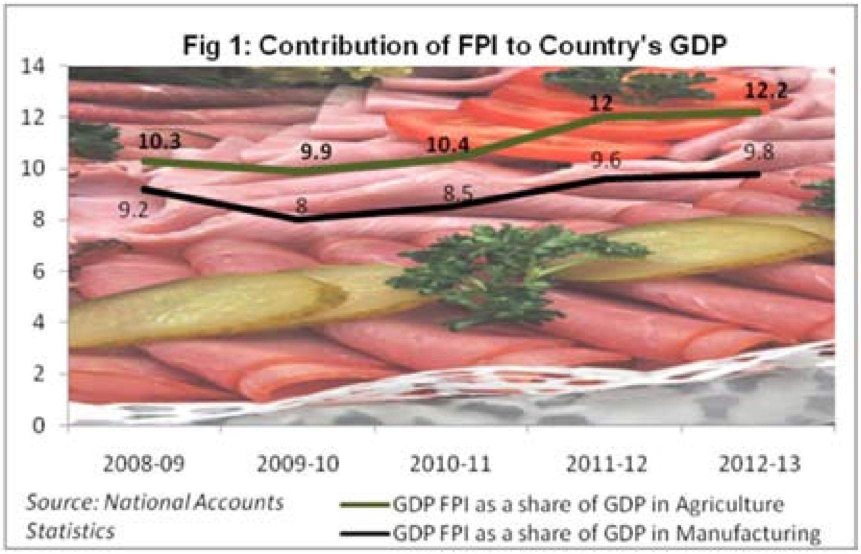
Irradiation Facilities help in extending shelf life of the food product through irradiation techniques by preventing infestation like in flour, sprouting and change in chemical composition of the product (as in potato). So far four irradiation projects i.e. two in Maharashtra and one each in West Bengal and Haryana have been sanctioned.

Modernized abattoirs favour scientific and hygienic slaughter, causing least pain to the cattle and ensuring better by-product utilization. So far only one case i.e. of MCD Delhi has been approved for grant of Rs. 40 million.

Despite the strengths and potential that India possesses in the area of food processing, the sector faces the daunting task of further strengthening the general infrastructure. The farmers still lack appropriate post harvest operations that can guarantee the wellbeing of the farm produce for further processing downstream. This degrades the value of the produce and in turn results in wasting of farm products worth thousands of crores of rupees. Apart from strengthening schemes to establish infrastructure facilities, measures to widely popularize them among farmers are crucial. The farmers' traditional means of storage, transport and marketing has to be further bolstered by technology, know how and financial support. Food processing has huge potential to dramatically improve rural livelihoods by raising farm incomes through value addition in agricultural produce. The food processing industry could make the country a leading food supplier to the world.

FOOD PROCESSING INDUSTRY AT A GLANCE

Food Processing Industry (FPI) of the country is fast emerging as an important sector in the whole economy. Nearly a tenth of world's arable land lies within the geographic boundaries of India, a country that is blessed with all major climates of the world, enjoying long sunshine hours and fairly good rainfall. India is also a country with the largest cattle population, second largest goat and sheep population and a vast coastline. All this has made India a country with vast potential to emerge as the largest food producing countries in the world. However, just producing large quantities of food is not enough in the current context where a large population has to be fed and wastage of produced food has to be minimised as far as possible. Food processing industry is therefore becoming very vital for ensuring food and nutrition security of the country. Over the past several years, FPI had been contributing significantly in terms of GDP, employment and investment. In the recent years, this sector has been growing at an average annual rate of more than 8%, signalling at an emergence of greater focus and activity in the sector. This sector is assuming greater significance and growing at a pace much faster than either agriculture or the manufacturing sector.Performance of FPI improved substantially -21.6 per cent. However, year 2012-13 was not so encouraging for the food processing sector and during this year, the growth of sector witnessed a downward growth. The same year also witnessed a slow growth both in agriculture and manufacturing sectors though the growth of the sector was higher than both agriculture and manufacturing sector. The growth and good performance of the food processing sector assumes a lot of significance in the backdrop of the concern that low level of processing, inadequate postharvest infrastructure facilities and lack of appropriate technologies result into huge wastage of agriculture produce, particularly perishable commodities resulting not only in loss to the national exchequer but a severe hardship to our farmers and consumers.



Food Processing Industry as an Engine for Growth of MSMEs

Total number of factories in Food Processing Sector in 2011-12 was 2.91 per cent higher in comparison to 2010-11. When compared to other industry segments, food processing sector is highly labour absorptive and less capital intensive in nature, clear from the fact that the sector has generated employment to the tune of 1.8 million persons which was 6.92 per cent more than the previous year. This is more when compared to other labour intensive sectors like textiles,

basic metals, wearing apparel etc. Food processing sector is also capital efficient when compared to various other sectors. It has been seen that the food products requires less capital for producing one unit of output, in value term, as compared to other labour intensive industries. According to the fourth All India Census of Micro, Small and Medium Enterprises of year 2006-07, there are over 0.22 million working enterprises in the country with a market value of over Rs 60 thousand crores, generating a gross output of over Rs 137 thousand crores. The MSME census also revealed that the total inputs consumed by food processing sector was Rs 94 thousand crores and generating a total employment of about 1.5 million people across the country. In 2011-12, the total employment in this sector was 1.8million people, which indicates at a significant growth over the previous few years. As compared to 2010-11, this is an increase by almost 7%. The country has food processing industries in the form of grain mill and starch products, vegetable and animal oils and fats, beverages, dairy products, fruits and vegetables products, prepared animal feeds, Fish, crustaceans, meat processing and preserving etc.

In terms of distribution of food processing factories, Andhra Pradesh has the highest number of factories registered as FPI units in 2011-12 with 9,359 such factories. It is way ahead when compared to the other states and produces a vibrant and sustainable ecosystem for food processing industry to thrive in the state. Tamil Nadu follows Andhra Pradesh in terms of number of FP factories with a total number of 5186 in 2011-12. Then comes Maharastra (3113), Punjab (2784), Uttar Pradesh (2116), Karnataka (1979), West Bengal (1600), Kerala (1437) and Assam (1212). However, it is to be noted that there are also factories which are registered under other industry categories but closely resemble food processing sector like coffee, tea, oilseeds, sugar, spices and alcohol made from molasses as these items fall within the purview of other industry categories. Food processing industries per say from the economic activity point of view include all edible processed food undertaken in various states across the country. To be precise, food processing includes manufactured processes where any raw product of agriculture, animal husbandry or fishing is transformed through a process in such a way that its original physical properties undergo a change and if the transformed product is edible and has commercial value, then it comes within the domain of Food Processing Industries. All these processes and activities generally involve em-

	Factories (numbers in '000)	**Persons Engaged (numbers in '000)**	**Fixed Capital (Rs '000 crores)**	**Output Value (Rs '000 crores)**
Grain Mill & Starch products	19	366	17.5	158
Vegetable & Animal oils and fats	3	121	18	197
Beverages	2	147	22	53
Dairy Products	1.6	150	11	87
F&V products	1	62	5	10
Prepared Animal Feeds	0.755	44	2.7	27
Total Food Processing Sector	37	1776	145	734

Fig 2: Top Ten States in Terms of Number of Factories as Registered FPI units in 2011-12

ployees, power, machines or money. Industries registered as food processing units are also those which carry out other value-added processes resulting in significant value addition, such as increasing shelf life, shelling and making ready for consumption etc. such produce also comes under food processing, even if these industry units does not undertake any manufacturing processes.

India's Food Production as Source of Supply to Food Processing Industry

In 2012-13, India produced 162187 thousand tonnes of vegetables as raw materials for the entire food processing industry. When compared to 2008-09, this marks almost 26% increase. In that year, the total vegetable supplied as raw material to food processing industry was 129077 thousand MT. In 2009-10, the supply of vegetables as raw materials increased to 133738 thousand MT, further increasing to 146555 thousand MT in 2010-11 and closing at 156325 thousand MT in the following year.

India has been witnessing a white revolution during the last several years. Consequently, the food processing units based on milk processing has also been showing an encouraging trend over the past years. The supply of milk as raw material to the food processing industry as a whole between 2008-09 and 2012-13 witnessed 18% increase. In 2008-09, a total of 112 million tonnes of milk was supplied to the food processing industry. The consecutive years that followed witnessed steady increase in the supply of milk as raw material. In 2009-10, the supply was 116 million tonnes, in 2010-11, the supply was 122 million tonnes which increased further

Fig 5: Meat Production in Million Tonnes in India

Source: Dept. of Animal Husbandry, Dairying and Fisheries

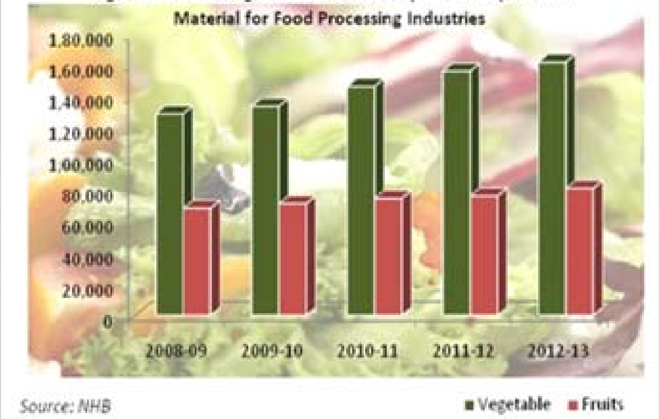


Fig 3: Fruits and Vegetables Production (in '000 MT) as Raw Material for Food Processing Industries

Source: NHB

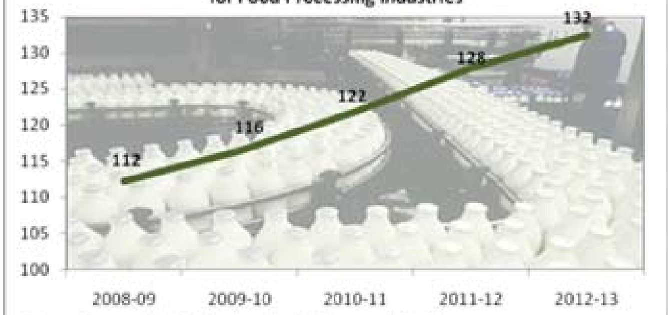


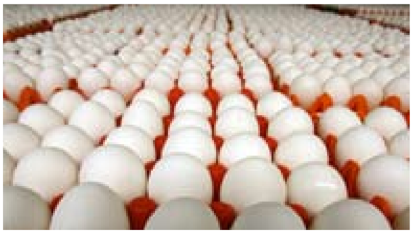
Fig 4: Availability of Milk (Million Tonnes) as Raw Material for Food Processing Industries

Source: Dept. of Animal Husbandry, Dairying and Fisheries

Table: Percentage of losses estimated for major produces	
Crop	Cumulative wastage (per cent)
Cereals	3.9 – 6.0
Pulses	4.3-6.1
Oil seeds	2.8-10.1
Fruits & Vegetables	5.8-18.0
Milk	0.8

to 128 million tonnes in the following year.

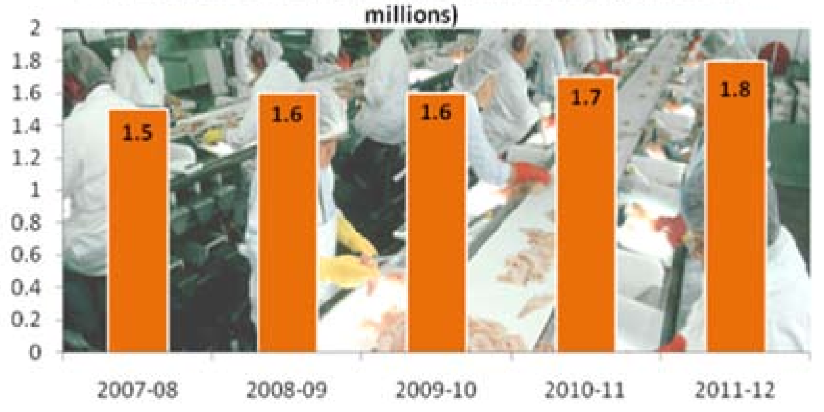
Like vegetables, fruits and milk, meat production has also been steadily increasing in the country which in turn is providing a steady base of raw material supply to the processing units related to meat in the country. In 2008-09, the production of meat in the country was 4 million tonnes which increased to 4.5 million tonnes in 2009-10. In the following three consecutive years, the production maintained an upward trend with 5 million tonnes in 2010-11, 5.5 million tonnes in 2011-12 and 6 million tonnes in 2012-13.



