

VOLUME 19 | ISSUE 2

FEBRUARY 2016, ₹45/-

AGRICULTURE The National Agriculture Magazine TODAY



India's Evolving Agri Markets

FEBRUARY 2016 | VOLUME XIX | ISSUE 2

CHIEF EDITOR

Dr. MJ Khan

Editor

Anjana Nair

Asstt. Editors

Sanjay Kumar

Fariha Ahmed

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 Virdi
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

Editor Dr. MJ Khan

E-mail: editor@agriculturetoday.in
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, photo copying, 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

Pages in the magazine: 60

The Proliferating Agricultural Trade

India's trade potential in agriculture has expanded over the years. Thanks to the green revolution, white revolution, yellow revolution and blue revolution, India tops globally in many agricultural commodities.

With all this production overload, India has opened up trade overseas which has been equally burgeoning. India exported \$39 billion worth of agricultural products in 2013, making it the seventh largest agricultural exporter worldwide, and the sixth largest net exporter. This represents explosive growth, as in 2003 net export were about \$5 billion. India is the fastest growing exporter of agricultural products over a 10-year period, its \$39 billion of net exports is more than double the combined exports of the European Union (EU-28).

India also has a steady supply of inputs to support its population. Prior to 1960, imports were the only measure that ensured food security. But with progress in India's agriculture and economy, the type and nature of the categories of food that was imported changed. Edible oils and pulses (includes chickpeas, pigeon peas, lentils, dry peas, etc.), of which India emerged as a major importer during the 1990s, continue to account for the bulk of India's agricultural imports.

While an improvement in the agricultural production has been the prime reason behind the enhancement of our exports, an equally supportive environment has been created by the governments over the years. Our export-import policy has been carefully crafted according to the changing times. Measures like the setting up of agri export zones, removal of procedural restrictions and marketing cost assistance have assisted in propagating agri exports. Apart from AEZs, as per the Special Economic Zones (SEZs) Act, the government has also granted approval for the setting up of nine SEZs for agri and food processing. A total of eight SEZs have already been notified and four facilities have been exporting various products. Aiming to nearly double India's exports of goods and services to \$900 billion by 2020, the government recently announced several incentives in the five-year Foreign Trade Policy for exporters and units in the Special Economic Zones.

Global trade apart, India's own domestic markets has seen a lot of changes recently. From the model APMC act to several region specific innovations, the agri marketing scene in India has witnessed a sea change from the conventional agri marketing in India. Rashtriya e Market Services Private Limited (ReMS) has been established as a joint venture company, with Government of Karnataka and the NCDEX Spot Exchange Limited having equal shareholding, for implementing the Agricultural Marketing Policy to bring in efficiency and transparency in the agricultural marketing system for efficient price discovery to benefit farmers and other market participants. Similarly models like ApniMandi, Rythu Bazaar are changing the way agricultural produce were marketed.

Agriculture has earned a broad canvas now. The system works on multiple objectives and in multiple dimensions. Developing proper channels of marketing locally and abroad is therefore crucial not only in improving the farm incomes but also infusing competitiveness in the agri environment of the country.



Dr. MJ Khan

Dr. MJ Khan

CONTENTS

VOLUME XIX | ISSUE 2 | FEBRUARY 2016



INDIA'S EVOLVING AGRI MARKETS

Editorial	01
Editorial Comments	04
News Corner	10

Cover Feature

India's Evolving Agri Markets	22
-------------------------------	----

Sustainable Agriculture

Indian Agriculture: Steps towards Sustainability	44
--	----



State Focus

Agriculture in Tamilnadu	46
--------------------------	----

Report

India – Africa cooperation in agriculture	52
---	----

Interview

Dr. Michael Jorg Ruf, Head, Business Unit CVAM, Continental Automotive GmbH	56
--	----



Know Your Leader

Ajay S. Shriram	59
-----------------	----

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

Researchers, Producers & Marketers of all Kinds of Sowing Seeds



Awarding for outstanding contribution to the seed industry, which has positively impacted the lives of the consumers of
" Sri Sathya Seeds "



Achievement of "Fastest Growing Indian Company Excellence Award" in Bangkok, Presented by H.E.Khun Korn Dabbaransi, Hon'ble Former Deputy Prime Minister of Thailand



Achievement of "Best Seed Entrepreneur" award for 2014 by SMA, Hyderabad, Presented by the Minister of Agriculture, Andhra Pradesh state Sri.Prathipati Pullarao



Achievement of "Best Seed Entrepreneur" award for 2014 by SMA, Hyderabad, Presented by the Minister of Agriculture, Telangana state Sri. Pocharam Srinivasa Reddy



An ISO 9001:2008 Certified Company

Sri Sathya Agri Biotech Pvt. Ltd.,

D No 11-13-175/1, 3rd Floor, PVR One Building, Near Sai Baba Temple,
Alkapuri Colony, Road No. 3, SRK Puram, Hyderabad - 035,
Telangana State, INDIA. Phone : 040-20068899

D No. 2-7-1/A, "SRI SATHYA SADAN", Stambhalaganuvu, Main Road,
Guntur-522 006, Andhra Pradesh State, India. Ph: 0883-2338595,96
web : www.sathyaseeds.com, email : info@sathyaseeds.com

Social Security to Farmers

Pradhan Mantri Fasal Bima Yojana to provide insurance coverage to half of the farmer population in two years

Farmers toil in the field to assure food security to nation. But are their lives secure. Unfortunately not! They lose their crops to market uncertainties, climate vagaries and pest attacks. Their income is not secured and hence not their lives.

Consecutive bad crop years and a deluge of farmer suicides finally got the attention it deserved. Alluding financial losses as the key to widespread farmers distress, a new and improved crop insurance scheme is set to assume centerstage. In all possibility the scheme will come to implementation the following financial year just before the next Kharif.

The new scheme christened as 'Pradhan Mantri Fasal Bima Yojana' (Prime Minister's Crop Insurance Scheme) sheds the hefty premiums of the previous crop insurance schemes. Touted as the scheme that offers the lowest premium rate, first time after independence, the scheme has an ambitious agenda to cover fifty per cent of the farmer population in two years, entailing an expenditure of Rs. 8,800 crore to the government exchequer.

The scheme entails features which finally can assure the much absent security in the lives of the farmers who are often left at the mercy of the unknown. Agriculture being a risky profession was unfortunately less represented in insurance schemes. Even the prevalent Modified National Agricultural Insurance Scheme (MNAIS) and Weather Based Crop Insurance Scheme (WBCIS) covered only around 20 per cent of India's 130-million farmer families. The hefty premiums which went as high as 15 per cent were definitely not helping in popularizing the scheme. Besides, the claim settlement period was also unsupportive. Although the rules favour the claim settlement within 45 days of the risk assessment, most often, claims are not attended to even after six months. Even among loanee farmers, insurance penetration is not 100 per cent, for whom it is mandatory to get an insurance cover as soon as they avail a crop loan.

The recurring bad monsoon and other climate vagaries necessitated a more farmer friendly scheme that gave them enough financial security post a calamity. In that aspect, the new scheme presents a promising outlook. This social security scheme will charge a uniform premium of only two per cent of the sum insured from farmers for all kharif crops and 1.5 per cent for rabi crops. For horticulture crops, the annual premium will be five per cent of the sum insured. The balance premium would be paid by the government to the insurance companies. This would be shared equally by the Centre and state governments. It entails easy usage of technology like mobile phone, quick assessment of damage and disbursement within a time-frame. For the Centre, there would be no upper limit on the subsidy and even if the balance premium is 90 per cent, it would provide for the same. Unlike earlier, where there was a claim subsidy, this scheme would offer premium subsidy and would be more affordable to farmers.

The new insurance scheme would cost the government Rs 8,800 crore over the next three years, assuming that 50 per cent of farmers are covered. At present, with 23 per cent insurance cover, the Centre spends Rs 3,100 crore a year on crop insurance. The insurance amount covered will also not be capped and so also the premium rates.

Another striking feature of this scheme is that it also covers pre harvest losses i.e., if the damage occurs while seeds have been planted. So will be the post-harvest losses. What makes the scheme more welcoming is that the data for crop cutting experiments could be uploaded through smartphones, mobiles, drones etc. to speed up the claim process. The unit of assessment would be individual farms, against villages as in the current insurance schemes. However, manmade calamities like fire, theft, burglary, etc, would not be covered under the scheme.

Interestingly, despite agriculture being a risky proposition, insurance schemes have also maintained a low profile. Neither the reports nor the different committees that have been formed to look into farmers benefit have intensely advocated for a strong insurance coverage. It was high time a similar scheme was introduced, although it took almost seven decades post independence, several climate anomalies and thousands of farmer suicides to conceive a friendlier and most importantly a useful insurance scheme.



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

Linking Irrigation and Employment Schemes

Integration of PMKSY and MNREGA on the anvil

Providing irrigation has never felt more crucial in the recent years, as deficient rainfall pulled down agricultural output and the sector in general. As increasing productivity remains crucial in assuring the food sovereignty, the country has to increasingly invest in technologies that increase more crop per unit of resources utilized. Today when the yields of the crops are still heavily dependent on the monsoon, the relevance of irrigation cannot be stressed more.

Modi's slogan of 'Har khet ko paani' further emphasizes the centrality of irrigation. More than irrigation, we need water saving technologies to further take the concept of 'More crop per drop' throughout the country. Irrigation although has gained foothold in India post green revolution, the adoption has been patchy. According to official data, around 46.34 per cent of India's net sown area of around 140.80 million hectares was under irrigation cover till 2011-12. In 2000-01, around 40.5 per cent of net sown area was under irrigation, a rise of around 5.8 percentage points in a decade! In crops like oilseeds, pulses and coarse cereals, data show that of the total area under cultivation, the areas under irrigation were only 26 per cent, 16.2 per cent and 14.4 per cent, respectively.

India has seen several irrigation projects and although the objective of all of these projects were to increase the irrigation cover, they were active under different scheme heads. Pradhan Mantri Krishi Sinchae Yojana (PMKSY) was launched last year with an allocation of Rs 50,000 crore to streamline and accelerate different schemes. PMKSY would amalgamate three major irrigation programmes of the Centre for holistic development. The programmes that would be brought under one roof are the Accelerated Irrigation Benefit Programme of the ministry of water resources, Integrated Watershed Management Programme of the ministry of rural development and land resources and the On Farm Water Management component of the National Mission on Sustainable Agriculture of the agricultural department. While this is an ambitious programme, creation of irrigation assets entail heavy farm labour. Labour crisis is slowly creeping into the Indian agri scene. A recent study noted that between 2004-05 and 2011-12, farm labour declined by around 30.57 million, while the total size of the workforce kept rising. The share of agri workforce during the same period declined from 56.7 per cent to 48.8 per cent.

Under such circumstance, the agriculture ministry plans to dovetail its programme of providing irrigation to each field with the rural employment guarantee scheme to ensure smooth availability of labour. Discussions have started between the agriculture ministry, which the Pradhan Mantri Krishi Sinchae Yojana (PMKSY) oversees, and the rural development ministry, which looks after the Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS). MNREGS labourers are usually engaged in irrigation projects — one of the main focus of the scheme — but a formal arrangement does not. Dovetailing the irrigation programme with MNREGS would ensure that work done under the PMKSY gets paid through the job scheme. The linking would also ensure availability of adequate hands for agrarian work. Rural India had seen a shortage of labourers for agriculture work after the rural job scheme was rolled out with a guarantee of minimum 100 days of paid employment.

MGNREGA resources can thus be used to create assets that could boost agricultural growth. With an average rural household income of Rs 6,500 per month, these schemes are critical for ensuring inclusive growth. By merging the two crucial schemes, more job opportunities are being created thus maximizing the benefits of both scheme and accelerating their implementation. Also, the funds for PMKSY can also be utilized for MGNREGA thereby creating more funds for implementing MNREGA. Government expenditure in one scheme will become an investment for the other, therefore helping in fiscal consolidation. Integration of schemes with MGNREGA will help in creating more number of meaningful jobs for rural population through MGNREGA.

The plan to combine PMKSY and MNREGA is a welcome step. It will not only create the much needed irrigation asset, but will also help in improving the rural livelihood.

Agri Expectations from Budget 2016-17

Union Budget 2016-17 is expected to see more investments in the agriculture sector

Another union Budget on the threshold, and expectations galore. While every sector needs a mammoth share to itself, agriculture is badly in need of more support this year. Two back to back patchy monsoon has derailed the momentum of this sector. The agri output and agri exports have been badly hit. Even the Finance minister, Arun Jaitley could not agree more on the topic when he said the performance of agriculture sector in three out of the last four years has not been good mainly due to inadequate monsoon. Taking cue from his observations, we expect the Union Budget 2016-17 to focus on rural economy and agriculture. Mr. Jaitley himself was of the view that the incentive structure of the agriculture sector should be revisited to address the challenges being faced by the sector and boost productivity.

The sparse coverage of monsoon seasons and the hailstorm episode last year has exposed the vulnerability of the agri sector. Announcements regarding Pradhan Mantri Fasal Bima Yojana (Prime Minister's Crop Insurance Scheme) has already been made and so this Union budget will see some major allocation to insuring crops and providing social security to the farmers. It will be a departure from the earlier crop insurance schemes where premium was kept as high as 15 per cent. Keeping the premium as low as 1.5-2 per cent, the new scheme intends to take into its fold around half of the farming population in the next two years.

