

# AGRICULTURE The National Agriculture Magazine TODAY

April 2016, ₹45/-

## Food Processing for Increasing India's Food Potential



APRIL 2016 | VOLUME XIX | ISSUE 4

**Editor** Anjana Nair  
**Assistant Editor** Fariha Ahmed  
**Sub Editor** Sanjay Kumar

## REGIONAL BUREAUS

Tirupati V Rajagopal  
Kerala KR Sreeni  
Jamshedpur Shireen Tabassum  
Gorakhpur Jitendra Dwivedi  
Himachal Pradesh Rakesh Ahuja  
Jammu & Kashmir MH Shah  
Hyderabad Murli Krishna  
Bangalore HS Gangadhar  
Lucknow Alok Vashishth  
Punjab SS Viridi  
Bihar Gautam Kumar

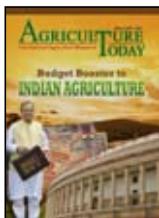
**Business Manager** Sonam Singh  
9910621421  
**Circulation Incharge** Rajan Gautam

## LAYOUT & DESIGN

**Graphic Designer** A. Rehman

Publisher & Printer – Dr. MJ Khan on behalf of M/s Concept Agrotech Consultants Limited, Published from 306 Rohit house Tolstoy Road New Delhi-110001 and printed by Everest Press E-49/8, Okhla Industrial Area-II New Delhi-110020 Phone No. 011-23731129 Fax No.011- 23731130

**E-mail:** [editor@agriculturetoday.in](mailto:editor@agriculturetoday.in)  
[business@agriculturetoday.in](mailto:business@agriculturetoday.in)



**Any issues?  
contact us at  
the above  
addresses!**

No part of this magazine can be reproduced, imitated or transmitted in any form, including electronic, mechanical, photocopying, recording or any information stage retrieval system or extracted in any way without permission from the publishers. Views expressed in the magazine need not necessarily be those of the Editor / Publisher.

[www.agriculturetoday.in](http://www.agriculturetoday.in)

Pages in the magazine: 60

## Food Processing – Converting Losses into Gains

India's agriculture production has spiraled in the recent years. Records of foodgrains and fruit & vegetable production has become a pleasant routine for India. The production statistics has made India the top producer of many agricultural commodities. However, these production windfalls has not yet translated into profit bonanzas for the real farmers. There is considerable loss of farm produce due to lack of proper infrastructure and storage.



Union budget this year has laid an unusual commitment of doubling farmers' income. While many believe this fete to be impossible on the grounds of the mammoth task of increasing agriculture growth to 14 per cent from the current rate of one per cent, the announcement can at least be seen as an acknowledgement of farmers' welfare as a critical component of food production chain. It can be the beginning of a slew of developments that holds the potential to initiate a massive change of making agriculture a farmers' vocation and not merely an engine to feed the population.

Food processing is one area which holds immense potential in increasing farmers' return from agriculture. A recent analysis has pegged India's losses of farm produce at a whopping Rs.90,000 crore. It is a shame to lose this much especially if you have avenues like food processing which not only adds up to the income but also has the potential to stop farm losses.

Food processing sector is one of the largest sectors in India in terms of production, growth, consumption, and export. In the last few years, the food processing sector has been growing at a faster rate than agriculture sector. Food Processing Sector has emerged as an important segment of the Indian economy in terms of its contribution to GDP, employment and investment.

The government has also been quite benevolent towards this sector. The food-processing sector has been identified as one of the priority sectors under Make in India, an initiative of the Prime Minister of India, with a view to attract investment to this sector. Many popular food processing companies have already expressed their desire to be part of the project. Union Budget 2016-17 has proposed to allow 100 per cent foreign direct investment (FDI) through the Foreign Investment Promotion Board route in marketing of food products produced and manufactured in India. This move would not only address the welfare of farmers but also that of food processing industry as a lot of fruits and vegetables grown by farmers do not fetch the right price or fail to reach the market on time. To promote use of refrigerated containers, the government has also reduced basic customs duty on such containers to 5 per cent from the existing 10 per cent, and excise duty to 6 per cent from the current 12.5 per cent. This will help boost setting up cold chains needed for efficient supply chains in the country.

Food processing is a crucial sector as it connects agriculture with industry, thus creating an effective gateway for technology and investment which can convert the agri sector to a more profit intensive and productive segment.

*Anjana*

**Anjana Nair**

# CONTENTS

VOLUME XIX | ISSUE 4 | APRIL 2016



## Food Processing for Increasing India's Food Potential

Editorial	01
Editorial Comments	04
News Corner	08

### **Cover Feature**

Food Processing for Increasing India's Food Potential	20
-------------------------------------------------------	----

### **Food Processing**

Make in India	50
---------------	----

### **Technology**

Knowledge Based Agriculture	52
-----------------------------	----

### **Reflection**

What if Green Revolution was absent in 1960s?	54
-----------------------------------------------	----



### **Know Your Leader**

Mrs. Anuradha J. Desai 59

Different Strokes	60
-------------------	----



**GREAVES**

SINCE 1859

**Greaves Cotton Limited**  
Farm Equipment Business

# COMPLETE FARM PRODUCTIVITY SOLUTIONS

**Brought to you by Greaves.**

The name that Indian Agriculture trusts to deliver prosperity.



Diesel Pumpset



Petrol/Kerosene  
Pumpset



Petrol/Kerosene  
Pumpset



Sprayer



Power Reaper



Power Weeder



Mini Combine Harvester



Brush Cutter



Power Tiller



Weeder



Rice Planter



Tractor

# GREAVES AGRI



Lakshmi Chambers, No.30, Anna Salai Little Mount, Saidapet, Chennai - 600 015.

Ph: 044-22304000 (Board) Fax: 044-22352271

## Cashing in the Cash Crops

*Government's new revenue insurance scheme for Plantation sector generates optimism*

**P**lantation sector can breathe a sigh of relief as the government plans to unload its next tranche of welfare schemes for the farming sector. This cannot be strictly termed as an insurance scheme linked to weather calamities or other such disasters. But this is a market-linked insurance scheme for plantation crops such as tea, coffee, tobacco and rubber to help growers tide over the impact of price and yield fluctuations. This revenue insurance scheme will help tide over the uncertainties linked in price recovery of the crops in an uncertain domestic and global market.

The scheme may consist of fiscal concessions, developmental assistance and regulatory simplification. It would be implemented on a pilot basis in 7 districts and will provide insurance cover against fluctuation in prices and yield. The scheme will be funded from the price stabilisation fund for plantation crops.

According to a commerce and industry ministry report, these crops are grown in about 16 lakh hectares and they provide direct employment to about 17.10 lakh workers. When compared to the food crops, this high value segment of agriculture occupies only about one per cent of the total cropped area. But the returns from the sector is significantly high. They generate about 15 per cent of the total agricultural export earnings.

India is a major player in this segment of crops. India is the largest producer and consumer of black tea in the world. The country is among the largest producers and exporters of tobacco in the world. As far as the production of rubber is concerned, India ranks fifth in the world.

Despite the better prospects of the plantation sector, the sector is also wrought with several risks. Being a non food category and categorized under high value products, the farmers in this segment do not enjoy many benefits from the government. The products from this sector are vulnerable to heavy risks in terms of production caused by adverse climatic conditions, as also to price risks caused by demand and supply situations and changes in domestic and international prices. They compete in an extremely competitive international market, which causes enhanced vulnerability in times of severe price drop. Cartelisation and indirect subsidies in international markets further aggravate price risks.

Besides, they have to endure several trade policies that deeply influence their profitability. Free Trade Agreements with ASEAN countries have led to the import of rubber hurting the rubber growers in the past. Rubber sector itself is reeling under the shock of low prices prevailing currently in the market. Rubber prices have crashed creating panic among the rubber growers of the country. Kerala which dominates rubber sector in India cloaked heavy losses in the previous year. In 2010-11, the revenue generated from rubber was Rs. 14,643 crore. But due to continuous fall in prices, this was truncated to Rs 6,731 crore in 2014-15. The share of the State in India's total production came down to 78.7 per cent in 2014-15, compared to 89.4 per cent in 2010-11. On April 5, 2011, rubber fetched Rs 243 per kg, the highest-ever price. It's now Rs 94 a kg (January 30, 2016), pushing 10.5 lakh rubber farmers in the State to an uncertain future. This is a fall of 61.32 per cent in just under five years. The revenue from rubber has now become a quarter of what it was five years ago.

For India to remain a credible supplier in the global market, domestic price stability is an essential criteria. The price dynamics seriously influence planting and replanting decisions taken by the farmers. Price stability through this insurance scheme will ensure that farmers are supported at times of price fluctuations. Besides, this is one of those rare occasions where government is seen reaching out to the small section of 'better off farmers' – depending on high value crops – shunning the usual drill of populism. The insurance scheme will give a major fillip to the 'Make in India' campaign of the government. In such a scenario Rubber industry is significant as we have a strong production base with an equally significant value chain starting from rubber growers to consumers of end product.

The conscious decision by the government to support cash crops is indeed a commendable policy directive as it can encourage farmers to move into a 'protected' cash crops segment improving the income from farming and hence production.

## Oil for Food

*India's oil for food scheme to secure oil supply with agriculture*

**G**ates are open for a new type of arrangement between oil rich nations of Middle East and the food surplus polity of India. Discussions are doing rounds between the two sides to reach an oil for food agreement that will be favourable for both the parties.

The current state of oil prices is an opportune time to think about options for stocking it. The oil prices are nose diving and India the world's third largest oil importer could use this time to its advantage. Apparently India is already working on such a move. India is building a strategic oil reserve in Visakhapatnam that could hold up to 1.3 million tonnes of crude oil. The project is part of a strategic plan to build an emergency stockpile with millions of barrels of crude, on the lines of the reserves that the US and its western allies set up after the first oil crisis of 1973-74. For India, the Visakhapatnam crude reserve might be a first of its kind project, but is part of a larger plan. As part of this, the Centre would set up Strategic Crude Oil Storage of about 5.33 million metric tonnes (MMT) at two other locations in the country apart from Visakhapatnam – Mangalore (1.5 MMT) and Padur (2.5 MMT) in the first phase. While the construction of Vishakapatnam oil reserve is underway, the ways to fill it up is taking shape.

India is using its position as a major food producer to land a deal with oil surplus nations in the gulf region. India imports about four-fifths of its oil needs, with a bulk of that being supplied from the Middle East. At the same time, India is the world's biggest rice and wheat producer after China and has large stocks of the staples. Countries in the Middle East depend on food imports for their food demands as the unfavourable agro ecological conditions existing in parched tracks of the middle east does not permit conventional agriculture. They are staring at a possible food deficit in years to come with chances of food imports doubling to \$70 billion in 20 years as climate change hits crop yields and the population rises.

India, on the other hand, is comfortably placed on food front, as rice stocks at the state-run Food Corporation of India were 16.2 million tonnes (mt) as on 1 February, against a target of 7.6 mt. Wheat stocks totaled 20.3 mt, higher than the government-set target of 13.8 mt. If such an arrangement falls through, it would help the Indian farmers to broaden their market reach, especially for rice and wheat.

Under the arrangement being proposed by the Indians, the Gulf state would be allowed to use about one-third of that oil for trade, while keeping the rest for India to use as strategic reserves. India will complete the first phase of its strategic reserve to store 39 million barrels by May and later this year begin work on the second phase, which will have a capacity to hold 91.6 million barrels.

India is probably using its tool, agriculture to secure the country's energy needs. India's energy needs have been expanding rapidly and the oil imports were eating up a major share of the exchequer. It is predicted that by 2020, India could well be the largest oil importer, increasing the country's vulnerability to threats of physical supply disruptions and to sharp price fluctuations. The ingenious oil for food scheme from the Indian side can buy energy security, for a country where development is high on agenda, with a rather modest tool – agriculture. At the same time, if the model materializes, some major safeguards need to be taken care on the agriculture production front. We should be able to maintain our food stocks and should take adequate measures to stabilize, if not increase, crop production in the country. Better varieties, weather forecasting, improved technologies, crop disease and pest prediction and irrigation should be ensured to maintain and improve agricultural production. Most important would be strengthening our storage infrastructure for the crops produced. As far as India is concerned, more than the production, it is the storage woes that diminishes our food capability. We have a proven track record of losing a sizeable amount of food produced due to the lack of well equipped storage structures.

It would be wise, if India could pursue the creation of storage reserve for the food grains with the same verve as that for oil.

## Rabi turns Rancid

*Inclement weather all set to affect rabi crops*

Indian agriculture has been under the weather last year, quite literally. Deficient monsoon and hailstorms had managed to tweak in uncertainties and worries into the farming community. Productions had come down and farmers had a really bad time coping with the changed scenario. Consumers on the other hand also paid, in fact hefty prices.

Looks like the bure din are not over yet. Recent weather parameters have also suggested exigencies for the agriculture sector. Unseasonal rains and hailstorms in many agriculturally significant tracts are sounding warning signals. Rabi crop, that constitute some of the important crops of the country like wheat, mustard and chickpea, are still in the fields or are in the process of harvest. Inclement weather is believed to intervene with the yield and income prospects of the farmers. It has come at a time when the government has announced its intention to double the farmers' income in five years period.

Agriculture experts say that there is already 10 to 15 per cent damage to Rabi crops, both standing in the field and those already harvested but lying in the fields. Loss in yield looks almost a certainty as the pollen grains have got washed out. Besides, diseases especially soil borne fungal infection, also is predicted to impact vegetable crops further. Not only quantitatively, but even in qualitative terms the farm production will be hit due to hail. Oil seeds another crucial sector for India, as we are one of the biggest consumers of edible oil will also be hit. Among oilseeds, mustard crops suffered losses.

Rain and thundershowers are predicted over western Himalayan region, plains of North-West India, North-East and peninsular India and North-Eastern States. Besides, there can be heavy rainfall and snow at isolated places over Jammu & Kashmir, apart from thunderstorms accompanied by squalls and hail at isolated places over Jammu division, Himachal Pradesh, Punjab and Uttarakhand.

A major crop, wheat draws much attention. The yield of wheat has been taking a hit from the last year. If the weather irregularities continue, the wheat yield this year will also see dip. Due to the strong winds, wheat crops have been experiencing root lodging and entire crops in several regions of Haryana, Punjab, Delhi and Uttar Pradesh have fallen flat. Without getting enough nutrients, scientist aver that yield will be less and grains will be smaller than normal.

The Associated Chambers of Commerce and Industry of India (Assocham) has also come out with a report that points out to this possibility. The report clearly mentions that India's wheat output may miss government estimates by as much as 15 million tonnes as higher-than-usual temperature during the peak sowing season and recent rains have hit the crucial rabi crop. The agency has pegged 2015-16 (July-June) wheat output at 79-80 mt compared with the government's estimate of 93.82 mt. In 2014-15 as well, wheat output had declined to 86.53 mt from 95.85mt a year ago. But the government has come out strongly against this and are standing by their estimates of 93.82 million tonnes for 2015-16

If the wheat production plummets, it will have great implications. The shortfall in production may lead to a spike in food inflation which may then contribute to price rise. This even gives out the possibility of imports. As far as stocks are concerned, the paper suggests a drop of 10-20 per cent in wheat procurement in the current year which will result in around 35-36 million tonnes of wheat stocks as of July 1. Given an average monthly requirement of 3 to 3.5 million tonnes towards Public Distribution system (PDS) and open market wheat sales, wheat stocks would plummet well below 10 million tonnes as of April 1, 2017 forcing the government to consider imports to augment domestic shortage. The ASSOCHAM paper even suggests lowering import duty on wheat to a more reasonable level of 5 to 10 per cent from the current 25per cent, so that parallel imports by private trade would ease pressure on government stocks and prices due to better availability. Even the government can consider importing wheat duty free through its state trading arms, to ease the strain on wheat stocks.

This is a crucial juncture for India as we are trying hard to rope in inflation and price rise. Farmers' welfare has assumed center stage. The government should consider counter measures not only for the benefit of the consumers but also for the farmers.

## Promoting Pulses

*Including pulses in PDS is crucial to maintain nutritional security*

**P**ulse worries for India hardly die out. It comes as no surprise that India home to many vegetarians, probably the largest lot in the world, is the largest consumer of pulses as well. A source of protein to many Indians, the pulses forms an import culinary ingredient in Indian cuisine. However, the country never seems to have enough of it. India is not self sufficient in pulses and the country imports a good quantity to meet the demand supply gap.

The import economics may sometimes throw the home budget out of balance. The pulses imported at hefty prices contribute to inflation and price spikes. Every year, India allows a good amount of pulses to be imported. This year the import is particularly high owing to unfavourable weather and the ensuing yield shortage. Pulses production is estimated at 17.33 million tonnes in 2015-16, while demand is pegged at 23.66 million tonnes. The wide gap is naturally expected to be filled in by imports. Pulses imports have increased to 5.55 million tonnes till March 1 during this fiscal as against 4.58 million tonnes in the entire 2014-15. Ram Vilas Paswan, Food and Consumer Affairs minister, recently informed that the total import by private and government agencies would be around 6.5 million tonnes during this year.

This comes at a time when many policy advocacy bodies are vehemently demanding inclusion of pulses in the Public Distribution System (PDS). Pulses, heavily priced, are eroding from the regular diet of an average Indian. Anxious about the declining protein intake among young people in the country, the Indian pulses and grains association (IPGA) is pushing the central government to include pulses in the PDS to ensure better nutritional balance. The average per capita consumption of pulses in India annually was 14 kilos, against the WHO's recommendation of 20 kilos.

While a few states such as Tamil Nadu, Uttar Pradesh and Goa have added pulses to the PDS, rest of the country still buy pulses at open market prices which are not only hefty but unstable. The demand of IPGA is totally justified, but the central government is not in a mood to follow the advice. The reason is not the government's apathy towards its citizens but sheer helplessness. The government is unsure whether it can honour its commitment of allowing pulses in the PDS. Inadequate domestic production and unfavourable crop estimates is holding back the government from realizing this wish.

The concern of inadequate protein intake is worrisome considering the fact India has a sizeable young population. With 356 million 10-24 year-olds, India has the world's largest youth population despite having a smaller population than China. It is said that developing countries with large youth populations could see their economies soar, provided they invest heavily in young people's education and health and protect their rights. The potential economic gains would be realised through a "demographic dividend", which can occur when a country's working age population is larger than the population that is dependent. For the betterment of the country, the younger population must be cared for.

So far, the government was only concerned with meeting the calorific requirements of the population through PDS and has totally shied away from committing anything nutritionally. In current terms, it would be impossible to cater to the nutritional demands of a large population, but India can start a nutritional programme in a stratified manner. The programme can look into the nutritional demands of children and younger population and provide pulses in a subsidized manner to the households with children in a particular age group. This can also be considered as a preparatory project to create a groundwork for a further extended programme at a later stage. In the meantime, this will also be enough reason to propel the country's agriculture side to work on pulse production. Lesser known pulses and highly nutritious coarse cereals can be added to the PDS basket which would also guarantee the income propositions of small and marginal farmers and put to better use many marginal lands.

Whilst dependent on imports, India cannot afford a blanket inclusion of pulses in the programme. But yes, we can definitely look at a more stratified approach. After all, the country cannot prosper with a malnourished population as the citizens are the face of a country.

## Shri Dr. Bhavarlal H Jain Passes away

▶ Padma Shri Dr. Bhavarlal H Jain (Age 79), Founder of Jain Group, Jalgaon passed away on 25th Feb 2016 after a brief illness, at a hospital in Mumbai. A man of small ideas which created big revolutions, he practiced what he preached and built his entire business on a foundation of inclusiveness and sustainability over the last five decades. The state funeral and cremation ceremony took place at Jain Hills, Jalgaon at 3 pm on Saturday, the 27th February 2016. His sterling work on rain water harvesting, watershed management and conservation is a landmark in the history of agriculture in the arid region of Khandesh. This and his contribution to agriculture have led universities to bestow four honorary doctorates and have won him numerous national and international awards. The prestigious Crawford Reid Award for promoting proper irrigation techniques, has been given to only two Asians till date. More recently the nation recognized his work and awarded him the Padmashree in 2008. He set up a huge Agri-Institute at Jain Hills with a faculty of agronomists and doctorates to train farmers from all over India and abroad on the latest farming methods.