Similarly, egg production has been increasing steadily over the years and between 2008-09 and 2012-13, the egg production increased from 56 billion numbers to 70 billion numbers. This is an increase of 25.5% when compared between 2008-09 and 2012-13.

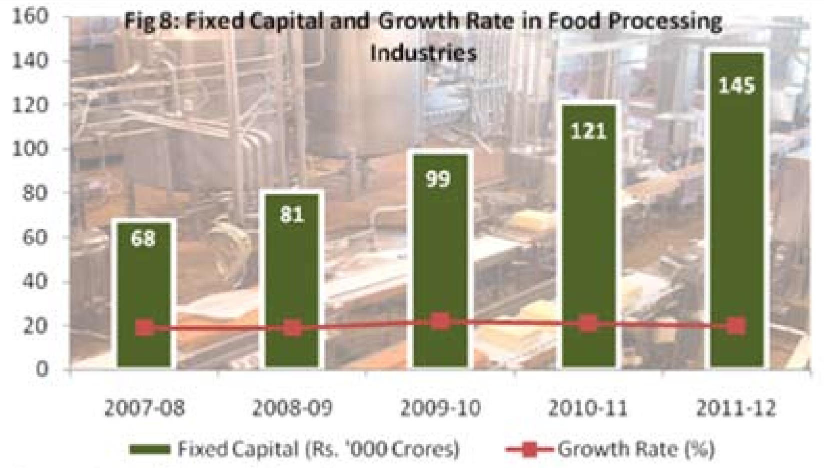
The significance of the FPI sector further increases when one looks at the quantum of wastage that is being witnessed in the agriculture sector of the country. In a study of losses of various agricultural produce conducted by CIPHET, cumulative wastage of cereals in the country ranges between 3.9 to 6 percent, pulses is 4.3 to 6.1 percent and oilseeds between 5.8 to 18 perent. The highest percent wastage is incurred by fruits and vegetables and it is between 5.7 to 18 percent.

Fig 7: Number of People Employesd in FPI Sector (Number in millions)



Source: Annual Survey of Industries

Fig 8: Fixed Capital and Growth Rate in Food Processing Industries



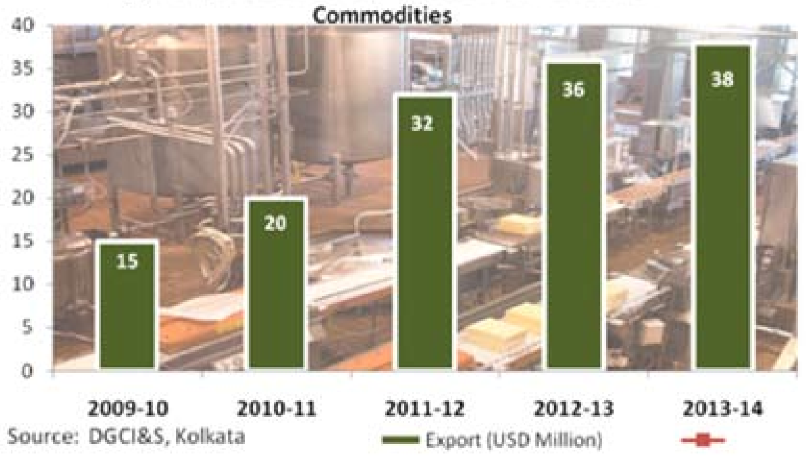
Source: Annual Survey of Industries

Food Processing Industry as an Engine of Employment and Growth

In the year 2007-08, FPI sector of the country employed 1.5 million people. Over the years, this has witnessed a steady growth and in the following consecutive years, the number of people employed increased and reached 1.8 million in 2011-12. This is an increase of 30% when compared between 2007-08 and 2011-12. The most important factor about the FPI sector vis-a-vis employment generation in the country's economy is that FPI is generally an employment intensive sector. Moreover, the sector allows the growth of the small and medium enterprises which is crucial for an expanding economy like India.

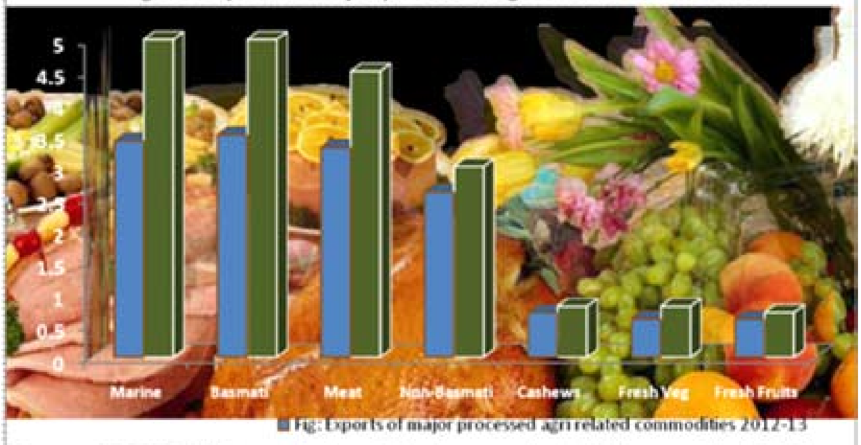
FPI sector is also crucial in terms of fixed capital contribution to the country.Fixed capital formation by the FPI sector has grown by a massive 113% between 2007-08 and 2011-12. In 2007-08, the fixed capi-

Fig 9: Export Scenario of processed Food & Related Commodities



Source: DGCI&S, Kolkata

Fig 10 : Exports of major processed agri related commodities



Source: DGCI&S, Kolkata

tal of the FPI sector was Rs 68 thousand crores. This increased to Rs 82 thousand crores the following year. In 2009-10, the capital formation was Rs 99 thousand crores, increasing to Rs 121 crores in 2010-11 and finally increasing to Rs 145 thousand in 2011-12.

FPI Sector as a Major Source of Foreign Exchange

Export of various processed food and related commodities in the country has been increasing consistently over the years. When compared between a period of 2009-10 and 2013-14, the export witnessed more than two fold increase, from USD 15 million in 2009-10 to USD 38 million in 2013-14. The substantial increase was witnessed between 2010-11 and 2011-12. In 2010-11, the total export from this sector was USD 20 million which increased to USD 32 million in 2011-12 (Fig 9).

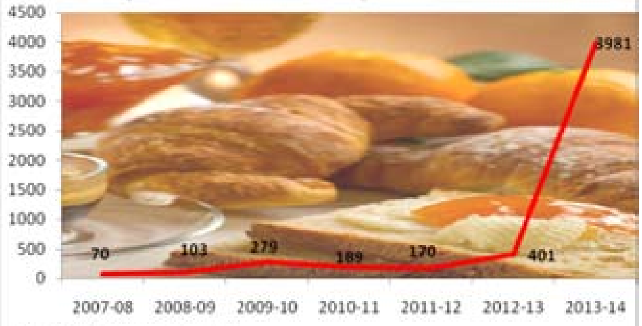
When the export statistics is studied in terms of the major individual agri commodities, its seen that marine products contribute the highest, followed by commodities like basmati, meat, non basmati rice segment, cashews, fresh vegetables and fresh fruits. Export of marine products and basmati rice was USD 5 million in 2013-14. Export of meat and non-basmati rice segments in 2013-14 was USD 4.5 million and USD 3 million respectively. It is important to note that all the different kinds of processed agri commodities posted substantial growth between 2012-13 and 2013-14.

The potential of the FPI sector in terms of attractive Foreign Direct Investment (FDI) has long been recognised. However, India as a country was not very successful in attracting substantial FDI between years 2007-08 and 2012-13. However, 2013-14 witnessed a massive inflow of FDI in the food processing sector when the country attracted a huge USD 3981 million.

Government Support to FPI Sector

FPI sector has been receiving increased government focus and support. A detailed support and funding mechanism has been elaborated in the eleventh and twelfth Five Year plans. The Ministry of Food Processing Industries (MoFPI) in 2014 provided financial assistance to a total of 981 food processing units across the country. Out of all the different segments, units related to consumer foods (191 units), F&V (231 units) and rice (322) received substantial government support. In terms of monetary support, consumer foods received funding of Rs 32 crores, F&V received funding of Rs 36 crores and rice units received Rs 48 crores.

Fig 11: FDI in Food Processing Sector (in USD million)



Source: DIPP, Govt. of India

Competiveness and quality pa-

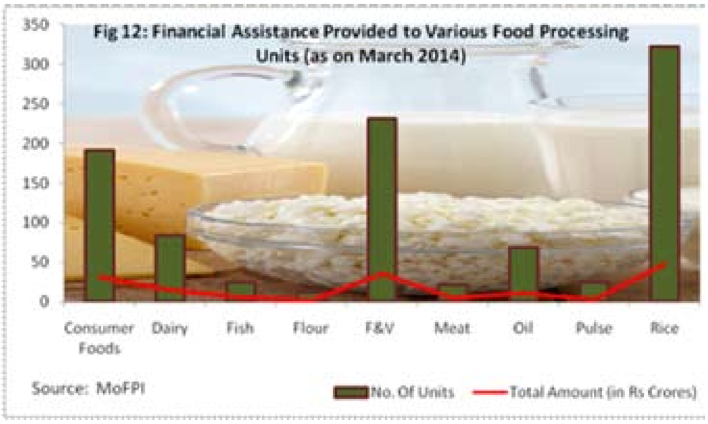


Fig 12: Financial Assistance Provided to Various Food Processing Units (as on March 2014)

Source: MoFPI

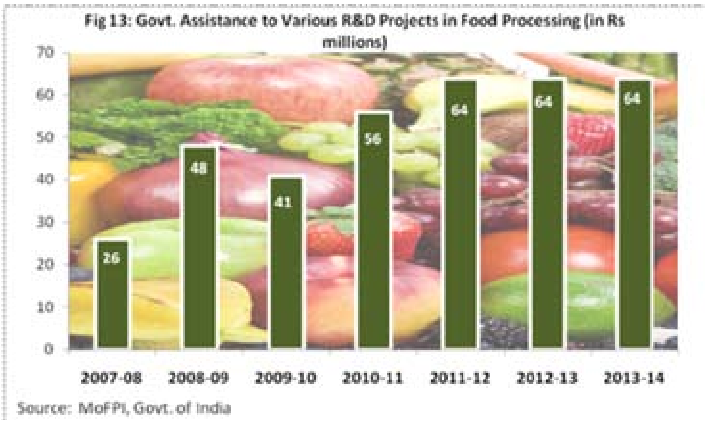


Fig 13: Govt. Assistance to Various R&D Projects in Food Processing (in Rs millions)

Source: MoFPI, Govt. of India

Fig 14: Amount of Funding in Food Testing Laboratories (in Rs millions)

Source: MoFPI, Govt. of India

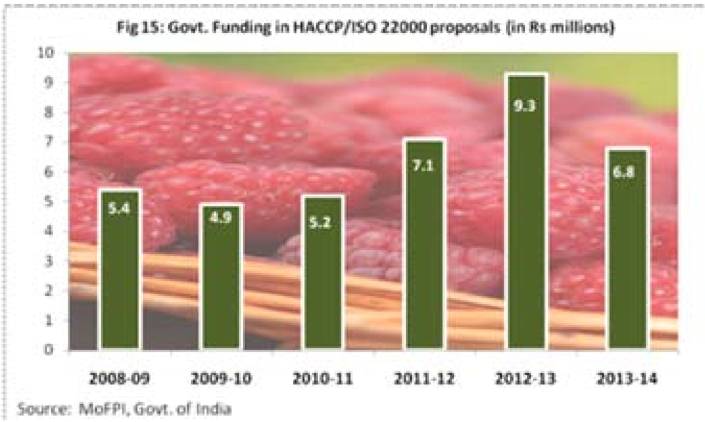


Fig 15: Govt. Funding in HACCP/ISO 22000 proposals (in Rs millions)

Source: MoFPI, Govt. of India

rameters of various processed food items of the country in the international market depends a lot on the level of effective research and development (R&D) that is being carried out in the FPI sector. Government of India, though MoFPI has been supporting various R&D initiatives across the country in FPI sector. In 2013-14, the total government support received by various R&D initiatives in the FPI sector was Rs 64 million.