Another sector which has been facing the effects of bad weather is the fertilizer industry. Fertiliser body, FAI has sought introduction of direct transfer of urea subsidy to farmers and higher budget allocation for next three years to clear arrears of Rs. 50,000 crore.

Irrigation is another crucial segment which is going to receive special mention in this union budget. The government has already allocated Rs 5,300 crore to support micro-irrigation, watershed development and the Pradhan Mantri Krishi Sinchai Yojana and has urged states to chip in substantially in this vital sector. This will be further stepped up in this budget. Moreover there has been talks about merging PMKSY and job scheme, Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA). Several agriculture bodies have also demanded setting up of national irrigation authority to give thrust to irrigation projects and river valley authorities for distribution of water, levying charges for water supply and suggesting cropping patterns.

The sector lacks a stable agro export policy. The government recently took up the issue of import ban and restrictions on Indian farm items with trading partners such as Vietnam, China, Saudi Arabia, Iran and European Union. Judging by the sentiments, the government may be working to derive a long-term comprehensive export policy which will pave the way to connect Indian farmers with international markets.

Budget 2016-17 is also expected to see significant increase in allocation to programmes such as the Pradhan Mantri Krishi Sinchai Yojana, Rashtriya Krishi Vikas Yojana, Pradhan Mantri Gram Sadak Yojana, and the one to provide soil health cards to the country's 140 million farmer families over three years to boost the overall rural economy. The farm sector has also sought exemption of income tax on profit made by farmer producers' organisations and agri-cooperatives, creation of buffer stock of milk powder, outright ban or increase in import duty of butter oil, and imposition of safeguard duty on import of rubber.

Farm bodies also expect the government to do away with interest subvention scheme on crop loan and take corrective measures to provide institutional credit to small farmers.

The key challenge faced by the Indian agriculture today is to increase farm productivity. We are looking at a scenario to maximize profit and productivity per unit of resources utilized. This would necessitate immense amount of support from technology. India needs to invest more in high-yielding and disease / pest resistant variety seeds and water saving technologies. While irrigation is important, more area should be brought under the efficient micro irrigation systems. The farmers must be better connected to resource centers which would advise them on planting according to the weather and market conditions. Heavy reliance on ICT can only add profit to the future agri ventures.

The Union Budget 2016-17 shoulders the immense responsibility of turning around the current state of affairs in agriculture, at the same time accelerating the growth of the agriculture sector.

Return of the Paralyzing Pulse

Government to revoke ban on Khesari lentil linked to neurological disorders

Desperation can prompt you to do the unthinkable. That is what seems to be going on with the Modi government. The Indian government is lifting a fifty year old ban on a type of lentil that has been linked to nerve damage and paralysis, in a desperate attempt by Prime Minister Narendra Modi to cut legume imports and make the nation self sufficient in pulses.

India's heavy addiction to pulses has been forcing the government to import millions worth of pulses every year. The annual demand is pegged at 25 million tonnes. India produces 18-19 million tonnes of pulses annually but has to import the rest to meet the domestic demand. Since the country is unable to produce pulses worth its demand, it has been resorting to the expensive option of importing tonnes of pulses. The recent back to back monsoon failure has also affected the pulses production in the country and the prices have doubled killing India's pulse economy.

The government has been trying to raise the production of pulses so as to cut down on its dependence on imports and to tame the rising pulse prices. Unfortunately, those measures haven't paid off yet. The new move to allow cultivation of khesari lentil which can grow in dry or wet conditions, after a hiatus of five decade is supposed to bring in the much needed pulse sufficiency. The same pulse species was banned back in 1961 owing to the increased incidence of lathyrism, a neurological disease in the population consuming legumes of the genus "lathyrus" to which khesari belongs. Lathyrism is a crippling motor-neuron disease of the lower limbs.

What gives Khesari an upperhand over the other pulses is its sturdy nature on field. It is highly resistant to drought and floods. It could also sell very cheap because of its coarseness. Besides, the varieties recently developed by Indian scientists contain a lesser amount of the neurotoxin that can damage nerve tissues and weaken the legs of both humans and animals than previous varieties according to Indian Institute of Pulses Research (IIPR). The only solace is that these khesari varieties - mahateora, ratan and prateek – weren't the same varieties which caused diseases back in the 1960s that led to a ban. According to the scientists, those varieties have disappeared. Anyways, the ban imposed in sixties were ineffectual to some extent as it is believed that the toxic varieties were smuggled across the border as khesari is still widely grown in Bangladesh. Khesari is still consumed in eastern India and neighbouring Bangladesh, mainly as a cheap source of protein for millions of poor people.

It has to be agreed that it is a very unusual way to increase pulses production. Here we are talking about increasing the bulk and meeting the demand of the population. The nutritional aspect has been conveniently side stepped. We are promoting a 'less toxic' pulse species, the only benefit is that it can easily add to the bulk! India ofcourse needs food security, but that do not mean jeopardizing the health of the people. We want to increase the intake of proteins but not by replacing it with poison, however little it may contain.

And how does the government plan to ensure that people refrain from consuming quantities which deem them toxic? Other than the direct consumption, the 'cheaper pulse' can easily go into commercial cooking where they can replace its 'expensive counterparts'. In that case, many 'protein fortified' attas and biscuits flooding the retail space will happily imbibe this cheaper alternate source of protein. There are immense possibilities that it can reach a larger population including children, pregnant and lactating mothers in many forms.

Such dire measures need only be adopted if all the other sensible measures to increase pulse production has failed. Rather than bringing back Khesari from the dead, how about investing in some real production technologies. Promoting pulses in fallow lands, better crop spacings, improved pulse varieties and improved market support can encourage the farmers to grow more pulse. Our objective should be to address the malnourishment and improve the health of the people rather than resorting to some quirky fixes.



Let us grow together



The more we nourish the earth, the more India gets rich



Since its inception in the early sixties, RCF has been a major driving force behind India's agricultural productivity. And our resounding success has its roots in our belief. The belief that when we empower the farming community, it leads to inclusive growth. All along, we've been a true & trusted companion of Indian farmers. Today, the nation requires to sustain self-reliance through **sustainable agriculture**. And we stand firmly committed to continue providing quality agricultural inputs and sound agronomical services to the farmers for ensuring higher farm productivity with proper care of soil.

Performance that inspires:

- Leading manufacturer of fertilizers in the country
- Serving the Indian farmers for the last 5 decades
- Rated among the top 5 companies in the fertilizer sector
- A wide product portfolio comprising 'Ujjwala' urea, 'Suphala' complex grades (15:15:15 & 20:20:0), 'Sujala' water soluble fertilizers, 'Biola' bio-fertilizer, 'Microla' micro-nutrients
- A pioneer in the chemicals field as well, producing more than 20 industrial chemicals

The way forward:

- Thal expansion project to produce 1.27 million tonnes of urea per annum
- To set up fertilizer complex at Talcher in consortium with CIL, GAIL and FCIL through coal gasification route
- To set up JV projects for urea in resource-rich countries of Middle East
- To enter into long term off-take agreements for rock phosphate and potash
- Strong focus on sustainable development



**RASHTRIYA CHEMICALS
AND FERTILIZERS LTD**
(A Government of India Undertaking)

DCM Shriram Ltd receives the National Energy Conservation Award

► DCM Shriram Ltd. won two Energy Conservation awards for the year 2015 in the Chlor Alkali sector. The awards were given by the Bureau of Energy Efficiency for National Energy Conservation. The First Prize went to the Caustic Soda plant, Shriram Fertilisers & Chemicals, Kota and Second Prize to Caustic Soda Plant, Shriram Alkali & Chemicals, Bharuch. The award was for the various initiatives taken by the plants for energy efficiency. At an award distribution ceremony held at Vigyan Bhawan, New Delhi, Mr Piyush Goyal the Hon'ble Minister of State with Independent Charge for Power, Coal, New and Renewable Energy, Government of India presented the First prize to Mr Vinay Mehta, Addl Vice President, DCM Shriram Ltd representing Shriram Fertiliser & Chemicals, Caustic Soda plant, Kota and the Second Energy Conservation prize was received by Mr K.R Vaidya, Addl Vice President & Plant Head, Shriram Alkali & Chemicals, Bharuch, DCM Shriram Ltd for its Caustic Soda plant. Mr. Ajay S Shriram, Chairman & Sr. Managing Director, DCM Shriram Ltd & Mr. Vikram S Shriram, Vice Chairman & Managing Director said, "We are deeply

honored to receive the award for our efforts in Energy Efficiency. We regularly keep upgrading technology and take new initiatives at our plants in Kota and Bharuch to improve efficiency. The National Energy Conservation award further infuses in us the confidence to continue with the same dedication and enthusiasm to conserve energy."



Private firm commences rice procurement in Jharkhand

► The Food Corporation of India (FCI) has awarded contracts to two private players — National Collateral Management Services (NCML) and Veerprabhu — to carry out paddy purchase operations in Jharkhand and Uttar Pradesh, respectively. This is for the first time that private players have been allowed to purchase paddy from farmers on behalf of FCI on a bigger scale. Last year, the Centre had decided to engage private players during the current kharif season for procurement of rice in eastern Uttar Pradesh, Jharkhand, West Bengal, and Assam. These are states where the procurement mechanism of FCI and state government agencies are rather poor. NCML has commenced paddy purchase in three identified clusters in Jharkhand. The Mumbai-based grain trading firm, Veerprabhu, has been allowed to purchase paddy

from clusters in eastern Uttar Pradesh. "We are at present not looking at huge volume of procurement by private parties. However, we are expecting the private sector to bring in efficiency



in grain purchase system," a food ministry official said. The FCI has allowed private firms in only those clusters where there is possibility of procurement of one lakh tonne of rice equivalent of paddy. Besides, the new policy allows the private parties to open as many purchase centres as

possible in the allotted cluster, subject to a cluster covering a minimum 500 to 1,000 hectare. The corporation has also shortlisted Veerprabhu to commence paddy procurement operations in West Bengal.

As per the policy, the private parties would be engaged in procurement of paddy in a cluster identified by the respective state government and the private company would deliver custom milled rice (CMR) at the FCI or state government-owned agency godowns. The food ministry has set a target to procure 30 million tonne (MT) of rice during the kharif marketing season (2015-16) starting from October 1. Till Monday, the rice procurement by agencies have already crossed 20 million tonne which is 30% higher compared to purchase during same period of 2014-15 marketing year (October -September).

Tata Trusts, Mars sign MoU to work on food safety in India

➤ Tata Trusts and leading global food manufacturer Mars Incorporated have entered into a Memorandum of Understanding (MoU) to work together to advance agriculture development, address malnutrition and improve food safety in India, according to a joint statement. Tata Trusts that will participate in the initiative include Sir Dorabji Tata Trust, Sir Ratan Tata Trust, and Navajbhai Ratan Tata Trust. All these trusts collectively known as Tata Trusts are coalition of philanthropic trusts that have been working to improve the quality of life of people in India. Being a food manufacturer, Mars Incorporated said it would work with the Tata Trusts “to develop methods and tools to increase crop productivity, farm income, and sustainability of select agriculture commodities, and to collaborate on the availability of safe, affordable, and sustainable raw materials from India.” The crops that will be focus include mint, peanuts, rice, and legumes. Mars Food, a segment of Mars, Incorporated, will also conduct joint research with Tata Trusts on nutritional guidelines that can help address anemia and other forms of malnutrition, the joint statement added. “Given Mars’ global leadership in nutritive foods and sustainable agriculture, the Tata Trusts believes this collaboration would have lasting, meaningful benefits for Indian communities,” said Ratan Tata, Chairman of Tata Trusts in the statement.



Mother Dairy, IL&FS tie up to sell organic compost

➤ Mother Dairy, whose about 400 Safal outlets in the Delhi-NCR region sell vegetables and fruits, juices, pulses, and spices, will now sell organic compost made by IL&FS Environment to households and farmers. “In the next two-three months, we hope to take this compost to about 5,000 farmers who work with us on a daily



basis,” said Nagarajan S, Managing Director, Mother Dairy Fruits & Vegetables Private Ltd, a wholly-owned subsidiary of National Dairy Development Board. Under the strategic tie-up, Mother Dairy will give back-end support to IL&FS Environment and will follow the concept of a “circular economy” by loading trucks that bring fruits and vegetables from farmers in the NCR region with organic compost, Nagarajan said, adding that this would also save transportation costs. The compost, Home Garden, is rich in humus and has over 12 per cent organic carbon content, necessary for long-term soil health, said Mahesh Babu, Managing Director, IL&FS Environment, adding that “65 per cent of soil in India does not contain organic carbon, which destroys its ability to retain moisture”.

Sula Vineyards to crush 20% more grapes this season

➤ The grape harvest at Sula Vineyards, the country’s largest wine producer, is underway and the company will crush about 13,000 MT of grapes this season, a top official said. “This year we will crush close to 13,000 MT of grapes, up 20% from 2015. Total farmer payments will cross Rs 50 crore,” Rajeev Samant, CEO, Sula Vineyards, said. “The grapes will come from across Maharashtra at our three wineries here, and from across Karnataka for our Karnataka winery. This year the effects of climate change and global warming are highly apparent with our harvest starting fully two weeks earlier than ever before,” he said. Samant added that the industry as well as wine growers are bearing the brunt of climate change and having to rapidly adapt their practices to cope with the often adverse effects. “In the 16 years since we began operations, we have built strong relations with our growers whose ranks are increasing every day,” he said. Sula Vineyards works with over 400 grape growers in Maharashtra and Karnataka with 10-year assured buyback contracts.