## Centre cuts fee and prices for Bt cotton

▶ The Centre has lowered the 'trait' (licence) fee for genetically modified (Bt) cotton by 70 per cent for 2016-17. The decision is in line with the recommendations of a panel constituted by it to determine a uniform national price of cotton hybrid seeds. The recommendations had prompted a Monsanto joint venture to say it would, then, be re-evaluating its operations in India. The decision is in line with the recommendations of a panel constituted by the government to determine a uniform national price of cotton hybrid seeds. The uniform national sale price of Bollgard-1 cotton hybrids has been fixed at Rs 635 per 450 g packet and Rs 800 a 450 g packet for Bollgard-II. At present, a 450g packet of Bt cotton is sold at Rs 830 in Maharashtra and at Rs 930 in Karnataka, Andhra

Pradesh, Telengana, Gujarat and Tamil Nadu. The uniform national sale price of Bollgard-1 cotton hybrids has been fixed at Rs 635 per 450 g packet and Rs 800 a 450 g packet for Bollgard-II. No trait fee is to be charged for the former; for the latter, it is Rs 49 (included in the Rs 800 a packet price). The panel was formed in line with the Cotton Price Control Order of December 2015, empowering the Centre to fix a uniform national price of cotton hybrids, including Bt cotton. The committee was chaired by a joint secretary in the Union agriculture ministry. At present, a 450g packet of Bt cotton is sold at Rs 830 in Maharashtra and at Rs 930 in Karnataka, Andhra Pradesh, Telengana, Gujarat and Tamil Nadu. In the northern states of Punjab, Haryana, Rajasthan, etc, it is Rs 1,000. The trait fee till now was a uniform Rs 187 per 450g packet. The retail sale price for Bollgard-2 fixed by the government is almost 25 per cent less than the highest prevailing price of Bt cotton in northern states and 14 per cent less than the one in areas where the sales are highest for the variety. Mahyco Monsanto Biotech (MMBL), a joint venture between Maharashtra Seeds Corporation and Monsanto India Ltd, is licence holder for all Bt seeds in India. Earlier, it had made the treat of revaluating its India operations if the panel recommendations were enforced. With the Centre having done so, a MMBL spokesperson said it would examine the notification in detail and then comment.



## Future Consumer signs MoUs with agri commodity majors

Future Consumer Enterprise has forged two MoUs with commodity companies LT Overseas and Cargill to manufacture edible oil and staples including rice. “We have signed an MoU to set up a rice mill with LT Overseas (the makers of Daawat rice) and with Cargill. The MoU is for forging partnerships and to cooperate with each other to broaden the relationship in the future,” said Kishore Biyani, Group CEO, Future Group. The integrated food and FMCG company had raised Rs 300 crore recently from Black River, a fund supported by Cargill. Cargill Chairman Siraj A Chaudhry said: “Since a Cargill-supported fund has invested in Future Consumer Enterprise, it makes us a preferred partner.” With 27 private brands across 64 categories — which comprise food, home and personal care brands like Desi Atta and Kosh (oats) — the Future Group plans to take its products to both traditional and modern trade outlets. “We have recently raised Rs 300 crore from Black River and with this we will also reduce our debt of Rs 200 crore and make the business debt free,” added Biyani.

## Hindustan Insecticides enters fertiliser business

State-run agrochemical firm Hindustan Insecticides Ltd (HIL) has entered the fertiliser business by signing an agreement with public sector undertakings NFL and RCF and is aiming at Rs 150 crore from urea sales over two years. The Department of Fertilisers has already certified HIL as importer of decontrolled phosphatic and potassic fertilisers. “HIL has signed an agreement with National Fertilisers Ltd (NFL) to sell and market its urea in states of Odisha and West Bengal, similarly an agreement has also been signed with Rashtriya Chemicals and Fertilisers (RCF) to sell and market its urea in Odisha and Assam,” said the company’s Director - Marketing SP Mohanty. He added that HIL is looking at sales of Rs 200 crore from phosphoric and potassic (P&K) fertilisers and another Rs 150 crore from urea in two years. At present, HIL has three plants, one each in Kochi, Bathinda and Rasayni, with a combined capacity of 30,000 kl per annum of pesticides. The company also has plans to expand its current capacity. To finance its expansion plans, the company is also looking to sell its 5.6 acres land here for around Rs 350 crore. The land is located at Zakhira near the Delhi-Rohtak road. HIL was incorporated in March 1954 to supply DDT for the National Malaria Eradication Programme, launched by the Centre. Subsequently, the company diversified into agro pesticides, and has grown manifold with a turnover of about Rs 340 crore in the last financial year.

## Mahyco and Arcadia Biosciences Announce Pipeline Advancement for Salinity Tolerant Rice

Maharashtra Hybrid Seeds Co. Pvt. Ltd. (Mahyco), a leading agri-biotech company from India and Arcadia Biosciences, Inc. (Nasdaq: RKDA), an agricultural technology company, announced the achievement of a pipeline advancement target in the development of Salinity Tolerant rice. In two years of initial field trials, rice varieties with Arcadia’s Salinity Tolerance (ST) trait showed double-digit increases under saline conditions with no loss of yield under normal conditions. Mahyco will be advancing these lead ST rice lines into their trait introgression program and conducting further multi-location field trials to validate trait performance, a significant step in product development and commercial advancement for both companies. “With the conclusion of the salinity tolerant rice trials, we are able to identify lines which have shown superior performance in acute salt stress conditions,” said Dr. Usha



Barwale Zehr, Chief Technology Officer of Mahyco. “We will now move forward to incorporate these rice lines into elite materials to bring commercial benefits for rice growers.” The global cost of lost crop yield to salt-induced land degradation is estimated to be \$27.3 billion per year according to the United Nations Natural Resources Forum. Of the world’s 568 million acres of irrigated land, 111 million acres, or about 20

percent, are estimated to be salt-affected. Arcadia’s Salinity Tolerance trait enables plants to produce increased yields under conditions of elevated salinity, expanding the range of usable acreage for crop production and reducing requirements for fresh water. The trait is in Phase 3 of development, and the trait has been applied to a wide range of crops, including wheat, rice, cotton, sugarcane and vegetables.

## CACP for keeping cane price unchanged



➤ The Commission for Agricultural Costs and Prices (CACP) has recommended to the Union Government to keep the fair and remunerative price (FRP) for sugarcane unchanged at Rs 230 per quintal for the 2016-17 season (October 2016-September 2017). The CACP is a statutory body that advises the government on the pricing policy for major farm produce. "The CACP has suggested sugarcane FRP at Rs 230 per quintal for the 2016-17 season after carefully examining the cost of production, surplus availability and international prices of sugar and other factors," sources said. For the ongoing 2015-16 season, the government had raised the FRP of cane by Rs 10 to Rs 230 per quintal. The fair and remunerative price is the minimum price that sugarcane farmers are legally guaranteed. However, state governments are free to fix their own state-advised price (SAP) and millers can offer any price above the FRP.

## Non-urea gas use by Fertiliser units to fetch mkt price

➤ After CAG's rap, the Oil Ministry has ordered charging of the market determined price for natural gas used by fertiliser plants for manufacturing non-urea crop nutrients. The ministry has asked state-owned gas utility GAIL India Ltd to charge a rate equivalent to price of imported liquefied natural gas (LNG) for regulated domestic gas, called APM gas, used by fertiliser plants for manufacturing non-urea products. CAG had in a 2012 audit report stated that GAIL had failed to

evolve a suitable system to ascertain the quantity of natural gas utilised by fertiliser companies for manufacturing non-fertiliser products and its billing at market price instead of subsidised price. "GAIL will charge market determined price for the quantity of APM gas used by fertilizer units for manufacturing of products other than fertilizer during July 2006 till implementation of Nutrient Based Subsidy (NBS) Scheme (ie March 31, 2010)," it said in the order. Further, the company would

From November 1, 2014 when the new domestic gas pricing guidelines came into effect, "GAIL shall charge the highest rate of regassified-LNG used for production of urea during the concerned period for the quantity of APM gas used by fertilizer units for manufacturing of products other than urea," the order said. The ministry asked GAIL to transfer the difference between domestic gas price and highest rate of R-LNG used charged for domestic gas used for non-urea purpose to Pool Fund Account (PFA). This "amount will be adjusted in further uniform pooled price," the order said. According to CAG, the gas used for non-fertiliser products was to be charged at market price from January 1, 2009. "This led to non-implementation of Ministry's directives and consequent substantial under recovery in Gas Pool Account besides extra avoidable burden on Government subsidy towards fertiliser production," the auditor had said in its report.



## Govt to launch insurance plan for plantation crops

➤ India is in the process of launching an insurance scheme for plantation crops such as tea, coffee, rubber and tobacco to help growers tide over the impact of price and yield fluctuations, with premium shared by the Centre, state governments and beneficiaries. The scheme would be implemented on a pilot basis in seven districts. According to a release issued by the state-run Rubber Board, supportive measures may consist of fiscal concessions, developmental assistance and regulatory simplification. "Our primary aim is to make things here and sell them everywhere underlying the Make in India vision of the prime minister. The government is keen in the overall development of the rubber industry value chain starting from rubber growers to consumers of end products," the release quoted Ranjan Rashmi, additional secretary, ministry of commerce and industry, as saying. He was delivering the inaugural address at India Rubber Meet 2016 being held in Goa from March 10-11. The insurance scheme will be funded from the price stabilisation fund for plantation crops.

## Govt to implement DBT for fertiliser subsidy soon

➤ The government said it could soon implement direct benefit transfer for fertiliser subsidy, just a day after the Lok Sabha cleared a Bill to offer statutory backing to Aadhaar. Economic affairs secretary Shaktikanta Das

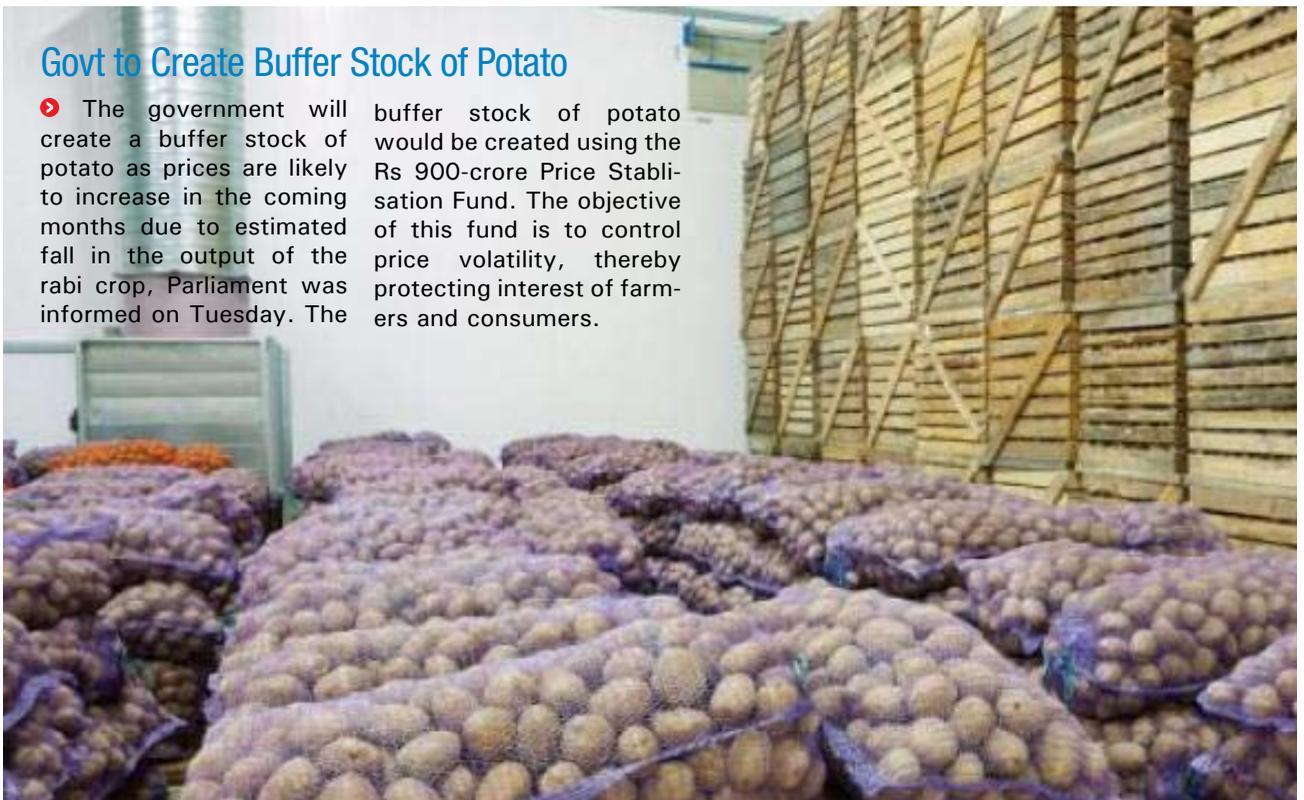


said: "Now, the idea is to roll it out in respect of other subsidies like fertiliser and food. It will be done slowly and calibrated manner without creating any disruption or without creating any difficulties for ultimate beneficiaries." At present, Aadhaar is being used to offer LPG subsidy as well as in some other programmes. Das added that the "game-changing phase" of legislation will ensure that benefit reaches the intended beneficiary and leakages and transmission losses are prevented. "DBT and Aadhaar framework will be linked. Now, we have a statutory backing for the whole exercise which earlier we didn't have," he noted.

## Govt to Create Buffer Stock of Potato

➤ The government will create a buffer stock of potato as prices are likely to increase in the coming months due to estimated fall in the output of the rabi crop, Parliament was informed on Tuesday. The

buffer stock of potato would be created using the Rs 900-crore Price Stabilisation Fund. The objective of this fund is to control price volatility, thereby protecting interest of farmers and consumers.



## Bihar govt to promote, brand co-op farming

▶ The Bihar government said it is working on a model to promote cooperative farming in the state, besides giving a brand name to it for better growth and development of farmers. "In the interest of the state's farmers and their better growth and development, the state government is working on a model to promote co-operative farming in the state. The government will provide cooperative farming a brand name in order to sell their produce in the international market," state Cooperative minister Alok Kumar Mehta said. Mehta was replying to a debate on cooperative department's budgetary demand of Rs 670.21 crore for FY'16/17. The minister said if 50 or 100 odd cooperatives were formed for the purpose, then big companies from China and the Middle East would come to the doorsteps of farmers to buy their produce. Later talking to reporters, Mehta said suppose cooperative farming of spices was done on 1,000 acres of land with the help of high technology and modern equipment, then it would naturally attract the attention of big companies overseas and they would buy the produce from farmers of Bihar. Per capita land holding has reduced to such an extent that it was not possible to carry out scientific farming for small and marginal farmers on their small size plots and hence, cooperative department was working on a model to carry out cooperative farming, he said. Stating that the government and its agencies have so far procured 11.23 lakh MT of paddy in the state, he said information with regard to paddy procurement can be obtained through a mobile app, which would be made public. Primary Agriculture Credit Society (PACS) would be computerised across the state, besides giving training to its chairman and manager for efficient working of PACS, Mehta said adding the government would develop one PACS as model in every sub-division.



## Crops damaged in 6 states due to unseasonal rains

▶ Unseasonal rain and hailstorm in the past few days have damaged winter crops in parts of at least six states across central, north and western India. So far, damage to rabi crops like wheat, mustard and chickpea has been reported from Punjab, Haryana, Rajasthan, Uttar Pradesh, Madhya Pradesh and Maharashtra. It may not be over yet, either. The met department has predicted more hailstorms and rain in parts of Punjab, Haryana and Chandigarh. The extent of damage is unclear as state governments are yet to collate data on crop loss and send it to the centre, an official with the agriculture ministry said, requesting anonymity. Admitting that the wheat crop was flattened in some districts of Punjab and Haryana, agriculture secretary Shobhana K. Pattanayak told the Press Trust of India that there are no reports of damage to mustard or pulses.



## Kerala govt rolls back wetland reclamation nod

▶ In a move that leaves the Oommen Chandy government red-faced ahead of the polls, the state Cabinet has revoked its order allowing paddy field reclamation for two major investment projects. While one is the R2,200-crore tourist village project at Kumarakam, the other is R1,000-crore hospital project in Ernakulam. Earlier, the Chandy Cabinet had allowed reclamation of the paddy fields. The tourism village project would involve reclamation of 470 acres of backwaters and the hospital project would mean reclamation of 47 acres of paddy land. Filling the paddy fields and waterbodies is seen as a violation of the Kerala's legislation to conserve paddy land and wetlands. "It is only to avoid



a controversy during the run-up to Assembly elections that the orders were revoked today. I do not think the earlier order allowing reclamation of the paddy fields were wrong. When a major investment comes up, it is difficult to observe its subservience to different kinds of legislations. That's why a waiver was made, initially," chief minister Oommen Chandy said. He pointed out that the eco-tourism village project at Kumarakam had first figured during the previous LDF tenure and VS Achuthanandan government had come up with orders for implementing it.

## 70% of Maharashtra tomato cultivation comes under drip irrigation

▶ Tomato growers in Maharashtra's drought-hit regions are increasingly turning towards drip irrigation as a solution. Over the last couple of years, around 70% of the state's tomato cultivation has come under the system. According to Shriram Gadhave, president, Vegetable Growers Association of India (VGAI), although Vidarbha and Marathwada regions have been reeling under drought conditions, the plantation for summer in the state has been up to 3 lakh per hectare,

the same as last year. This is because farmers have been using the drip system, which has resulted in 20% more yield, he pointed out. The use of mulching paper is also on the rise and special trials are being conducted on tomato by farmers in several parts of the country, he said, adding that drip irrigation is turning out to be a very effective solution as it also prevents disease. Last year, the tomato crop was affected by Karpa disease and whitefly attacks. The plantation

was attacked due to paucity of rains and therefore farmers have increasingly begun to use drip as a solution, Gadhave said. At Pimpalgaon in Nashik, one of the biggest markets for tomato, wholesale prices were hovering around R6 per kg. Gadhave, who was recently in Gujarat to discuss possibilities of synergy between farmer producer companies, said that farmers in this state as well have taken to drip and there is a rise in tomato production in Gujarat.



## Karnal sugar mill yields record output

▶ The Karnal Cooperative Sugar Mill has become the first cooperative sugar mill in Haryana to achieve 12% plus recovery of sugar. The sugar mill began its crushing season 2015-16 from December 1, 2015, and has to date crushed a total quantity of 19.57 lakh quintals of sugarcane with the highest on date recovery of 12.02%, thereby setting a new record in the cooperative sector, according to Varsha Khangwal, managing director of the sugar mill. The performance of Karnal sugar mill is all the more noteworthy because of the fact that this is one of the oldest sugar mills in Haryana which was set up in 1976. Despite being a conventional mill, it has been giving stiff competition to its counterparts, both in the cooperative as well as private sector, in terms of operation control, optimum steam consumption and quality of sugar, Khangwal added.

## Kiwi: emerging fruit of NE

▶ Kiwi fruit, a native of China, which is known as the world's healthiest fruit because of its nutritional properties, is fast emerging as an important fruit in the Northeastern region.

Dr KK Jindal, former additional director general of Indian Council for Agricultural Research (ICAR) said this while making a presentation on low chilling temperature fruits for sub-tropical and tropical zones of NE States to improve livelihood of farming communities at the three-day National seminar on "Integrating agri-horticultural and allied research for food and nutritional security in the era of global climate disruption", here recently. Kiwi, a small fruit about three inches long and weighing about 120-150 grams, is sold at Rs 90-Rs 100 in the farms with the price doubling in the markets. Its green flesh is creamy in consistency with an invigorating taste reminiscent of strawberries, melons and bananas, yet with its own unique sweet flavour. "Kiwi can be grown where large Cardamom is cultivated," said Dr Jindal, on the sideline of the ICAR sponsored seminar. "This inter-cropping could be the future vision of the Northeastern States", he added. Informing that all the NE States excluding Assam and Tripura have prospects of Kiwi cultivation as it grows in high hills and upland, Dr Jindal expressed his desire to establish a Kiwi research centre in Arunachal Pradesh which is the largest Kiwi fruit producer of the country. He said Kiwi fruit cultivation area has been increasing in Nagaland in the last couple of years. Likewise, cultivation of the fruit at Mao area in Manipur's Senapati area is also encouraging, he added. "The quality of Kiwi in NE States is of international standard. Those in Arunachal Pradesh (150 gm) are much bigger than those available in New Zealand (120 gm)," he said.