Government of India has also been encouraging and funding Food Testing Laboratories (FTLs). The funding in this areas, though has been fluctuating over the years, have witnessed a gross overall increase, from Rs 99 million in 2007-08 to Rs 247 million in 2013-14. Years like 2008-09 and 2012-13 witnessed less investment in this area though.

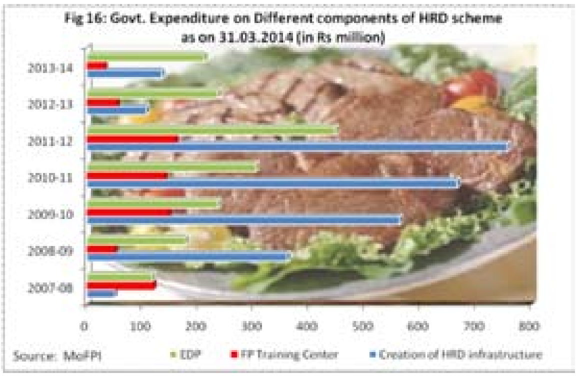


Fig 16: Govt. Expenditure on Different components of HRD scheme as on 31.03.2014 (in Rs million)

Source: MoFPI

In 2008-09, the amount of funding by the government in FTLs was a meagre Rs 21 million and again in 2012-13, the investment in the same was just Rs 86 million.

Between a period from 2008-09 and 2013-14, the maximum amount of government funding was witnessed in 2012-13 at Rs 9.3 million. It decreased to Rs 6.8 million in 2013-14.

Government has also been aware of the importance of creating a trained and efficient pool of manpower in the FPI sector. From this point of view, government has been supporting various aspects of creating trained manpower in terms of creation of HRD infrastructure, establishing FP training sector and creating entrepreneurship development programmes (EDPs).

Food Processing Industry units have been coming up in the country across various states in the recent years. Performance of this sector has improved significantly in the recent years. There were about 37000 registered factories under the food processing sectors in various parts of the country.

AgroTech 2015

12 – 14 March, 2015, Lucknow

AgroTech 2015 was organised by the International Agriculture Consulting Group with the support of the Government of Uttar Pradesh, various central Government Ministries and Agriculture Today Group from 12 – 14 March 2015 at the Indian Institute of Sugarcane Research campus, Lucknow. The event was attended by senior officials from the Government, industry, research, development and extension sectors, district level functionaries, NGOs and farmers.

Hon'ble Governor visiting AgroTech 2015 stalls.

Director of Agriculture, UP Government Mr. AK Bishnoi, Director of Horticulture, UP, Dr. SK Joshi, former Additional Chief Secretary of UP, Sh. Anis Ansari, former Agriculture Minister, Dr. Ashok Bajpai, Vice Chancellor of ND Agriculture University, Dr. Akhtar Haseeb, Director General of UP Council of Agriculture Research, Prof. Rajendra Kumar, Director of Indian Institute of Sugarcane Research, Dr. OK Sinha, besides senior officials from Tea Board, Spices Board, Ministry of Culture, Indian Council of Agriculture Research, Ministry of Ayush, Indian Banks Association, Mahyco Seeds, Jain Irrigation, Nuziveedu Seeds, Excel Crop Care, PI Industries Limited, Ministry of Earth Sciences, Ministry of Social Justice etc.. participated in the three day long event.

Inaugurating the event, former Agriculture Minister, Dr. Ashok Bajpai said that AgroTech has been organised since the year 2001 by Agriculture Today Group in Lucknow, which has served well the farmers of Uttar Pradesh. Director General of UP Council of Agriculture Research Prof. Kumar said such events were very helpful in bringing all stakeholders to one platform to deliberate upon the issues and challenges facing agriculture and in delivering the scientific achievements to farmers. Dr. MJ Khan, President of Agriculture Today group said that so far over 3 lakh farmers have been given training and exposure through such events, which have been organised in Lucknow, Guwahati, Hyderabad and in Maharashtra by the Group, besides large number of district level Kisan melas.

Hon'ble Governor of Uttar Pradesh Sh. Ram Naik was the Chief Guest at the Concluding Function. He took time to visit the exhibition area and interacted with the exhibitors to know the benefits of various products, services and technologies that were put on display. Hon'ble Governor also felicitated five farmers, who have set examples in innovations and productivity in the State. Farmers who were honoured included Mango farmer Padamshree Sh. Kaleemulah of Lucknow, Agriculture Leadership Award 2011 winner Sh. Ram Saran Verma of Barabanki for banana crop, Sh. Satyapal Singh, Sugarcane farmer from Sitapur, Sh. RS Maurya, from Lakhimpur and Sh. Habeeb Khan from Itaunja, Lucknow for his tissue culture work.

Hon'ble Governor also presented mementoes to the exhibitors and sponsors for best display. Mahyco Seeds, National medicinal Plants Board, Trust for Livelihood Solutions, Indian Council of Agriculture Research, Department of Agriculture, UP, Jain Irrigation, Spices Board, Ministry of Earth Science were presented mementos for stall display. Indian banks Association was adjudged the Best Stall. The event was sponsored by Spices Board, Ministry of Social Justice & Empowerment, Nuziveedu Seeds, Jain Irrigation, UPL Group, Ministry of Non-Conventional Energy Sources through NEDA, and Department of Tourism among others.

Delivering his Concluding Speech, Hon'ble Governor, Sh. Ram Naik praised the event and the effort behind the event. He affirmed that agriculture is the backbone of India and even today, over 60% of our population is directly dependant on agriculture for its livelihood. He also noted that agriculture assumes even greater importance for states like Uttar Pradesh, where approximately 70% population earns its livelihood through agriculture. He acknowledged that farming is a difficult profession, but praised our farmers for resolutely working in difficult situations and feeding the nation.

Kisan Patrika launch issue being released by Hon'ble Governor at the AgroTech 2015 Concluding Function, published by Krishi Vigyan Kendra, ICAR. Seen in the picture from left to right are: Prof. Rajendra Kumar, Vice Chancellor, ND Agriculture University Faizabad Prof. Akhtar Haseeb, Hon'ble Governor Sh Ram Naik, Dr. MJ Khan, President, Agriculture Today Group, Dr. OK Sinha, Director, Indian Institute of Sugarcane Research.

Considering the relevance of agriculture in Uttar Pradesh, he exhorted the state to gear up to the challenge and help its farmers well with the new technologies and support programs. While liberalization of world trade has opened up new vistas of growth, global opportunities have opened up but the same has exposed our services, industry and farming sector to a great challenge said Shri Naik. He particularly pointed to the challenges faced by rural sector. He also noted that Programs such as AgroTech are important in creating awareness among the farmers and providing them exposure to technologies, agro products and various Governmental schemes to help them do more scientific farming. He was particularly impressed by the interactive sessions organised for the farmers where farmers enthusiastically participated.

He encouraged the states to identify their core strengths using the global bench-marking and adopt focussed approach with appropriate technologies, inputs and cropping mix to enhance the core competencies in those items of agricultural production so as to compete globally.

He also urged UP to bring in the best of technologies, both in production & processing and exposure to latest developments, value addition, crop diversification, marketing & export to its farmers and officials for productivity and quality improvement. He urged the government to supplement farmers'efforts through its various schemes. But he also stressed that farmers need to be educated on the schemes of the Agriculture and other Ministries so that they could avail of the benefits, improve agriculture and take up diversified farming including dairy, goatry, poultry and fisheries. Towards these objectives, programs such as Agrotech need to be organised in every district of the State.

Managing Dairy Animals in Winter Season

Winter is a season in which the temperature falls below zero degree and it badly affects the dairy animals. Consequently the animals often go off feed, feverish and pneumonitic. This affects the milk production, health and reproduction of the animal. Normal cow and buffalo body temperature ranges between 101-102 degree Fahrenheit and suitable ambient temperature favorable is 65-75 degree Fahrenheit. Severe cold surroundings mean more energy loss which has to be compensated by giving extra calorie rich feed and special care. However, cows and buffaloes freshening shortly before winter months produce more total milk than other seasons. During this season favorable temperature (mild cold), qualityand digestible feed availability are the reasons for it. Following is a list of do's and don'ts for their special care in this season:

Feeding and watering: Generally, the dairy animal should be fed balanced ration comprising of dry matter at the rate of 2.5 kg per 100 kg body weight out of which one third should be from concentrate mixture, one half from dry roughages and one sixth from green roughages. Concentrate mixture should comprise of grains (40%), oil cakes (32%), brans (25%), mineral mixture (2%) and common salt (1%). Apart from this, the extra energy rich grains at the rate of approximately 0.8% of body weight should be fed to counter the stress of cold for maintaining normal milk production and other activities. Water should be clean and available four times a day possibly lukewarm at their drinking time

Shelter management: Shelter plays a key role in production efficiency of high producing dairy animals because it protects them from extreme weather conditions and provides comfort. If the animals are in discomfort due to cold ; alterations in house should be made by covering the windows at night time by jute bags, etc. Spacing should be appropriate (3.5 sq. m. for cows and 4 sq. m. for buffaloes). Bedding should be at least 6 inches thick and dry. Windows should be opened in daytime for air and sunlight and disinfection. Proper ventilation in animal housing is undisputedly important.

General management: During a warm sunny day the dairy animal should be kept in the loafing area and to be sheltered indoors at night. The bathing, washing and grooming should be carried out in open area on a bright sunny mid day and it should be followed by mild oil massage to prevent itching, skin diseases and ectoparasites. Vitamin D through sunlight exposure is excellent for dairy animals, especially young dairy calves. Only green fodder feeding is not advised. It will cause blot and more urination. Green fodder contains carotene which converts into vitamin A. It should be mixed with dry fodder in appropriate proportion.

Sanitation: Animals should be fed clean and dust free feed and water. Thorough cleaning of animals sheds, dung, urine, milking parlour, teats of milch animals are also veryimportant

Vaccination: Many diseases flare in winters due to cold stress. Vaccination against various contagious diseases such as FMD, H.S., trypanosomiasis (surra), T.B., J.D., B.Q. etc. should be carried out about once or twice a year according to the schedule. This would certainly avoid the expenses incurred on routine treatment and production losses due to illness and would also improve quality of milk.

Dr.Rajinder Singh, Sr. Extension Specialist (animal sciences), Lala Lajpat Rai University of Veterinary and animal Sciences. Extension Center Rohtak and Dr. KS Dangi, Chairman, Haryana Livestock Development Board, Former D.G. Dep't of A H D Haryana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EMERGING INDIAN AGRICULTURE

With the introduction of Green Revolution in 1960s and consequent generation of agricultural surplus, a new trend of commercialization started emerging in the Indian agriculture which was contrary to the traditional subsistent nature. Conscious farmers today grow crops not exclusively for their own use but for selling the same in the market and obtain as much profit as possible.