Govt relaxes apple import norms, allows shipment via more ports

► Relaxing import restrictions on apples, the government has allowed inbound shipments of the fruit through sea ports and airports in Kolkata, Chennai, Mumbai and Cochin. It has also permitted imports from land port and airport in Delhi besides land borders. The move could help in increasing availability of the fruit in the domestic market and ease its prices. Last year in September, the government had restricted import of apple by allowing its inbound shipment only through Nhava Sheva port in Maharashtra. Import of apples “is allowed through sea ports and airports in Kolkata, Chennai, Mumbai and Cochin; and land port and airport in Delhi. Import of apples is also allowed through India’s land borders,” the Directorate General of Foreign Trade (DGFT) has said in a notification. Importers had earlier raised concerns over the restrictions. They had termed that as a non-tariff barrier. The US authorities too had raised objections over the restrictions.



Irrigation, rural job schemes to be linked

► The agriculture ministry plans to dovetail its ambitious programme of providing irrigation to each field with the rural employment guarantee scheme to ensure smooth availability of labour. Officials said discussions have started between the agriculture ministry, which the Pradhan Mantri Krishi Sinchae Yojana (PMKSY) oversees, and the rural development ministry, which looks after the Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS). MNREGS labourers are usually engaged in irrigation projects — one of the main focus of the scheme — but a formal arrangement does not exist, officials said. Dovetailing the irrigation programme with MNREGS would ensure that work done under the PMKSY gets paid through the job scheme.

Centre to launch software to connect agri markets

► The Centre will soon launch a software solution that helps connect agricultural markets across the country. “The new software could break the virtual and connectivity barriers of agricultural markets and will benefit the farmers in getting fair prices,” Radha Mohan Singh, Union Minister of Agriculture and Farmers Welfare, said. Addressing a gathering at Mulugu in Medak district after laying foundation stone for Shri Konda Laxman Telangana State Horticulture University, he said Karnataka could bring 50 agricultural markets on one platform. “We have received proposals from 12 States, including Telangana, asking the Centre’s help to help their markets connected. We will give Rs 30 lakh for each agricultural market,” he said.



Centre's bid to promote organic farming in North-east

► The Centre is all set to launch a major campaign to promote organic farming in the North-east region with a budgetary allocation of Rs 125 crore. Union Minister for Agriculture and Farmers' Welfare Radha Mohan Singh said the Centre proposes to go on a mission mode in the North-east to promote organic farming. The Centre has allocated Rs 1.25 crore for the North-east and the DoNER Ministry has given the consent to the Agriculture Ministry to promote organic farming. The Agriculture Ministry proposes to spend about Rs 200 crore in the North-east on a 90:10 pattern of sharing funds, he added. The Minister said that Sikkim is the first State to have adopted organic farming on a universal basis. The State, which has an Act that prohibits use of agro-chemicals, has already taken steps to convert its entire arable 74,000 hectares of land into organic farming. It is now focusing on certification, branding,



processing and marketing so that farmers get premium price on the organically-cultivated produce, the Minister said.

Govt prepares plan to boost farm, infra

► The government is readying a strategy to focus on infrastructure, agriculture and restoring the health of the banking system as well as specific measures to ease stress in the rural economy when it unveils the 2016-17 budget in February end. According to the preliminary blueprint that has emerged during the budget discussions, the government wants to focus on these crucial areas to accelerate growth and tackle growing unease in the farm economy "There will be more attention to irrigation and agriculture. We are working out the numbers. We will have to address the problems in the rural economy which has borne the brunt of two consecutive droughts," said a senior official, who did not wish to be identified. "This is a very crucial budget for the government," said the official, highlighting the need to take effective measures to revive vital sectors and overall growth. He also said the infrastructure sector will see greater attention as the government is keen to step up investment despite a challenging fiscal situation. The government has allocated Rs 5,300 crore to support microirrigation, watershed development and the Pradhan Mantri Krishi Sinchai Yojana and had urged the states to chip in substantially in this vital sector. Sources say this effort will be stepped up in the current budget.

Govt unveils Rs 8,800cr new crop insurance

► Farmers need to pay only 2% of premium fixed for kharif and 1.5% for rabi produces

In a major policy shift towards rural areas, the Centre announced a new crop insurance scheme under which farmers need to pay a low premium only, but it entails a budget of Rs 8,800 crore. The farmers will pay only 2 per cent of the premium fixed by the insurance company for all crops grown during kharif season and 1.5 per cent for rabi crops, Home minister Rajnath Singh said after a cabinet meeting. The remaining amount of premium would be subsidised by both the Centre and state under 50:50 plan. The new scheme would subsume all other crop insurance programmes and will run as pradhan mantri fasal mima yojana (PMFBY). The programme will combine districts into clusters and insurance companies will have to bid for each cluster on the rate of premium they will charge for the crops. The scheme will be launched from the next kharif season, beginning June. The government said once farmers put their claim on insurance, immediately they will receive 25 per cent of the amount. The remaining 75 per cent will be decided within certain time period using both feedback of revenue department officials as well as modern technology including drone and satellite mapping. The farmer's field should be the basis of evaluating damage, rather than cluster and it should be cleared in the policy itself, said Bharaitya Kisan Union spokesman Rakesh Tikait.



Maharashtra stares at 30% drop in cane acreage due to water shortage

➤ Maharashtra is staring at a drastic drop in sugarcane planting for the 2016-17 season. With water levels depleting at an alarming rate in the state dams, plantation for the season, which has just begun, is likely to be hit by up to 30%, officials said. The 'suru' (ratoon) planting has just begun and a review will be taken after February 15, said Vipin Sharma, Maharashtra sugar commissioner. According to senior officials, new plantation usually goes up by 35% every year but this year overall new plantation has gone down by 20% because of the water shortage. As a result, the ratoon planting is likely to be around 45-60% in the coming season and the overall planting is likely to be affected to the tune of 20-30%, the officials said. Till date around 50% plantation has been completed and because of the paucity of water farmers are now either resorting to ratooning or opting for less water-intensive crops, they pointed out, adding that mills in Marathwada region are the hardest hit and plantation in this region could be affected to the tune of 50%.



Rubber growers in Karnataka seek support price, hike in import duty

➤ Rubber growers in Karnataka have urged the Centre and State governments to help them tide over the crash in the price of the commodity. In this regard, they have urged the Karnataka government to announce market support price for rubber on the lines of Kerala model, and to the Centre to increase the import duty on rubber from the existing 25 per cent to 70 per cent. Shridhara Bhide, President of the Karnataka State Rubber Growers' Welfare Forum, said that the price of natural rubber, which was around Rs 240 a kg in 2011-12, has now come down below Rs 100. He said the Karnataka government should announce market support price of Rs 150 for rubber on the lines of the 'Rubber Production Incentive Scheme' of the Kerala government. Under this scheme, the Kerala government credits the difference between the market support price and the daily reference price approved by the Rubber Board to the bank account of the grower directly. The tapped area eligible for financial assistance in the Kerala scheme is limited to two hectares of rubber per applicant, and the eligible financial assistance for each applicant is limited to 1,800 kg/ha per annum. The 2015-16 budget of the Kerala government had earmarked Rs 300 crore for 'Rubber Production Incentive Scheme' he said.

Maharashtra suspends licences of 12 sugar factories

➤ Maharashtra has decided to suspend crushing licences of 12 sugar mills in the state for their failure to pay fair and remunerative price (FRP) arrears for the 2014-15 season. The licences of another 7 factories have also been suspended for their failure to pay the dues to the Chief Minister's Fund at the rate of Rs 3 per tonne, top officials said. These mills will also be fined Rs 500 per tonne if they continue to crush cane, the officials said. Significantly, 13 sugar mills that have not been granted permission by the State Sugar Commissionerate to crush cane will be issued revenue and recovery certificate notices this week for their failure to pay up FRP dues, said Vipin Sharma, Maharashtra sugar commissioner. This is perhaps the first time that such stern measures are being taken by the government. Sugar mills in Maharashtra have been struggling to pay FRP dues since the last season after the fall in sugar prices and the 12 factories still owe the farmers dues to the tune of Rs 200 crore. According to the commissioner, as on December 31, 2015, the arrear position was around Rs 328 crore and this is likely to come down to Rs 200 crore by January 10 since the mills have begun paying up.



Sikkim becomes India's first organic state

► Sikkim has become India's first fully organic state by implementing organic practices on around 75,000 hectares of agricultural land. Sikkim Organic Mission's executive director, Dr Anbalagan said around 75,000 hectares of agricultural land was gradually converted to certified organic land by implementing organic practices and principles as per guidelines laid down in the National Programme for Organic Production. It was in 2003 when the Pawan Chamling government decided to make Sikkim an organic farming state through a declaration in the legislative assembly. Later the entry of chemical inputs for farmland was restricted and their sale banned. Farmers, therefore, had no option but to go organic. Organic cultivation is free of chemical pesticides and chemical fertilisers as it tries to strike a harmonious balance with a complex series of ecosystems.



Karnataka pips Kerala to emerge top pepper producer

► Karnataka has dethroned Kerala as the leading producer of pepper, accounting for almost 50 per cent of the production in the 2014-15 crop year. Of the estimated all-India pepper production of 70,000 tonnes, Karnataka's share was 33,000 tonnes while that of Kerala was 28,000 tonnes during the period. In 2013-14, the figure was 16,000 tonnes and 20,000 tonnes respectively. Official sources in the Spices Board attributed rising prices of pepper and fluctuation in coffee rates as reasons to incentivise farmers in Karnataka to take up pepper as an adjunct crop. Moreover, Karnataka planters have been taking lot of initiatives in stepping up pepper production and have set up plans to adopt the Vietnamese method of exclusive mono-crop of pepper cultivation.

AMMA SEEDS TO TAKE ON MNC GIANTS IN TN

► Tamil Nadu will soon see Amma Seeds taking on seeds marketed by multi-national giants. In what could be a master political stroke, J Jayalalithaa, Chief Minister of Tamil Nadu, launched quality and certified seeds under the brand name Amma, the State's popular brand. A release by the Government of Tamil Nadu said the public sector Tamil Nadu State Seeds Development Agency would offer farmers quality and certified seeds under the brand name Amma Seeds at affordable prices. The Chief Minister launched the scheme by personally handing over the seeds to three farmers. It has come as a big relief to farmers who suffered heavy losses in the recent flood which devastated their crops.

Maharashtra rolls out health-care plan for drought-hit farmers

► As part of its attempt to provide better health care to families of drought-hit farmers, the state government is organising a mega health camp at Jalgaon. This is for the first time that a camp, with the participation of doctors from the private sector, is being organised in drought-affected areas. Chief minister Devendra Fadnavis, who inaugurated the camp, said that the state would hold more such camps in all drought-affected areas. Loan waivers alone won't help farmers as they often find it difficult to get proper medical attention, too, he said.



Cabinet approves new **crop insurance scheme**



► In a bid to provide a social security net to millions of farmers across the country, reeling under the impact of consecutive droughts, the Union Cabinet on Wednesday approved a new crop insurance scheme, having premiums as low as 1.5 per cent of the sum insured. To be called Pradhan Mantri Fasal Bima Yojana (Prime Minister's Crop Insurance Scheme), it will charge a uniform premium of two per cent of the sum insured from farmers for all kharif crops and 1.5 per cent for rabi crops. For horticulture crops, the annual premium will be five per cent of the sum insured. The balance premium would be paid by the government to the insurance companies. This would be shared equally by the Centre and state governments.

Nabard sanctions 44 cr for varsity

► Innovative projects proposed by Kerala University of Fisheries and Ocean Studies (KUFOS) got a major boost as the National Bank for Agriculture and Rural Development (Nabard) has sanctioned 44 crore for implementing them. The development projects include a five-storied academic complex at the headquarters, an ocean studies campus and a hatchery for grey mullet, both at the fisheries station of the varsity in Puthuveypu, KUFOS said in a statement. "KUFOS is building the academic complex to provide adequate physical support for the newly started postgraduate courses. The complex will have all modern amenities," KUFOS vice-chancellor B. Madhusoodana Kurup said.



Banks miss **credit target** in 2014-15

► Within priority sector credit, both public sector and private sector banks have missed the 18 per cent target of advances to the agricultural sector in FY15, says the Reserve Bank's statutory report on trend and progress of banking in India 2014-15. "Following the overall trend, credit growth to the priority sector also declined during 2014-15 and this decline was spread over all sub-sectors with growth in credit to agriculture declining to 12.6 per cent from 30.2 per cent in the previous year. Credit to priority sectors by PSBs (public sector banks), PVBs (private sector banks) and FBs (foreign banks) was 38.2 per cent, 43.2 per cent and 32.2 per cent (of adjusted net bank credit (ANBC)/credit equivalent of off-balance sheet exposure, whichever is higher) respectively, during the year," the report said. PSBs indicated a shortfall from the overall target of 40 per cent. "Within priority sector credit, both PSBs (16.5 per cent) and PVBs (14.8 per cent)



had a shortfall in advances to agricultural sector against the target of 18 per cent," it added.