## Effective rate of the Krishi Kalyan Cess to be lower than 0.5 per cent

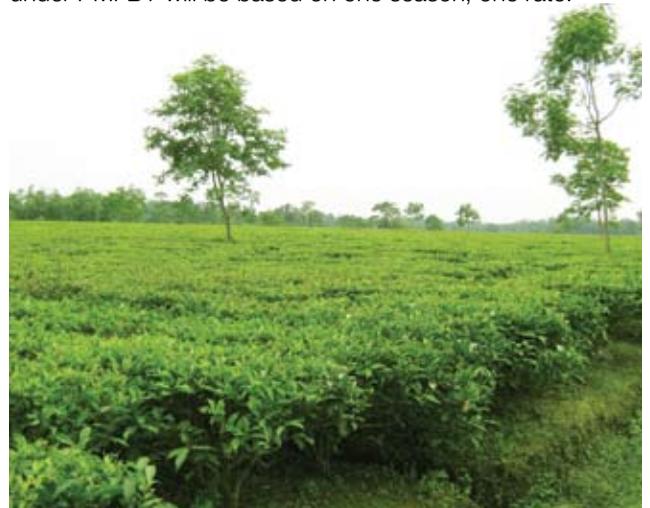
Finance minister Arun Jaitley in Union Budget for 2016-17 (April-March) introduced a new cess on services named Krishi Kalyan Cess at the rate of 0.5 per cent, the same rate as that for existing Swachh Bharat Cess. The effective rate of the Krishi Kalyan Cess, however, will be lower than 0.5 per cent as the government will provide input tax credit for the cess, as against no input tax credit for Swachh Bharat Cess. Though the rate being charged for both the cesses is same at 0.5 per cent, the estimates for collections, however, differ for the next financial year. The government estimates to raise Rs 10,000 crore from Swachh Bharat Cess, while Rs 5,000 crore are estimated to be collected from Krishi Kalyan Cess due to the difference in the method of computation of both the cesses. "We are giving (input tax) credit in Krishi Kalyan Cess, while there is no credit for Swachh Bharat Cess. At every stage of service, there will be a separate cess charged. They would have already paid service tax on some input, for which credit will be given. But no credit is given for Swachh Bharat Cess," Revenue Secretary Hasmukh Adhia said. Producers can avail this credit on inputs and pay the cess only on the value addition at the time of sale of the product. Jaitley in his Budget speech for 2016-17 announced levy of Krishi Kalyan Cess from June 1, 2016. The cess is aimed at financing initiatives relating to agriculture and welfare of farmers. The government will also continue to charge Swachh Bharat Cess at the rate of 0.5 per cent on all taxable services, increasing the total rate of service tax to 15 per cent from 14.5 per cent at present. In the current financial year, the government aims to collect Rs 3,750 crore from Swachh Bharat Cess that the government levied at the rate of 0.5 per cent on the value of taxable services with effect from 15 November 2015.



## Govt aims to bring 50% farmers under PMFBY in next few years

The government is targeting to double the insurance coverage under crop insurance through Pradhan Mantri Fasal Bima Yojana in a couple of years, a senior government official said here on Monday. The scheme will be implemented in the country effective from April 1. "As of now, 23 per cent of the country's total farmer's population is covered under various existing crop insurance schemes. However, the government is looking at taking it to more than 50 per cent through the PMFBY in next two years," said Ashish Kumar Bhutani, Joint Secretary, Ministry of Agriculture, at an event organised by GIC Re. As of now, it is mandatory for the loanee farmers to go for crop insurance. However, the government's focus will be to bring more and more non-loanee farmers, which comprise merely 5 per cent of total farmers at present, under the scheme in future, he said, adding, "a total of 5,000 automated weather stations will be set up across the country under PPP model for the successful implementation of the scheme." "The agriculture insurance is the largest insurance portfolio after motor and health," GIC Re CMD Alice Vaidyan said. "The insurance regulator, Irda is working on a host of measures to create such a platform so as to push agricultural insurance and other insurance products in the country," Irda executive director Sriram Taranikanti said. As of now, there are only 11 non-life insurance companies, including the state-owned specialised agriculture insurer Agriculture Insurance

Company, which have been empanelled by the government for the implementation of the PMFBY. However, all the four state-owned non-life insurers have evinced their interest to participate in the scheme. "From our side, we have requested the government to involve all the four PSU general insurers into the scheme in a major way," New India Assurance chairman and managing director G Srinivasan, who is also the chairman of General Insurer (PSU) Association (GIPSA) said. As per the scheme, the farmers' share of premium under PMFBY will be based on one season, one rate.



## Nabard, IRFC Issues to Bring More Cheer to Retail Players

▶ The government is giving aggrieved high income professionals another chance to invest in taxfree bonds before they are stopped. It has allowed state-backed National Bank for Agriculture and Rural Development (Nabard) and Indian Railways Finance Corporation (IRFC) to sell about Rs 6,000 crore of tax-free bonds and mandated a higher than-usual



allocation for retail investors. The two bond sales will be the last such issues in this financial year and are likely to offer as much as 7.297.64% with 10 to 15-year maturities. The government allowed the additional fund raising on condition that a higher portion of the issue is set aside for retail investors, who can buy up to 60% of these bonds compared with 40%

earlier. In the budget presented last year, seven state-owned companies were supposed to sell Rs 40,000 crore of taxfree bonds, of which the National Highways Authority of India was allotted Rs 24,000 crore and the Indian Railway Finance Corporation was allowed Rs 6,000 crore. NHAI surrendered Rs 5,000 crore, which was then allotted to Nabard, a new entrant. The government also allowed IRFC to raise an additional Rs 3,500 crore.

## HDFC Bank celebrates International Women's Day

▶ To celebrate international women's day, HDFC Bank has rolled out two initiatives for the benefit of women at the bottom of the pyramid. The company organized health check-up camps and enabled women to market products at over 400 locations in more than 20 states. The women are participants in HDFC Bank's Sustainable Livelihood Initiative (SLI), a programme to achieve the board mandated objective of empowering one crore families (5 crore Indians) in unbanked and underbanked locations and bring them into the banking fold. The Bank's SLI footprint has so far spread to thousands of villages across 25 states of the country. SLI is a holistic approach to people empowerment. It begins with occupational training, and includes financial literacy, credit counseling, livelihood finance and market linkages. This initiative is targeted exclusively at women through Self Help Groups (SHGs) and Joint Liability Groups (JLGs) as the Bank firmly believes that upliftment of a family starts with financial empowerment of women.

## Farmers may get additional insurance covers

▶ The government is considering giving farmers an option to avail two additional insurance covers as part of the Pradhan Mantri Fasal Bima Yojana (PMFBY). Prime Minister Narendra Modi made this announcement in the Lok Sabha while replying to the debate on the Motion of Thanks to the President's Address to the joint sitting of both the Houses of Parliament. As part of the pilot scheme, farmers across 45 districts would be able to choose two additional insurances from a list of seven along with the crop insurance scheme that would be implemented from April 1 this year. The other insurance schemes on offer are - Pradhan Mantri Jeevan Jyoti Bima Yojana, Pradhan Mantri Suraksha Bima Yojana and Chhatra Suraksha Yojana. These schemes are aimed at covering fire accidents at home, cover for farm pump sets, tractor insurance and motor bike insurance scheme. "These are seven things that are linked to the farmer. He can pick any two from this list and seek additional benefit by paying lower premium," Modi said. Modi said insurance companies had cited some difficulties in implementing this initiative on a pilot basis. "But, I have been insisting a lot," he said. The new scheme proposes a differential premium method, under which a farmer will pay 2% of the sum insured as premium for kharif crops and 1.5% for rabi crops. The scheme would also provide compensation for even loss of seed plants and post-harvest damage. It will also cover calamities - including hailstorms, unseasonal rains, landslides and inundation. Instead of relying on yield data, which is often delayed, to settle claims, the scheme will use smartphones, remote-sensing data and drones to assess crop damage.



## India, other developing nations press WTO to deliver on 'Nairobi promises'

India and other members of the G-33 group in agriculture have pressed the World Trade Organisation (WTO) to start work on a special safeguard mechanism (SSM) for farmers in developing countries and a permanent solution to the public stockholding programme as promised in the Nairobi Ministerial meeting in December. Developed

countries such as the US and Canada, on the other hand, have warned the WTO against rushing into formal negotiations, stating that they need time to think. The discussions took place at the meeting of the WTO's Committee on Agriculture, which was the first after the Nairobi meeting. "Different members stressed on the importance of different

aspects of the negotiations. The chair of the meeting said that he would have another round of consultations to pin down the content as well as format of the negotiations," an official tracking the meeting said.

## India asks Iran to review import tariff to make tea more competitive

In a move that would make Indian tea more competitive in the lucrative Iranian market, the Centre has asked Iranian customs authorities to be more flexible in calculating import duties to correct the disproportionately high levies being imposed on low-priced South Indian tea. In a recent meeting with Iranian officials, a delegation from India comprising representatives from the Tea Board and the Commerce Ministry also pressed for review of certain pesticide norms that are affecting exports from the country. "At present, the tariff line valuation for Indian tea in Iran is pegged to only the high-priced Assam and Darjeeling tea. As a result, buyers of low-priced South Indian tea end up paying much higher levies than what they



should be if the import duty is calculated on the actual price of such tea," a government official said. India has asked Iran to have different tariff line valuations for the premium varieties and the South Indian teas and also two separate ones for peak-season and off-season. The Iranian customs authorities will soon get back to us on this, the official said. "Indian tea exporters face a lot of competition from Sri Lankan tea in Iran and lowering of customs levies could play an important role in giving Indian tea an edge over its competitors," the official said. Iran imposes 20 per cent import duty on tea and charges 9 per cent VAT. A correct calculation of import duty on low-value tea can, therefore, make a considerable difference to exporters of low-priced tea. Commerce Ministry officials are also in talks with the Institute of Standards and Industrial Research of Iran for review of maximum residue levels (MRLs) of pesticides on tea imposed about a year ago which is resulting in rejection of some consignments of Indian tea. "The ISIRI has agreed to examine field trial data in India based on which they would take a re-look at their risk assessment of tea from India," the official said. India's tea exports to Iran were about 22 million kg (mkg) in 2015 against 18 mkg in 2014. However, with the country importing over 140 mkg of tea every year, India is looking at a higher share.



## Japan to Cut Imported Wheat Prices

Japan would sell imported wheat to domestic millers at an average price of 52,610 yen (\$468) per tonne in April-Sept, down 7.1% from the previous six-month period, the farm ministry said. The move reflects lower international prices amid plentiful global stocks and lower shipping fees.

## Low production likely to shrink pepper exports

▶ Vietnam has pushed India to third position in the global pepper market and exporters now foresee competition from Sri Lanka and Brazil. India's average production of pepper is 65,000 tonnes in the last three years and the country exports 20,000-22,000 tonnes a year. Unfavourable weather in Kerala and Karnataka may cause production to decline to 53,000 tonnes in 2015-16. Production in Vietnam may rise 10 per cent to 150,000 tonnes. "Indian production has declined and competing nations have raised their output in recent years," said Jojan Malayil, chief executive officer at Bafna Enterprises, an export house in Kerala. The Spices Board has estimated 53,000 tonnes of pepper production in 2015-16 against 65,000 tonnes a year ago and exports are likely to be 20,000 tonnes. "Unfavourable weather in Kerala and Tamil Nadu caused the fall in production. Some parts of Karnataka, too, have faced a pest attack," said A Jayathilak, chairman of the Spices Board.

## Clove imports more than double in 5 years as domestic output falls steadily

▶ Imports of cloves into the country more than doubled in five years, following a continuous decline in domestic production of the spice. In 2010-11, imports were at 7,000 tonnes valued at Rs 153.37 crore, against 14,950 tonnes valued at Rs 771.13 crore in 2014-15, according to Spices Board sources. Farmers in Idukki



district of Kerala, where it was widely cultivated until about two decades ago, have cut down the trees as the prices turned out to be non-remunerative and shifted to other crops. Besides, it requires more labour for harvesting and that was scarce in the State. During 2013-14, the production from 912 hectares of plantations in Kerala stood at 68 tonnes. Another major area of its cultivation in the country is Kanyakumari district's Nagarkoil region where from 869 hectares 816 tonnes were produced in 2013-14. Heavy incessant rains during the last North-East monsoon season in Tamil Nadu, have affected the crop and as a result the current crop is less by 30 per cent, S Subramaniam, a grower in Nagarkoil, said. According to him, the market there is steady at Rs 800 a kg. But, buyers are not forthcoming as everybody is busy with closing their annual accounts because of the financial year ending, he said. In Kumily, Kerala, the price is ruling at the same level, market sources said. In the upcountry markets, imported material is sold at prices ranging between Rs 500 and Rs 650 a kg, depending upon the quality. India is a net importer of this commodity, with an annual demand ranging between 15,000 and 20,000 tonnes, trade sources claimed. Imports are made from Sri Lanka, Madagascar, Comoros, Zanzibar and Indonesia, they added. The coming Indonesian crop is estimated at around 60,000 tonnes and is expected to hit markets next month, they said. Colombo crop is very low, while the crop in Madagascar, Comoros and Zanzibar are good. Current international prices are in the range of \$7,500-9,000 a tonne.

## Exports of coconut products on the rise

▶ Despite India's merchandise exports showing negative growth, export of coconut and coconut products registered an 8.73-per cent increase during April-January 2015-16.

The cumulative value of exports, other than coir and coir products, was Rs 1,188.27 crore against Rs 1,092.90 crore during the corresponding period of 2014-15. The efforts of the Coconut Development Board in promoting entrepreneurs to take up export of coconut and coconut products has also started yielding results, with the RCMC (Registration Cum Membership Certificate) issued to exporters crossing 2,000. Activated carbon, virgin coconut oil, coconut oil, dry coconut, desiccated coconut, copra, coconut shell charcoal, etc, are the major coconut products exported in the first 10 months. Activated carbon accounts for 45 per cent of export earnings, with the figure touching 51,644.61 tonnes valued at Rs 531.78 crore. Around 32 per cent of activated carbon finds its markets to the European Union, followed by the US. Export of virgin coconut oil also registered an astonishing growth of 340 per cent during the first half of 2015-16. Around 69 per cent of virgin coconut oil exported to the US and the figure was 6,575.98 tonnes. Fresh coconut exports during the first ten months of 2015-16 were 31,191.73 tonnes with GCC countries leading the show. Coconut shell products are also gaining popularity in international markets.

## FCI to put its godowns online by July

► In a bid to track stock position and quality of grains stored on a real-time basis, the Food Corporation of India (FCI) will link its 553-odd godowns through an online network by July this year. The purpose of the online depot project is to discontinue manual entry of foodgrains stock in each of FCI's depot for eliminating possibility of diversion of grains. The corporation has already completed a pilot run of the project in 30 depots located across the country. A formal inauguration of the project is slated later this week. Under the online project, all the depot managers and allied staff are trained with handling tablets for entering the stock positions in the real-time basis. Once all the depots owned by FCI are put on a single online platform, another 1,288 godowns hired by FCI from Central Warehousing Corporation, state warehousing corporations, etc. would be added to the platform probably by the end of next fiscal. The total cost of putting all the 1,842 depots online would be around R200 crore. The software and hardware of the online system has been developed by a private player, Ricoh India, which was selected through a bidding process. "Once all the foodgrain depots are linked to a platform, the entire movement or transportation could be tracked centrally," an FCI official said. The official said that the whole system of grain transport could be monitored thus eliminating possibility of diversion. According to another FCI official, the depot online system would facilitate process automation, standardisation and efficiency of the management of foodgrain distribution.



## Norman Borlaug Chair for AAU scientist

► Professor Bidyut Kumar Sarmah, an agricultural scientist from the Assam Agricultural University (AAU) was recently awarded by the Indian Council for Agricultural Research (ICAR) with the prestigious Norman Borlaug Chair. Dr Sarmah, Director, DBT-AAU Centre and Professor, department of Agricultural Biotechnology of AAU was nominated by the Vice-Chancellor, AAU Dr KM Bujarbaruah for this honour for his pioneering research in conferring insect resistance in grain legumes using Bt-genes. Prof Sarmah is also known for his commendable research in the field of agricultural biotechnology for developing insect-resistant Bt-chickpea which is in the process of deregulation through confined field trials. Prof Sarmah will hold the chair as a 'National Professor' initially for a period of five years and will receive a grant of Rs 2.5 crore for conducting research on 'Development of cisgenic chickpea resistant to pod borers'. He is the first agricultural scientist from north-eastern India to have been selected for this honour.



## Ninjacart Gets Rs 20 cr to Fight for Farmers

► Ninjacart, an online platform that connects farmers and brands to retailers, has raised 20 crore in a funding round led by Accel Partners. The round also saw participation from Qualcomm Ventures, Singapore-based M&S Partners and ZopSmart, the parent of online grocer ZopNow. The Bengaluru-based startup which helps supermarkets and kirana stores source fresh fruits and vegetables, staples and FMCG goods directly from farmers and brands, will use the cash to hire talent, invest in supply chain infrastructure and technology. "Due to marginal farming, poor logistics and zero market information, a number of middlemen get involved in sourcing the produce from farmers to markets," said Thirukumaran Nagarajan, chief executive officer at Ninjacart. "As a result, the farmer gets only one fourth of what the consumer pays." Ninjacart is trying to solve these problems by bridging the gaps so that the farmer gets a good value for his produce and the stores get quality goods at competitive prices, he added. "B2B fresh and staples is a multibillion dollar category," said Subrata Mitra, partner at Accel Partners. "It's highly unorganised and inefficient. Ninjacart is using tech and ops innovation to drive efficiencies in this unstructured marketplace."



## National online trading in agri commodities to begin from April

► Come September and the Karnataka government's initiative in getting farmers a state-wide e-market would be replicated elsewhere. The aim is to create a national e-market in this regard. This proposed National Agriculture Market (NAM) is to come about by electronically linking 585 major wholesale markets (mandis) in the country, termed Agricultural Produce Market Committees. Implementation of this idea is the responsibility of the Small Farmers Agribusiness Consortium (SFAC). The project had been announced last July by the central government, with a Rs 200 crore allocation for three years. The software contract has been awarded to a consortium led by Hyderabad-based Nagarjuna Fertilizers and Chemicals (NFC). "Online trading of 21 selected agri commodities will begin on the NAM in April, in 20 mandis. That will help bug fixing, if any, in the software. By September, about 200 mandis will be integrated with this platform and start trading of selected commodities online," said Vasudha Mishra, managing director, SFAC. She said the schedule is to link the 585 major mandis by September 2017. NFC, with Techno Brain Global FZE, an information technology company with a global presence, will provide technical support. And, after developing the software, operate and maintain the NAM portal for five years. Training will be imparted to the participants, state-wise. Mishra said: "We have mandated them to use open source software." The schedule is for linking 200 mandis by September, another 200 by March 2017 and the remaining 185 by September 2017. NCDEX E-Markets, a subsidiary of the agri-centric National Commodity and Derivatives Exchange, had linked the mandis of Karnataka. Farmers in that state are able to sell to the best bidder and commission agents also deal through that platform. The produce is graded and assayed, with the farmers paid on the spot. Prices are quoted accordingly, with farmers able to choose the best offer from a mandi. NCDEX E-Markets has also started linking the mandis in Andhra Pradesh and has signed a similar agreement with the government of Gujarat. Adds Mishra: "Both Gujarat and AP have said they will link their mandis to the NAM platform, once this is operational." Once NAM is fully operational, a farmer should be able to sell to anyone in the country who offers the best price.



## New pesticides approved for tea gardens

► To protect the green leaves from the pernicious attacks of pest-looper caterpillars at most of the tea gardens across the State, two new insecticides have been recently approved by the Central Insecticides Board (CIB) which were scientifically screened by a group of researchers of Tea Research Association (TRA) for four years since 2009 to 2012. The TRA's research found that Flubendiamide and Emamectin Benzoate were very effective pesticides to control the devastating pests in the gardens. The TRA is following the Tea Board of India's Plant Protection Code (PPC) to produce healthy tea through judicious use of chemicals in plantation and pest-management. The team of researchers, led by the then Chief Advisory Officer (West Bengal) of TRA Dr Sunil Kumar Pathak as the principal investigator, scientifically proved that both the pesticides could easily control the pest-looper caterpillars, like hyposidra talaca. As the Tea Board of India's PPC directive strictly restricts the use of many hazardous chemical insecticides since last year, planters are facing serious problems in controlling the pests that damage green leaves since the period of budding in hundreds of gardens across the length and breadth of the State. Sharing their worries, many planters said that since the PPC was imposed in 2015, neither could they find an "effective pesticides of permissible quality in the markets" nor could use many of the chemical pesticides, which they applied earlier for pest-management in the gardens. The managers of many gardens in Jorhat and Sivasagar districts reported that they had lost 10 to 15 percent of total crop due to attacks by pests in their respective gardens in 2015, though the climatic condition, including the amount of rainfall, was favourable. Asked about the effectiveness of the two recently-approved pesticides, Dr Pathak said that they would "definitely solve the problems of pest-looper caterpillars" in the tea gardens. "Since the past few years, the pests caused serious problems in our gardens across the State. The two pesticides, approved by CIB recently, have brought relief to the planters," said Dr Pathak, who is now working as the Chief Scientist and Deputy Director (ASA) of TRA's Toklai Tea Research Institute in Jorhat. The research was sponsored by the Tea Board of India under the 11th Plan and the research was conducted at the TRA's North Bengal Regional Research and Development Centre, he said.