They are not interested in the cultivation of those crops which are non-remunerative or whose yields are very low. The decline in the area of coarse grains may be cited as an example. Pulses which have comparatively longer growing period and lower yield also fail to get favorable treatment. Higher remunerative prices in non-food crops are encouraging farmers to go for horticulture, floricul¬ture, sericulture, pisciculture, apiculture and similar activities as a result of which the area under food crops is declining in some areas.

Diversification

Another emerging trend in the Indian agriculture is leading towards diversification which is opening up the prospects for dairying, horticulture, truck farming, floriculture, aquaculture, sericulture, apiculture and agro-forestry etc.

This has been made possible due to the development of irrigational facilities as a result of which multi-cropping has become the order of the day. Farmers can no longer afford to go for fallowing. Instead they prefer crop-rotation on scientific lines i.e., nitrogen consuming crops (cereals) followed by nitrogen fixing crops (pulses and beans) or striking a proper combination of tree crops-cereal crops, horticulture, animal husbandry, pisciculture etc.

Among horticultural products grapes, mangoes, oranges, bananas and apples etc. have great export potential. Export of grapes from Maharashtra to the Gulf countries is an encouraging feature. Most of the horticultural products face the problem of glut at the time of harvest.

In economic terms, relative changes in prices of different crops also may effect substitution. In the Indian context, rice, wheat, maize, millets and pulses are the major food crops. Oilseeds, sugarcane, cotton, jute & mesta, and pota-

toes are the major cash crops. Tobacco, chillies, ginger, onion, turmeric, tapioca, sweat potatoes, etc. are minor cash crops. Among plantation crops tea, coffee and rubber are important. We observe that cereals and pulses occupy about 3/4th of the gross area under cultivation. A clear trend in an increase in the percentage of area under cash crops is discernible. Plantation crops occupy a very small percentage (less than 1%) of the total area under crops. Among the food crops, area under wheat has the highest growth rate followed by maize, rice and pulses in that order. The growth rate of area under millets is negative. Among the major cash crops, area under potatoes has grown fastest, followed by oilseeds, sugarcane, cotton and jute in that order. Among the food crops, wheat exhibited the highest

growth rate of yield per hectare. Maize followed wheat. These two crops experienced over three fold increase in the yield rate. Rice experienced a little less than three fold increase in the yield rate. Millets and pulses also showed about 30-35 percent increase in the yield rate. Introduction of high yielding varieties in wheat, maize and rice coupled with an improved irrigation facilities led to the said spectacular increase in the yield rates of these crops. Among the major cash crops, cotton, sugarcane and jute exhibited two-fold increase in their yield rates. The percentage contribution of change (increase) in yield rate is the most dominant component of agricultural growth. The percentage contribution of change

(increase) in the gross area under cultivation was the second most potent factor of agricultural growth.

Need for updating technologies:

A country like India is experiencing growth in all sectors including population and more mouth to be fed in coming years. When we talk about growth we need to consider infrastructure

growth also. So our land is limited but we need more food and good infrastructure to meet growing population demands. This situation was faced by all developed countries at some stage where we have a population which is educated and attracting them towards agriculture production needs technology up gradation. Labour challenge is also becoming headache for advanced growers so their solution lies in introducing new machineries for agro sector.

For instance, rice is commercially very profitable crop in case of north India where we grow quality rice (Basmati) sold at a higher price in India and exported to developed countries. Main challenge farmers facing in term of rice is labour shortage at the time of transplanting. Currently, scientists are working on direct seeded technologies but this comes with its own share of problems in areas of weed and water management. Similar situations were faced in Japan, Taiwan and South Korea around 20 years ago but they slowly replaced current manual practice with mechanical way of transplanting.

We have similar situation and only remedy is accepting new technologies like mechanical transplanting.

Similarly in case of Vegetables production, farmer's main challenges comes for pest management along with crop establishments under unfavorable weather conditions. With the introduction of Poly House technology, now farmers are earning manifold than previous open field production. Poly house giving them flexibility for sowing regardless of weather situation and we are getting quality produce as compared to open field conditions.

Advantages of technology implementation:

With new production technologies we can attract young generation to adopt agriculture as career.

Also we can produce much more from a similar piece of land to feed growing population.

We can get quality produce which can provide more money to growers.

Market channel will also improve as educated grower can decide his market preferences and it cuts some unwanted channels in between for profit generation.

Role of corporate sector:

Corporate sector always see the opportunity in weak areas. Organizations are working on new hybrid seeds with genetic traits for disease tolerance, new chemical ai and formulation which have low residual effects along with better control of pest to reduce number of chemical application and keeping harmony in flora and fauna. New machinery for spraying chemicals etc are reducing stress of labor issues and also improving efficacy of products with uniform distribution.

Priyanka Kanwar and Aman Thakur
Regional Manager, Syngenta India Ltd

Green chemistry
A must for 21st Century agriculture

The recently constituted National Institution for Transforming India states the need to progress from "food security" to a mix of agricultural production, while safeguarding our environmental and ecological assets. It is hence highly desirable that India embraces green chemistry. This sets a robust framework for safe and judicious use of crop protection protocol for the country's millions of farmers.

India and the rest of the world is staring at some serious challenges. By 2050, we shall grow to a world with over 9 billion people. Of that number, the UN estimates that almost 8 billion will come from the less developed areas of the world. This will require us to commit to solving some of the world's greatest challenges like increasing food production, decreasing dependence on fossil fuels, protecting lives and the environment, and providing science-based solutions to developing markets across the globe. The fo-

Green chemistry is defined as the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. Green chemistry applies across the life cycle of a chemical product, including its design, manufacture, and use.

cus on green chemistry emanates from our acknowledgement of these trends and our commitment to offer the best research and development.

New development from green chemistry with special focus on food security has become imperative for environmental balance. Crop protection chemicals are recognized as an essential input for increasing agro production and preventing crop loss before and after harvesting. In India, as per an ASSOCHAM estimate, we lose about Re 50,000 cr worth of farm produce because of pests and diseases, and that's a serious dent on farmers' livelihood. We have the dual task of enabling farmers to use crop protection solutions to safeguard against these losses, and developing the tools and technologies that will allow them to do so in a safe, ecologically sound manner.

The benefits of green chemistry, including green agri-practices emphasizing end-to-end consciousness of sustainable production, are many. It helps maximize crop production while minimizing environmental load in soil, water and air and maintaining ecological equilibrium. The judicious use of farm chemicals also

helps to reduce occupational health risks, to preserve the ecosystem, and to keep residues within standard limits. More and more such interventions are needed as the area of cultivable land remains limited. Yet, food requirements of the nation continue to multiply every minute. Meeting the need of our rapidly expanding population requires improved, sustainable agricultural productivity and growth.

Average productivity in India stands at 2 metric tonnes per hectare (MT/ha) compared with 6.5 MT/ha in China. At the same time, India's pesticide consumption is also low at 0.60 kg/ha as compared to Japan at 10.80 kg/ha. Hence, increased, proper usage of advanced crop protection solutions can potentially help farmers to improve crop productivity. This also portrays the huge growth potential as the Indian economy moves forward.

Our farmers, like their counterparts in the rest of the world, deserve the best and there is a need for industry stakeholders to provide them with innovative solutions to protect crops, improve plant health, and increase yield and quality. All these are critical to food security. Innovation in agricultural research should be fostered and legislation enacted to encourage increased uptake in sustainable farming methods.

Increasing sustainable agricultural production enables farmers to grow more food on existing land without encroaching on natural habitats. Assuming fair market conditions, this translates to higher farm incomes, enabling farmers to diversify production, invest in higher quality seeds and crop protection products as well as growing higher-value crops. These are all developments that not only benefit the farmer but the entire economy.

As India has moved many notches up on the global landscape, it is imperative we demonstrate to the world that like in IT and manufacturing, we have huge potential in farming sector as well, and we are committed to give the best opportunities through innovative solutions to our farmers, who form the backbone of one of world's largest economies. Use of green chemistry, technologies and processes is one significant step in that direction.

Ram Mudholkar,
Business Director, South Asia,
DuPont Crop Protection

Sex Pheromones for Ecofriendly Pest Management

Brinjal Fruit and Shoot Borer: The Notorious Pest

Brinjal (*Solanum melongena L.*) is one of the most important vegetable crops in India as well as in Assam, that occupies more than 5 lack hectares with a total production of 8.2 million tonnes. A horde of insect pests attack this crop due to cultivation throughout the year, out of which brinjal shoot and fruit borer *Leucinodes orbonalis* is the most destructive. In early stages of the crop growth, larva bores into the shoots resulting in drooping, withering and drying of the affected shoots. During the reproductive stage, tiny larva bores into the flower buds and fruits and the bored hole is invariably plugged with excreta. The infested fruits become unfit for consumption due to loss of quality and lose their market value. It is also reported that there will be reduction in vitamin C content to an extent of 68 per cent in the infested fruits. The yield loss could be as high as 70 per cent and may go up to 90 per cent. Farmers apply different pesticides against this insect to produce blemish-free marketable fruits, which constitutes a lion's share of insecticide used on vegetable. Use of inappropriate pesticides, incorrect timing of application and improper doses have resulted in high cost of cultivation with little or no appreciable reduction in target pest populations. Instead, the pest has become resistant to insecticides in recent years. In the absence of an effective alternative method, the over-dependence on chemicals is threatening human health and environmental safety. In order to reduce the pesticidal load in the environment, certain behavioral chemicals as well as some non chemical mea-

sures could be harnessed. The use of sex pheromone based IPM technologyis one such measure.

Pheromones for insect pest management:

Pheromones are a class of semiochemicals that insects and other animals release to communicate with other individuals of the same species. These are released into the environment by a member of a species that elicits a specific response in members of the same species. Sex pheromones are released by female insects that can attract males for mating purpose. There are three main uses of pheromones in the integrated pest management of insects. The most important application is in monitoring a population of insects to determine if they are present or absent in an area or to determine if enough insects are present to warrant a costly treatment. A second major use of pheromones is to mass trap insects to remove large numbers of insects from the breeding and feeding population. Massive reductions in the population density of pest insects ultimately help to protect the crop. A third major application of pheromones is in the disruption of mating in populations of insects. This has been most effectively used with agriculturally important moth pests. In this scenario, synthetic pheromone is dispersed into crops and the false odor plumes distract males away from females that are waiting to mate. This causes a reduction of mating and thus reduces the population density of the pests.

Krishi Vigyan Kendra Sonitpur Intervention

Sonitpur district of Assam is a leading vegetable producer in the state where BFSB remained a major pest of brinjal and hence, many farmers refrained from growing eggplant.

A study made by Krishi Vigyan Kendra, Sonitpur revealed that management of the pest rely exclusively on the application of chemical insecticides that includes Carbofuran 3% granules @ 4-5 g/seedling 15 days after transplanting followed by 4-5 spraying Chlorpyriphos 25 EC at 1.0-1.5 litre/ha, starting from 30 days of transplanting which has resulted in a tremendous misuse of pesticides leading to contamination of the soil and water resources of the vicinity area. Any single method of pest management cannot achieve a level of BSFB control acceptable to producers in the region.

Keeping in view the above facts, interventions were undertaken to test the efficacy of sex pheromone based IPM technology against BFSB through different experiments under Krishi Vigyan Kendra, Sonitpur, Assam. The components included a) Installation of pheromone trap @ 30/ha starting from flower bud initiation till final harvest and changing the lures at monthly intervals b) mechanical removal of infested shoot and fruit from the field at weekly interval, and c) application of NSKE 5% four times at 15 days interval starting from flowering. Experiments were conducted for the last three consecutive years under field condition in 3 villages of Sonitpur district viz., Amolapam, Napam and Punioni near KVK Sonitpur. Six different combinations viz., T1 (Pheromone traps @ 30/ha), T2 (Trap + mechanical removal), T3 (Trap + NSKE), T4 (Pheromone trap +mechanical removal + NSKE) T5 (farmer's practices) and T6 (control) were tested to formulate an eco-friendly IPM module. The effect of different treatments on percent fruit damage and yield were recorded. From the present study it can be concluded that the module, Mechanical removal of infested fruits and shoots + Pheromone trap + NSKE is the most suitable tactic for reduction of shoot and fruit borer damage as well as increase in yield of brinjal.