Farm loans: Interest subsidy scheme distorting the credit system

➤ To alleviate agricultural distress, a Reserve Bank of India panel has recommended a slew of measures, including doing away with the current interest subsidy scheme, instituting a universal crop insurance scheme for small and marginal farmers, and digitisation of land records. The committee on medium-term path on financial inclusion, headed by Deepak Mohanty, Executive Director, RBI, suggested that the Centre should come up with universal crop insurance for small and marginal farmers at a heavily subsidised rate, the money for which can be funded by doing away with the current interest subsidy scheme. It observed that the interest subsidy scheme has distorted the agricultural credit system and seems to have impeded long-term investment. The committee said millions of small farmers live on the precipice, starved of credit. In the absence of bold structural reforms by way of digitisation of land records and giving tenancy certification to enable credit to the tiller, the problem is likely to persist. It expressed concern that although agricultural credit has been rising every year, as reflected in an increase in the number of accounts, the extent of financial exclusion remains large, especially for tenant farmers, share-croppers and agriculture labourers who still have limited or no access to the formal credit system. Additionally, indirect credit has risen more impressively compared to direct credit, due mainly to more and more categories being brought within the ambit of priority sector lending for agriculture. The Committee recommended that in order to increase formal credit supply to all agrarian segments, digitisation of land records should be taken up by states on a priority basis. In order to ensure actual credit supply to the agricultural sector, the committee recommended the introduction of an Aadhaar-linked mechanism for Credit. The Reserve Bank of India may accordingly modify its regulatory guidelines to banks to directly lend to tenants/lessees against such credit eligibility certificates.



Nabard looks to raise funds via tax-free bonds

➤ With close to Rs 80,000 crore required to complete irrigation projects that have already been conceived, the National Bank for Agriculture and Rural Development (Nabard) wants the government to consider allowing it to raise resources via tax-free bonds so that the projects can be taken to their logical conclusion. Given that irrigation is a priority area for the Centre, completed irrigation projects will benefit farmers and the economy, according to Harsh Kumar Bhanwala, Chairman, Nabard. He emphasised that under the aegis of the Rural Infrastructure Development Fund (RIDF), Nabard has created an irrigation potential of 26.7 million hectares in the last 21 years. The fund has also helped establish rural connectivity — 4.16 lakh km of rural roads and 1,000 km of bridges. RIDF deposits are drawn from banks facing shortfall in meeting priority sector lending — agriculture, micro, small and medium enterprises, housing, education and weaker sections — targets. The Fund was instituted in Nabard through an announcement in the Union Budget 1995-96 with the sole objective of giving low-cost funding support to state governments and state-owned corporations for quick completion of ongoing projects relating to medium and minor irrigation, soil conservation, watershed management and other forms of rural infrastructure.



Over the last few years, banks have stepped up efforts to meet PSL targets in order to keep their outgo towards RIDF as low as possible. On RIDF deposits, banks earn low-interest rates, ranging from 3.75 per cent to 5.75 per cent. The higher the shortfall in meeting the overall PSL target, the lower the interest rate they earn on deposits parked in RIDF.

Bhanwala observed that in addition to the allocations under RIDF, for completion of irrigation projects there is a need to create a mechanism for funds to flow in as capital borrowings.

EU's extends import ban on Indian veggies

► The European Union (EU) has extended the ban on import of four vegetables – bitter gourd, eggplant, taro plant (arbi) and snake gourd – from India by another year despite efforts made by the country to put in place stringent quality control and packaging measures.

New Delhi, which had been lobbying with the EU authorities and Parliament for allowing the ban to lapse on December 31, 2015, will now step up efforts for its revocation. Mangoes, which had been in the initial list of banned farm items brought out by the EU in May 2014, but were exempted early last year, continue to find

favour with the 28-member bloc with no new restrictions imposed on the fruit. The items were banned by the EU in May 2014 for a period of 20 months following detection of fruit flies in some consignments. To assure the EU that such lapses would not take place in the future, New Delhi made it mandatory for exports of all perishable items to the bloc to be routed through pack-houses certified by the Agriculture and Processed Food Products Export Development Authority (Apeda) under the vigilance of plant protection inspectors.

Indonesia signs MoU to import rice from India, Pakistan

► Indonesia has signed a Memorandum of Understanding (MoU) to import rice from India and Pakistan, in order to reduce its dependence on Thailand and Vietnam for meeting its domestic demand. The Indonesian government has allowed import of half-milled rice or entirely milled rice of intact sticky/glutinous variety, Thai Hom Mali rice with 5 per cent broken grain, half-steamed rice, Japonica with maximum 5 per cent broken grain, Basmati with maximum 5 per cent broken grain, rice with maximum 25 per cent broken grain, rice with 100 per cent broken grain, and sticky rice with 100 per cent broken grain. Rice with maximum 25 per cent broken grain can be imported for price stabilisation, as a buffer for emergency situations, poor people, and/or mitigation of food insecurity by state-owned logistics firm Bulog after considering its stock, the difference between the market price and government's procurement price, and estimation of production surplus. In such situations, rice can only be imported one month before the main harvest season, during the season, and two months after it. The main harvest season is determined by the agriculture ministry.

Jute product exports shrink due to high cost

► Rising prices of jute goods triggered by steep raw jute prices have shrunk the export market for domestic manufacturers. A squeeze in export orders could wipe out the profitability of the mills with major export orders. Jute goods exports have logged almost flat growth from 2010-11 (0.19 million tonne) to 2013-14 (0.21 million tonne). However, jute goods exports declined sharply in 2014-15 to 0.15 million tonne, a fall of 27 per cent. Raw jute prices have touched an all-time high of Rs 53,000 a tonne, double the level of Rs 26,000 per tonne in the year-ago period. This has escalated prices of jute goods as well. B T prices are now at Rs 74,000 a tonne whereas Hessian has moved beyond Rs 100,000 a tonne. "Rising prices of jute goods have both a short-term and long-term impact on the export market. While exports may not be impacted in a big way in value terms, the decline would be felt in volume terms. We have already lost major export markets like Egypt and Syria. Also, there is no incentive from the government of India unlike Bangladesh which continues to incentivise jute exports," Manish Poddar, chairman, Indian Jute Mills Association said.

Japan's Yubari melons, Kobe beef get brand protection

► Champagne, Melton Mowbray pork pies and Gorgonzola cheese are to be joined by Kobe beef and eye-wateringly expensive Yubari melons as protected products after Japan granted them a special status. A total of seven products including Kobe beef and the melons from the northern island of Hokkaido were added to a list of Japanese geographical indications, the farm ministry said. With the designation, anyone who uses the registered brands without permission could face penalties. "We'll promote the registration of geographic indications and increase demand (for premium farm products) inside and outside Japan," Hiroshi Moriyama, Agriculture Minister, told a press conference. The World Intellectual Property Organisation, on its website, defines a geographical indication as "a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin". The government hopes to boost exports of made-in-Japan premium agriculture products as local farmers could face competition from cheaper imports with the recently concluded Trans-Pacific Partnership free trade pact. Under the deal, most tariffs were to be eliminated or slashed on everything from beef, dairy products, wine, sugar, rice, horticulture and seafood through to manufactured products, resources and energy.

India - Africa cooperation in agriculture can ensure long term global food security

➤ Indian council of Food and Agriculture (ICFA) hosted a 14 member African delegation from eleven countries in New Delhi mounted by African Union and led by Michigan State University, US. The visit in India was coordinated by TERI, which is the Consular General of Michigan State University in India. On this occasion, ICFA signed two MoUs with Michigan State University and with TERI for working on technology transfer, training and entrepreneurship development in Africa and conducting global studies on trade, technology and food security related issues. ICFA Chairman, Dr. MJ Khan also announced the launch of ICFA Working Group on Africa to be hosted by ICFA in India and co-hosted by MSU and AU with 15 members each from India and Africa and five members from US. Indian side of the table was joined by Dr. MJ Khan, Chairman, ICFA; Mr. Alok Sinha, DG - ICFA; Mr. Pinaki Ranjan, ED, ICFA; Dr. KL Chadha, President Horticulture Society; Dr. M Moni, Chairman, ICFA Working Group on ICT; Dr. Dinesh Mishra, CEO, NCUI; Dr. RP Singh, Secretary, All Indian Agri Varsities Association; Mr. RPS Gandhi, Stevia farmer; Mr. Vijay Sardana, 'Head - Food Security and Agribusinesses, Policies and Programs, UPL Group; Mr. Anil Jauhri, CEO, QCI; Dr. JS Sandhu, Dy. DG, ICAR and Mr. Ravi Verma, Member of Parliament. The delegates from the Africa included Mr. Ouro-Koura Agadazi (Togolaise), Mr. A. W. Gemelal (Ethiopia), Ms. V. A. Opoku-Agyakwa (Ghana), Mr. Moussa Savadogo (Burkina Faso), Mr. K. M. N. Shongwe (Swaziland), Mr. A. Tokoro (Togolaise), Mr. S. O. Obwogo (Kenya), Mr. I. A. Mdee (Tanzania), Ms. A. G. Kamau (Kenya), Ms. L. Mbongo (Namibia), Mr. H. M. Moimbo (Kenya), Ms. D. K. Musonda (Zambia), Mr. C. I. Okpoko (Nigeria) and Ms. O. O. Olajitan Popoola (Nigeria). All the delegates expressed their happiness to be a part of this interaction organised by ICFA and hoped to put in use the rich experiences in their respective countries for the development of agriculture.



WTO commits to end farm export subsidies: Azevêdo

➤ Members of the World Trade Organisation (WTO) made a commitment at the Nairobi ministerial to eliminate subsidies for farm exports, its director general Roberto Azevêdo has said in a statement, describing the move as the “most significant outcome on agriculture” in the organisation’s 20-year history. Developed countries have committed to scrap export subsidies immediately, except for a handful of agriculture products, and developing nations will do so by 2018, according to the WTO statement. Developing nations will have the flexibility to cover marketing and transport costs for farm exports until the end of 2023, and the poorest and food-importing countries would enjoy additional time frame to trim export subsidies. However, developed nations, ironically, refrained from making any commitment to trim massive



trade-distorting agriculture subsidies (at the production level) offered by them, which make their farm products much cheaper in the export market, despite hectic negotiations that exceeded the scheduled closing of the Nairobi ministerial by almost a day from December 18. Instead, they focussed only on ending direct subsidies given for farm exports, said analysts. The latest decision contains disciplines to ensure that other export policies are not used as a disguised form of subsidies. These disciplines include terms to limit the benefits of financing support to agriculture exporters, rules on state enterprises engaging in agriculture trade, and disciplines to ensure that food aid does not negatively affect domestic production, according to the statement. Developing countries are given longer time to implement these rules. India had expressed “disappointment” over the lack of a

unanimity in re-affirming to conclude the 2001 Doha Development Agenda. “Ministers acknowledged that members ‘have different views’ on how to address the future of the Doha Round negotiations but noted the ‘strong commitment of all Members to advance negotiations on the remaining Doha issues’”, said the statement.

Now, a pungent yet healthy mustard oil

▶ A mustard oil that is healthy and yet retains its characteristic pungency is something many consumers — especially in northern and eastern India — would consider as the ideal cooking and frying medium. That ‘ideal’ combination may have become real now, with the release of a new variety, Pusa Mustard-30. Developed by the Indian Agricultural Research Institute (IARI), it has an erucic acid content of less than 2 per cent of total fatty acids. The normal Indian mustard (*Brassica juncea*) typically have over 45 per cent erucic acid, linked to increase in risk of cardiac muscle impairment. The high erucic acid levels in Indian mustard have led to a growing market for imported rapeseed or canola oil (*Brassica napus*). Belonging to the same Brassicaceae family, but of a different species (*napus*), canola oil has the advantage of low erucic acid (below 2 per cent), but lacks in glucosinolates, organic compounds that catalyse reactions in the broken seeds imparting the pungent taste associated with mustard oil. While the glucosinolates content in Indian mustard is about 150 micromoles per gram of seeds, it is less than 30 for canola. Pusa Mustard-30 also offers high crop yields.



Icrisat's new seed variety can double tur yields

▶ The International Crops Research Institute for the Semi-Arid Tropics (Icrisat) has launched a tur seed variety that it claims has the potential to double the yield of the pulse if grown in Andhra Pradesh. The seed called LRG-52 and named Amaravathi after the new capital of Andhra



Pradesh, was recently released for cultivation by the State Varietal Release Committee, the global farmer

research body said in a weekly newsletter. The institute said tur productivity in Andhra Pradesh was stagnant at around 600 kg/ha, with terminal moisture stress being the main constraint. “LRG-52 has yield potential of 2 tonne/ha under rain-fed conditions and 3tonne under irrigated conditions,” Icrisat said adding the crop matures in just 15 days and it was moderately tolerant to helioverpa, maruca, pod fly, Fusarium wilt and Sterility mosaic diseases. The seed is bold in size, thereby giving better recovery when split to produce tur dal. India has witnessed sharp decline in output of the key pulse since the last two years, making prices surge to a record Rs 200/kg in October from Rs 80 a year ago.