# Food Processing for Increasing India's Food Potential



**Agriculture has to increasingly keep pace with the growing demand for food from the burgeoning population. The sector has been diligently catering to the demand from the people since the beginning of the civilization. However, with diminishing resources, the focus is now on producing more food with minimum inputs. At the same time, India is facing an unusual situation where the country produces more but loses a significant proportion of the produce due to storage woes and lack of infrastructure. However food processing can effectively reduce the distance from farm to fork and prolong the life of many perishable commodities. Identified as a priority sector, Food processing segment of agriculture has started to flourish and is in the process of realizing the dream of food for all and income for farmers.**

India endowed with varied agro ecological conditions and vast swathes of arable land, which happens to be the largest in the world, is home to many food crops. Primarily an agrarian country, India had to fight its way through famine, poverty and skewed political equations to arise out of utter helplessness in food availability to total food security. Overflowing granaries and truck loads of fruits and vegetables have become synonymous with India's agriculture. However, it would be an utter fallacy to believe that these surpluses are turning into real time profit for farmers. India is becoming incapable to deal with excesses and this ineptitude deeply undermines the efforts, the resources and the time that has gone into the farming operations.

Even as India celebrates its success in agriculture pronounced by heaps and mounds of food grains scattered in the grossly inadequate premises of FCI godowns, one cannot but feel remorse for the quantity of food that is lost owing to a complete lack of logistics or lack of infrastructure. India being the top producer of many agricultural commodities, holds undue advantage in turning this spectacle into actual profit. Despite five decades post green revolution, we still have wastages that have rocketed, with recently a Union Minister quoting the losses to the tune of Rs.90,000 crore.

### Agri Commodity Outlook

It goes without saying that India is at a safe distance from the pangs of famine and food exigencies that were experienced in the pre green revolution era. India today is a major producer of several agricultural commodities. During the last few years, India has been doing exceptionally well in production front. The dream run however was cut short last year with back to back droughts.

India is the world's second largest producer of Rice, Wheat and other cereals. India's food grain production is estimated to increase marginally to 253.16 million tonnes in crop year 2015-16 on likely improvement in output of wheat and pulses despite back-to-back drought. The estimate is, however, lower than the record 265.04 million tonnes (MT) in crop year (July-June) 2013-14, but slightly better than 252.02 MT achieved last year. Wheat, rice, coarse cereals and pulses are part of the food grain basket. "Overall food grain output is likely to be better than last year despite deficit monsoon for two straight years. Since February-March is crucial for wheat crops, we hope there

**India is the world's second largest producer of Rice, Wheat and other cereals. India's food grain production is estimated to increase marginally to 253.16 million tonnes in crop year 2015-16 on likely improvement in output of wheat and pulses despite back-to-back drought**



Second Advance Production Estimates of Major Kharif Crops During 2015-16

Crops	Production in Million Tonnes
Food Grains	253.16
Rice	103.61
Wheat	93.82
Coarse Cereals	38.40
Maize	21.00
Pulses	17.33
Tur	2.55
Gram	8.09
Oilseeds	26.34
Soyabean	9.13
Groundnut	7.18
Rapeseed & Mustard	6.84
Cotton	30.69 million bales (of 170 kg each)
Sugarcane	346.39

**Production of rice, a major kharif crop, is however projected to drop by 2 per cent to 103.61 million tonnes in 2015-16 crop year, from 105.48 million tonnes in previous year.**

Percentage of losses estimated for major produces	
Crop	Cumulative wastage (per cent)
Cereals	3.9 – 6.0 per cent
Pulses	4.3-6.1 per cent
Oil seeds	2.8-10.1 per cent
Fruits & Vegetables	5.8-18.0 per cent
Milk	0.8 per cent
Fisheries (Inland)	6.9 per cent
Fisheries (Marine)	2.9 per cent
Meat	2.3 per cent
Poultry	3.7 per cent

Source: CIPHET Study on post-harvest losses, 2010

would be no unseasonal weather conditions like hailstorm that we witnessed last year," said Agriculture Minister Radha Mohan Singh in an interview.

Barring wheat and pulses, production of coarse cereals, oilseeds, cotton, jute and sugarcane is estimated to be lower in 2015-16, as per the second advance estimate of the Agriculture Ministry.

Wheat output is projected to go up by 8.42 per cent to 93.82 MT in 2015-16, from 86.53 MT in the previous year.

Pulse output is also estimated to increase marginally to 17.33 MT this year from last year's 17.15 MT though it's still not sufficient to meet domestic demand. Among pulses, tur dal is expected

to decline to 2.55 MT in 2015-16 crop year, from 2.81 MT in the previous year. Similarly, urad dal production is also likely to decline to 1.74 MT from 1.96 MT in the said period, impacted by deficit rains. However, production of gram dal is pegged higher at 8.09 MT in 2015-16 as against 7.33 MT while that of moong production is estimated to increase marginally to 1.55 MT from 1.50 MT in the said period.

Production of rice, a major kharif crop, is however projected to drop by 2 per cent to 103.61 million tonnes in 2015-16 crop year, from 105.48 million tonnes in previous year.

As per the estimate, coarse cereal production is expected to decline 4.46 MT to 38.40 MT this year while that of oilseed output is projected to drop to 26.33 MT from 27.51 MT in the said period. Among oilseeds, soybean output is estimated to decline to 9.13 MT in 2015-16, from 10.37 MT in the previous year, while the groundnut production is expected to fall marginally to 7.18 MT, from 7.40 MT in the said period.

Sugarcane production is pegged lower at 346.3 million tonnes, cotton at 30.69 million bales of 170 kg each and jute at 10.40 million bales of 180 kg each.

### Export Economics of Agri Commodities

India is not only the largest producer of cereal, but also the largest exporter of ce-





real products in the world. India's export of cereals stood at Rs. 58279.80 crore during the year 2014-15.

Rice (including Basmati and Non Basmati) occupy the major share in India's total cereals export with 64.40% during the same period. Whereas, other cereals including wheat represent 35.60% share in total cereals exported from India during this period. The major importing countries of India's cereals during the period were Iran, Saudi Arabia, Indonesia, UAE and Bangladesh. Export of Basmati rice, one of the prized commodities from India, for the year 2014-15 stood at 37,02,260.12 MT at a value Rs. 27,597.87 crores.

Another important agri commodity that is involved in global trade is wheat. World trade in wheat is greater than for all other crops combined. Demand of India's wheat in the world shows a rising trend. The country has exported 29,24,070.18 MT of wheat worth Rs. 4,991.82 crores during the year of 2014-15.

India was the largest producer of maize in the world, with 14.06 lakh MT during the year 2011. The country ranks sixth in Maize production with 3.39 per-



Produce	Loss Value, Rs Crores/ annum
Cereals	20,098
Pulses	3,877
Oilseeds	8,278
Spices/ Plantation Crops	9,325
Fruits	16,644
Vegetables	14,842
Livestock	18,987

Exports of major processed food & related commodities from Food Processing sector					
S.no.	Exports	2012-13	2013-14 (P)	2013-14 (P)	
		(US \$ Million)		(%) Growth	(%) Share
	Total Exports	3,00,401	3,12,621	4.07	-
	Exports-FPI, of which	36,212	37,798	4.38	12.1
1	Marine products	3,464.08	5,014.89	44.77	13.3
2	Rice- Basmati	3,564.04	4,866.33	36.54	12.9
3	Meat & meat preparations	3,291.98	4,481.35	36.13	11.9
4	Rice-other than Basmati	2,651.97	2,875.67	8.44	7.6
5	Cashews	746.97	842.39	12.77	2.2
6	Fresh Vegetables	605.23	842.30	39.17	2.2
7	Fresh Fruits	607.79	726.76	19.57	1.9

Source: DGCI&S, Kolkata; P: Provisional Results

cent share in total world production. India's share to the global market has been steadily increasing. The country has exported 28,25,610.60 MT of maize worth of Rs.4,037.50 crores during the year 2014-15.

India also exports other cereals like Bajra, Barley, Buck Wheat, Canary Seed, Grain Sorghum, Jowar, Maize Seed, Oats, Other Cereals, Ragi and rye to countries like Iran, Jordan, United Arab Emirates, Pakistan and Kenya. During 2014-15, India had exported 6,88,199.93 MT of cereals belonging to this category which was valued at Rs. 1,224.02 crores.

Besides the staple cereals, India also exports good quantity of fresh fruits and vegetables. During 2014-15, India exported fruits and vegetables worth Rs. 7474.14 crores which comprised of fruits worth Rs. 2771.32 crores and vegetables worth Rs. 4702.78 crores. Mangoes, Walnuts, Grapes, Bananas, Pomegranates account for larger portion of fruits exported from the country while Onions, Okra, Bitter Gourd, Green Chillies, Mushrooms and Potatoes contribute largely to the vegetable export basket. The major destina-

tions for Indian fruits and vegetables are UAE, Bangladesh, Malaysia, UK, Netherland, Pakistan, Saudi Arabia, Sri Lanka and Nepal.

### Food Waste to Food Processing

India, although has successfully emerged from the abysmal pits of food shortage and today boasts of serial production bonanzas, the Asia's

third largest economy has a totally shameful record of food wastages.

The food wastage is rampant across a wide section of agricultural products. While the perishable nature of fruits and vegetables may be one reason, it is the lack of proper storage infrastructure in the case of cereals. The food loss statistics associated with India's agriculture is a concern of mammoth proportions – a fact that



## 'Food Processing Sector - a Vital Link between Agriculture and Industry'

Tai Industries started its operations in 1986, and since then has been engaged in the marketing of the 'DRUK' brand of fruit products, manufactured by its group company – Bhutan Fruit Products Private Limited. With a claim to an unmatched quality and taste, DRUK with its exhaustive range of packaged fruit and vegetable products such as processed fruits, vegetables, jams, squashes, pickles, honey, fruit slices and cornflakes have conquered international markets. With a vast product line up, state-of-the-art processing techniques and resolute quality control parameters, the company has a thick base of clientele across hotels, clubs, hospitals, nursing homes, bakeries and confectioners. It has won 4 prestigious MONDE INTERNATIONAL AWARD in Madrid in 1984 and 5 in Lisbon in 1985. While interacting with Agriculture Today, Mr. Rohan Ghosh, Managing Director, Tai Industries discussed the general scenario of food processing sector in India. "Food processing industry in India is a sector that has gained prominence in the recent years. Availability of raw materials, changing lifestyles and appropriate fiscal policies have given a considerable push to the industry's growth. This sector serves as a vital link between the agriculture and industrial segments of the economy. Strengthening this link is of critical importance to reduce wastage of agricultural raw materials, improve the value of agricultural produce by increasing shelf-life as well as by fortifying the nutritive capacity of the food products; ensure remunerative prices to farmers as well as affordable prices to consumers. Adequate focus on this sector could greatly alleviate our concerns on food security and food inflation. India already is a leading exporter of several food products. To ensure that this sector gets the stimulus it deserves, Ministry of Food Processing Industries is implementing a number of schemes for Infrastructure development, technology up-gradation & modernization, human resources development and R&D in the Food Processing Sector," said Mr. Ghosh. He also mentioned that liberalization and the growth of organized retail has made the Indian market more attractive for global players. "With a large agricultural resource base, abundant livestock and cost competitiveness, India is fast emerging as a sourcing hub of processed foods. With a population size of 1.22 billion, out of which 604 million are under the age of 24, this rising youth population is likely to increase India's overall food consumption. Rising income levels, affluence and a growing middle-class, with one-third of the population expected to live in urban areas by 2020 will result in favourable economic & cultural transformation, shift in attitudes & lifestyles. Consumers are experimenting with different cuisines, tastes and new brands. There is an increase in awareness and concern for wellness and health, high protein, low fat, wholegrain and organic food, all will also help the farmers to increase their income," opined Mr. Ghosh. But he was also quick to point out

the challenges of the sector. He pointed out the absence of Comprehensive national level policy on food processing sector; Availability of trained manpower; Processing plants with cost effective technologies; Cost effective food machinery & packaging technologies; Constraints in raw material production Inadequate infrastructural facilities; Access to Credit; Market Intelligence; Inconsistency in central and state policies; Lack of Applied research; Adequate value addition; Lack of specific plan to attract private sector investment across the value chain; Food safety Laws ; Weights & measures Act and Packaging commodity rules as factors responsible for India's nascent food processing sector. "India's processing capabilities are most often dubbed as underutilized. Lack of information on production, nutritional quality, consumption and utilization of many of the underutilized plant products which are unpopular compared to major fruits. Lack of awareness on economic benefits and market opportunities; Lack of technology for value addition through village level food processing; Lack of improved quality planting material; Lack of technology to reduce the gestation period and enhance the fruit production; Lack of interest by researchers, agriculturists and extension workers; Lack of producer interest; Low yield; Post-harvest and transport losses; Non-existence of marketing network and infrastructure facility for underutilized fruits are some of the challenges faced," mentioned Mr. Ghosh. He also said that hundred per cent FDI in marketing of food produced in India may be a way to partly open retail for foreign retailers especially relating to fresh produce. "The move will benefit farmers, give a fillip to the food processing industry and create vast employment opportunities. This could also help those foreign players who are planning to come to India to produce themselves but want to test the market first. The move is very progressive and will help in reducing wastage, helping farm diversification and encourage industry to produce locally within the country," said Mr. Ghosh. However, he was optimistic about the future of food processing in India. He believed that the Indian food industry is poised for huge growth, increasing its contribution to world food trade every year. He said that in India, the food sector has emerged as a high-growth and high-profit sector due to its immense potential for value addition, particularly within the food processing industry. "Accounting for about 32 per cent of the country's total food market, the food processing industry is one of the largest industries in India and is ranked fifth in terms of production, consumption, export and expected growth. The total food production in India is likely to double in the next 10 years," Mr. Ghosh expressed hope.



was corroborated by the previous Agriculture Minister, Sharad Pawar when he informed the Parliament that India bears losses worth Rs. 44,000 crore due to loss of fruits, grains and vegetables.

Statistics from different sources point to this dismal truth.

A nation-wide study on quantitative assessment of harvest and post-harvest losses for 46 agricultural produces in 106 randomly selected districts was carried out by CIPHET, Ludhiana. The study mainly considers the quantitative loss as the material rendered "unfit for human consumption". The different stages considered for assessment of losses are harvesting, collection, threshing, grading / sorting, winnowing /cleaning, drying, packaging, transportation, and storage depending upon the commodity. The report of the study was released in 2010. The study had analyzed harvest and post-harvest losses of major agricultural produces at national level which was estimated of the order of Rs. 44,143 crore per annum at 2009 wholesale prices.

As per a study undertaken by the ICAR through its All India Coordinated Research Project on Post-Harvest Technology Network conducted in



fourteen Agro-Climatic zones of India, Indian Farming community incur losses equal to Rs. 92600 cr. per year.

While the lack of storage infrastructure appears to be the primary reason, another possible scenario is the underutilized potential of processing sector. India despite being a major food producer is unable to convert these excesses into value added products. The level of food processing in India is only 6% ( 2.2% of Fruits and

Vegetables, 8% of Marine products, 6% for Poultry and 20% for Buffalo Meat) where as it accounts to more than 70% in Countries like USA, China, Malaysia and Philippines.

The food wastage that currently India is staring at significantly reduces the food available for consumption. At a time when there is a constant effort to enhance food production, these kind of losses severely restrains our goal of food for all. The losses should



## Basmati – India's Pride

"India contributes 85 per cent of basmati rice cultivation. The rest is contributed by Pakistan which is the only other country where basmati is cultivated other than India", says Vijay Setia, Executive Director, Chaman Lal Setia Export Ltd. and former President, All India Rice Exporters Association in an interaction with Agriculture Today. Chaman Lal Setia Export Ltd. is one of the oldest and hi-Tech Rice Millers cum Exporters of Basmati rice of all varieties from India with state of the art processing units based in Karnal, Amritsar, Delhi and corporate office in New Delhi. Makers of the famous Maharani rice, the company is recognized as star export house by the Govt. of India, ISO 9001-2008, HACCP Certified and also out of automatic detention list of Food & Drug Administration (FDA)-USA. Global trade of basmati rice is 4.5 million tonnes, whereas Indian share is around 4 million tonnes. Maharani Rice has a total business of 1 million tonnes in branded and in private label. Total turnover is above Rs. 500 crores. Despite back to back droughts, the yields of basmati rice were not affected in 2015. However, Mr. Setia said that in some pockets effect of drought was noticed but crop size was good - equal or better than last crop year. For a crop like basmati, climatic parameters are crucial factors affecting the quality and quantity of yield. Mr. Setia also conformed to this and said that warm weather at the time of grain filling reduces yield and quality of rice. An export oriented company, Mr. Setia was not happy with India's export policy. "There are two serious flaws. Exports are allowed on DA which means on credit with any guarantee. This results in the exploitation of Indian suppliers leading to many bad debts. No country would allow such sale. This is affecting earnings of exporters and farmers. There is no restriction on cash payment above twenty thousand to farmers. It is a biggest evil and spoiler making them totally dependent for seeds, fertilisers and diesel. Poor inputs lead to poor quality and productivity" opined Mr. Setia.



be converted into gains by involving the right technology and industry. This year's budget has placed tremendous emphasis on doubling farmers' income. A well-developed food processing sector with higher level of processing helps in the reduction of wastage, improves value addition, promotes crop diversification, ensures better return to the farmers, promotes employment as well as increases export earnings. This sector is also capable of addressing critical issues of food security, food inflation and providing wholesome and nutritious food to the masses.

The distance from food wastage to food processing is fairly short if we are invested financially and politically. India offers

tremendous opportunities for food processing. There is abundant supply of raw materials, a constantly increasing demand for value added food products from a dynamic population and emphasis by the government on increasing the food processing capabilities of the country.

## Food Processing – The Rising Star

Food processing sector is one of the largest sectors in India in terms of production, growth, consumption, and export. India's food processing sector covers a variety of agricultural products including fruit and vegetables; spices; meat and poultry; milk and milk products, alcoholic beverages, fisheries, plantation, grain processing and other consumer product groups like confectionery, chocolates and cocoa products, soya-based products, mineral water, high protein foods etc.

In the last few years, the food processing sector has been growing at a faster rate than agriculture sector. Food Processing Sector has emerged as an important segment of the Indian economy in terms of its contribution to GDP, employment and investment. The sector constitutes as much as 9.0 and 11.0 per cent of GDP in Manufacturing and Agriculture sector respectively. Food Processing Industries sector has been growing at an Average Annual Growth Rate (AAGR) of around 8.4 per cent as compared to around 3.3 per cent in Agriculture and 6.6 per cent in Manufacturing. Performance of this sector has improved



## Ushering in Processing

Usher Agro Ltd is India's leading agro processing company catering to a consumer base spread across the country and overseas. Incorporated in the year 1996, Usher paved the path for the country's large-scale rice miller's community and turned around milling operations into a full-fledged industry offering optimum value to the stakeholders, the farmers and the distributors. Positioned as a complete basic food processor, Usher Agro Limited deals in rice, wheat and pulses. Usher Agro sources its raw materials from all mandis across Punjab, Haryana, Uttar Pradesh, Madhya Pradesh and Bihar. Its flagship brand, Rasoi Raaja is a common household name in India and abroad and an epitome of credibility and quality delivered by latest technology. Usher Agro Ltd also distributes a massive range of non-branded food grains produced with same technology with equal weightage to quality, nutrition and value for money. While interacting with Agriculture Today, Mr. Vinod Kumar Chaturvedi, Managing Director, Usher Agro Limited discussed the general scenario of rice processing in India. "The general (rice) processing sector is mostly unorganized. However, the market is demanding more branded products and hence encouraging the market towards becoming organized. The reduction in margins have also increased the model of working on yields which is only possible in an organized sector. The sector was reserved for SME until 1998. The rice processing in India takes place in small mill which conducts most of their operations manually. The sector as a whole is missing modern technology. The brand awareness and the change in purchase habits should be there", said Mr. Chaturvedi. Agri export businesses are at the receiving end when the government imposes random bans on agri commodities. "The government had never banned non basmati rice as whole. The ban was a price ban i.e., any rice having price below 950 \$ could not be exported from India. The exports in ban period were 8 million MT & Exports after lifting of ban is around 12 MMT. The lifting of ban has increased the export of additional 4MMT and the combined export market does not comprise of more than 10% of paddy produced by India" mentioned Mr. Chaturvedi. Another area of concern for export houses is the rejection of consignments by importing countries. Mr. Chaturvedi stressed that the issue of pesticide residue is a concern and has affected the business for all the exports of Punjab & Haryana as the extensive use of fertilizers has resulted in high residual value. "These measures have affected the exports to specific countries like USA. These exigencies can be handled by purchase planning," he said. For the future Usher group is on the way to achieve its objective of being the "Green Refinery".