KVK interventions have already made the farmers aware about the ill effects of hazardous chemicals on human health. Therefore this study has increased the horizontal acceptability of pheromone based technology as an alternative to chemical pesticides in Sonitpur district of Assam.

Popy Bora, SMS (Plant Pathology)
Naseema Rahman, SMS (Horticulture) and Promod.C. Deka, Programme Coordinator, Krishi Vigyan Kendra, Sonitpur, Assam Agricultural University

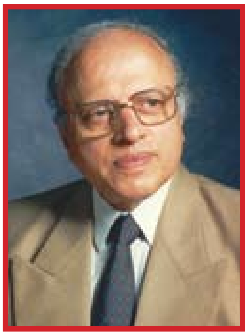
Union Budget 2015-16
A Dampener for Agriculture

Amid heavy expectations and hopes,Union Budget 2015-16 was presented by Union Finance Minister Arun Jaitley on 28th February 2015. In his budget speech, the FM was exuberant about the state of Indian economy as hementioned that the Indian Economy has turned around dramatically in the last nine months with the real GDP growth expected to accelerate to 7.4 per cent making India the fastest growing large economy in the world. Shri Jaitley expected that the growth in the next financial year to be between 8 to 8.5 per cent. The Minister underlined that India has to think in terms of a quantum jump. He said the year 2022 will be the Amrut Mahotsav, the 75th year, of India's independence. He added the vision of what the Prime Minister has called 'Team India' led by the States and guided by the Central Government should include a roof for each family which will require to complete two crore houses

in urban areas and four crore houses in rural areas with each house having 24 hour power supply, clean drinking water, a toilet and road connectivity. He said the vision includes that at least one member from each family should have access to the means of livelihood, substantial reduction in poverty, electrification of the remaining 20,000 villages including off-grid solar power by 2020, connecting each of the 1,78,000 un-connected habitation, providing medical services in each village and city, ensuring a Senior Secondary School within 5 km reach of every child, strengthen-

"Union Budget Consolidates the Gains already made in Agriculture"

Prof M S Swaminathan, Former Member of Rajya Sabha



Indications of budget proposals and priorities are usually given in the address of the President of India at the Joint Session of Parliament. In his address, the President has stressed that Kisan is the sentinel of our food security and that value added agriculture, market reform, use of technology and improving productivity in areas with untapped potential are important. 2015 is the International Year of the Soil and the Government is proposing to issue soil health cards to all farm families. This should help in promoting balanced fertilisation. Also, a price stabilisation fund will be established for perishable commodities with an initial outlay of Rs. 500 crore. Much stress has been placed on creating more irrigation facilities and the Prime Minister has also been repeatedly emphasising the need for improving water use efficiency through a 'More Crop per Drop of Water' approach. Another area mentioned by the President is the conservation of indigenous cattle breeds. Food processing and youth involvement are other priority areas.

The Economic Survey 2015 has recommended the setting up of a national market for agricultural commodities. Earlier the National Commission on Farmers had strongly advocated the establishment of an Indian Single Market which will avoid impediments in the movement of agricultural commodities throughout India. The Economic Survey also recommends a re-look at genetically modified crops, since they can play an important role in enhancing the productivity of small farms as well as food security and sustainability in an era of climate change. The Union Budget presented by the Finance Minister Shri Arun Jaitley addresses some of the issues mentioned both in the address of the President as well as the Economic Survey.

Thus, the budget proposes to allocate adequate funds for irrigation as well as for soil health monitoring and enhancement. Renewable energy particularly solar power generation will receive substantial support. Agrobased industries and digital connectivity will be given importance, so that skilled job creation in rural India can be facilitated. Subsidies will be reviewed and made effective in relation to the purpose for which subsidies are given. Rural infrastructure development will receive Rs. 15000 crore while minor irrigation will be provided Rs. 5200 crore. The credit available to farmers will be increased to Rs. 8.5 lakh crore. A MUDRA Bank will be established with a Corpus of Rs. 20000 crore for helping small and backward entrepreneurs. Empowerment of youth with new skills and entrepreneurship qualities will receive special attention from the MUDRA Bank.

In the field of agricultural research and education, horticultural research will be strengthened by establishing a PG Institute of Horticultural Research in Punjab. The Kerala Agricultural University will be upgraded. Child nutrition and healthcare will receive an additional allocation of Rs. 1500 crore for the ICDS programme. Public procurement of agriculture commodities will be reviewed. Announcement of Atal Innovation Mission is a welcome initiative for encouraging scientific innovation.

By and large, the budget aims to consolidate the gains already made in the area of agriculture and gives further push to areas like small farm productivity and non-farm employment. Since State Governments will have substantial additional resources and since agriculture is a state subject, I hope many of the location specific problems in agriculture and rural development will receive the needed attention from State governments. The budget recognises that agricultural progress is fundamental to national wellbeing since a majority of the population depend upon agriculture for their livelihood. I therefore would like to complement Shri Arun Jaitley for the steps he has proposed to improve rural infrastructure, small farm productivity and profitability and youth employment and entrepreneurship.

"Comprehensive Agriculture Budget for Overall Development"

V.Rajagopal, Former Director, CPCRI; President, Society for Hunger Elimination (SHE)

The Union budget has many positive features that aim at development agenda, although some areas may have problems. Of particular importance is the thrust given for agriculture sector and the valuable comments made by Dr. M. S. Swaminathan which has many positive features that must make the Government to implement the recommendations of the National Commission for Agriculture headed by Dr. Swaminathan. The major issue is to minimize the suicides by the farmers and to bring zero level suicides in five years. Revitalize food security act with tangible measures that would address the problems of poverty and hunger. For achieving the Millennium Development Goal of halving hunger,there is urgent need to embark on an exclusive agriculture budget from 2016 to encompass allied areas like rural development, women and child health, food processing, post harvest management. All these require huge funding, hencea comprehensive agriculture budget would go a long way in the overall development that ensures food, nutrition, environment and livelihood security in a holistic way.Hunger elimination to make zero hunger India may have to be the priority.

ing rural economy-increase irrigated area, ensuring communication connectivity to all villages, to make India, the manufacturing hub of the world through Skill India and the Make in India Programmes, encourage and grow the spirit of entrepreneurship and development of Eastern and North Eastern regions on par with the rest of the country.

The budget speech was also notable for Mr. Jaitley's admission of the fact that agricultural income was under stress. However, the admittance found little resonance in the schemes announced by the FM. The budget did not add anything new or impressive for agri sector.

The only impressive figure that emerged in the budget speech is the ambitious target of Rs.8.5 lakh crore of credit during the year 2015-16. Other than that, the centre's total outlay for the agriculture sector declined by 10.4 per cent, from Rs.31,322 crore in 2014-15 to Rs.28,050 crore in 2015-16.

This budget, FM has carried forward the resolve to improve the soil health as was laid down in the previous budget. The ambitious Soil Health Card Scheme that was launched to address the problem of imbalance in soil fertility received its share of financial aid this year as well. When UPA's flagship scheme received Rs.156 crore in last year's budget, this year the amount was gingerly raised to Rs.200 crore. The ambitious programme aims to provide all 145 million farm holders with a soil health card in three years. While soil fertility was the subject of attention, FM has also proposed to support Agriculture Ministry's organic farming scheme – "Paramparagat Krishi Vikas Yojana". The scheme will receive financial assistance of Rs. 300 crore.

Shri Jaitley also drew attention to the Pradhan Mantri Gram Sinchai Yojana which is aimed at irrigating the field of every farmer and improving water use efficiency to provide `Per Drop More Crop'. The budget allocated Rs.5,300 crore to support micro-irrigation, watershed development and the Pradhan Mantri Krishi Sinchai Yojana. The Minister urged the States to chip in substantially in this vital sector. However,last year, the allocation towards these irrigation and watershed management schemes were Rs.5,623 crore.

In the agri credit segment, the FM allocated Rs.25,000 crore in 2015-16 to the corpus of Rural Infrastructure Development Fund (RIDF) set up in NABARD; Rs. 15,000 crore for Long Term Rural Credit Fund; Rs. 45,000 crore for Short Term Cooperative Rural Credit Refinance Fund; and Rs.15,000 crore for Short Term RRB Refinance Fund. This was with a special focus on small and marginal farmers. Underpinning the efforts of hard-working farmers, the budget has set up an ambitious target of Rs. 8.5 lakh crore of credit during the year 2015-16.

The budget increased the target for rural credit substantially but lowered the centre's share of other

"One of the Best Budgets in the Recent Past"

Dr. Rakesh Gupta, GM, PS&LB

The Union Budget 2015-16 is a constructive, direction-oriented with a clear cut roadmap to rejuvenate Indian Agriculture. In context to Agriculture, the budget this year has many far-reaching features. For instance, Paramparagat Krishi Vikas Yojana, Pradhanmantri Gram Sinchai Yojana to extend irrigationand proposal to set up a Unified National Agriculture Market.

This Budget has courageously tackled so many burning issues in current Indian Agriculture scenario. The Budget shows positive intent to support organic farming, micro irrigation and watershed management along with rural infrastructure.The budget aims to revive India's agriculture growth by addressing the two major factors critical to agricultural production: soil and water.

- Launch of ambitious Soil Health Card Scheme to improve soil fertility on a sustainable basis.
- The Pradhanmantri Gram Sinchai Yojana aimed at irrigating the field of every farmer and improving water use efficiency to provide `Per Drop More Crop'.
- Full support to Agriculture Ministry's organic farming scheme – "Paramparagat Krishi Vikas Yojana"

Allocation of fund in union budget:

- Rs 5,300 crore to support micro-irrigation, watershed development and the 'PradhanMantriKrishiSinchaiYojana'.
- Rs 25,000 crore in 2015-16 to the corpus of Rural Infrastructure Development Fund (RIDF) set up in NABARD.
- Rs 15,000 crore for Long Term Rural Credit Fund.
- Rs 45,000 crore for Short Term Co-operative Rural Credit Refinance Fund.
- Rs 15,000 crore for Short Term RRB Refinance Fund.
- Target of Rs 8.5 lakh crore of agricultural credit during the year 2015-16.

Creation of a Unified National Agriculture Marketfor the benefit of farmersto fetch a fair price for their farm produce&Service Tax exemption extended to certain pre cold storage services in relation tofruits and vegetables is a welcome step to incentivise value addition in crucial sector.

The Budget takes cognizance of these issues necessary for increasing agricultural productivity and bettering the lives of millions of poor and marginal farmers who toil the land to fill the food basket and feed the country with a long lasting goal of retaining the farmer in Agriculture.

This has been one of the best budgets in the recent past incorporating comprehensive steps to address the core issues of fostering sustainable Agriculture. A number of Agriculture related reforms announced in budget, if implemented successfully, will help in increasing farm productivity& ameliorating standard of living of poor farming community in coming years.

Union Budget 2015-16 – Poised for High Farm Growth

Mr. Rana Kapoor, MD & CEO, YES BANK and President ASSOCHAM

Agriculture is by far the single biggest enabler of inclusive growth for India and this fact has been duly placed on top priority in the Budget, with focus on growth, investments & development. Jan Dhan, Jan Suraksha, efficient infrastructure, sustainable resource management & value addition are the key game changers enunciated, which shall catapult Indian into a sustainable & high agri & rural growth trajectory.