Now, a web portal for farmers to sell produce

▶ A website that will act as a platform for farmers to sell their produce, without any middlemen, was launched in Karnataka recently. Speaking at the launch of the website KisanMarket.com, Food and Civil Supplies Minister Dinesh Gundu Rao said that the portal will help farmers by directly integrating the buyer and the seller. “Some traders dominate the business. Farmers are deprived of good price for their produce and they do not get proper information. Farmers, in fact, get only 20 per cent of the profit. Middlemen are making the best of the situation,” he said. More than 1,100 farmers have already registered on the portal, which is an initiative by the TGS Group. Thyagaraja Rallapalli, Chairman, KisanMarket.com, said that farmers can register themselves on the website for free with their mobile numbers. The facility is open to farmers and traders in different states and is not confined only to Karnataka. The main advantage is that farmers can fix their own prices for the produce on the website. The website is available in Kannada, Telugu, Tamil, Malayalam, Bengali, Gujarati, Hindi and English.



Agriculture Ministry and Food Processing Ministry get new Secretaries

► Shobana K Pattanayak, a 1982 batch Karnataka cadre IAS officer, has been appointed Secretary in the Department of Agriculture on the retirement of the incumbent Siraj Hussain. Special Secretary in the Agriculture Department Avinash Srivastava has been promoted as Secretary in the Food Processing Ministry. Srivastava is Special Secretary, Department of Agriculture, Cooperation and Farmers Welfare. In MoFPI, he would have to deal with tasks such as implementation of Mega Food Park scheme and tax rates in the proposed GST regime.



Shobana K Pattanayak



Avinash Srivastava

Farmers given high zinc rice seeds to fight malnutrition

► In a bid to mitigate malnutrition in tribal-dominated Chhattisgarh, the seeds of high zinc enriched variety of rice were distributed to farmers for commercial production. Chief Minister Raman Singh launched the seeds of new species of paddy, 'Chhattisgarh Zinc Rice-1' to farmers at the "National Farmers Fair" which began in Jora village on the outskirts of the capital. "Farmers of our State are actually the greatest agriculture scientists. They have combined traditional methods and experience with modern technology, and have thereby made great achievements," the Mr Singh said while addressing the opening ceremony of the three-day event. "It is because of their (farmers') hard work that we have taken a leap from only rice export to export of fruits and vegetables along with rice," he said.



On the occasion, 1,500 mini kits of these seeds which are high-yielding in nature, were distributed to farmers. The Chief Minister further said the fair is a great opportunity to learn about the progress of Chhattisgarh in agro-sector in the last 15 years. "With their perseverance and dedication, State's farmers have brought a revolution in the field of agriculture. Various schemes run by agriculture department in coordination with Indira Gandhi Agriculture University have also accelerated growth of agro-sector," he said.

Ministry launches 2 apps for farmers

► The agriculture ministry on Wednesday launched two mobile apps -one on crop insurance and second on agri-market. Crop insurance app can be used to find out details about cover available, premium, sum insured and subsidy information. Agri Market Mobile App can be used to get market price of crops in the markets within 50 kilometer radius of the location of the device.

'Organic Sikkim' Cardamom Set to Get e-platform

► India is all set to find more demand for its large cardamom in the international market now that Sikkim, which produces a chunk of this highly-valued spice, has been declared an organic-farming state, according to the Spices Board. Organically-grown large cardamom may be priced higher than its fertiliser-fed counterpart, but the former has burgeoning premium-class consumers abroad whose number is increasing of late, said Spices Board Chairman A Jayathilak. He added that organically-raised large cardamom is another initiative under the present government's Make in India mission. India exported 665 tonnes of large cardamom in 2014-15. In the first half of the current fiscal cardamom worth Rs 20.12 crore was exported from India. Sikkim, which grows large cardamom in 17,000 hectares, produces 4,000 metric tonnes (90 per cent of the country's production) of the spice annually. The Spices Board has released the 'Organic Sikkim' logo on January 18 in the presence of that Chief Minister Pawan Kumar Chamling. The Spices Board has a team of 50 employees working in Sikkim to sustain organic farming and to empower the growers to earn more from their produce in the coming years. Large-cardamom cultivation will get further boost in the six months from now as Spices Board is set to launch an e-platform for its famed fortnightly auction in Sikkim's traditional spice market of Singtam. This is in accordance to the Digital India campaign, Jayathilak said.

India's Evolving Agri Markets

Agriculture in India is a major driver in terms of economic growth especially for the rural economy. Notwithstanding the fact that more than half of the country's population is dependent on agriculture for their livelihood, the sector is also seen emerging as a strong contender in the global space by earning a sizable foreign exchange. India over the decades has developed strong trade alliances in the agri segment with many countries.



In today's agri space, considerable changes have taken place with respect to trading and marketing. Once which used to be a door to door endeavor and at the most restricted to local village market yards, the agricultural goods today find their way beyond the international borders. The products as part of better marketing antics undergo a series of changes through processing and value addition and are better packaged and stored. This segment alone has assumed the stature of an industry and has huge employment potential notwithstanding its better economic prospects.

India's Agriculture Trade

India's trade potential in agriculture has expanded over the years. Thanks to the green revolution, white revolution, yellow revolution and blue revolution, India tops globally in many agricultural commodities. India is the world's largest producer of many fresh fruits and vegetables, milk, major spices, select fibrous crops such as jute, staples such as millets and castor oil seed. India is the second largest producer of wheat and rice, the world's major food staples. India is the world's second or third largest producer of several dry fruits, agriculture-based textile raw materials, roots and tuber crops, pulses, farmed fish, eggs, coconut, sugarcane and numerous vegetables. India was ranked in the world's five largest producers of over 80% of agricultural products, including many cash crops such as coffee and cotton, in 2010. India is one of the world's five largest producers of livestock and poultry meat, with one of the fastest growth rates, as of 2011. India has

been the largest exporter of beef in the world since last year, and has further widened its lead over second-ranked Brazil with a projected total of 2.4 million tonnes exported in 2015 against Brazil's 2 million tonnes.

With all this production overload, India has opened up trade overseas which has been equally burgeoning. According to data from the commerce ministry, in 2010-11, agricultural exports stood at \$17.35 billion, in 2011-12 \$27.43 billion, in 2012-13 \$31.86 billion and in the first 11 months of 2013-14, it stood at \$29.3



Agricultural and Processed Food Products Export Development Authority, New Delhi

The Agricultural and Processed Food Products Export Development Authority (APEDA) was established by the Government of India under the Agricultural and Processed Food Products Export Development Authority Act passed by the Parliament in December, 1985. The Authority, with its headquarters at New Delhi has been serving the agri-export community since its inception. To reach out to the exporters in different parts of the country, in addition to 5 Regional Offices, APEDA has set up 13 Virtual Offices at Thiruvananthapuram (Kerala), Bhubaneswar (Orissa), Srinagar (J&K), Chandigarh, Imphal (Manipur), Agartala (Tripura), Kohima (Nagaland), Chennai (Tamil Nadu), Raipur (Chhatisgarh), Ahmedabad (Gujarat), Bhopal

(Madhya Pradesh), Lucknow (Uttar Pradesh) and Panaji (Goa). APEDA has been entrusted with the responsibility of export promotion and development of 14 agricultural and processed food product groups listed in the Schedule to the APEDA Act. In addition to this, APEDA has been entrusted with the responsibility to monitor the import of sugar as well. APEDA has been actively engaged in the development of markets besides upgradation of infrastructure and quality to promote the export of agro products. In its endeavour to promote agro exports, APEDA provides financial assistance to the registered exporters under its Schemes for Market Development, Infrastructure Development, Quality Development and Transport Assistance.



India exported \$39 billion worth of agricultural products in 2013, making it the seventh largest agricultural exporter worldwide, and the sixth largest net exporter

billion. During this four-year period, overall exports recorded 93 per cent growth. The share of agricultural commodities in India's overall export basket rose to 10.66 per cent in 2012-13 from 7.06 per cent in 2009-10.

India exported \$39 billion worth of agricultural products in 2013, making it the seventh largest agricultural exporter worldwide, and the sixth largest net exporter. This represents explosive growth, as in 2003 net export were about \$5 billion. India is the fastest growing exporter of agricultural products over a 10-year period, its \$39 billion of net exports is more than double the combined exports of the European Union (EU-28). It has become one of the world's largest supplier of rice, cotton, sugar and wheat. India exported around 2 million metric tonnes of wheat and 2.1 million metric tonnes of rice in 2011 to Africa, Nepal, Bangladesh and other regions around the world.

According to the World Trade Organization, global export and import of agricultural and food products stands at \$1.66 trillion and \$1.82 trillion, respectively, of which India's shares are 2.07 per cent and 1.24 per cent, respectively. This indicates India is a net exporter of agricultural products. The country ranks 10th in terms of global agricultural and food exports. Shipments have been particularly strong to Least Developing Countries (LDCs). In 2013, India became the top agricultural supplier to LDCs, with sales of \$5.2 billion. This is nearly \$1 billion more than the European Union, which is the second largest supplier. Indian exports to LDCs were more than three times greater than U.S. exports to these markets last year. Furthermore, according to United Nations data, India's export growth rate to these countries far surpasses the competition.

India also has a steady supply of inputs to support its population. Prior to 1960, imports were the only measure that ensured food security. During 1966 India had to import more than 10 million tonnes of foodgrains as against a domestic production of 72 million tonnes. In the following year again, nearly twelve million tonnes had to be imported. On the average well over seven percent of the total availability of foodgrains during the 1960s had to be imported. But with progress in India's agriculture and economy, the type and nature of the categories of food that was imported changed.

India's agricultural imports have been growing 16 percent annually



in U.S. dollar terms during 1990-2009. Agricultural imports totaled nearly \$11.0 billion in 2009/10. Agricultural products account for about 4 percent of total imports in 2009/10. Edible oils and pulses (includes chickpeas, pigeon peas, lentils, dry peas, etc.), of which India emerged as a major importer during the 1990s, continue to account for the bulk of India's agricultural imports. Other major items imported on a regular basis include raw cashew nuts (for processing), tree nuts (primarily almonds), and fruits (primarily apples). India remains a periodic importer of wheat when needed to replenish food security stocks, and sugar, when needed after cyclical downturns in domestic production.

Agri Export Zones

While an improvement in the agricultural production has been the prime reason behind enhancing our exports, an equally supportive environment has been created by the governments over the years. Our export import policy has been carefully crafted according to the changing times. Measures like the setting up of agri export zones, removal of procedural restrictions and marketing cost assistance have assisted in propagating agri exports.

Agri Export Zones are considered the most important creation of this policy. These zones are meant to promote ag-



ricultural exports from the country and provide remunerative returns to the farming community regularly. They are to be identified by the State Government, which would evolve a comprehensive package of services to be provided by all State Government agencies, State Agriculture Universities and all institutions and agencies of the Union Government for intensive delivery in these zones. Corporate sector companies with proven credentials were encouraged to sponsor new agri export zones or take over already notified agri export zones. Services that were managed and coordinated through this scheme include the provision

Agri Export Zones are considered the most important creation of this policy. These zones are meant to promote agricultural exports from the country and provide remunerative returns to the farming community regularly





of pre/post harvest operations, plant protection, processing, packaging, storage and related research and development. APEDA will supplement, within its schemes and provisions, the efforts of State Governments for facilitating exports.

The concept of Agri Export Zone (AEZ) was initiated by the Government of India in the year 2001 under Chapter – 16 of Exim Policy. The objective behind the notification of AEZ was to focus on potential products from the export perspective and address critical issues in creation of exportable quantity and quality and to synergize the use of all available resources and logistics from central and state sector schemes in existence. These facilities have been set up in 20 states covering more than 230 districts. The project covers 35 crops including fruits, vegetables, spices, cashew, tea, basmati rice, medicinal plants, and pulses. The total investment under the AEZ programme by all agencies stands at Rs 1, 724 crore, including private investments of Rs 970 crore. 60 AEZs in 20 States were notified by the Government till 2005. As of 2012, all those AEZs have completed their notified span of five years. Unfortunately, the state nodal agencies have not reported any information about exports and employment generation in these 60 AEZs since last three years which is a pity as these

could have stimulated further policy incentives and infrastructure expansion. Due to the lack of any progress report in the past three years, the government has not allocated any funds for AEZ in the last three years.

Apart from AEZs, as per the Special Economic Zones (SEZs) Act, the government has also granted approval for the setting up of nine SEZs for agro and food processing. A total of eight SEZs have already been notified and four facilities have been exporting various products. The exporting SEZs include Kerala Industrial Infrastructure Development Corporation, Karnataka Industrial Area Development Board, Parry Infrastructure Company Private

Limited and Pearly City (CCCL) Infrastructure Limited.

More support to Foreign Trade

Indian agriculture enjoys several inherent advantages. However, India's has not risen to its export potential. When it comes to the country's presence in international market, we are just 14th in terms of total export value. In horticulture, India's contribution to the global trade is only 1 per cent. "Considering production, productivity levels, domestic and international demand, and the current status of exports of India, there is immense scope in improving exports of meat, fruits



and vegetables, and spices”, stated a ASSOCHAM report recently.

Aiming to nearly double India’s exports of goods and services to \$900 billion by 2020, the government recently announced several incentives in the five-year Foreign Trade Policy for exporters and units in the Special Economic Zones. Unveiling the first trade policy of the NDA government, Commerce Minister Nirmala Sitharaman said the FTP (2015-20) will introduce Merchandise Exports from India Scheme (MEIS) and Services Exports from India Scheme (SEIS) to boost outward shipments. Besides, higher level of incentives will be provided for export of agriculture products under the Foreign Trade Policy (FTP), which seeks to integrate with Make In India and Digital India initiatives of the government. The FTP also seeks to establish an Export Promotion Mission to provide an institutional framework to work with state governments to boost India’s exports. Export obligation would be reduced by 25 percent and incentives available under the MEIS and SEIS would be extended to the units in the SEZs to make them more attractive for investors. Under MEIS, the main sectors to be provided support includes processed, packaged agricultural and food items, agricultural and village industry goods.