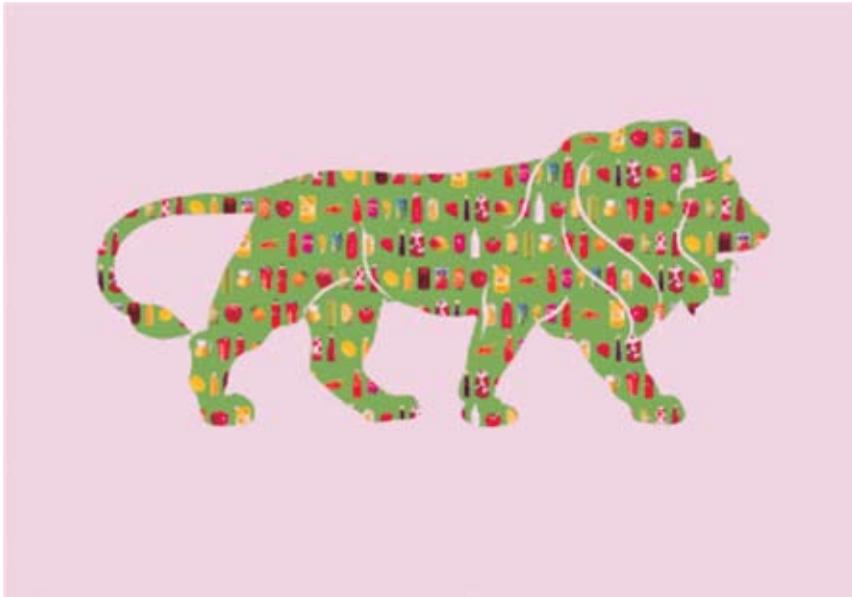
for all the processed food products up to 100 per cent on automatic route except for items reserved for Micro and Small Enterprises (MSEs) subject to applicable laws/ regulatory, securities and other conditions. For manufacture of items reserved for Micro Small Medium enterprises, FDI is permissible under automatic route up to 24 per cent of the capital. If foreign investment is more than 24 per cent, Industrial License under Industries (Development & Regulation), Act 1951 is required. In terms of fixed capital, FP sector is growing at an AAGR of 20.35 per cent during five years ending 2011-12. As per the latest, ASI 2011-12, the Fixed Capital in FP Industry stood at Rs. 1,45,038 crore.

## Government Incentives for FP Sector

Considering the mounting losses of agri products, it becomes imperative to develop capabilities that can convert the damages into investments. However, this proposition requires investment and an unfailing infrastructural support.

Keeping in view of the need for proper preservation and conservation of agro products and to ensure multi-dimensional agricultural Infrastructure development, the Ministry of Food Processing Industries introduced a "Mega Food Parks Scheme" in September 2008 which envisaged a well defined agri/ horticultural- processing zone containing state of the art processing facilities with support infrastructure and well established supply chain. It aimed to create a modern food processing infrastructure for the small and medium processing units who otherwise have not developed due to capital intensive nature of food processing equipment. This was a flagship program of the Ministry which intended to facilitate establishment of an integrated value chain, with food processing at the core and supported by requisite forward and backward linkages. The broader idea behind the scheme was to bring together farmers, processors





and retailers, and link agricultural production to the market so as to ensure maximization of value addition, minimization of wastages and improving farmers' income. Under the scheme (2008-09) of mega food parks, the Ministry had sanctioned 42 projects throughout the country. Of these, 17 parks were allotted in March 2015 to state governments and private firms, including Adani Ports & SEZ. All the 42 mega food parks approved by the government will become operational by 2019, which would yield a potential investment of about Rs 14,000 crore.

Cold chains are yet another crucial area where development is happening, albeit at a slower pace. Given the geographical diversity of India, a comprehensive development takes time. As per the data available to the government as on 30<sup>th</sup> October, 2012, there were 6,488 cold storages having cumulative capacity of 30.75 million MT. 96% of the cold storage are in Private Sector; more than 75 per cent of the capacity is utilized only for potato and only about 23 per cent are under multi commodity category. National Centre for Cold Chain Development (NCCD), an autonomous centre for excellence, has been established



as a registered society to work in close collaboration with industry and other stake holders to promote and develop integrated cold chain in India. Several schemes have been developed by the government to promote this significant segment. Central sector scheme of Integrated cold chain, value addition and preservation Infrastructure and Centrally sponsored scheme of cold chain, Primary Processing Centre, and Reefer trucks under National Mission on Food Processing (NMFP) are two such schemes launched to encourage cold chain development in India. The objective of the scheme of Cold Chain, Value Addition and Pres-

ervation Infrastructure is to provide integrated cold chain and preservation infrastructure facilities without any break from the farm gate to the consumer. It covers pre-cooling facilities at production sites, reefer vans, mobile cooling units as well as value addition centres which includes infrastructural facilities like Processing/Multi-line Processing/ Collection Centres, etc. for horticulture, organic produce, marine, dairy, meat and poultry etc. Individuals, Groups of Entrepreneurs, Cooperative Societies, Self Help Groups (SHGs), Farmers Producer Organizations (FPOs), NGOs, Central/State PSUs etc. with business interest in Cold Chain solutions are eligible to setup integrated cold chain and preservation infrastructure and avail grant under the Scheme. With a view to promote investment in Cold Chain, Department of Economic Affairs, Ministry of Finance has covered Cold Chain under Infrastructure category. So far, 138 cold chain projects have been commissioned in India.

Availability of skilled manpower has been identified as one of the major challenges of Indian Food Processing Industry. The Ministry of Food Processing Industries (MoFPI) is working in close collaboration with Food Industry Capacity and Skill Initiative (FICSI), the Sector Skill Council (SSC) in food processing and regularly guiding and assisting it in achieving its mandate. The Ministry is helping to strengthen the SSC in this sector by helping in all possible ways to complete the validations of the Qualification Packs (QPs) for each job role that have been developed and also helping in development of the course curriculum through National Institute of Food Technology Entrepreneurship and Management (NIFTEM), an institute under this ministry. The Ministry is also conducting weekly meetings with all stakeholders to review the progress. The two institutions under the administrative control of this Ministry i.e., NIFTEM



The project entails an investment of Rs. 400 Crore and it will be executed in a phased manner. UAE based Lulu Group plans to invest Rs. 2,500 Crores for a fruit and vegetable processing unit, an integrated meat-processing unit, and a shopping mall in Hyderabad. The German company, Linde Group is planning to invest USD 200 Million in the Indian state of Andhra Pradesh's fishing industry. The company plans to work in freezing of seafood and add value to exports. Linde also intends to invest in an air circulation plant, a lab and an academy that will train people in food processing.

Union Budget 2016-17 has proposed to allow 100 per cent foreign direct investment (FDI) through the Foreign Investment Promotion Board route in marketing of food products produced and manufactured in India. The government claims this move will ensure that the FDI policy also addresses the requirements of farmers as well as the food processing industry, citing that a lot of fruits and vegetables grown by farmers do not fetch the right price or fail to reach the market in time. To promote use of refrigerated containers, the government has also reduced basic customs duty on such containers to 5 per cent from the existing 10 per cent, and excise duty to 6 per cent from the current 12.5 per cent. This will help boost setting up cold chains needed for efficient supply chains in the country.

Despite being a global giant in agriculture, we in India have only explored a miniscule fraction of the food processing sector. Supply chain mismanagement, infrastructure gaps, APMC restrictions on raw materials procurement, complex FSSAI restrictions and inadequate organized retail has bottled up our food processing aspirations. With several schemes and programmes, we are on the right track to increase our food potential through food processing.

and Indian Institute of Crop Processing Technology (IICPT) are also conducting regular programmes/courses on skill development and entrepreneurship for the youth, farmers, self help groups and industry.

The Ministry of Food Processing industries has also come out with a map depicting the food availability in India. The map available in the ministry website identifies surplus and deficient areas of various agricultural and horticultural produce in the country which can help in planning processing clusters by means of setting up suitable facilities in different parts of the country.

The government's Make in India Programme has also taken Food Processing under its wings. Make in India is an initiative launched by the Government of India to encourage multinational, as well as national companies to manufacture their products in India. It was launched by Prime Minister Narendra Modi on 25<sup>th</sup> September 2014. The food-processing sector has been identified as one of the priority sectors under Make in India, an initiative of the Prime Minister of India, with a view to attract investments to this sector. Many popular food processing companies have expressed

their desire to be part of the project. PRAN-RFL Group, a Bangladesh based company with business in food processing segment is setting up a manufacturing plant in Tripura with a total investment of about USD 33 Million (Rs. 200 Crore). The company has already invested Rs. 50 Crore and is likely to invest the remaining amount over next two to three years. The unit has already commenced work and is employing 500 people. With likely expansion over the next few years, it is estimated that more than 1000 workers would be employed by 2017. ITC, one of India's foremost multi-business enterprise with a market capitalization of USD 40 Billion and a turnover of USD 8 Billion, has indicated investments of about USD 583 Million (Rs. 3,500 Crore) in West Bengal, which would go into constructing two integrated consumer food factories, an IT development center and a hotel. ITC also indicated that it is in the process of setting up 20 factories for its FMCG products and seeks to garner a revenue stream of Rs. 1,00,000 Crore from this segment by the year 2020. Balaji Wafers Pvt. Ltd is setting up wafers and snacks manufacturing unit at Indore in Madhya Pradesh.

# ‘INDIAN SPICES OCCUPY AN IMPORTANT POSITION’

India produces a wide range of spices. At present, Indian spice production is around 3.2 million tonnes valued at approximately 4 billion US \$, and holds a prominent position in world spice production. Spices Board (Ministry of Commerce and Industry, Government of India) is the flagship organization which has been established for the development and worldwide promotion of Indian spices. The Board is an international link between the Indian exporters and the importers abroad. The Board has been spearheading activities for excellence of Indian spices, involving every segment of the industry. In an interview with Agriculture Today, Dr. A. Jayathilak, Chairman, Spices Board discusses the relevance of spices in Indian agriculture and Indian economy.



## Which are the economically important spices produced by India?

India is the only country which produces and exports around 65 varieties of spices. The major spices that contribute to the Indian economy are Chilly, Pepper, Small Cardamom, Large Cardamom, Turmeric, Ginger, Cumin, Nutmeg and mace, fenugreek, Mint products, Spice oils and oleoresins.

## What is the market share of Indian spices globally?

Indian spices have an important position as well as demand in the International market. Export of Indian Spices contributes to about 50% of the International spice market share.

## What role can spices play in doubling farmers' income as emphasized in the budget?

The spice crops yields better income to the farmers when compared to other cash crops. The demand for spices is high - not only in India but also in global market, due to its usage in multiple fields such as culinary, medical, cosmetic, perfumery, textiles etc. The demand for value added spice products like oils, oleoresins, spice colours, dried/flaked/powdered spices, etc., is increasing day by day. The farmers can earn good income by utilizing the opportunity and demand for spices and value added spice products, prevailing in the global market. The studies have shown that cost-benefit ratio of spices is on a higher side when compared to other crops, and can be doubled if good agricultural practices like judicious use of fertilizers and pesticide are adopted by the farmers. The production of organic spices fetch the farmers a premium price, which may be double or triple the price of the spice crops produced by conventional methods. Since the spices farmers are mostly small farm holders, the practice of organic farming is easier, and shall fetch them good income.

## What is the market share of organic spices in India and abroad?

India exports about 3100 metric tonnes of organic spices fetching a value of Rs 103.71 crores. Of the total spice production, the ratio of certified organic spices is only 4% of which approximately 1% is exported and the rest are being purchased in the domestic market due to its high demand.

## Are there any certifications in India to certify organic spices? Which are the agencies involved?

The Ministry of Commerce and Industry, Government of India, launched the National Program on Organic Production (NPOP) in the year 2000, to provide a focused and well directed development of organic agriculture and quality products. NPOP provides information on standards for organic production, systems, criteria, and procedures for accreditation of Inspection and Certification bodies, and the regulations governing its use. There are over 25 certification bodies accredited by NPOP in India. The list is available in

site [www.apeda.gov.in/apedawebsite/organic/npop\\_certification\\_bodies.doc](http://www.apeda.gov.in/apedawebsite/organic/npop_certification_bodies.doc)

### **How does a geographical indication improve the marketability of Indian spices?**

Geographical indication (GI) status of Indian spices will help branding of spices as premium products that cannot be matched by similar crops grown in other parts of the world. The GI certification provides higher level of protection for notified goods, and civil and criminal remedies for infringements. This can ensure the authenticity and quality of the GI registered Indian spices boosting the demand for the products in global market, thereby increasing the export returns of the country. The cultivation of GI spice crops shall help the farmers to get premium price for the crop. The list of Indian spices having GI status are Malabar Pepper, Alleppey Green Cardamom, Coorg Green Cardamom, Naga Mircha (Chilli), Guntur Sannam Chilli, Byadagi Chilli, Sikkim Large Cardamom, Mizo Chilli and Assam Karbi Anglong Ginger. The studies are being conducted to identify and check the feasibility for obtaining the GI status for other spices.

### **Why does Indian (including spices) consignments get rejected by foreign countries? Don't we have enough quality safeguards?**

The quality standards vary from country to country. The exporters have to follow the quality standard specified by the countries to which they are exporting to avoid and decrease the volume of the rejection. The Export Inspection Council of India (EIC) has developed voluntary certification programmes besides regulatory export control, especially in food sector. Certification is mandatory in the areas of fish & fishery products, dairy products, poultry products, egg products, meat & meat products and honey. The certification covers the important specification/

### **The quality standards vary from country to country.**

**The exporters have to follow the quality standard specified by the countries to which they are exporting to avoid and decrease the volume of the rejection**

quality standards only. The projects are being designed to set a universal code of quality standards of various food products in order to smoothen and solve the issues pertaining to the trade. This shall help in reducing the problems like consignment rejection which mostly arise due to export of batch of products to multiple countries with different quality standards.

Quality Evaluation Lab of Spices Board provides analytical support for mandatory inspection on the consignment of chillies and chilli products exported from India since 2003 against the incidence of Sudan and Aflatoxins. This was extended to turmeric powder for the clearance of Sudan I – IV since May 2005 and further extended to Nutmeg, Mace and Ginger for the conformance on Aflatoxin regulations. Due to the above mandatory inspections introduced by Spices Board, the rejection rate have reduced drastically.

### **Are you satisfied with the budget allocation to agri sector?**

The budget 2016-17 has given main focus to agriculture sector, which shall help in improving the status of all stakeholders in the agriculture sector. The increase in budget shall help in focusing of mechanization of the agriculture sector, improve irrigation facilities, effective implementation of crop insurance scheme, etc., which shall help in improving the living standards of the farmers as well as the agriculture economy of the country.

### **What are the challenges associated with spice**

### **cultivation?**

Traditionally, spices in India have been grown in small land holdings by small scale farmers, with exception of large and small cardamom which is cultivated as plantations. The primary challenges are lack of knowledge of Good agriculture practices and Good hygiene practices among the farmers. In spite of training classes and seminars, most of the farmers are still reluctant to adopt the new techniques and new varieties of crops, or even replant the senile crops in the field, due to fear that it might not support their cultivation. They still rely on the agencies who supply the pesticides and fertilizers for guidance, which leads to increase in expenditure on farming. Also, it leads to accumulation of pesticide residues in the final products, which adversely affect the income from the crop. The traditional harvest, processing and storage methods also affect the quality of the final product which adversely affects the profit of the farmers, which in turn shall affect the spice sector.

### **How can the proposed e-market help in spice marketing?**

The implementation of e-market is one of the main achievements of Spices Board. This shall facilitate the farmers and manufacturers in multiple ways in terms of earning and saving time. The implementation of e-auction shall ensure smooth, transparent and efficient running of the auction. The e-auction facility shall enable the farmers to fetch fair price for their produce by removing the intermediaries between them and the exporters/buyers. Through the project, the farmers can get updated price of the crops, which shall guide them to choose the day they want to sell the product at the auction. This shall be a boon for the farmers in remote areas, where collection and transportation of the produce to markets is difficult. Also, through e-marketing, indirectly we can promote computer literacy in the area.

# 'FOOD PROCESSING SECTOR HAS HUGE EMPLOYMENT POTENTIAL'

Shri Mahila Griha Udyog, the makers of the famous Lijjat Papad, is a Women's organisation manufacturing various products from Papad, Appalam, Masala, Gehu Atta, Chapati, SASA Detergent Powder, SASA Detergent Cake (Tikia) and SASA Liquid Detergent. With its Central Office at Mumbai, the organisation is widespread through its 81 Branches and 27 Divisions in different states all over India. Membership has also expanded from an initial number of 7 women from one building to over 43,000 women throughout India. Lijjat Papad has been chosen as a Power Brand 2010-2011 by the Indian Consumer. The Economic Times Award was given to the Institution for Corporate Excellence "Business Woman Of the Year". Also, coveted awards like Best Village Industry Institution" and "Brand Equity Award" were also bagged by this institution. In an interview with Agriculture Today, Smt. Swati R. Paradkar, President, Shri Mahila Griha Udyog, discusses the role played by the institution in empowering women of India.

**Lijjat Papad was one of the earliest women self help group ventures and symbol of women's strength. What is the secret behind the success of this venture?**



When Shri Mahila Griha Udyog Lijjat Papad was launched, it was a humble beginning. On the day - 15<sup>th</sup> March, 1959 - a pioneer batch of seven ladies had set the ball rolling. As the days went by, more and more ladies joined them, and the institution started to grow. In those early days, the path was not easy. The institution had its trails and tribulation. Faith and patience of the members were

put to test on several occasions. They had no money. Literally the Institution started from scratch, on borrowed sum Rs.80/- on the condition that it must earn and return Rs.200/- within a stipulated time. The institution had opted for the goal of self reliance and self growth from the very beginning. As a matter of principle, no monetary help was sought from any quarter. Even voluntarily offered donations were declined. So work started on commercial footing, as a small scale venture. Difficulties and hurdles were there, but they were accepted and they met them with a smile. What really helped the institution was the excellent quality of the product - the papads, which had remained uniform from the very first day of its production. At no time, the members allowed it to deteriorate. The principles upon which the institution was based, had made Lijjat Papad a successful organization.

**Had it been different, if women were not involved in this venture?**

Our Institution is a Village Industry and papads are made manually by hand and it is possible only when women are involved.

### What is the level of food processing in India?

The level of food processing in India is increasing. The Government has recently implemented policies and schemes like sanctioning Mega Food Parks providing affordable credit facilities to the sector, introducing new technologies and encouraging investments in this sector. This will lead to growth and development of the food processing sector. We are producing good quality processed food products like papad, and we believe in giving high and best quality products to our consumers.

### Despite being a major producer of food grains, India has not fully exploited the potential of food processing. Why?

Agriculture and Food Processing sectors are closely connected and important parts of our economy. Agriculture needs to be protected with facilities for reducing wastages, adequate storage and infrastructure development, so we can utilize the food grains to the maximum for food processing industry. In India, we produce food grains on large scale, but there are no facilities to ensure adequate storage of the same. If we utilise food grains to the maximum, we will be self sufficient and therefore import of food grains will be reduced.

### How would the recent announcement of FDI in the marketing of food products produced in India affect food processing sector of the country?

This announcement has been made only recently and the policy will have to be studied. The Food Processing sector nevertheless needs to be protected and safeguarded and the Government may consider this aspect when FDI is actually brought to effect.

### Being the member in the National Food Processing




---

**We will venture into new products after studying its potential in generating self-employment opportunities for women. We are concentrating on providing large self-employment opportunities to women**

---

### Development Council, what are your suggestions to increase the food processing capabilities of the country?

At the meeting of National Food Processing Development Council, we had discussed about a National food processing policy to be framed and uniformly followed by states in co-operation with Industries. Hurdles in development should be removed, government clearance made liberal and projects should be cleared within stipulated time. This will help in developing the sector and increase its capabilities. Food Processing technology has to be improved to reduce wastages which will be beneficial for export purpose which in turn will lead to increase in foreign exchange reserves.

### What role can food processing play in women's empowerment?

The sector has huge employment potential. Economic self-reliance leads to raising standards of women, thus empowering them. Our Institution has demonstrated this fact. Through our institution, 45,000 women have been empowered. Women are more conscious of importance of food processing, which therefore, will increase the employment opportunities in this sector.

### What are the future products in the pipeline for the group?

We are manufacturing products with the basic idea of women getting self-employment opportunities through this. We have recently started Multi-Grain Atta. We will venture into new products after studying its potential in generating self-employment opportunities for women. We are concentrating on providing large self-employment opportunities to women through our existing products such as making of papads and thus reaching out to maximum customers.

# ‘INDIAN FOOD PROCESSING INDUSTRY UNDERGOING A SIGNIFICANT TRANSFORMATION’

Adani Wilmar Limited (AWL) is a joint venture incorporated in January 1999 between Adani Group, the leaders in International trading & Private Infrastructure with businesses in key industry verticals - resources, logistics and energy, and Wilmar International Limited - Singapore, Asia's leading Agri-business group with business activities including oil palm cultivation, oilseed crushing, edible oil refining, sugar milling and refining, specialty fat, oleochemical, biodiesel and fertilizer manufacturing and grain processing. The joint venture kicked off with the commissioning of India's first port-based refinery at Mundra, Gujarat and later on other such units were setup across other locations. Adani Wilmar has a number of products for the consumer segment which can be categorized in to edible oils, Rice, Besan & Pulses. The company's brand, 'Fortune' has been voted as "India's No. 1 Edible oil brand" as per Nielsen Retail Index Report. In an interview with Agriculture Today, Mr. Atul Chaturvedi, CEO and Director of Agro Business in Adani, talks about the general scenario of food processing in India and the opportunities and challenges of the sector.