Jan Dhan & Jan Suraksha

The JAM initiative (Jan Dhan, Aadhar & Mobile) is an action behind the bold intent to pursue Direct Benefits Transfer at farm (fertiliser & grain) & consumer ends. This is the next logical step after the stupendous success of the government in having brought 12.5 crore families into the formal financial system mainstream in 100 days. Extending Jan Dhan to Jan Suraksha for insurance is a step in the right direction. Inefficient subsidies had so far been curtailing growth, ineffectively reaching beneficiaries, promoting unsustainable farm practices, dis- incentivizing diversification and adding to the twin deficits challenge, which the forgoing initiatives will help undo. This is also a first small directional step towards shifting the farming support paradigm from a Grains led MSP system to a Diversified Cropping led Price Risk Management.

Efficient infrastructure

Prudent liquidation policy, doing away with inefficient monopolies and private sector involvement have already set the pace for efficient public food management. GST & FMC merger with SEBI shall aid creation of a robust Unified National Agriculture Market and strengthen price discovery and price risk management for farmers. PPPs by way of larger private investment for agri infrastructure will be further boosted by the larger sovereign involvement in risk sharing.

The focus on boosting agriculture sector through an INR 25,000 crore corpus for RIDF, and a combined outlay of INR 75,000 Cr for Credit & Refinance Funds is noteworthy. The INR 34,699 crore allocation to MNREGA with the right approach to create productive rural infrastructure is a positive development as well.

Setting up of the Institute for Horticulture Education & Research will extend the high value diversified triple revolutions focus of the government- protein, white (milk) & blue (aqua).

Sustainable Resource Management

Deteriorating soil health & non judicious usage of fertilizers have resulted in a double whammy of subsidy drain on exchequer and unsustainable agriculture. Scaling up of Soil Health Card scheme, setting up of the "Paramparagat Krishi Vikas Yojana" and the 5,300 crore allocation to support irrigation will incentivize capacity creation for sustainable agriculture. Various initiatives envisaged to promote renewable energy are also critical for the farm & allied sectors.

Value Addition

Creation of Micro Units Development Refinance Agency (MUDRA) Bank to refinance MFIs will promote rural entrepreneurship. Service tax exemption for cold chain and inland transport for exports are small yet significant enablers to incentivise value addition. Facilitating reforms including those for infrastructure creation, ensuring a level playing field for the organized sector, judicious taxation, access to credit, focus on skill development & "Make in India" shall aid growth, exports, farm incomes & inflation control.

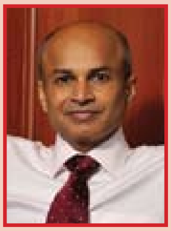
The enabling ecosystem for farm infrastructure including 24-hour power supply, complete rural electrification including by off-grid solar power and connecting all habitations by all weather roads are long pending national priorities that have been duly addressed.

Conclusion

With the right policy direction that the Budget has enunciated, we are poised for strong farm growth and are well positioned to ensure "Sab Ka Saath, Sab ka Vikaas" in fullest spirit.

"Sab Ka Saath, Sab ka Vikaas" in fullest spirit.

Union Budget benefit the commodity markets



Samir Shah, MD & CEO, NCDEX

The repeal of the FCRA and introduction of commodity derivatives under the definition of securities in the SCRA answers the long awaited requirement of empowered regulation of commodity markets. This will pave the way for deepening of the commodity markets through participation of banks, FIIs and MFs. The introduction of options and indices has been enabled through the adoption and the application of the SCRA. This also means that the commodity market will now align with the way the securities markets function.

It's a game changing move for the commodity markets. The investors should feel more safe and confident to participate in a much bigger way in commodities markets. The commodity markets in India have come a long way under the able regulation by the Forward Markets Commission. We are confident that the changes will benefit the commodity markets quite significantly.

Budget Lays the Framework for Capacity Building in Rural India

Shilpa Divekar Nirula, CEO, Monsanto India Region

The Union Budget seeks to lay the framework for capacity building in rural India, the importance of which cannot be overstated if agriculture is to contribute more effectively to national growth and create a level of attractiveness for the profession amongst rural youth. One of the biggest challenges facing India's farmers is the lack of access to credit. This diminishes the capacity of farmers to invest in quality agricultural inputs and often adds to their financial strain. The allocation of more than Rs. 75,000 crores across various schemes will go a long way in strengthening the structure of rural credit disbursement.

By taking steps in the direction of balanced and inclusive growth and by strengthening foundational elements such as water, soil and infrastructure, there are attempts to create lasting benefits. This will not only help our farmers improve their socio-economic conditions, but also assist Indian agriculture prosper and eventually result in inclusive development.

centrally sponsored schemes such as the Rashtriya Krishi Vikas Yojana (RKVY) and the National Food Security Mission (NFSM) by nearly Rs.5,500 crore, hoping that the states will chip in with increased tax devolutions.Centrally-assisted state plan for agriculture, which includes major schemes to boost production and productivity like the RKVY and NFSM, saw the allocation dropping from Rs.14,173 crore in 2014-15 to Rs.9,000 crore in 2015-16.

In fact, the total Plan outlay for the department for agriculture and cooperation has been reduced during the coming fiscal from Rs 22,260.55 crore for 2014-15 (BE). The main reason for this is the higher central tax devolutions to states from the 14th Finance Commission award. As a result, in many centrally-sponsored schemes, the state's share in revenue expenditures has gone up.

In tune with the government's commitmentfor supporting employment through MGNREGA, the budget has increased its allocation to Rs.34,699 crore from Rs 34,000 crore last yearwhile promising to enhance the allocation by another Rs 5,000 crore if there is tax buoyancy. Despite the PM's disapproval of MNREGA, Jaitley has managed to marginally increase the allocation to the world's largest welfare scheme.

Another take away from this year's budget was FM's hint of establishing a Unified National Agriculture Market. He said, "While the farmer is no longer in the clutches of the local trader, his produce still does not command

"Need More Investment in Agri Infrastructure"

Mr. Sanjay Kaul, MD &CEO, National Collateral Management Services Limited (NCML)

Perhaps the game changer for the commodity market is the announcement to merge the Forward Markets Commission (FMC) with SEBI. This step will lead to improve credibility, transparency and regulation of the commodity futures market. It is hoped that this will pave the way for participation of banks and other financial institutions in the commodity futures market.

The clear road map for a roll out of the GST by next year is welcome as the implementation of GST will lead to a much freer movement of agri produce across the country. The announcement of moving towards a unified national agricultural market is a related welcome announcement though the modalities have not been spelt out. As agri markets are currently a state subject the government will have to devise mechanisms to overcome this constitutional limitation.

Allocation of Rs. 25,000 crore from the RIDDF for rural infrastructure along with the announcement to connect all habitations with all-weather roads will provide a fillip to development of the rural sector and boost farm incomes. The exemption from service tax for pre-cooled storage structures for fruits and vegetables is also welcome, though it is doubtful whether such standalone measures are adequate for attracting large investments in agri infrastructure.

the best national price. To increase the incomes of farmers, it is imperative that we create a National agricultural market, which will have the incidental benefit of moderating price rises. I intend this year to work with the States, in NITI, for the creation of a Unified National Agriculture Market".This is a policy reform that has been anxiously awaited for. The scheme can pitch in improving agri marketing by affecting the level of intermediation, price stability and better realisation for the farmers.

In Union Budget 2015-16, General Exemption under Service tax has been reviewed. Exemptions to transportation of 'food stuff' by rail, or vessels or road will be limited to transportation of food grains including rice and pulses, flours, milk and salt only. Transportation of agricultural produce is separately exempt which would continue.

The Dairy sector received an impressive allocation under the Dairy Vikas Abhiyan. Dairy Vikas Abhiyan is an umbrella programme which covers schemes for development of dairy industry, dairy entrepreneurship, livestock and fodder development. The outlay of Rs. 488.18 crore is for development of Livestock Health and Disease Control Programme, National Livestock Mission, National Programme for Bovine Breeding, Cattle Development and one new scheme of Indigenous Breeds. The outlay of Rs. 481.50 crore is for National Dairy Plan, Dairy Entrepreneurship, National Programme for Dairy Development and Delhi Milk Scheme.

Another area that received FM's attention is the fisheries sector. Blue revolution is an umbrella programme for development of Fisheries Sector. The outlay of Rs. 410.69 crore is for National Fisheries Development Board, Development ofMarine Fisheries Infrastructure and Post Harvest Operations, National Scheme of Welfare of Fishermen, Development of Inland Fisheries and Aquaculture and Assistant to Fisheries Institutes, Blue Revolution - Inland Fisheries and Directorate of Aquatic Animal Health and Quarantine.

The department of agricultural research and education has seen a marginal reduction in budgeted Plan allocation from Rs 3,715 crore in 2014-15 to Rs 3,691 crore in the ensuing fiscal. It was also proposed in the budget to set up a Post Graduate Institute of Horticulture Research and Education in Amritsar

The Union government has decided to delink eight Centrally-sponsored schemes from this fiscal. These schemes include National Mission on Food Processing, which until now was Centrally- sponsored.Further Union finance minister Arun Jaitley did not allocate any funds for state and UT Plan Outlay by ministries/

"A Very Progressive and Pragmatic Budget"

R.G.Agarwal, Group Chairman, Dhanuka Agritech Ltd

At the very outset, I congratulate the Government led by Hon'ble Prime Minister Shri Narendra Modi for a very progressive and pragmatic budget and hope that this will surely lead to agriculture growth rate of 4 per cent. The budget also aims at consolidating the gains already made in the area of agriculture.

There has been serious concerns for increased degradation of otherwise limited resources- primarily soil and water, impacting agriculture. Though in the past as well, some efforts towards soiltest-based fertilizer application and conservation of irrigation water were made, yet, the present budget very specifically focuses on soil test-based nutrient management by providing soil health card to every farmer, and Pradhan Mantri Krishi Sichayee Yojana, support to micro-irrigation to have 'more crop per drop', along with added push to expand water availability in rain-fed areas through a new scheme 'Neeranchal'. However, the real test will be how effectively these schemes are implemented, especially soil health card, which is not one time activity but as an on-going concern linked to the cropping systems being practiced.

Due to climatic changes, the abiotic and biotic stresses will pose major threat in the near future. It is well researched and recorded that 20 to 30 per cent otherwise avoidable losses in foodgrains production are caused by pests. The situation is further getting aggravated due to emergence of newer pests. Therefore, Pesticide Industry was expecting for launching of Mission Mode National Project to encourage Integrated Crop Management, and national campaigns to demystify the myths often raised by a few NGOs against chemical pesticide use. Expanding more area and crops under assured plant protection will lead to a sizable increase in much needed foodgrains production. Another important concern is accelerated improved technology reach, as a large per cent of farmers don't get timely knowledge. There has to be major focus on catalyzing public-private partnerships in agriculture sector, which at present is very negligible; along with training of agri-input dealers.

With all the achievements and record foodgrains production, India has yet to move to Evergreen Revolution to achieve sustainable food and nutritional security, by appropriate area specific technology backstopping and favourable policy support. Announcement of Atal Mission to encourage scientific innovations is an appreciable initiative in this direction.

Budget for Pre-conditioning fresh farm produce

Pawanexh Kohli, National Centre for Cold-chain Development, Ministry of Agriculture

It is amply clear that to properly utilise and benefit from the cold-chain, the supply chain operator needs to prepare the harvested produce for onwards travel from farm gate to market. This involves pre-conditioning procedures (i.e. sorting, grading, washing), retail packaging and labelling, pre-cooling, before undergoing climate controlled storage and transportation and ripening. None of these measures alter the essential characteristics of agricultural produce as no food processing is involved – the farm produce is delivered fresh and whole, from farm to market. These procedures make it possible for agricultural produce to be marketed more efficiently and help to reduce losses in supply chain and to prolong the freshness of produce.