The government is keen to raise the farm exports as it would give farmers ample opportunities to sell their products keeping export market in their mind. It will not only arrest the dipping rural income, but also increase India’s presence in the global market which have recently started dipping. Agricultural exports, which had surged from \$17.7 billion in 2009-10 to \$42.7 billion in 2013-14, fell to \$39 billion in 2014-15.

The government is preparing a list of market-access barriers (non-tariff barriers such as sanitary and phytosanitary measures, packaging norms along with high tariff) and market denials (outright bans) in overseas markets that hamper its agricultural exports. The plan is to take these issues up more strongly with the key



Farm exports will not only arrest the dipping rural incomes, but also increase India’s presence in the global market which have recently started dipping. Agricultural exports, which had surged from \$17.7 billion in 2009-10 to \$42.7 billion in 2013-14, fell to \$39 billion in 2014-15.

importing countries. The government recently took up the issue of import ban and restrictions on Indian farm items with trading partners such as Vietnam (ban on Indian peanuts), China (yet to allow market access to Indian non-basmati rice), Saudi Arabia (ban on Indian green pepper), Iran (general ban on rice imports) and European Union (ban on Indian snake gourd, bitter gourd, aubergine and colocasia leaves).

The government is also compiling more information on 60 Agri Export Zones (AEZs). The AEZ concept, launched in 2001, has not yet taken off as the government has not allocated enough funds. The government is planning to revamp the policy with a focus on value-added exports. On May 11, the government had organised first outreach programme (in Mumbai) with exporters of farm products to inform them about the plan of

a ‘stable export policy’ and elicit their responses on the problems they face in India and overseas.

WTO and Indian Agriculture

Today, the wave of globalization is being increasingly felt in the area of agriculture. As our primary objective of food security has been more or less achieved, the country’s interest in engaging in foreign trade is being actively pursued. However, global trade has seldom been fair.

Formation of WTO was a seminal event in the history of global trade. It was constituted in January 1, 1995 under the Marrakesh Agreement, signed by 123 nations on 15 April 1994, replacing the General Agreement on Tariffs and Trade (GATT). The WTO provides a forum for negotiating agreements aimed at reducing obstacles to international trade and ensuring a level playing field for



India has been advocating adequate tariff protection to certain products by designating them special products. The products within agriculture regarding which India is extra sensitive with respect to trade liberalisation -- due to their potential for huge employment-generation and livelihood concerns

all, thus contributing to economic growth and development. The WTO also provides a legal and institutional framework for the implementation and monitoring of these agreements, as well as for settling disputes arising from their interpretation and application. The WTO deals with regulation of trade between participating countries by providing a framework for negotiating trade agreements and a dispute resolution process aimed at enforcing participants' adherence to WTO agreements, which are signed by representatives of member governments and ratified by their parliaments.

However the ongoing negotiation process has not achieved the objective of a level playing field. The tiff between the developed and developing countries continue to persist, and so far a closure to the subsidy discussions have been elusive. The WTO is attempting to complete negotiations on the Doha Development Round, which was launched in 2001 with an explicit focus on developing countries. As of June 2012, the future of the Doha Round remained uncertain: the work programme lists 21 subjects in which the original deadline of 1 January 2005 was missed, and the round is still incomplete. The conflict between free trade on industrial goods and services but retention of protectionism on farm subsidies to domestic agricultural sector (requested by developed countries) and the substantiation of fair trade on agricultural products (re-

quested by developing countries) remain the major obstacles. This impasse has made it impossible to launch new WTO negotiations beyond the Doha Development Round.

Liberalization was unheard of in the agriculture sector before the formation of WTO. The sector was highly protected in developed countries. Remunerative prices, subsidies and quantitative restrictions followed by the developed countries rendered the Indian agri exports non remunerative. India has been in the forefront pitching for protecting the agricultural interests of the developing countries.

India has been advocating adequate tariff protection to certain products by designating them special products. The products within agriculture regarding which India is extra sensitive with respect to trade liberalisation -- due to their potential for huge employment-generation and livelihood concerns -- include cereals, edible oils and oil-seeds and dairy products. Other agricultural products produced by small farmers and, therefore, sensitive for India are spices, ginger, cane sugar, etc. These need to be protected against deep tariff reduction.

As part of G33, India has strongly supported the need for developing countries to have a Special Safeguard Mechanism (SSM) which would allow them to impose additional tariffs when faced with cheap imports or when there is a surge in imports. However, developed countries and some developing

countries have sought to impose extremely restrictive requirements for invoking SSM, which would render this instrument ineffective. India is also aggressively pushing developed countries to reduce their farm support.

As far as agriculture negotiations are concerned, the playing field may be tilted further against India if it is required to undertake deep tariff cuts without any concurrent elimination of farm subsidies by developed countries. Even the most ambitious proposal would permit the US and the EU to together provide trade-distorting subsidies to the extent of \$ 30 billion. Further, without strengthened disciplines on green box, developed countries may be in a position to increase subsidies under this category beyond the present levels of \$ 90 billion. Such high levels of farm subsidies in developed countries, accompanied with deep tariff reductions in India, could severely threaten the livelihood of India's farmers as well as the food security of its people.

Although the negotiations are prolonged and reaching a unanimity in dialogues seem impossible, institutional arrangements such as WTO, provides a platform to keep the dialogues open to eventually form a future trade atmosphere that is mutually benefitting.

Indian Agri Markets

While India has been actively exploring and conquering overseas market, we have an equally vibrant and dynamic domestic market. Our markets which were once unorganized and scattered have now become more or less regulated by a series of reforms which in fact is still continuing. Discerning consumers and their expanding incomes have changed the face of markets in urban centers which are now home to more products with an equally impressive chain of retail markets.

The current system of organised marketing of agricultural commodities has been promoted through a network of regulated markets. Most state governments and UT administrations have enacted legislations to provide for the regulation of agricultural produce markets. The purpose of state regulation of agricultural markets was to protect farmers from the exploitation of intermediaries and traders and also to ensure better prices and timely payment for their produce.

Agricultural Markets in most parts of India are established and regulated under the State APMC Acts. The whole geographical area in the State is divided and declared as a market area





wherein the markets are managed by the Market Committees constituted by the State Governments. Once a particular area is declared a market area and falls under the jurisdiction of a Market Committee, no person or agency is allowed freely to carry on wholesale marketing activities. Apart from Kerala, Jammu and Kashmir, and Manipur, all other states have enacted marketing legislations known as APMC Acts.

Over a period of time, these established markets became restrictive and monopolistic markets, providing no help in direct and free marketing, organised retailing and smooth raw material supplies to agro-industries. Exporters, processors and retail chain operators cannot procure directly from the farmers as the produce is required to be channelised through regulated markets and licensed traders. There is, in the process, an enormous increase in the cost of marketing and farmers end up getting a low price for their produce. Monopolistic practices and modalities of the state-controlled markets have prevented private investment in the sector. Eventually, the marketing channels for agricultural produce remain long and fragmented, and lack economies of scale. On an average, four to six

transactions take place before the produce reaches consumers from the point of sale by producers increasing the price spread between consumers and producers.

Although the Centre passed a model APMC Act in 2003, only 16 states have amended their Acts. The model legislation provides for the establishment of private markets/yards, direct purchase centres, consumer/farmers' markets for direct sale and promotion of Public-Private Partnership (PPP) in the management and development of agricultural markets in India. Provision has also been made in the Act for constitution of State Agricultural Produce Marketing Standards Bureau for the promotion of grading, standardisation and quality certification of agricultural produce. This would facilitate pledge financing, direct purchasing, forward/future trading and exports.

The Game Changers

The government level planning aside, there are several models that have erupted locally and functioning effectively. Rashtriya e Market Services Private Limited (ReMS) has been established as a joint venture company, with Government of Karnataka and the NCDEX Spot Exchange Limited

having equal shareholding, for implementing the Agricultural Marketing Policy to bring in efficiency and transparency in the agricultural marketing system for efficient price discovery to benefit farmers and other market participants. ReMS is a joint venture company, promoted by Government of Karnataka and the NCDEX Spot Exchange Limited, having equal shareholding. REMs offer complete technology and management solution for modernising markets in state and operating the markets on par with international practices. The unified market platform has integrated some 51 markets so far. It aims at covering all the 155 main market yards as well as 354 sub-yards. From the day of its launch (February 22, 2014), 7.5 lakh lots of trading has been done on the platform with 45 lakh bids being made. Transactions on the platform are worth Rs.15,000 crore. It has accommodated lakhs of farmers, 31,473 traders and 17,149 commission agents for all the 92 regulated commodities. The range of services under REMs include automated auction and post auction process (weighing, invoicing, market fee collection, accounting, payment of sale proceeds directly to farmers), assaying facilities in markets, facilitate warehouse-based sale of produce, facilitate commodity funding to benefit all stakeholders, price dissemination, secondary market development and capacity building for stakeholders. Some of the major benefits of the platform are: single licensing system, increased competition, easy and fast trading, better price discovery, etc. Under this new initiative, traders are allowed to participate in auctioning at all APMCs in the State with a single licence. Participants such as businessmen, traders, millers, etc. from other States as well are allowed to participate in online auctions. This has resulted in better price discovery which is determined by considering demand and supply equation not only of Karnataka but also in other States. The other benefits which are reaped through this unique initiative are increased



arrival of commodities (diversion of trade from open market to APMCs), real time monitoring of prices across the State, transparency in operations such as weighing, pricing, billing, etc. and better quality maintenance of the produce. The platform also facilitates users to track the integrated markets of specific commodities. In the next phase of its reform, the State is looking forward to establish a system of transfer of money to the accounts of farmers directly.

Some experiences of direct marketing in India have been very successful. In a model called Apni Mandi in Punjab and Haryana, there is a direct contact between the farmers and ultimate consumers. These mandies are called apni mandi since farmers are called apni mandi since farmers as producers bring the product for sale directly to the buyers as consumers. Hadaspur vegetable market in Pune is yet another instance of direct marketing. It belongs to the Pune Municipal Corporation and fee for using the space in the market is collected by the Municipal Corporation from the farmers. This is one of the ideal markets in the market mechanism. There are no commission agents and has modern weighing machines for weighing products. The purchasers make payment of the value of produce directly to the farmers in cash. Rythu Bazaars have been established in Andhra Pradesh with prime objec-

tive to provide direct link between farmers and consumers in marketing of fruits, vegetables and essential food items. Both producers as well as consumers are benefited from Rythu Bazaar as producer's share in consumer's rupee is more than 15 to 40 per cent and consumers get fresh vegetables, fruits and food items at 25-30 per cent less prices than the prevailing prices in nearby markets. The State Government of Tamil Nadu established Uzhavar Mandies (farmers markets) in selected municipal and panchayat areas of the State. In these markets, farmers enjoy better marketing infrastructure free of cost and receive considerable higher prices for the products than what they receive from middlemen at villages or primary markets at town. Farmers also get good quality seeds and other inputs in the market itself.

Farm producer organisations (FPOs) of various kinds are emerging as a new model for organised marketing and farm business. Such models include informal farmers' groups or associations, marketing cooperatives, and formal organisations like producers' companies. Producers can benefit by getting together to sell their produce through economies of scale in the use of transport and other services, and raise their bargaining power in sales transactions, while marketing expenses get distributed. This results

in a better share of net returns. Such models are particularly required for small farmers to overcome their constraints of both small size and modest marketable quantities. Aggregating producers into collectives is now universally accepted as one of the most effective means of reducing the risk in agriculture and improving the access of small and marginal producers to investments, technology and markets. Several thousand farmer producer organizations (FPOs) exist across the country, registered under various statutes such as the cooperative laws, trusts, federations, and lately under the Companies Act as producer companies.

Indian agriculture has multiple objectives now. It has yet to attain self sufficiency in certain food categories like pulses and oil seeds, at the same time it has the mammoth responsibility of increasing the producer's income and safeguarding the livelihood of the rural community. Developing proper channels of marketing locally and abroad is therefore crucial not only in improving the farm incomes but also infusing competitiveness in the agri environment of the country. The country is critically looking forward to many sweeping reforms that can invigorate the agriculture of the country.



Ambassador Islam A. Siddiqui until 2014 served as Chief Agricultural Negotiator with the Office of the U.S. Trade Representative and was responsible for many bilateral and multilateral negotiations and policy coordination regarding agricultural trade. In this capacity, Dr. Siddiqui played an active role in the successful 2013 WTO Ministerial meeting in Bali, Indonesia. He was the lead negotiator in the Brazil cotton case that delayed the imposition of retaliation measures by Brazil in excess of \$800 million annually. During this period, he was involved in many trade negotiations with trading partners in Asia, Africa, Europe and the Western Hemisphere that resulted in record levels of exports by opening or expanding markets for U.S. agricultural products. Dr. Siddiqui previously served as Vice President for Science and Regulatory Affairs at CropLife America, where he was responsible for regulatory and international trade issues related to crop protection chemicals. Previously, he also served as Vice President for Agricultural Biotechnology and Trade at CropLife America. In an interview with Agriculture Today, Dr. Siddiqui discusses the potential of India as a global player in agricultural products.