## **What is the market scenario of processed food products in India?**

Accounting for about 32 per cent of the country's total food market, the food processing industry is one of the largest industries in India, and is ranked fifth in terms of production, consumption, export and expected growth. With available cost-competitiveness and by adopting international standards, India has emerged as a fast growing hub for processed foods. Having said that, I feel the sector has huge scope for improvement. India witnesses nearly 12% wastages in fruits and vegetables annually, due to lack of modern harvesting technologies and cold chain infrastructure. The processing levels of fruits and vegetables stand at a meager 2% of total produce which should be at least 10% in Indian context.

## **What are your views on FDI in retailing? Will it be detrimental to the likes of kirana stores and street vendors?**

Of course not. FDI in retail will improve the Supply chain, reduce wastages, facilitate integration and bring International best practices into our system. On the other

hand, the Kirana stores and street vendors would always have the advantage of local presence which the Mega retail stores would never enjoy. The important point would be how the government implements the policy and how they ensure that proper checks and balances are in place to regulate the sector.

### **How is backward integration linked to the level of food processing?**

Very Poor. Farmers are not permitted to sell directly to processors and the chain becomes long. Why should fruits and vegetables first go to market yards and then get sold. APMC reforms are long overdue and it is high time that this act is given a decent burial. Further, absence of proper cold chain inhibits seamless development of Food Processing Sector.

### **How can food processing industry realize the dream of doubling farmers' income?**

Doubling Farm income by 2022 will be a Herculean task as it entails increasing the agriculture GDP growth of around 14% from the current level of less than 1%. With low agriculture prices worldwide this task looks very difficult. However, with required thrust being given in this Budget, we feel the competitiveness of Indian farmer vis-a-vis his western counterpart should improve. The need of the hour is to embrace Technology (even GM) with open arms and increase productivity of Indian Farmers.

### **How was the Union Budget for agri business sector?**

2016-17 Union budget saw government taking the right steps towards strengthening our agricultural sector and empowering our farmers. The real challenge for the government would be to implement the policies in letter and spirit, and ensure tangible results from the same. Agriculture, being a State subject, the required thrust will have to come from State Governments. The example of Gujarat



### **FDI in retail will improve the Supply chain, reduce wastages, facilitate integration and bring International best practices into our system**

and Madhya Pradesh needs to be replicated by other States in raising Agri GDP.

### **What are the challenges of food processing industry?**

Aptly recognized as the 'sunrise industry', providing vital linkages between the two pillars of our economy – manufacturing and agriculture – the Food Processing industry in India is undergoing a significant transformation. However, this industry is facing major challenges like Lack of comprehensive National policy on food processing, Non availability of trained manpower, Inadequate infrastructural facilities and Supply side bottlenecks like small and dispersed marketable surplus due to fragmented holdings, low farm productivity, high seasonality and perishability. These problems are compounded by absence

of a reasonable Cold Chain.

### **How receptive is the world market to India's products?**

Exports of processed food and related products have been increasing steadily; the main destinations being the Middle East and Southeast Asia. The significance of India's food processing industry and its global acceptance is proved by the fact that it ranks fifth in the world in exports. India's export of Processed Food was Rs. 31500 Crores in 2014-15, which included products like Basmati rice, Mango Pulp, Dried and Preserved Vegetable, Other Processed Fruit and Vegetable, Groundnuts, Fishery and Miscellaneous Preparations. India's geographical situation gives it the unique advantage of connectivity to food importing nations.

### **How can food processing sector influence rural development?**

Food processing industry can play a pivotal role in rural development. It can reduce supply chain bottlenecks, help in value addition which directly reduces food wastage hence facilitating better returns to the farmers. Growth of Food Processing Sector has the capacity to raise rural incomes exponentially. India needs to open its door to international players which would go a long way in changing the rural landscape.

# 'GLOBAL MARKET IS HIGHLY COMPETITIVE'

**Flex Foods Limited (FFL), a company engaged in the growing and processing of Culinary Herbs, Mushrooms, Fruits and Vegetables catering to the Domestic and International markets mainly in Europe, USA, Canada & Australia, is an associate company of UFLEX, a 2.3 Billion dollar company, leader in flexible packaging technology. Established in 1990, FFL Flex Foods Limited sources its raw material through contract farming through a dedicated network of 500 farmers. In a conversation with Agriculture Today, Mr. Raghavendra Rao, CEO, Flex foods Limited, talks about the food processing sector and the challenges faced by the industry.**



## **What is the level of fruits and vegetable processing in India?**

The level of Processing of Fruits and Vegetables in India at present is about 2.20 per cent out of which the organized sector accounts for 1.30 per cent and Unorganized sector 0.80 per cent. The overall processing level is reported at about 6.60 per cent.

## **What is the market share of Flex Foods Ltd in India and globally?**

The share of India in Global Trade of Food Products is 2.50 per cent, valued at US \$ 37.40 billion. The contribution of the food processing industry to the gross domestic product at 2004-05 prices in 2012-13 amounts to INR 845.22 Billion. FFL is pretty large in the Herbs and Mushroom category globally and having substantial client-age worldwide.

## **How competitive is the world market in food processing sector?**

It is very highly competitive. The quality and packaging of processed food products are of prime importance. Moreover, the failure to meet the commitment on the dates of delivery may result in losing even the dedicated customers.

## **What gives Flex foods the competitive advantage?**

FFL's Orthodox range of products, Orthodox processed form i.e. VFD, World class quality Standard and Infallible trust of the dedicated customers have given us a competitive edge.

## **How has contract farming helped flex foods? How has the farmers benefited from it?**

Contract farming helps us to ensure raw material quality and consistency in maintaining our demand and supply ratio. Moreover from the sustainability stand point, contract farming is more critical for running our business on day to day basis. Farmer gets benefited because they get the right price and are committed to FFL looking for our long-term relationship with them.

## **How can food processing help in doubling farmers' income?**

By guaranteed offtake by the processors working closely with the farmers under a contract, and by providing technical, material and moral support to the farmers, the quality and productivity of the crops as desired get enhanced which in the process increase the income levels of the farmers.

## **India's cold storage is deeply**

## **deficient to maintain the country's agri production. How can food processing companies help in raising country's cold storage requirement?**

Every food processing unit in the organized sector, particularly the ones that are based on the perishable farm produce as the raw material, constructs cold storage facility as an integral part of the project. Moreover, a large number of Cold Storages are under construction under the Cold Chain Scheme promoted by the Ministry of Food Processing Industries, Govt. of India that attracts a cash incentive of Rs. 10 crore in the form of Grant-in-Aid.

## **What are the challenges faced by the Indian food processing industries?**

India's food processing industry faces a multitude of challenges, some of which are - Apathy of the banks to lend financial assistance to FPI despite GOI directives; Relatively much higher rate of interest on long and short term loans & Inconsistent economic incentives; Heavy overall Import duty on Imported Equipments (Avg. about 31%); Poor availability of the processing grade of raw materials; Higher taxation on processed food products and Poor infrastructure.

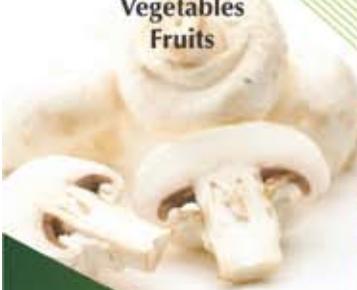


**Flex Foods Limited**

# FLAVORFUL DISPLAY OF EXPERTISE

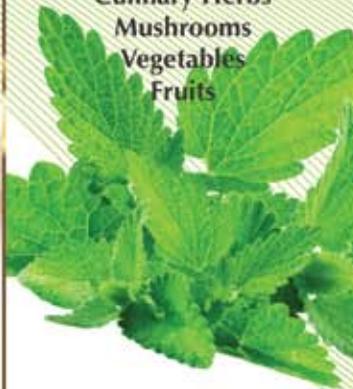
**Freeze  
Dried**

Culinary Herbs  
Mushrooms  
Vegetables  
Fruits



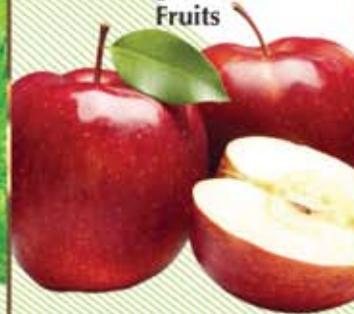
**Air  
Dried**

Culinary Herbs  
Mushrooms  
Vegetables  
Fruits



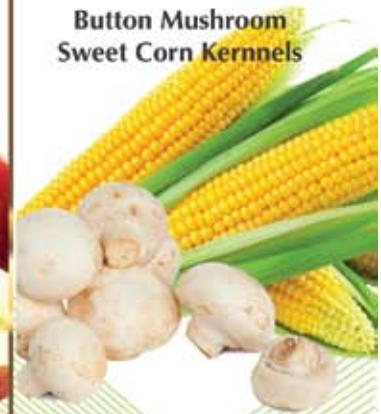
**Frozen  
/ IQF**

Culinary Herbs  
Mushrooms  
Vegetables  
Fruits



**Canned**

Button Mushroom  
Sweet Corn Kernels



## Accreditations

• ISO 22000 • BRC • HACCP • Global GAP • Kosher

Website: [www.flexfoodsltd.com](http://www.flexfoodsltd.com) | E-mail: [info@flexfoodsltd.com](mailto:info@flexfoodsltd.com)

# ‘ATMOSPHERE IN INDIA TO INTRODUCE NEW PRODUCTS IS VERY FAVOURABLE’

Having established its presence in 26 countries and regions throughout the world, The Ajinomoto Group has expanded its business operations in food products, amino acids, pharmaceuticals, and other fields. At present, their products are sold in over 130 countries and regions. Ajinomoto India Pvt. Ltd. is a Japanese MNC which was established in the year of 2003 in India. Known for its flavor enhancers and seasoning products, Ajinomoto India Pvt Limited has a wide range of products and many new are in the pipeline. In a discussion with Agriculture Today, Mr. Atsushi Mishuku, Director (R&D, Marketing & Production), Ajinomoto India Pvt Ltd, conversed about the company, its products and the misconceptions surrounding the flavor enhancers.



## What is the product portfolio of Ajinomoto India Pvt Ltd?

Presently we are having wide range of products which is catering to Retail, Food service and Industrial sector. Our product line offers- “AJI-NO-MOTO® [MSG]” the Umami seasoning, available in 5g,15g, 50g,100g,500g variants;“HAPIMA®” (Menu specific seasoning mix) – Under Hapima® brand we have Hapima –Fried Rice Mix Original, Hot & Spicy variant and Hapima Crispy Fry Mix and “AJITIDE® I + G “ – basically a flavor enhancer catering to the industrial sector. Many more are yet to come in the future.

## What is the market share of the company in India?

Ajinomoto India is enjoying a healthy market share for blended spices in Tamil Nadu. In the upcoming year, we are expecting better growth in market share.

## Is India a promising market for Ajinomoto?

The huge population base, impressive GDP growth rate and continuously growing blended spices market makes India a very promising market for Ajinomoto.

## In India, who are the consumers of the seasonings produced by Ajinomoto? Are they food processing companies, hotels or households?

Ajinomoto India has a wide range of product line, which caters to the different sectors of the market.“AJI-NO-MOTO® [MSG]” the Umami seasoning, 5g, 15g, 50g, and 100g variants caters to the Households.“AJI-NO-MOTO® [MSG]”the Umami seasoning, 500g variant caters to the Food service sector(HORECA).“HAPIMA®”(Menu specific seasoning mix) –Fried Rice Mix and Crispy Fry Mix caters to the Households.“AJITIDE® I + G “ – caters to the food processing companies.

## The flavoring product, Ajinomoto has come under scathing attack by health lobbyist as harmful and detrimental to health. What is your response?

Monosodium glutamate (MSG) is the sodium salt of glutamic acid (glutamate). MSG is a flavor enhancer which has been used effectively for nearly a century to bring out the best flavor of foods. When MSG is added to foods, it provides a similar flavoring function as the glutamate that occurs naturally in food. MSG is comprised of water, sodium and glutamate. When eaten, MSG is separated by the body into a small amount of sodium and

glutamate. MSG is usually produced through fermentation process. It is similar to that used in making milk, curd and yogurt. The process begins with the fermentation of sugarcane, sugar beet or corn. The finished product is a pure, white crystal which dissolves easily and blends well in many foods. MSG can be used in many savory dishes including meat, fish, poultry, many vegetables, and in sauces, soups, marinades. While MSG harmonizes well with salty and sour tastes, it contributes little or nothing to sweet or bitter foods. Glutamate naturally present in food and the glutamate derived from MSG are identical. It does not matter whether you select glutamate rich foods and ingredients like tomatoes, Cauliflower and Ridge gourd on the one hand or MSG on the other hand; the glutamate in each is the same. Medical specialists have known for decades that your body does not distinguish between the glutamate found naturally in foods and that in MSG. In fact, even today's state-of-the-art technology can't separate them. However, since glutamate is glutamate, there is no way to determine whether the glutamate came from tomatoes, Parmesan cheese or MSG.

There is no limitation for the use of MSG as a food additive because scientific and regulatory bodies such as the Joint FAO/WHO Expert Committee on Food Additives (JECFA) placed MSG in the safest category "Acceptable Daily Intake (ADI) not specified" based on the extensive scientific data. However, MSG is a self-limiting substance. Once the proper amount is used, additional use contributes little, if anything at all, to food flavor. In fact, adding too much MSG can result in a decline in palatability and is economically wasteful.

MSG has been thoroughly studied by various independent international organizations in clinical and scientific studies which have all come to the same conclusion. MSG has been proven to be safe time and again. Extensive research shows that MSG is safe for all humans, including infants and pregnant



women. Breast milk is naturally high in glutamate; the average human infant ingests 150-200 milligrams of free glutamate daily from its mother's milk. MSG's low sodium content represents a minor contribution to the overall sodium level of a typical diet. By way of comparison, MSG contains about 12% sodium, while table salt contains 39%. And, MSG is used at levels lower than salt.

### How did the recent controversy involving maggi noodles affect agri business firms like ajinomoto which produce seasonings catering to those products?

Coming to the Maggi controversy, it was mainly because of three issues, that is- Firstly, presence of Lead detected in the product in excess of the maximum permissible levels of 2.5 ppm and Secondly, because of violation of labeling regulation by misleading labeling information on the package reading "No added MSG" and Thirdly, because Release of a non-standardized food product in the market, viz. "Maggi Oats Masala Noodles with Tastemaker" without

risk assessment and grant of product approval. Basically, we can see the above stated reason has nothing to do with any of our products. Our entire products have been produced under strict quality control. We abide by the regulation of the country and FSSAI "Food Safety and Standards Authority of India". As a result, there was not much effect of Maggi controversy on our overall business.

### In India, other than the seasonings, are there any processed products that are available currently from you company? If not, are there any future plans to do

so?

We have planned to launch Instant noodles in India with joint venture with "Toyo Suisan Kaisha. Ltd". The joint venture company will be called as "Maruchan Ajinomoto India Private Limited".

### How is the atmosphere in India to introduce new products?

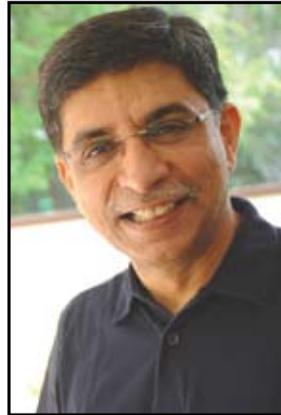
The huge population base, increase of disposable income, change of life style and with increase of household consumption the atmosphere in India to introduce new products is very favorable.

### How are the policy regulations in India for a foreign agribusiness company like Ajinomoto?

Currently the policy regulations in India are very favorable and encouraging for a foreign company like Ajinomoto to invest and grow in future. Especially the recent steps taken by Tamil Nadu Government are very encouraging for the foreign investors to invest here.

# 'FOOD PROCESSING CAN TRANSFORM AGRICULTURAL SCENARIO IN INDIA'

ITC is one of India's foremost multi-business enterprise with a market capitalisation of US \$ 40 billion and a turnover of US \$ 8 billion. ITC, rated among the World's Best Big Companies, Asia's 'Fab 50' and the World's Most Reputable Companies by Forbes magazine, has business interests in areas as diverse as Fast Moving Consumer Goods (FMCG), Hotels, Paperboards & Specialty Papers, Packaging, Agri-Business, and Information Technology. A formidable force in India's Agri-Business segment, ITC is one of India's largest exporters of agricultural products. The Company's 'e-Choupal' initiative has enabled Indian agriculture significantly enhance its competitiveness by empowering Indian farmers through the power of the Internet. This transformational strategy has already become the subject matter of a case study at Harvard Business School apart from receiving widespread global acclaim. In a rendezvous with Agriculture Today, Mr. Sanjiv Rangrass, Divisional Chief Executive, Agri Business Division- ILTD, ITC Limited delves into the food processing sector of India.



## How significant is food processing in today's agriculture?

Food processing has a multi-dimensional impact on the economy. It is critically positioned at the intersection of agriculture and industry, the two pillars of the Indian economy with 10% of GDP in each sector. Food processing spurs agri value chains, enhances farm incomes, reduces agri wastage, encourages sustainable

agriculture, enables value creation through the manufacture of packaged foods, drives investment in cold chains and storage, generates huge employment opportunities and livelihoods and manages supply side food inflation. At present, India wastes 40% of its total produce every year. According to the Food Processing Ministry, Rs 92,000 crore worth of food produced is wasted in the country every year. Even a borderline reduction in these losses through food processing will increase the food security of the country and improve the income levels of the farmers. This will, in turn, transform the agricultural scenario in India.

## How effective would be to engage Food processing sector in the recently launched Make in India campaign?

The Government of India has rightly identified food processing as a sector integral to its 'Make in India' programme. For the past 5 years, the food processing sector has been growing at 8.4 %. Given the surge in demand for processed food items, there is tremendous opportunity for growth in this sector. Currently, less than 10% of the country's agri-produce is processed. This is as low as 2 % for fruits and vegetables. Even with this low level of processing, food processing GDP is estimated at Rs 1.1 lakh crore. Exports of food and food products are estimated at US\$ 40 billion. With agricultural yields improving and processing moving to around 30% of agri-produce, food processing GDP has the potential to increase to Rs 5.65 lakh crores by 2030. According to the data provided by the Department of Industrial Policies and Promotion (DIPP),



orientation > low value addition > low margin > low risk taking ability.

For example - The creation of the wheat value chain by ITC is probably a classic example of how farmer-industry connect can help bring value to both farmers and consumers. ITC, through its e-Choupal network procures lakhs of tonnes of wheat from millions of farmers across the country. The identity- preserved wheat enables ITC to offer unique differentiated Food products like Wheat Flour, biscuits and noodles while enhancing the incomes of farmers at the same time. The integration of the entire value chain has enabled ITC to create world-class brands like Aashirvaad (atta), Sunfeast (biscuits), and Yippee! (noodles), which have delighted millions of Indian households. Another example is the Potato value chain. ITC sources potato through the e-Choupal network for the production of its chips brand, Bingo.

### **Agri business is a risky affair. How does ITC survive?**

Agriculture is vulnerable to the vagaries of nature. Apart from weather, agriculture is also dependent on several variables such as pest, soil, inputs, competing crops, competing nations, customer requirements etc, which change from year to year and are beyond control. ITC's operations span the entire spectrum of activities starting from agri-services/crop development to risk management, including sourcing at the farm gate, processing, supply chain, multimodal logistics, stock management and customer service. The solutions offered by the Division are a combination of all or some of these interventions. A major differentiating factor that provides ITC a cutting edge over its competitors in India is its focused crop development initiatives and extension services. Working closely with the farming fraternity, ITC has constantly transferred technology from the lab to the land with appropriate solutions, thereby making agriculture a profitable

business for all its stakeholders.

### **What is your opinion on this year's budget? Was it helpful for the agri business companies?**

The Union Budget's deep focus on agriculture and rural India is certainly encouraging and a welcome step. The budgetary allocation has increased to Rs. 35,984 crores in 2016-17 from Rs 15,809 crores in the previous fiscal year. The government has also made a focused allocation of funds for irrigation schemes, crop insurance and national e-market for farm produce with interest subsidies for the farmers. From the perspective of the farmers and rural India, this year's budget seems to have lot of focused interventions to promote farming. From the point of view of agri businesses, further value can be added by promoting private partnership in agriculture through incentives and structural reforms covering areas such as - Initiatives & Incentives Promoting Food Safety Platform; Stable Policy Regime on Export Policy for Agri Commodities and Incentives towards Contract Farming & Private Sector Involvement in Direct Buying of Agri Produce and Focus on Skill Development

### **Can FDI in multi brand retail promote food processing in India?**

FDI in any sector should be need-based with specific deliverables like technology infusion, processes improvement etc. maximising value creation. The existing norms of 51% FDI in multi-brand retail or the new proposal of 100% FDI in food retail will have a positive impact on the food processing industry. The focus should also be on sourcing of quality food produce and custody of complete farm value chains. However, it is imperative that the FDI is farmer centric and his profitability a core focus area. Similar benefits should be offered to the domestic players as well.