Under the provisions in India's Finance Act, in regards to service tax (see Section 66D (d) (iii) of Chapter 5 of Finance Act 1994 and Chapter VA of Finance Act 2003), processes carried out at an agricultural farm which do not alter the essential characteristics of agricultural produce but only make it marketable for the primary market fall under the Negative List. However, elsewhere (Section 65B(5) of the Act), "agricultural produce" is defined to mean any produce of agriculture on which either no further processing is done or such processing is done as is usually done by a cultivator or producer. This meant that the exemption would be applicable when service was done on the farms by the farmers themselves.

Actually these processes, to prepare a produce for safe onward trip to market, the earlier mentioned washing, sorting, packing, precooling, etc., are carried out at pack-houses operated by cold-chain operators. These pre-conditioning activities are not done at an agricultural farm, as in India most farm holdings are very small, but done at the level of aggregator at pack-house facilities. These activities are part of the supply chain, to improve the transportability of the agricultural produce to market, and since there is no food processing activity involved, they do not alter the essential and natural characteristics of the produce. These activities are key to the primary task of cold-chain, to deliver fresh to distant consumers.

The pack-house or cold-chain operators are entities like agri-entrepreneurs, logistics service providers, cooperatives, FPOs, etc. These pack house operators must obviously undertake backward integration with the cultivators in organizing and facilitating such go-to-market preparatory activities. Yet, since they themselves are not the cultivators of the agricultural produce, the interpretation of tax laws required that this service be subject to tax. The key initial activity in the fresh whole food supply was therefore not benefiting from the real intent of the Negative List provided in the Finance Act.

The taxing of these key back-end services, tended to discourage investment in agricultural supply chain, especially in the much needed back-end or farm gate, and could add to the cost of fresh agricultural produce in retail market.

The Hon'ble Finance Minister has therefore, in his 2014-15 budget, proposed that "Services by way of pre-conditioning, pre-cooling, ripening, waxing, retail packing, labelling of fruits and vegetables which do not change or alter the essential characteristics of the said fruits or vegetables", henceforth be exempted from service tax. This will translate into an immediate 14% benefit to the bottom-line in this trade. The refrigerated transport and storage of agricultural produce remains exempted as earlier.

In effect, with the notification, in case of fruits and vegetables, the entire value chain of activities (pre-conditioning, packing, precooling etc. at pack-houses; reefer transport; cold storage; ripening, distribution) is exempt from levy of service tax.

With this exemption, the development of the much needed pack-houses, as source points of the fresh food cold-chain, will benefit greatly. Remember, the farm gate needs to be connected in an uninterrupted fashion to consumers, to ensure that healthy fresh farm produce reaches all, everywhere. The pack-house is the first step towards this end, not the cold store.

Eat fresh, eat healthy, understand the cold-chain.

departments for food processing. It was Rs 125 crore previous year, this year it is nil. It will now depend on the states to decide as how much they want to spend on food processing.

This year's budget did not bring anything special for agriculture sector to the table. It focussed on carrying forward the gains from previous years. Nothing extra ordinary happened in the budget except for the special powers of the state to decide on the fate of many agri programmes which were hitherto the prerogative of the centre. This is an interesting development as states are usually not benevolent in allocating sufficient funds. Each state will have their own agenda and will focus on niche areas. Food processing was a big miss in this year's budget. When Narendra Modi launched Make in India campaign, Food processing considered a promising sector. Under the changed circumstances of states assuming power to decide on allocations, it remains to be seen how effectively all of them can effectively steer towards a common goal. Funding to many prestigious agri programmes has been either cut short or given a marginal hike. Over all, the budget was disappointing for agri sector.

More from Less

Rita Sharma, **former Secretary to Government of India, Ministry of Rural Development**

Budget 2015-16 portends more from lessin agriculture, a central theme in the Finance Minister's announcements for the sector, embodied in "per drop more crop". However, the budget makers appear to be under the illusion that high farm growth and record foodproductioncan be achieveddespitemajor budgetary-cuts in several agriculture and rural development programmes.

Technologies associated with the Green Revolution, have enabled farmers to boost output by an ever-increasing reliance on genetically-improved seeds, energy-intensive assuredirrigation andagrochemical inputs.But, persisting with the existing technological trajectory and doing 'more of the same' is becomingincreasingly less promising.Groundwater tables are receding.Soil fertility is declining on counts of depletingnutrients,reduced carbon content andloss of biological activity. Health hazards mountfrom agrochemical residues entering the food-chain and contaminating surface and groundwater.Biodiversity is under threat.Clearly, agriculture must transform to be able to produce more food with fewer resources: less land, less water, less inputs, less energy and less environmental impact.

During the past four decades the per capita net cultivated area has declined to less than half from 0.26 to 0.11 hectares.Population pressure and fragmentation has seen the landholdings increase from about 88 million in 1980-81 to 138 million in 2010-11. 85% are smallholdings, i.e., less than 2 hectares. The shrinking landholdingsare compounded by reduced fertility caused by erosion, salinity, water-logging and loss of organic matter. Similarly, the quantity and quality of water for agricultural production is diminishing, affected by competingdemands from the growing industrial and domestic users, erratic monsoon patterns and the frequency of droughts, floodsand cyclones influenced by climate change.

Some major initiatives related to water and soil, critical to agricultural production, were announced in the Budget 2015-16.All echoed the spirit of more from less. The "Pradhan Mantri Krishi Sinchai Yojana" (PMKSY) is a flagship programme for improving water use efficiency to provide `per drop more crop'. The PMKSY draws upon on-going schemes, namely, the micro-irrigation scheme, the Integrated Watershed Management Programme (IWMP), and the AcceleratedIrrigation Benefit Programme.Incentives and subsidies are provided for propagation and use of water-saving technologies such as fertigation, drip and sprinkler irrigation.The IWMP aims at preventing soil run-off, regeneration of natural vegetation, rainwater harvesting and recharging of the ground water table. This enables multi-cropping and the introduction of diverse agro-based activities, which help provide sustainable livelihoods to the people residing in the watershed area. The cost of bringing one hectare under IWDP is almost ten-times less than the cost of bringing one hectare under a capital-intensive major irrigation project.

The ambitious Soil Health Card Scheme brings centre-stage the need to improve soil fertility on a sustainable basis through balanced use of fertilizers. Indiscriminate use of subsidized urea is leading to excessive nitrogen in the soil while deficiency of other macro and micro nutrients, and organic matter essential for soil health, remains unaddressed. Advisories based on soil testing will prescribe the precise fertilizer use, thereby avoiding wasteful application of nitrogen. The "Paramparagat Krishi Vikas Yojana" will provide an impetus for organic farming, through use of natural processes and biological inputs, and thereby reduce dependence on agrochemicals.

In embracing Conservation Agriculture we do not eschew science. The essence of more from less is driving the research institutions to breed crop varieties that can grow in a drought, survive in a flood or thrive in salinity. They can resist pests and diseases,and give higher yields on less land and harsher climatic conditions.Practices such as raised-bed planting, alternate wetting and drying in rice production, laser levelling, etc. have lowered water consumption. Reduced tillage prevents over-turning the soil, lowers land preparation cost, economises on tractor usage, and lessens fossil fuel use.

System of Rice Intensification (SRI) is a classic example of more from less. This was developed outside the formal scientific establishment spreading from farmertofarmer and through community based organizations. SRI methods are known to have increased rice yields by 20 to 50% with 25-50% reduction in water, 30-40% fewer agrochemicals and 80-90% less seed.

More from less must not be taken to mean reduced financial resources for the agriculture sector, as appears to be the case from the current budget allocations.A sustainable agricultural revolution of the 21st century must recognize the need to save and replenish what has been depleted through the policies of excess.It will have, at its core, the maxim of more from less.This will require more, not less,financial investments in the farm sector. The next generation of changes will require us to rethink and reformulate our production systems and consumption patterns. It will be drivenby our children and grandchildren, but it must begin with us.

Farmers' Leaders meet Home Minister

Farmers in India are going through a particularly precarious situation. Their interests have been vastly compromised and their existence is at stake due to many policy reforms that the country is witnessing. Farmers are particularly wary about certain recent developments like Land Acquisition Ordinance, recent report of Shanta Kumar High Level Committee on restructuring FCI, farmers suicides, government's support to GM crops, lack of fair and remunerative prices for farm produce, demand for a farm income commission, removing agriculture from free trade agreements including WTO, adequate disaster relief for farmers, lackluster budget etc.

Of the particular significance is the recent Land Acquisition Ordinance which the government was vehemently pushing and to which the farmers had registered their protest. To ease out the issues and to develop a mutually amicable solution a meeting was hosted by the Hon'ble Home Minister, Sh. Rajnath Singh with National Farmers Coordination Committee, which comprised of several farmers organisations. The invitation to this meeting was extended from the Government, after the National Farmers Coordination Committee, met with 27 farmers' organisations at Constitution Club, sought time with the Government.

All the 27 farmers bodies while opposed the Ordinance in its current form, they also distanced from NGOs led Anna Agitation and rejecting any truck with him.

A delegation of 15 important farmers' leaders led by Farmers federation convener, Dr. MJ Khan met the Home Minister Sh. Rajnath Singh at his chamber and presented the Charter of demands to support the Government on Land Acquisition Ordinance 2014. The demands included:

- Consent of 70 per cent land holders in a project of the Government and 80 per cent in PPP projects for acquiring the land for developmental projects. Government must not acquire land for private parties, except in PPP projects for public purpose.
- The word "Appropriate Government" has to be clearly defined. We demand that in Districts the right to acquire land should be given to District Boards, which have by constitution broad representation. In other authorities, 50 per cent farmers' nominees must be included.
- The Social Impact of the project must be ascertained by a committee, which should have 50 per cent farmers and non-governmental representatives. Effective measures should be taken to address the impact.
- The Amendment under section 24 (2) should be withdrawn, which gives the validity of projects beyond five years, pending arbitration
- Lands acquired for industrial purpose and such other projects, where employment is generated, 50 per cent of the class 3 and class 4 level jobs in Govt sector and 50 per cent of the Non-Managerial jobs in PPP projects should be reserved for those farmers, whose land is acquired and from the local villages within 10 kms radius.

To ease out the issues and to develop a mutually amicable solution a meeting was hosted by the Hon'ble Home Minister, Sh. Rajnath Singh with National Farmers Coordination Committee, which comprised of several farmers organisations

The delegation was led by Sh. KB Chowdhary, President, Bhartiya Krishak Samaj; Sh. Rakesh Tikait, National Spokesman, Bhartiya Kisan Union; Sh. Yudhveer Singh, South Asia Convenor, Intl Farmers Alliance and Gen Secy, BKU; Sh. Puneet Singh Thind, General Secretary, Rashtriya Kisan Sangh; Sh. Kesari Singh Gujjar, President, Dehat Morcha; Sh. MI Sayyed, President, Vegetable Growers Association of India, Maharashtra; Sh. Raja Ram Tripathi, President, Chhatisgarh Farmers Association (CHAMP); Sh. Ram Karan Solanki, President, Delhi Unit, BKS; Sh. GN Sharma, President, Bihar Farmers Association; Sh. KT Gangadhar, President, Karnataka Rajya Rayyat Sangh; Sh. Mahavir Gulia, Haryana State President, Bhartiya Krishak Samaj; Sh. Rajesh Sharma, President, J&K Cooperative Association and J&K Farmers Council; Sh. Prabhakar Kelkar, Gen. Secy, Bhartiya Kisan Sangh; Sh. Mahavir Gulia, Haryana State President, BKS and Dr. MJ Khan, National Convenor, Federation of Indian Farmers Organisations.

Netherlands- The Dairy Titan

Despite being one of the world's smallest and most waterlogged countries, the Netherlands is the world's largest exporter of agrifood products after the USA. Its economy is one of the most competitive in the world, thanks to its openness – trade makes a substantial contribution to its economic output.