‘INDIA HAS A BRIGHT FUTURE’

How significant is India as trader of agri products in the world market?

In recent years, India has been a significant player in international agricultural trade. In 2014-15, Indian exports of agricultural and allied products were about \$37 billion. Major agricultural and allied product exports from India to the world included: shellfish/seafood, cotton, soybean cake, refined sugar, buffalo meat, rice, fresh fruits and vegetables, spices, tea, coffee and cashewnuts. In contrast, imports of agricultural and allied products into India during the same period were about \$17 billion. Notable agricultural products imported into India included palm oil, soybean oil, sunflower oil, pulses, almonds, cashew nuts (in shell), dates,, dry milk powder and rubber.

India’ export policies are mostly unstable and beset with periodical export bans. How practical it is for India to develop export policies detached from its internal market dynamics?

In my view, India’s agricultural export decisions are unpredictable and shortsighted. For example, India’s restrictions against exports of cotton lint in 2010-11 prevented Indian cotton farmers benefiting from high cotton lint prices in world markets, which went as high as \$2.25 per pound. Consequently, India experienced a surplus of carry-over cotton fiber from the previous year and cotton lint prices collapsed following year, thus hurting the Indian cotton farmers once again. It is my experience that, agricultural export restrictions and bans may produce short-term gains but in the long run they are neither beneficial to farmers and nor to the country imposing such measures.

What should be India’s sustained stand on WTO platform?

Based on exports/imports of all merchandise and services, India is a major economic power in the

world. Globally, India is the 19th largest exporter and twelfth largest importer of merchandise sector. In the services sector, India ranks sixth in exports and ninth in imports worldwide. Therefore, India should play the role in Geneva commensurate with her status as a global economic power. It also means working with other WTO member countries in finding win-win solutions and not blocking deals.

Despite being a major agricultural producer, India hasn't fully exploited its potential in global market. What changes should be brought about in the policy front?

While it was the case in the 1990's and early 2000's, exports of value added agricultural products and preparations have soared in recent years. Demand for processed foods, beverages and snacks from the Indian diaspora and other consumers around the world is increasing. Indian agricultural exporters should cash in as suppliers of high quality organic food as the demand for organic food products is rising in Europe, North America and Northeastern Asia. Above all, Indian exporters of agricultural and allied products must adhere to the strictest food safety and quality standards in order to maintain their brand and image.

India has a poor reputation when it comes to phytosanitary measures or pesticide residue. How effectively can it be improved?

Recent incidents of high pesticide residues in Basmati rice and other food products in export channels points out the need to impose strict quality assurance programs. It should be an integral part of the business plan for every exporter to make his business to know which pesticides are registered and what are the Maximum Residue Limits (MRLs) in the export destination country. This problem is further compounded since Indian farmers are still using generic pesticides which have been banned in Western countries

Indian exporters can benefit by being suppliers of high quality organic food, processed and value added food and beverage products to these countries. Consumers in the West are moving away from red meat to seafood for health reasons

for a long time. Therefore, the MRL for these banned pesticides is zero. In short, global harmonization of pesticide residues and a global database for all pesticide/crop combination is the long-term solution.

What are your thoughts on New Foreign Trade Policy (2015-2020), especially its implications on improving the agri trade?

The 2015-2020 Foreign Trade Policy Plan includes a number of initiatives to facilitate trade, including agricultural trade. It includes a number of measures to assist exporters and importers of agricultural products, such as the creation of a multi-functional nodal agency to be accredited by APEDA to facilitate exports of perishable agricultural products and reduce transaction costs. Other forward-looking features of the FTP are: creation of a single window in Customs, self-assessment of customs duties and negotiating Mutual Recognition Agreements (MRAs) with regulatory authorities in trading partner countries. It all sounds very exporter friendly provided all of these provisions are implemented in a timely manner.

What reforms would you suggest for improving the

current agri markets in India?

Farming is a risky business not only in India but all around the world. Providing risk management tools to farmers against acts of nature or price volatility should be the first order of business when it comes to agricultural reforms. I am thrilled to know that the Indian Government is finally thinking of providing crop insurance to farmers. Many countries provide marketing loans to farmers so that they do not have to sell their produce under distress. Post harvest losses in fruits, vegetables and grains account for about 30 to 40% of the value of these crops. If storage and cold storage facilities and marketing loans were available to farmers, farming would become a profitable business to millions of farmers in India.

Do you think a national agri market is a viable proposition in India?

Investment in infrastructure such as roads, transportation and modern storage and cold storage facilities is the key to transform regional markets into a single national market. It is a matter of time that farmers will be able to benefit from a single national agri-market by moving produce from areas of abundance to areas of deficit.

What are the future pointers for India in global trade? What markets and products should we be targeting?

I envision a bright future for India to be a global player in agricultural trade by shifting from mono-culture of a few crops (wheat and rice) to diversification of crops, aquaculture and agro-forestry. There is a pent up demand for organic food products, including tea, coffee and spices in Western and Northeast Asian countries. Indian exporters can benefit by being suppliers of high quality organic food, processed and value added food and beverage products to these countries. Consumers in the West are moving away from red meat to seafood for health reasons. Therefore, exports of high quality seafood is to Europe and North America should be targeted.

LEADING THE FRUITS BUSINESS

Incorporated in 2000 by Mr. Gian Chand Arora, IG International Pvt Ltd. (IGIPL) commenced business by importing fruits in containers from Australia. Since then, IGIPL has constantly invested in infrastructure and have emerged as the leader in the Imported Fresh Fruit Industry. Today, the Company handles an annual volume of over 1500 refrigerated containers (40 feet) from 20 countries across the globe. IGIPL also manages the distribution of these goods through its 27 wholesale outlets across India. A leading marketer and distributor of nutritious, high-quality fresh fruits across India, IGIPL's brand IG is a trusted symbol of product quality, freshness and reliability. The Company's turnover for FY 2014 stood at Rs. 250 crores. Along with imports, IGIPL has interests in exports as well as third party logistics and temperature controlled warehousing. IG Supply Chain Pvt. Ltd., a wholly owned subsidiary of IGIPL, is in the business of third party logistics and temperature controlled warehousing. The Company is one of the top 5 players in temperature controlled warehousing with a capacity of 25,000 pallets and facilities in Mumbai, Chennai, Bangalore, Jaipur and Amravati. With a captive business where it maintains inventory and distributes it to wholesale outlets across India, its fleet of 50 refrigerated trucks completes the end – to – end supply chain for the fruits. In a conversation with Agriculture Today, Mr. Tarun Arora – Director – Finance and Operations, IGIPL discusses the IGIPL's operations and the general trend of agriculture trade prevalent today.



How was the year 2015 for IGIPL?

It was a great year indeed; we are overwhelmed with the response we have received for our products. We are gaining recognition in the markets all around. We have expanded our cold stores so that we can handle much larger quantities of delicate fresh fruits. We have been continuously innovating and importing fruits from world renowned names and introducing them in the Indian market for the first time. It has been a wonderful learning experience and we are delighted that we have been successful in achieving our goals.

What is the market share of IGIPL in fruit exports and import sector?

IGIPL is undoubtedly one of the leaders in the fresh produce industry. It is difficult to give a figure for market share as the market comprises of many players both in the organised as well as unorganised sectors. However, we are targeting sales of over US\$ 100 million this year and that should give you a fair idea about the size of our business.

Under the initiative of IG IPL, which are the fruits that have gained Indian acceptance?

We have introduced several new kinds of fruits with great success. The New Zealand Hass Avocado, the Australian Mandarin Longan and the Golden Kiwi received huge response in the Indian market on account of their high quality, unique taste and nutritional value. Today, these fruits have created a niche for themselves in the Indian market with a large number of consumers, who are delighted that these fruits are available easily on a regular basis through the initiative of IG.

What are the challenges for an Indian company that deals with fruit trade?

There are many challenges for those involved in the fruit business. Fruits are perishable and delicate, and hence have to be handled with utmost care. Furthermore, they are difficult to retain in the highly humid conditions prevalent in our country and some fruits like Dragon Fruit and Avocados are particularly sensitive. However, these are not big hurdles for us since we are well equipped with cold stores and reefer trucks which provide controlled environment for the fruits from end to end and ensure that they reach the market safely and in the finest condition.

In today's agri trade, how relevant is temperature controlled warehousing?

Temperature controlled warehousing is a key factor when it comes to handling fresh produce. It is an absolute necessity in order to get the fresh products to the customer. Our motto has always been to deliver the finest quality produce and when we tell our customers that the fruit is right from the orchard, they must be that way in appearance, quality and freshness.

IG Supply Chain Pvt. Ltd., was your brainchild. How did you arrive at this business?



Our country faces a huge cold chain challenge which is well documented. As per various estimates, around 30% to 40% of the country's fresh produce goes to waste between the farmer and the consumer. It is a staggering figure and a huge loss to the nation. We have been expanding in the fresh produce business and it became clear to us that we need to set up our own cold chain for better logistics management as well as to ensure that the produce handled by us does not perish and reach the consumers in 'right from the orchard' condition. Hence, we started expanding the cold chain side of our business and until last year, whatever cold chain facilities we had, either created or acquired by us, were being used only for captive requirement. We now have cold chain warehousing facilities and are focused only on fresh produce as the segment for our business.

In the area of third party logistics and temperature controlled warehousing, where does IG IPL stand in India?

We are one of the largest cold chain

companies in India with a presence in 14 locations and a total of nearly 40,000 Pallets (some under construction).

How is the fruit storage scenario of India? How can we improve the current situation?

The fruit storage scenario in India leaves much to be desired. India is the second largest producer of fruits and vegetables and it is really sad that we are the biggest food wasters in the world - wasting billions worth of fruits, vegetables and grains every year. We need to bring in new technology and set up modern advanced temperature controlled warehouses for storage of fresh produce in order to avoid wastage.

What are IG IPL's plans for 2016?

We plan to increase both our top line and bottom line and expect 20% plus growth this year as well. We have a new facility coming up in Andhra Pradesh for which we have signed an MOU with the Government of Andhra Pradesh.

'INDIA - A VERY BIG MARKET FOR CHILE'

Chile occupies a ribbon of land that extends down the Pacific coast of South America. Stretching from the tropics almost to the Antarctic, and rising from sea level to the highest peak in the Western Hemisphere, Chile is renowned for its rich natural diversity. The country's small economy is relatively stable, unlike those of its neighbours. Economic growth is driven by exports based on the country's rich mineral resources and its agriculture, forests, fisheries and factories. Agriculture in Chile encompasses a wide range of different activities due its particular geography, climate, geology and human factors. Historically, agriculture is one of the bases of Chile's economy. Due to its geographical isolation and strict customs policies, Chile is free from diseases such as Mad Cow, fruit fly and Phylloxera, this plus being



located in the southern hemisphere and its wide range of agriculture conditions are considered Chile's main comparative advantages. Agriculture is Chile's second largest source of exports, and is expected to grow rapidly in 2012- 2016. Therefore, an efficient agro-food industry is a top priority in Chile. Today, the food industry represents 25% of Chile's economy and employs more than 1 million people. It is expected that in 2030, the food processing industry will account for one third of the country's economy. The fruit, wine, poultry, beef, pork and dairy industries offer large export potential. Rising attention

to animal welfare, traceability, productivity and control are clear trends in the agro-food industry. Natural advantages, government strategies of increasing the production of value-added food products, expanding international trade networks, and rising domestic food consumption are key elements driving growth in the Chilean food processing industry. In an interview with Agriculture Today, Mr. Jaime Gonzalez, Counsellor for Agricultural Affairs, Embassy of Chile in India discusses the trade relations between India and Chile in the agriculture segment and its future potential.



What are the agricultural products that are currently exported to India?

Agricultural products that are currently exported to India from Chile include Apples, Wine, Grapes and other fresh fruits, Concentrated Juice, Dry fruits and Seafood.

Please share with us the trade volume between India and Chile.

Sector	2013 Jan-Dec	2014 Jan-Dec	2014 Jan-Dec	2015 Jan-Dec	Variation 2015-2014	Participation
Sector wise Exports						
Total (Agriculture & livestock)	80.797	109.631	105.255	84.722	-19,5 %	
Agriculture	19.455	46.407	45.808	25.260	-44,9 %	29,8 %
Livestock	291	447	447	404	-9,6 %	0,5 %
Forestry	61.051	62.777	59.000	59.058	0,1 %	69,7 %
Sector wise Imports						
Total (Agriculture & livestock)	9.187	13.941	12.836	14.396	12,2 %	
Agriculture	8.769	13.516	12.424	14.017	12,8 %	97,4 %
Livestock	102	92	92	96	4,3 %	0,7 %
Forestry	316	333	320	283	-11,6 %	2,0 %
Trade balance of Products						
Total (Agriculture & livestock)	71.610	95.690	92.419	70.326	-23,9 %	
Agriculture	10.686	32.891	33.384	11.243	-66,3 %	16,0 %
Livestock	189	355	355	308	-13,2 %	0,4 %

Has Chile and India signed any trade agreement to further increase the trade volume in this segment recently?