### **How can the government realize its budget objective of doubling farmers' income by 2022? What are your suggestions?**

The question always arises whether budgetary allocations and interventions alone can achieve the huge milestone of doubling farmers' income by 2020. The key to success will lie in the execution on the ground through a holistic management of structural initiatives, which will positively enhance farmer profitability. In order to double or improve the farmer's income, all factors that contribute to farmer profitability such as enhanced farm productivity (to increase yield and minimize wastage), product quality & integrity (which drives market price) and reducing cost of cultivation need to be addressed in a holistic manner. Fast track incentives to expand the irrigation cover in the country with drought proofing technology to multiple productivity, Focus on Food Safety and Value Addition to improve market price, Reducing the cost of cultivation with focus on reduction of fertilizer and pesticide usage and Policy reforms to facilitate market access to farmers and supporting price discovery reflecting market realities should be worked upon. Apart from the above, the government should focus on attracting the best talent in the country to work in agriculture.

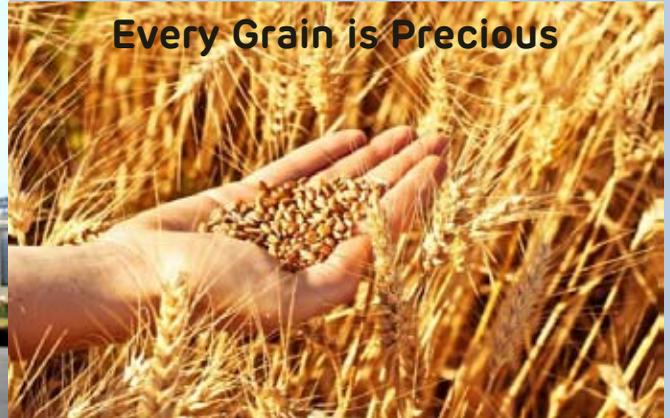
### **How will be 2016 for agriculture sector as a whole and food processing sector in particular?**

With excess rainfall in some areas and drought in the balance, 2016 appears to be a challenge. The government's intent in the budget needs to be translated into reality. Whilst agriculture will be a challenge, the food processing industry will see a definitive movement and with the impetus, we can expect next year to be an excellent for this industry.

## Future of Food Security in India



## Every Grain is Precious



## No Bags No Losses



## Adani Agri Logistics Limited

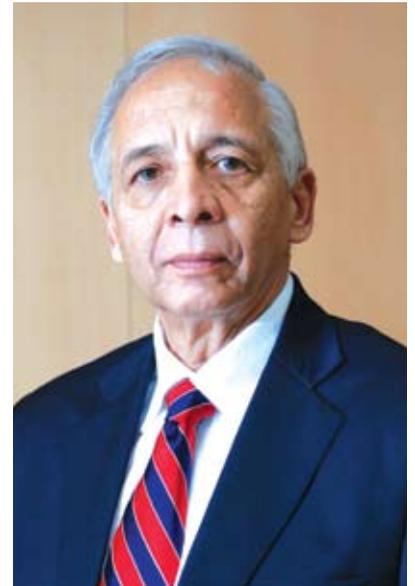
Food grains play an essential role in nourishing the nation's populace. Therefore it needs special care like proper storage and transportation. For taking care of these special needs, Adani Group, one of India's fastest growing business houses has set up seven base and field depots spread across the length and breadth of the country, coupled with specially designed top loading and bottom discharge rail wagons. The sole objective of this project is to provide comprehensive supply chain management solutions to FCI- Food Corporation of India. These depots are fully mechanized using state of the art technology for storing food grains. Fully integrated and IT enabled operations make sure that there are no lapses in quantity and quality of grains, and transparent transactions are carried out at all stages.

### **Salient Features:**

- AALL handles 5,55,000 MT of food grain for FCI in the states of Punjab, Haryana, Tamilnadu, Karnataka, Maharashtra and West Bengal. Another 3,00,000 MT of food grain is handled for Govt. of Madhya Pradesh. Additionally, AALL has expanded its foot prints in Bihar and Punjab with capacity of 75,000 MT for FCI.
- Wheat is stored in GI Sheet (Steel) silos. The silos are fully covered and have an elaborate system for preservation of wheat.
- High-end monitoring equipment's for checking critical quality parameters like moisture content, foreign matter, live infestation etc.
- Central Control System using state of the art PLC systems, for automatic operations of the facility.
- Modern cleaning and drying operations, through sieves, magnetic separators etc. to remove dust, tailings and other foreign matter.

# BUILDING ON BASMATI

LT Foods Ltd, incorporated in 1990, as a private limited company is one of the country's leading processors and exporters of packaged rice foods under the flagship brand, Daawat. The brand is among the top players in the domestic branded Basmati Rice markets. The Daawat brand has been a great success in international markets as well. It all began about 30 years ago, when Raghunath Arora started a small trading company, Lalchand Tirathram Mills in Bhikiwind, in a little village in Amritsar. In 1980, the company started exporting Premium Rice. Daawat came into being in the 1980s, and this resulted in a steep vertical ascent of the company's growth in the 1990s. To increase the acceptability of LT Overseas products globally, the company has taken the lead in implementing industry best manufacturing practices & obtaining internationally acclaimed certifications. LT Overseas (now LT Foods Ltd) was among the first few in the rice industry to obtain the ISO 9001-2000 certification. Presently LT Food has obtained certifications like HACCP, SQF, BRC, and Organic and EIC. The company has a strong distribution network in all major basmati consuming cities in India with more than a hundred distributors in each state. L T Overseas has also made inroads into more than 50 countries across the globe including markets like USA, Canada, UK, EU, middle east and Africa. In an interview with Agriculture Today, Mr. JS Oberoi, Director, LT Foods Limited discusses the market potential of Basmati and challenges involved in basmati production.



## How was the production of Basmati rice in last fiscal? Did the drought affect the rice production?

The production of basmati rice in last fiscal was not impacted by the drought conditions as basmati is cultivated in assured irrigation areas. Farmers take decision on planting basmati or other varieties depending on their perception of how prices are expected to move.

## What is the market share of Daawat in India and globally?

'Daawat' has a market share of 18% in the domestic market. It has significant market share in overseas markets particularly in USA, where it commands a 40% market share. This is in the ethnic as well as the mainline markets.

**Being a major exporter,**



### **how do you view the frequent bans that are imposed on agri commodities by the government ?**

Fortunately the government recognizes the export potential of basmati so that the frequent bans on export of other commodities and grains are generally not enforced on a high value product such as basmati rice. A few years ago a 'minimum export price' (MEP) was laid down by GOI, but it is no longer applicable.

### **How do you offset the risks involved in agribusiness?**

Risks in agribusiness are in many ways similar to business risks generally. These are mitigated by superior management practices, critical scenario building and building quick reaction capability. LT Foods has a professional management which is constantly scanning the environment to be aware of changes and dangers before they get escalated. Appropriate actions to seize opportunity as it develops and guard against risks are then put into place.

### **How has Daawat maintained its dominance in the world market?**

---

**'Daawat ' has a market share of 18% in the domestic market. It has significant market share in overseas markets particularly in USA, where it commands a 40% market share**

---

Daawat has built up a formidable professional management cadre to ensure and grow its dominance. Coupled with this is the management focus on quality and efficiency by investing where required. This ensures that internal processes for quality control and cost effectiveness are on top of the mind of everyone in the Company.

### **What are the challenges faced by agri business houses involved in exporting agricultural commodities?**

Export of any food product, based on agriculture practices, constantly face the challenge of rising consumer expectations who insist on quality, safety, and production through environmentally compatible

practices. These challenges are expected to continue to grow in the coming decades and Daawat is laying great emphasis on these aspects so that its products continue to enjoy the confidence of the consumers worldwide.

### **Are you satisfied with the Union Budget 2015-16?**

Yes, the budget has laid a strong focus on agriculture. Initiatives such as new crop insurance scheme, greater allocation for extending irrigation into rainfed areas, measures to increase farmer incomes through a variety of schemes, emphasis on food processing etc., will give the required impetus to this sector.

### **What are the future plans of LT Foods?**

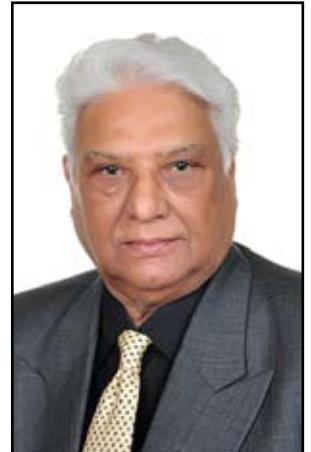
LT Foods has very ambitious plans to grow into a 'global foods company' rather than only based on one product that is basmati rice. It also has visions to expand its footprint globally and to that extent is taking vigorous steps to seize opportunity as it arises. Recently, LT Foods has acquired the brand 'Indus Valley' from HUL. This is an indication of the hunger for growth of the company.

# 'FUTURE SCENARIO OF MALTING INDUSTRY IN INDIA IS BRIGHT'

Established in the Year 1970, The Malt Company (India) Pvt. Limited, is one of the largest Malting companies in India. Having a long experience of more than four decades in the field, it is a well recognized brand name throughout the entire liquor, health foods, confectionery and pharmaceutical industry. A leading producer of premium quality Malt products, MCI has a long range commitment to quality and ensures that customers get superior Malt products-exactly the way they want it. As far as their products are concerned they are involved in Malt, Malt flour, Malt extract and Malt extract powder. MCI products find use in manufacture of Beer, Non-Alcoholic Beer, Malt Whiskies, Malt Based Food Products, Breakfast Cereals and Nutritious Health Drinks. Mr. P K Jain, Chairman and Managing Director, MCI in an interaction with Agriculture Today discusses the scope of Malt products in India and activities of the company.

## What is the scope of malt products in India?

The future scenario of Malting Industry in India is potentially quite bright. There has been a steady expansion in the production of Breweries and the Distilleries. The pace has accelerated in the recent years. Apart from the domestic players, many multinational companies have either already entered the fray or planning to do so. Simultaneously, the growth rate shown by malt using food processing industries has also been very impressive.



## What is the clientele of The Malt Company (India) Pvt. Limited?

Malt is mainly procured by Breweries - for beer production, Distilleries - for the manufacture of whisky, Food industry - Malted Milk Foods, Bakery, Biscuits, Confectionery, Chocolate Powder, Cornflakes, Coffee, Baby food, etc., and Pharmaceuticals - Tonics, Health foods, Slim diets. The Malt Company (India) Pvt. Limited has valuable list of clientele which include Glaxo Smithkline, Nutricia, Mondelez, Amul, ITC, UB Group, United Spirits, SAB Miller, Carlsberg, Molson Coors, Ab Inbev, Heineken among many others.

## What is the capacity of the company? Where does The Malt Company (India) Pvt. Limited source its raw materials to meet this demand?

The company has a capacity of 2 lakh tonnes per annum. Raw material is sourced from open mandis in the country. Malting quality Barley is available in abundance in Rajasthan, Haryana, Punjab and UP. Barley is a seasonal crop and is available during harvesting time April/May/June every year and thereafter the stocks are stored in silos/godowns from where the companies keep on receiving the supplies as per requirement.

## Has the Malt Company (India) Pvt. Limited entered into any contract farming agreement with farmers in India?

Yes with hundreds of Farmers. Research work on developing high yield strains of barley has been initiated in India mainly since late 90's. This has been undertaken by the Union Government as well

as some Governments as well as by the private sector, like us. The field trials have been encouraging. The contract farming offers potential benefits to both the Barley growers as well as to the Malt industry so long as this is done in an overall strategic and positive framework.

### Are there any specific varieties or any specific harvest index for producing malt?

Yes. There are specific malting varieties that cater to the requirements of malting process.

### What is the level of malt processing in India?

There are high technical plants from Germany and mid-level technology from China and low level indigenously.

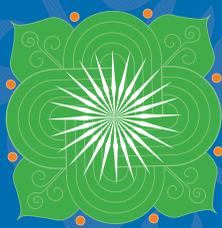
### What are the challenges in this sector?

It is highly capital intensive in fixed assets creation and also on working capital.

### How was the Union budget 2016-17 to food processing companies?

The budget promises remunerative prices to the farmers for their produce, transfer of technology and modern agricultural practices for producing agricultural produce on a large scale

to meet the requirements of organized marketing. Also, a unified agriculture marketing e-platform which will bring markets to the doorstep of farmers. This coupled with 100% FDI in marketing of food products produced and manufactured in India would result in big buyers reaching out to farmers for their agri-horti produce. 100% FDI will bring in higher efficiencies in food processing industry and trade, and will make our food products more competitive in international markets. Investment schemes are there but the true potential would be realized when there is harmonization across states on their Tax policies and they are able to implement central government policies in true spirit in their respective States.



FRESH PRODUCE

India

## Trident Nariman Point MUMBAI 26-27 April 2016

FRESH PRODUCE INDIA  
CONVENTION • EXPO • WORKSHOPS

NEW FORMAT

### REGISTRATION

STANDARD\*  
LOCAL RATE

INR  
19,102

EARLY-BIRD\*  
LOCAL RATE

INR  
15,281

expires on 9 April 2016

For further information and to register contact The SCS Group:

Monica Nain  
The SCS Group  
651 Pace City-II, Sector 37, Gurgaon (HR),  
New Delhi Metro INDIA 122 004  
Tel: +91 (124) 434 4500  
Email: [fpi@scs-group.com](mailto:fpi@scs-group.com)



[freshproduceindia.com](http://freshproduceindia.com)

\* The above local rates are exclusively available to India-based companies.. The published rates include Government of India Service Tax.

Platinum sponsor



Other sponsors include



Organised by

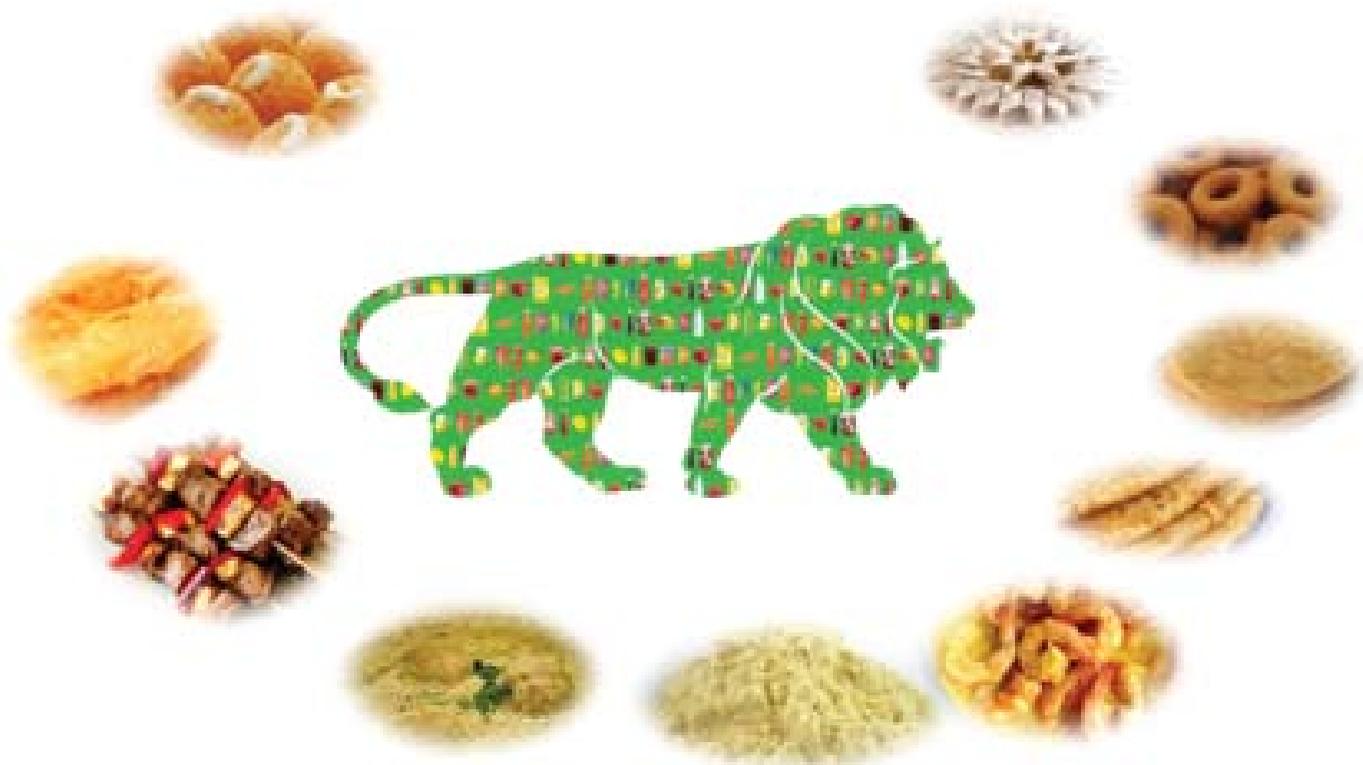


In association with



# “Make in India”

Facilitate Standardization and Mechanization of Traditional Indian Food



## Indian Traditional Foods

India is home to one of the most aromatic and colorful cuisines in the world. Traditional Indian cuisine is rich and diverse in flavours and uses distinct cooking techniques, raw materials and authentic utensils.

The traditional food of India has been widely appreciated for its fabulous use of herbs and spices. The cooking style varies from region to region. Indian cuisine has distinct influence of Arabs, Turkish, East-Asian and European influence. On account of several invasions and regimes over the millennium, a large assortment of dishes and their variations have been evolved. Given the range of diversity in soil type, climate, culture, ethnic group and occupations, these cuisines vary significantly from each other and use locally available

spices, herbs, vegetables and fruits. Indian food is also heavily influenced by religious and cultural choices and traditions. The Indian foods can be described as area specific viz., Kashmiri foods, Punjabi foods, Bengali dishes, Hyderabadi cuisine, Gujarati dishes etc. Traditional foods are healthy, sustainable, affordable and liked by every class of people.



## Need for standardization and mechanization of traditional foods

Indian traditional foods are still region specific and holds a great potential for commercialization in India and abroad. For this, standard process and machineries for continuous preparation are required. Standardization and mechanization will help in preparing hygienic and safe foods which could capture the world food market. India can become the food basket of the world by tapping the potential of our traditional foods.

India is known for its traditional foods, which are mostly confined to the unorganized sector at present. Aiming at the uniform and hygienic mass production of those highly demanded traditional foods products throughout the country, it is impera-

tive to have a discussion on scope of standardization and mechanization in food processing industries.

Recently, Government of India has launched the famed 'Make In India' campaign which is a major national program that is designed to facilitate investment, foster innovation, enhance skill development, to protect intellectual property rights and to build best-in-class manufacturing infrastructure for products made in India. There's never been a better time to Make In India. This program is focused on various sectors in India e.g. automobile industry, aviation, biotechnology, chemical, construction, electrical, electronics, leather, IT, pharmaceutical, textile, food processing etc.

**NIFTEM Make-In-India initiative**

National Institute of Food Technology Entrepreneurship and Management (NIFTEM) is a Deemed-to-be university under De-novo category and Autonomous Institution under the Ministry of Food Processing Industries, Government of India. It has been setup in a sprawling campus of 100 acres located near Delhi NCR at Kundli, Sonapat Haryana as an apex world class institute of global

standards in Food Technology, Entrepreneurship and Management. The Institute caters to the needs of various stakeholders, entrepreneurs, industry, exporters, policy makers, the government and the existing institutions.

NIFTEM has been running a unique Village Adoption Program (VAP) in which a team of students and a faculty adopt a village and nurture it for four years. During this program, a number of traditional dishes have come to our knowledge which are area specific and have a great potential to be commercialized. Out of those, NIFTEM has selected 12 traditional Indian recipes viz., 1. Sattu fortified 2. Kajukatli 3. Khakhra 4. Puran Poli 5. Khandvi 6. Boondi Ladoo 7. Kebabs 8. Prawn curry 9. Chila 10. Gustaba 11. Vada and 12. Khaja. Teams of faculty members and students have been formed to work on each of the selected products to standardize the preparation process and to design the machineries for mass production of these dishes so that these area specific dishes could be commercialized. Industries are requested to suggest more potential traditional products of their choice and can join hands with NIFTEM for taking this initiative to greater heights.



**Make-In-India Conclave-2015**

It is an initiative of NIFTEM to provide a common platform to all the stakeholders like food processing industries, machine manufacturers and consultants/ experts from various agencies for sharing their views to facilitate standardization and mechanization of Traditional Indian Food. This exchange of ideas should provide a road map for popularizing



Indian traditional foods worldwide, capturing the world food market and making India a global food basket.