On 1 April, the dairy quota system in the Netherlands, a major dairy exporter, will be replaced by curbs on the environmental impact of milk production. As this new measure is regarded as a lesser limitation than quotas, many Dutch dairy farmers are gearing up for expansion – and a global increase in consumption is providing tempting markets.The sector's accelerated efforts to produce higher milk volume resulted in an expansion of the Dutch dairy herd in 2013. Milk production in the Netherlands increased from 11.7 billion kilograms in 2012 to 12.2 billion kilograms in 2013, more or less in parallel with a 4.6% growth of the dairy herd. Producer prices spiked at record levels in 2013 and the Dutch herd grew to 1.55 million cows. The amount of milk processed in the Netherlands increased in 2013 in line with the growing national dairy herd. Much of this extra milk was used for the production of cheese, by far the biggest Dutch dairy category. In the same year, cheese production stood at approximately 794000t, absorbing almost 56% of the quantity of processed milk.

Dutch exports showed substantial volume growth in all key product groups in 2013. Increased exports and a higher price level resulted in a 21% increase in the value of exports, which amounted to over €6.7 billion (R87 billion). The positive

Dutch trade balance for dairy products reached almost €4.1 billion (R53 billion), which saw dairy products contributing more than 8% to the overall Dutch trade balance.

With a share of more than 5% in the world's trade in dairy products, the Netherlands is the most active EU member state in the world market. Its main destinations outside the EU are Russia, China, Nigeria and Saudi Arabia. Cheese accounts for more than 46% of the value of Dutch dairy exports.

The Netherlands has 17 800 dairy farms, and each producer has on average between 80 and 100 cows. The farms, which are highly automated, are normally run by the family and one worker. The country also has a 280 000-strong national dairy goat herd. Professional goat milk dairy operations were only established in the Netherlands in the 1980s. Today, the largest goat milk operations have between 5000 and 8000 goats.

The Netherlands has always been at the forefront of developing and introducing new agricultural technology. Having studied the effects of light intensity, wavelength and duration on dairy cows, researchers at the country's world renowned Wageningen University found that manipulating these factors influenced milk yield and growth rate. Between 16 hours and 18 hours of light per day at a level of 180 lux to 200 lux optimises feed intake and milk yield.

A recent media tour to the Netherlands included a visit to Anton Stokman's farm in Friesland. Based on the findings of Wageningen University, Stokman implemented a new lighting cycle in his cow barn to improve the health and productivity of his cows. Stokman farms according to the principle that everything that is good for a dairy cow is good for economical production, and thus for the farmer. Therefore, he optimises the cows' environment and welfare by providing as much free choice as possible. Cows havecubicles for resting, but canfreely move to the feedingarea on an open floor. Another advanced featureof Stokman's farming operation is a robotic milking system. Since installing the system, the average yield per cow has increased 10% and the farm's annual milk yield has risen to an average of 9 500kg per lactation, with 300 cows in milk. The system enables cows to be milked whenever they want – day or night, seven days a week – and sometimes up to five times per day, depending on the stage of lactation and level of milk production. All cows wear micro chipped neck collars, and as they enter the milking stall they are automatically identified by the computerised system. In this way, Stokman is able to establish the frequency of milking. Milking rate, milk conductivity and yield are also monitored with every milking. This data is used in an early warning system to identify potential health problems. Stokman has installed convex dual chamber waterbeds in the cows' rest cubicles. These waterbeds have a cushioned area for the knees, as well as a separate pocket for the body and hind legs. To measure the release of odour and greenhouse gases from the housing system, Stockman undertook research in conjunction with Wageningen University. The study, 'Measuring Programme for Integral Sustainable Stables', showed that a 'free choice' cow-shed reduced ammonia emission by 35%, odour by 50% and methane by 50%. The total emission reduction in the four sheds was on average 25% for ammonia and 50% for methane. In

spring and summer, cows are allowed to venture out to an outdoor grassed area. This helps improve their activity levels and provides an alternative, more natural walking surface.Stokman works closely with other members of the Dutch farming community to promote his free choice philosophy.

Figures from United Nation's Food and Agricultural Organisation (FAO), shows that animal production generates 14.5% of all human induced greenhouse gases. Piggeries are responsible for 9%, poultry for 10% and ruminants for 81%.In that sense, Netherlands – the premier dairy destination of the world - has something to worry about. But they are well ahead in the game. The De Marke Knowledge Transfer Centre is an experimental farm belonging to Wageningen University and Research Centre, a world-renowned agricultural education facility in the Netherlands. De Marke focuses on methods to mitigate greenhouse gas emission and enhance nitrogen (N) utilisation in dairy cow diets.The most effective strategy to reduce the environmental impact of animal production is to increase productivity. Simply put, this means obtaining a higher yield from the same number of animals and land size – and done so sustainably. This is according to Dr HinkPerdok, sustainability projects director at Cargill Animal Nutrition (CAN) in Rotterdam, in the Netherlands.CAN employs more than 500 researchers and technology professionals. All are involved in defining and understanding key aspects of animal metabolism, nutrient requirements and immunology. The company is a founding member of the Global Roundtable for Sustainable Beef and is an active member of the Roundtable on Sustainable Palm Oil. It is also a founding member of the Soy Moratorium in Brazil. CAN uses advanced near-infrared reflectance (NIR) technology to measure nutrient and quality parameters used in

dairy ration ingredients, ensuring the best performance based cow diets. The Cargill nutrition system was developed to provide precise nutrient calculations for feed formulation. This enables CAN to customise nutrition solutions to a farmer's needs quickly.

Co-operatives play an important role in the Netherlands.Worldwide, there is a swing back to agricultural co-operatives, according to Kees Paradies, export manager of the Cono Kaasmakers Co-op in Westbeemster. At the heart of this renewed interest is the problem of how to market agriculture successfully, and co-ops are being investigated as a possible solution. Co-operatives showit's possible to combineeconomic success with social responsibility. Cono has only approximately 500 farmers or small family farms as members yet can be regarded as a relatively small co-operative which employs a total of 175 permanent workers. Cono paid the best milk price in the entire country to its producers for 16 years in a row. The dairy's unique location and renowned Beemster Polder cheese brand, made on site since the co-op was founded in 1901, are arguably its main competitive advantages. Cono's farmers produce 340 million kilograms of milk per annum for the production of 28 million kilograms of premium cheese. In 2002, Cono became the first co-op in Europe to paya free-range bonus to its participating members. This is paid per 100kg of milk and the scheme requires the cows to have a minimum grazing period of 100 days on pastures. As a result, the use of concentrate to supplement a cow's diet is less than that of cows that stay permanently in cow sheds. In co-operation with a client, ice cream makers Ben & Jerry's, Cono also introduced the sustainability programme, Caring Dairy, in 2008. Its five key aspects for sustainability are profitable farming, conserving the landscape, sound labour practices, energy efficiency and animal welfare. To make the supply chain sustainable from cow to cheese, other role players are also included. Within this programme, farmers decide how their own dairy farms can become sustainable.

Himachal's Royal Warhorse

Shri Vidarbha Singh is a political force to reckon with in Himachal Pradesh. In his five-decade long political innings, he has been a seven-time MLA, a five-time MP and six-time Chief Minister. Virbhadra Singh stands as the tallest among the stalwarts of state Congress and his clout is well established in the national level as well. He steered the Congress Party back to power in the stteriding against all possible hurdles.

Virbhadra Singh the six-time Chief Minister of Himachal Pradesh is a political veteran who had made his mark both in national and state politics. A member of Indian National Congress, Shri Singh was elected seven times to Himachal Pradesh Legislative Assembly.

Scion of Himachal Pradesh`s erstwhile royal state of Rampur Bushehar, Singh was educated at Colonel Brown Cambridge School and the Bishop Cotton School, and later obtained a BA Honours degree from St. Stephen's College, Delhi.

Power positions were not new to this political stalwart. Born on June 23, 1934, Singh succeeded to the position of king of the state at the age of 13 in 1947. After joining Congress in 1961, Singh entered Lok Sabha for the first time in 1962 from Mahasu constituency when Himachal Pradesh was part of Punjab and was the youngest member of 3rd Lok Sabha. He again won in 1967 and won from Mandi seat in 1971, which he repeated in 1980 and then again in 2009. There is no other member in the present Lok Sabha to have entered the lower House before him.

He was a member of the Indian Delegation to the General Assembly of the United Nations in 1976. Between 1976 and 1977, Singh held the national office of Deputy Minister for Tourism and Civil Aviation in central cabinet. He was Minister of State for Industries between 1980 and 1983. From May 2009 until January 2011, he held the cabinet post of Minister for Steel. He then became cabinet minister with responsibility for Micro, Small and Medium Enterprises until resigning from office in June 2012.

Aside from his role in national politics, Singh was an indomitable force in state politics as well. He has been elected on seven occasions to the Himachal Pradesh Legislative Assembly. The first occasion was in a by-election in October 1983, when he was returned for the Jubbal-Kotkhai constituency. He won that seat again in the 1985 elections. Thereafter, he was elected from the Rohru constituency in 1990, 1993, 1998 and 2003.

Singh assumed the mantle of the Chief Minister of Himachal Pradesh for the first time in April 1983 and held the post until March 1990. He was again appointed to the role between December 1993 and March 1998; and once more from March 2003. With reappointments within those years, this record amounted to him holding the office on five occasions.

Between 1998 and 2003, he was Leader of the Opposition in the state Assembly. He has also been president of the Himachal Pradesh Congress Committee from February 1992 to September 1994, and leader of the Congress Legislative Group. He had also been president of the State Congress Committee in 1977, 1979 and 1980. In July 2012, he quit from all key party posts at a crucial time when the State was going for elections in November 2012.The trigger for the resignations is reported to be his exclusion from the Screening Committee for short listing of candidates for the polls. He was appointed to lead the party on the eve of the November 2012 elections which he did so with elan. The party then agreed to him becoming Chief Minister of Himachal Pradesh for a record sixth time. The agreement did not go vain as he became the face of Congress in HP and his clout took congress to victory in the state.

Singh as CM introduced a fresh Lokayukta Bill in the Assembly providing for single member Lokayukta who would be a retired Supreme court judge or former Chief Justice of High Court. He has also taken a tough stand against deforestation. "I am totally committed for the preservation of nature, for trees and for environment. Nobody would be spared in the illegal green felling. Even if my son is found guilty in such offence, he would also not be spared", says Singh.

Outside of politics, Singh is involved with various social and cultural bodies. He has been president of the Sanskrit Sahitya Sammelan and of the Himachal Pradesh branch of the Friends of the Soviet Union.

Shri Singh has remained a committed political worker in furthering the interests of the hill state. It is no wonder he has remained in the political scene spanning more than five decades.

"While acquiring land, three factors—food security, security of farmers and purpose for which land is to be acquired—should be kept in mind. Preserving land is a must as 90 per cent of food for humanity comes from the soil and only 10 per cent comes from other resources such as the ocean"

DR MS SWAMINATHAN
Former Director-General of International Rice Research Institute and one of the pioneers of the Green Revolution

Agriculture and all that it encompasses is not only critical for our food supply, it also remains a main source of livelihoods across the planet. While it is a sector at risk, agriculture also can be the foundation upon which we build societies that are more resilient and better equipped to deal with disasters

JOSÉ GRAZIANO DA SILVA
Director General, FAO

"FCI does not have infrastructure and manpower. So, states should come forward to procure and the Centre is ready to give assistance"

RAM VILAS PAWAN
Food Minister

"We were number one in feeding the country, and we will make Punjab number one in organic farming in India…we consider the air as our guru, water our father and earth as our mother and we have sacrificed all three for the sake of feeding the country,"

PARKASH SINGH BADAL
Punjab Chief Minister

"Our commitment to farmers runs deep. We have already taken major steps to address two major factors critical to the agriculture production - soil and water"

ARUN JAITLEY
Finance Minister