In this regard, NIFTEM has participated in following two conclaves:-

- 1) 1st Conclave on "Make in India" programme – STANDARDIZATION AND MECHANIZATION OF TRADITIONAL INDIAN FOOD with our esteemed partners from different food processing industries at 11th Food & Technology Expo on July 30, 2015 at PragatiMaidan, New Delhi.
- 2) 2nd Conclave on "MAKE IN INDIA" programme –on August 22, 2015 at Bangalore.

Outcomes from these conclaves would help to reduce the production cost of traditional foods with application of modern technology and to evolve methods for standardization of traditional foods. The aim is to make India the Food Factory of world and capture the world food market in next few years.

*Dr. Ajit Kumar, Ph.D. IIT-D, IAS (Retd.), Vice Chancellor, NIFTEM*

# Knowledge Based Agriculture

## The linkage with sustainability, food security and climate change impact

**F**resh produce business in India is looking for standards now. Today, exports of fresh fruits like Grapes, Pomegranates, Apples, Mango and Vegetables all over Europe and Gulf destinations is picking up volumes. Countries importing fresh produce from India are concerned about quality and standard of packing and pesticide residues. The demands are based on seasonal supply and charted as per supply quota defined in the importing country.

The European market started building up consciousness on the quality and technical knowhow on the fresh produce. With the bulk of fresh produce arriving at the European market daily from various destinations like India, Thailand, Kenya and such developing countries, the EU has started building up strict rules towards no compromise on quality and technical aspects. They have set up standards like Global GAP for farm certification and assurance. Traceability is a concerned topic today.

Good agriculture practices (GAP), one of the prominent terminologies is common in agriculture practices nowadays. Various training sessions are being organized by the government as well as private organizations to keep the growers updated.

Today, many organizations are putting emphasis on the need of good supply chain, during transportation of the fresh produce from field to customers. The pack house developed for fresh produce packing should adhere to various standards and certificates like BRC and HACCP & QMS certification

Thus, going through the complete supply chain study, we can realize

the need of knowledge base agriculture that should have cloud database for churning the productivity of fresh produce supply from various location in India for demand our Indian fruits and vegetables has abroad. The major control points where knowledge database and compilation is required are:

1. Farm traceability: The farm meant to supply the fresh produce should have standards like Global GAP which have a cloud database and can be accessed from any point in the world. The usage of pesticides



fertilizers are recorded and controlled in such certified farms as per requirement of the country of exports. The cloud database ensures the requirements are being complied with and test report of the produce is available prior to harvest from the farm and packing.

2. Product quality assurance: The packing facility which is processing the fresh produce for the exports destinations should be on the cloud network such that the standards like BRC which are known to anyone sitting worldwide on internet. This gives assurance to the customer that the product has been processed and

handled in the safest way it can be.

Now, comes the variability of production which happens due to climatic changes as for example in case of Grapes, the largest volume of which is obtained from Nasik, Maharashtra. As we study the demand and supply of Grapes to destinations in Europe from India, Nasik farmers try at war footing to protect the crop from chilling injury due to extreme cold. Such damaging results of climate change need technology inputs from the farmers at right time, and even the cloud database of production should be generated. Another example of climate change is the vegetable cultivation practices as per calendar schedules. The demand and supply gap between the producer country and the destination country gets mismatched due to the unseasonal rain or heat pattern. This leads to the unscheduled application of pesticides on the vegetable .thus making it an unsafe product for exports market, leading to large volume sale in domestic chains and hampering the costing chart of the market, affecting the customers at large.

The above example of climate effect affects traceability chain and product quality assurance leading to a big gap in the stable supply chain of fresh produce.

Thus the need of the hour is to organize the fresh produce industry and form a cloud database of all the factors affecting the industry to research out the trends followed and work out the solutions effectively to ensure good business in the industry.

**Amlan Roy Choudhury,**  
*Indian Fresh Produce Industry*

# INTERNATIONAL AGRICULTURE CONSULTING GROUP

## Indian initiative towards food and agriculture solutions

### Vision

Our vision is to be a leading provider of Indian regional expertise in food and agriculture and to outstand as key advisory partners on food security concerns, policy planning and strategy framework for sustainable development through agriculture.

### Mission

Our mission is to initiate and support micro and macro level changes in agriculture by providing Indian expertise and solutions for research, extension, education, training, institutional frame, policy planning, agribusiness and project consulting so as to address their major agricultural concerns relating to farm production, food security, environment sustainability, rural employment, economic growth and human resource development.



### Objectives

1. Provide Indian expertise to deliver solutions to agricultural issues and concerns through formulation of agro and rural development projects, farming solutions, micro and macro level national agriculture planning, policy support, organized research, extension infrastructure and institutional set-ups, value addition and market linkage services.
2. Manage short terms management programs, training and entrepreneurship course for farmers, research & extension personnel, officials and professionals of various countries while recognizing and understanding ecological, technological, social and economic concerns related to their food and agriculture sector.
3. Facilitating students from different countries in enrolling in food and agricultural degree programs; management and entrepreneurship courses offered by various institutes and recognized universities of India, so as to help various countries in developing human resource for creative and productive change at ground level.
4. Organizing delegation level visits from India to various countries and of different countries to India for participation in agri and business summits, learning and exposure at technology institutions, agri universities, model farms etc., and discussing possibilities for joint ventures, collaborations and promoting better understanding in agriculture and agribusiness.
5. Facilitating Governments, Corporates or Institutions to venture globally and act as total solutions providers in implementation of foreign agriculture projects by providing research structure, technical assistance and investment planning in food, farming, agribusiness or agriculture development programs.



Technical Partner



Head Office:

306, Rohit House, Tolstoy Marg, New Delhi - 110001

Ph: 011-23731129, 46569160, Fax: 23731130

Email: [president@iacg.in](mailto:president@iacg.in), Website: [www.iacg.in](http://www.iacg.in)

# WHAT IF GREEN REVOLUTION WAS ABSENT IN 1960s?



**F**rom the historical data of the post independent India, with special reference to agriculture and food scenario, it was evident that early 1960s had bad years due to drought which adversely affected food production. Even for

the then population of around 450 million, food availability was a serious problem and the fear of people going without food was bothering the minds of the Prime Minister, Agriculture Minister and officials. At that time, the country was depending on the US based PL 480 scheme to im-

port food grains to meet the demand of public. That period was literally 'ship to mouth' existence, meaning whatever was shipped from USA was enough just to feed, with no stock to face problems of poverty staring at the country. If the problem had prevailed for long, starvation and hunger

deaths would have been the worst possible scenario. That was the most challenging period. Some misconceptions need to be corrected.

### Crucial Decisions

The situation was grim that called for urgent solutions with political and administrative efforts. Fortunately for the Nation, the then visionary Prime Minister Shri Lal Bahadur Shasthriji showed courage of conviction to plunge into meaningful and implementable action in the interest of growing population. Luckily for him the eminent Statesman with administrative acumen Shri. C. Subramaniam was the Agriculture Minister. He had a thorough knowledge of agriculture sector in the country. So, they discussed at length the ways and means to overcome the problem of food shortage in a short time. The dynamic ICS officer at that time Shri. B. Shivaraman was the Secretary of Agriculture Ministry whose grasp of the problem was commendable. So, a policy decision was in place to involve the agriculture scientists to enhance food production with whatever technology was available then.

### Green Revolution

At that right time Dr. M. S. Swaminathan who was the Director of the premier Indian Agriculture Research Institute (IARI, New Delhi) was already working on wheat, with back ground knowledge of rice cultivation also. He also had good rapport with the world renowned agriculture scientist, Nobel Peace Prize winner Dr. Norman Ernst Borlaug, who in Mexico was working with dwarf wheat varieties with great success. He was credited with high food production which helped to address chronic hunger in African countries. Dr. Swaminathan wanted to initiate collaboration with Dr. Borlaug to tide over the situation, but that required approval from the Central cabinet presided over by the Prime Minister. After a thorough discussion Mr. Shivaraman and Dr. Swaminathan briefed Mr. C. Subramaniam on the issue, who after very careful examination of the proposal



from all angles, got convinced that it was worth trying to boost the food production of the country. When the whole proposal was put up in proper perspective to the Prime Minister, he had approved the same as he had immense faith and confidence in the knowledge and wisdom of Shri. C. Subramaniam. That was the genesis of story of enhanced food production especially wheat which increased from 10 million tonnes to 40 million tonnes within a span of few years with the varieties selected by the duo - Drs. Borlaug and Swaminathan. To make the story short, the country could not only overcome the shortage of food and dependence on PL 480 scheme, but could also achieve self-sufficiency within four to five years. It was a major breakthrough in the annals of Indian Agriculture, an indisputable saga. No doubt, the progressive farmers accepted and adopted the wheat varieties in States like Punjab and Haryana, where there was unprecedented bumper harvest to the satisfaction of farming community in the country. To commemorate the event, the then Prime Minister Indira Gandhi released a postal stamp in 1968. That was aptly christened as 'Green Revolution' which answered the burning issue of poverty and hunger. The entire world had acknowledged the achievement of India in short time. This in brief was the

genesis of Green Revolution.

### Scenario without Green Revolution

It would be difficult to imagine what would have happened if the appropriate decisions were not taken at the right time. Either a deficit on policy decision or administrative implementation or scientific failure, alone or in combination would have resulted in India continuing to import food grains from US for pretty long time. That would have resulted in utter poverty and starvation deaths. Already many States had very poor food stocks, and public displeasure and anger was on the rise. Added to that, monsoon was also playing truant in those years affecting agriculture growth. One shudders to think of continuing with the 'ship to mouth' food situation and that would have led to utter chaos. Food crisis of the highest order was visible. That would have caused disastrous consequences in the country. Alas! that was all averted at the right time by the laudable synergy of political will, administrative acumen and scientific pursuit with vigor, each at its best. The twin objectives of providing adequate food for boosting production and ending the PL 480 import was achieved with the much acclaimed Green Revolution, which was not at all an easy task at that given situation. It is an indisputable



fact in Indian history. It was a case of knowledge and wisdom with indomitable will.

### Post Green Revolution scenario

The post Green Revolution era showed steady increase in agriculture growth. Encouraged by several fold increase in yield and income generation, enthusiastic farmers were made to think that higher fertilizer application and plant protection measures, irrigation might further boost the yield, they went ahead with heavy doses of chemical fertilizers that were detrimental to soil health. Large scale use of pesticides resulted in pollution. Indiscriminate use of ground water for irrigation over and above the required levels also led to improper management of water resources. A combination of these led to soil sickness and other problems in agriculture sector. It must be carefully noted that the eagerness to achieve more yield by the farmers, enhanced sale of fertilizers and pesticides by the companies and adequate irrigation facilities had all inadvertently resulted in agriculture

going haywire. Neither the agriculture scientists, officials nor farmers were aware of impending dangers of excessiveness in all the inputs. Nothing would have prevented them making corrective measures at right time. When the realization dawned much later the immediate reaction was to blame the Green Revolution and its architects for all the ills in the problem. That was honestly unfair. The Green Revolution did not advocate use of any inputs more than required. If judicious application was not practiced by those involved in the field operations, the success of the revolution could not be found fault with. It was, to put in mild words, the utter greed to make rich harvest and quick bucks by the farmers, the business norms to exploit the situation to sell chemical fertilizers and easy availability of irrigation in some of the areas, that might have led to problems in agriculture, but the Green Revolution had to bear the brunt which reflected on poor understanding or ignorance of most of the people both in official and non official sector. A dispassionate introspection would reveal the

facts.

In conclusion, the Green Revolution was definitely a boon which averted the food crisis, avoided large scale hunger and starvation, a trend setter for boosting agriculture production. Most importantly it had ended the import of food grains from US PL480 scheme. The daunting task of bringing the Nation from 'ship to mouth' to self sufficiency in food production was a commendable achievement, thanks to all concerned. Virtually the country was pulled out from 'begging bowl' status to 'basket full' status in food front. In any biological system, a change is necessary, so much so when the chemical fertilizers, pesticides caused great harm, then reverting back to organic agriculture/natural farming had to be adopted with necessary precautions. That is what is being practiced now with vigor to ensure sustainable agriculture production to feed the growing population. The practice of throwing mud or belittling the value of Green Revolution must stop in the interest of the Nation and history which recorded the events with care.

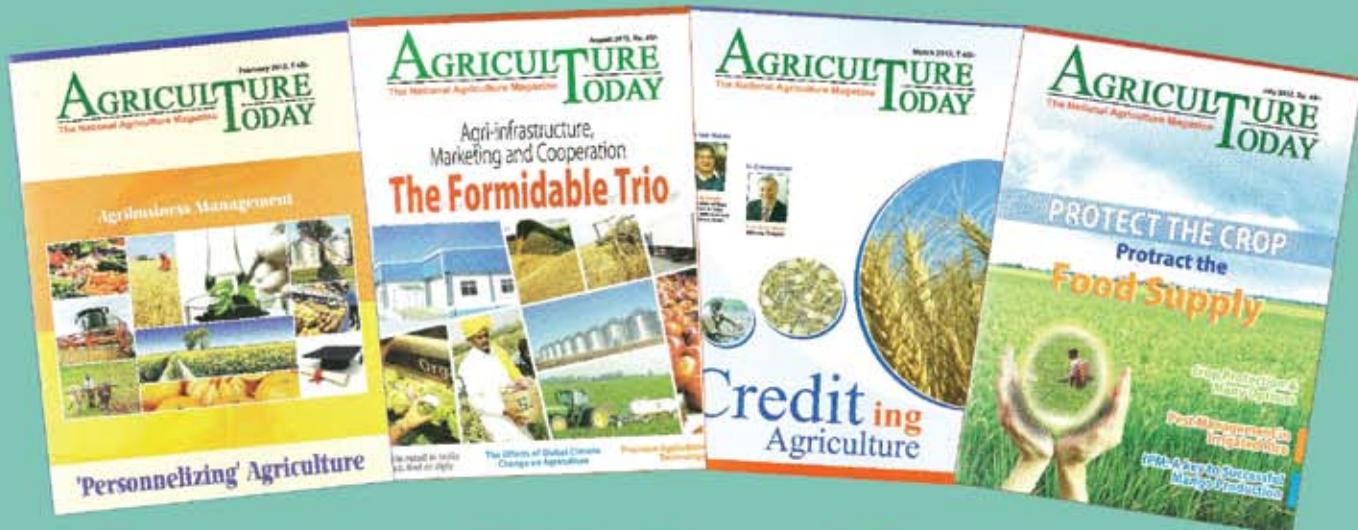
*Dr. V. Rajagopal*



# Centre for Agriculture and Rural Development

*We bring hope*





# Incredible Stories

## Subscribe today

I would like to subscribe to **Agriculture Today**

Term	institutions & Library	Individuals	Students
<input type="checkbox"/> One Year	₹800	₹500	₹300
<input type="checkbox"/> Three Years	₹2000	₹1200	₹700
<input type="checkbox"/> Life Membership		₹6000	

I will Pay with

Demand Draft  Cheque  Cash    

No.  Bank Draw  Dated

DD should be drawn in favour of **Agriculture Today**

Name: Ms/Mr: .....

Organization Name: .....

City: ..... office: .....

Ph: (Resi.): ..... Fax: .....

Mobile No: ..... E-mail: .....

**Terms & Conditions:** Rates and offer is valid in India only please allow one weeks time for the delivery of magazine by post. For the subscription related queries please contact: 306 Rohit House Tolstoy Marg, New Delhi- 110001, Ph: 91-11-23353406, 91-11-23731129, E-mail: [subscription@agriculturetoday.in](mailto:subscription@agriculturetoday.in),

[www.agriculturetoday.in](http://www.agriculturetoday.in)

**AGRICULTURE TODAY**

## Flocking Success



Mrs. Anuradha J. Desai who guides her family owned business, VH hatcheries in the capacity of the chairperson, was instrumental in catapulting the company to the frontiers of glory by sheer visionary approach. Today a 1 billion USD conglomerate and the largest fully integrated poultry group in Asia, the VH Group owes its leadership position to Ms. Desai's decisive and critical policy decisions. A woman of wisdom, vision, strength and passion, Ms. Desai is an apt example of a true leader.

**M**rs. Anuradha J. Desai, Chairperson of the Venkateshwara Hatcheries (VH) Group, is a dynamic leader who has made her presence felt in the poultry business for more than thirty years. She has been instrumental in consolidating the group's pre-eminent position in the Country's poultry sector. Her dynamic leadership fuelled the company's growth from Rs. 400 crore to Rs. 5,000 crore (\$1 billion) since she took over the reins in 1996 after her father Banda Vasudev Rao's demise.

Born to Dr. B. V. Rao, founder of Venkateshwara Hatcheries, and Uttara Devi Rao on 15th May, Ms. Desai inherited an unparalleled legacy that played a crucial role in shaping India's foot print in poultry sector. Dr. Rao, affectionately called "The Father of Indian Poultry Industry", was the driving force behind transforming Indian poultry from a mere backyard activity into an organized world class industry in India. The Rao family migrated to Pune in the late 1960s and Anuradha, the eldest of the three siblings, learnt the nuances of the poultry business from her father at a very young age as her father set up VH as a small operation along the banks of Pune's Mutha river.

Desai, a lawyer by education, was not a mute spectator in the family business. Her leadership was invaluable for the company. She broadened the profile of the company and added several segments into the business such as egg powder, poultry feed, animal feed, vaccines, biotech, R&D and now even wine distribution and entertainment. The group has done both backward and forward integration, making it an integrated poultry company. They have exports to the tune of Rs. 230 crore, which include products like egg powder, vaccines and animal medicines. The group's listed company Venky's, supplies chicken to groups like KFC, Pizza Hut, Domino's, etc. It also has its small chain of quick service restaurants called Venky's XPRS in South and West India. Her business adventures move beyond the realm of poultry. She also took ownership of Blackburn Rovers, English Premier League football team in November 2010, making her the only Indian at the helm of an English Premier League team.

Apart from her stellar role in her own business, Mrs. Desai figures as a prominent voice for the Indian poultry sector as a

whole. In 1990, when there was a concerted lobbying for importing chicken from the United States, Ms. Desai almost entirely by herself thwarted the attempt and was successful in convincing the country that US was thrusting upon India its unsold and unwanted stock. While Avian flu emerged as a major threat in some of the Asian countries, the consumption of poultry and poultry products came down in India. The NECC under her leadership took up the herculean task of convincing the Indian consumers about the harmlessness of Indian chicken and eggs. Media campaigns, roadshows, chicken festivals and biryani parties were organized to convince the concerned Indian customers. Desai played a significant role in increasing the per capita consumption of eggs in India and also in increasing export of eggs.

She has received many accolades, which include the "Udyog Rattan Award" by Institute of Economic Studies - Delhi, "Best Women Entrepreneur Gold Award" from the Institute of Marketing Management and the "Best Woman Entrepreneur Award" from Yuva Bharati and Honorary Doctorate from Tamil Nadu University of Veterinary and Animal Sciences. Anuradha J. Desai is the first woman to be elected as President of World Poultry Science Association (IB) for four years from 1996. She is Chairperson and Managing Director of Venkateshwara Hatcheries Private Limited and Chairperson of Agrocortex India Limited, National Egg Co-ordination Committee, Venco Research and Breeding Farm Private Limited, Venkateshwara Research and Breeding Farm Private Limited, Bala Industries and Entertainment Private Limited, Venkateshwara Engineering Industries Private Limited and Centre for International Trade in Agriculture and Agro Based Industries and Director in Bala Entertainment International Private Limited, B.V. Bio-Corp Private Limited, Srivenk Investment and Finance Private Limited, Venka Investments Private Limited, Lavasa Corporation Limited, National Agricultural And Foods Analysis And Research Institute, Bharat Eggs Producers Association, Poultry Development Promotion Council, Uttara Biosciences Private Limited and Uttara Impex Private Limited.

A leader in her industry, Ms. Desai never shied away from taking risks. Under her secure leadership, VH hatcheries has evolved into a leader in its segment.



“This is a very important time for farmers. All of us have to think about one thing and that is water conservation. Water level is going down gradually. We should work to conserve water. Water conservation is something all of us need to work on and everyone should be connected to a people’s movement to conserve water”

**NARENDRA MODI**  
Prime Minister



“To make farming attractive to the youth, it should be technologically upgraded and made economically rewarding”

**MS SWAMINATHAN**  
Founder, MS Swaminathan Research Foundation



“There will be no inter-state water dispute if all the States take efforts for rain water harvesting, which will make the them water surplus, without depending on other States”

**ANNA HAZARE**  
Social Activist



“The livelihoods of many workers such as fishermen depend on the quality of the freshwater. A farmer’s job depends on his or her ability to manage the available freshwater. If the 2030 Agenda is to be a success and we are to build together a sustainable future, we must ensure that work in water is decent and that the water we all rely on is safe”

**GUY RYDER**  
Director General, International Labour Organisation (ILO)