Yes a PTA (Preferential trade agreement) was signed on March 8, 2006. The Parliament of Chile approved it on April 2007. It came into effect from 17th August, 2007 in Chile and in India on 11th September, 2007. Implementation of India Chile PTA has been notified to WTO on 13th January, 2009. In fact, Chile was the first country of South America to sign a trade agreement with India. During the State Visit of Hon'ble President of India to Chile in April 2008, four agreements/MoUs, namely Sports, S&T, Air Services and Antarctica, were signed. Immediately, after a week, the fifth Agreement on Agriculture was also signed. Currently we are working a new PTA which includes approximately 3000 item which is 10 times of what we had in old PTA.

As a trading partner, how significant is India to Chile?

With a population of 1.3 billion, India is a very big market for Chile. Already Chile exports number of products to India. In future, we expect to cope with the challenges of being a reliable food supplier to India, taking advantage

of the experience that Chile already possesses in this area.

Does Chile import any agricultural products from India?

Yes, Chile imports products like fruit preparations, vegetable oil & fats, spices and tea.

What are the challenges faced in marketing of agri products overseas?

An organized marketing system protects the interest of both consumers and producers. It is essential to maintain the renowned good quality and reliability in an increasingly demanding market to be able to compete in good shape with closer origins to the destination country. Also, it is important to create awareness in importers, distributors and consumers of the attributes of the Chilean food, which can be guaranteed as: Innocuity, Traceability, Quality, International Guarantee and Natural Flavour.

What challenges did Chile face while trading with India?

One important big challenge is the distance and the subsequent necessity to preserve freshness and shelf life. Since

currently there are not direct connections between Chile and India, it takes a lot of time for the Chilean produce to reach Indian Market. Also the relative high custom tariffs and other taxes, along with non-tariff barriers make market access a complex issue.

Is Chile planning to channel more products into Indian market?

Yes, Chile is already in the process of introducing more products like blueberries, avocados, wood etc. We are looking forward to increase bilateral trade between both the countries which will help in minimising trade deficit and it will also help in facilitating trade and investment between the two countries.

How are the trade relations going to be in 2016?

Hopefully trade relations between the two countries will grow at a much faster rate as both the countries are coming closer. Recently, India has eliminated the restriction on import of apples from all the ports which is a good news to start 2016. Balancing non-tariff barriers with actual risk mitigation needs will be an important component of Chile's agricultural office in 2016.

INDIA-ISRAEL AGRICULTURE COOPERATION TOUCHING NEW HEIGHTS

Agriculture in Israel is a highly developed industry. Israel is a major exporter of fresh produce and a world-leader in agricultural technologies despite the fact that the geography of Israel is not naturally conducive to agriculture. More than half of the land area is desert, and the climate and lack of water resources do not favour farming. Only 20% of the land area is naturally arable. Today agriculture represents 2.5% of total GDP and 3.6% of exports. While agricultural workers make up only 3.7% of the work force, Israel produces 95% of its own food requirements, supplementing this with imports of grain, oilseeds, meat, coffee, cocoa and sugar. Over the years, India – Israel ties have touched new heights. Among other sectors, agriculture sector has seen immense cooperation. In an interview with Agriculture Today, His Excellency Daniel Carmon, Ambassador of Israel to India; Mr. Dan Alluf, Counselor, International Development cooperation (MASHAV), Science and Agriculture, Embassy of Israel in India and Ohad Horsandi, Spokesman, Embassy of Israel in India discusses the India – Israel ties especially in the agriculture segment in great detail and point out the areas where this cooperation can be further extended.

How do you see India Israel relations. How important is Agriculture in India-Israel ties?

India and Israel are dynamic democracies and have enjoyed warm and cordial relations founded on shared values, common interests and challenges. India is one



of the most interesting as well as important places for us, and relationship with India is of top priority.

Undoubtedly, agriculture is one of the areas where we collaborate more. India-Israel agriculture cooperation is touching new heights. Agriculture is our common interest because of the similar challenges we had to confront and built our nation. Agriculture in Israel is a highly developed industry now. Israel is a major exporter of fresh produce and a world-leader in agricultural technologies, despite the fact that the geography of Israel is not naturally conducive to agriculture. More than half of the land area is desert, and the climate and lack of water resources do not favour farming. This corresponds to some of the challenges that India faces. But we have mastered to confront it with our technologies and solutions for better agriculture and for better productivity. Mastering the various ingredients of the value chain, and sharing with countries which can cooperate is the essence of our relations.

Our experts identifies the need in both the countries and go ahead with various projects. A combination of sophisticated, applied science, rugged determination and government support have helped Israel's farmers to modernize and adapt to changing geopolitical, market and climatic conditions, giving them a strong base from which to proceed in the coming decades. We understand that in order to meet the common challenges, we have to work together and join hands. We have great appreciation to the capabilities, experience and dedication of our Indian counterparts. This is an equal partnership that both sides have much to gain from. This cooperation is transforming into a real partnership.

How successful was Indo-Israel Agricultural Project (IIP)? IIP is entering its third phase this year. What

would be the activities under this phase?

The agriculture cooperation between Israel and India is unprecedented. It is the biggest agriculture project in which the Government of Israel is involved anywhere in the world and is done through MASHAV – Israel's International Development Cooperation Agency and Government of India. India has federal structure of governance and individual states also play an important role in initiating and implementing such joint projects. The first phase of the Indo-Israel Agricultural Project (IIP) started in 2008 when both countries agreed to implement a three year action plan. Later, the agreement was extended up to 2015. Under this agreement Israel aims to set up several Centres of Excellence (CoEs) in the field of agriculture across India. These centres would act as platforms for transfer of technology to the local farmers aimed at increasing agriculture productivity and improving the quality of farm produce. We started with first and second phase, and the results were very impressive. The centres are blooming and some of them are self sustainable economically.

We have entered the third phase of this agreement that will expand our cooperation even further. Indo Israel project at this stage is in Inter governmental stage. But in the third phase, we do not decide the activities by ourselves. We go into negotiation with Indian and Israeli side on what we can do together. We aim at doing better with what we have and also learning how to grow more with less. When we hear Indian leaders talking about one drop more crop, this is what we are doing. Drip irrigation is only one ingredient. Fertigation, covered agriculture, pruning these are some of the technologies we have mastered and shared with Indian side. But in the third phase, we will focus more on technology, which will amplify the ingredients of the value chain. We will focus more into post harvest, we might touch the mechanization, and we will go more for diversification of crops according to the needs and estimates of a particular state. At the end of the third phase, we will have 36 centres

spreading across 15 states.

There are lots to be done from the Indian side too. Making agriculture profitable to farmers is a matter of great importance to India. Farmers in India are yet to benefit from the technological advancements shaping country's services and manufacturing sector. Introduction of better crop varieties and advanced farming techniques have a potential of transforming the lives of rural communities across India. At the end of the day, farmers are important and we hope they will use the technology in future ventures and get the benefit. The idea is to bring them to the market of Indian economy. It's not an issue of economy and trade or gaining more money by Israeli businessmen. It's an issue of identifying priority in India and Israel and identifying the solution that Israel brought to itself and how these solutions can be shared. When both our leaders talk, they don't only talk high politics but high agriculture. Israel's expertise in water resource management and cultivation of arid land can be crucial in helping India ensure food security.

What are the areas where we can see increased cooperation between the two countries?

Our relationship is based on cooperation, and we are really cooperating in the real sense. While partnership between India and Israel has witnessed phenomenal growth during the past two decades, the ties have gained significant visibility only during the past year. Israel and India have already been engaged in 'Make in India' across sectors from defence to agriculture to water. There are large number of areas that forms fabric of Indo-Israel cooperation like agriculture, defence, cyber security, energy and trade. We should also strengthen cooperation in academic side. We should encourage exchange of more student from India to Israel and vice versa. We want to encourage more research, inventions and tourism. We would like to see more Indian companies in Israel. Israel is a start-up nation, and we invent our solution through Israeli start-ups, innovators and inventors. But we would like to have more

partners from Indian side as they are also very innovative. The programmes initiated by the Indian government like Clean Ganga, Make in India, Clean India, Start-up India etc., have more than a niche where both countries can collaborate in. The main message is collaboration and cooperation.

What measures do you propose to accelerate cooperation in areas of mutual interest?

The key here is the joint work and collaboration. The main message to Indian Govt and Indian companies is to see the opportunities in Israel and vice versa for the Israelis. It is essential for our leaders and people to meet and visit each other countries even more, in order to further cement bilateral cooperation and for launching more partnerships. Our joint achievements are already remarkable and there is room for further enhancement of these relations in every field. We know quite a few big companies who are interested in Israeli technology. Some companies have even acquired Israeli start-ups. The idea is to have Indian partners grow together and see the Israeli start-ups grow and do it together. We would like to see more business interaction and trade in the future. Political will, business will and popular will is there. Israel and India has lots to offer to each other. It comes from leadership, business, appreciation and from the fact that we talk to each other as equivalent. The table is very large, the issue at stake are numerous and important to both the sides. This is the beauty of Israel and India relations and all of this is very visible now. We enjoy good business by high level occasion and delegation visits. The Agritech exhibition, held once every two years, is one of the leading international events of its kind to showcase Israel and international agriculture technologies that attracts many ministers, decision-makers, experts, practitioners and trainers in agriculture, and thousands of farmers and visitors from India to see at one site the latest developments in agricultural sector and advanced agro-technologies. This way we are doing wonderful things together for the benefit of both the countries.



Mr. Dan Alluf, Counselor, International Development cooperation (MASHAV), Science and Agriculture, Embassy of Israel in India

What are the factors that favour strong India Israel trade relations in the agri segment?

India has chosen Israel as a strategic partner (G2G) in the field of agriculture. This partnership evolved into the Indo-Israel Agricultural Project (IIAP), a partnership aiming at achieving increased crop diversity, increased productivity, and increased resources use efficiency. IIAP is implemented via establishment of Centers of Excellence (CoE), in which Israeli technologies and know-how are disseminated. The solutions which we are bringing in India are not out of reach for Indian farmers. It is highly accessible for farmers to use. We look for holistic approach. For example, drip irrigation. In each CoE, farmers are getting training on full concept of drip irrigation system and how the farmers in India can install them in their fields. We teach them how to maintain the drip system and use it effectively in all seasons. We will help develop prototype for each centre. Drip irrigation can also be used to supply nutrients to the plants. The solution is to create the product and localise it in India. By doing this, we give technology and solutions to the farmers. We have built the trust over the years, which is also reflected in our trade relations.

Apart from trading in agricultural commodities, which are the other areas that has seen immense cooperation between the two countries?

Government to government cooperation in agriculture between India and Israel began with the establishment of Centre of Excellence. The main goal was to increase crop diversity and productivity in terms of quality and quantity. Today we have 26 CoEs across 9 states, an additional Dairy CoE has been defined and due to be established. Nine states including Punjab, Haryana, Rajasthan, Gujarat, Maharashtra,

Karnataka, Tamil Nadu, Bihar and Uttar Pradesh are part of phase 1 & 2, and six states to partner with the IIAP within phase 3 are Andhra Pradesh, Telangana, Madhya Pradesh, West Bengal, Mizoram and Goa. We focus our activities on different segments of agriculture state wise and then, accordingly devise strategies and products to maximise agricultural yield. Each CoE comprises of three segments. Nursery, where lot of Israeli technology in terms of climate control are demonstrated and which create atmosphere for seedling and plants. The Centre also produces six million saplings of high yielding varieties of vegetables in 28 to 30 degree Celsius temperature and sells them to the farmers. CoE demonstrates hitech and most cost effective solutions. Farmers can see the benefits and choose the best technology. We also develop local protocols for nursery management, crop cultivation and irrigation and fertigation management. At present, there are 26 CoEs with a special focus on mangoes, vegetables, Citrus, pomegranates, dates, flowers, bee keeping and dairy. We see India and Indian farmer with lot of respect. We see mango as a key crop, and therefore we invest in the Indo-Israel Agriculture Project and we dedicate 7 Centers of Excellence, out of 29, for this crop. We try to bring Israeli know-how into India, and through team working with our Indian partners we tailor cultivation techniques and solutions in order to increase productivity in the quality of fruits, and in addition introduce new agronomical concepts such as intensive orchards, irrigation, fertigation and more.

India is an important agricultural producer, but lags behind in terms of adoption of technology. How can Israel help in this aspect?

We demonstrate high end technologies at the centres of excellence – related to horticulture and vegetable cultivation. When farmers step into a centre, they view everything with their own eyes and feel confident to implement it in their own fields. We provide them answers to their queries in real time. CoE is a solution but it is not the only stand alone solution. Israel has successfully gained excellence in few areas of agriculture. We want to take this knowledge to Indian farmers. We are mapping the challenges and trying to address them. We are replicating the project in many parts of India as per the requirement of these regions. We want the farmers to have the strength to choose from various crops. Today, the majority of them are restricted to cultivate rice, cotton, sugarcane or corn. We want them to choose varieties of fruits and vegetables which are usually giving bigger revenue and profit. For implementation of various projects and activities, support of State government and Federal government is needed. Agriculture is a traditional industry and we have to take steps to bring a change. We cannot copy paste Israel to India or any other place. The joint initiative taken by India and Israel has the potential to bring a paradigm shift in Indian agriculture, where low income has put pressure on farmers.



Ohad Horsandi, Spokesman, Embassy of Israel in India

What is the level of agricultural trade between India and Israel?

Israeli exports to India amounted to \$2.2 billion or 3.2% of its overall exports in 2014. The 10 major commodities exported from Israel to India were - Gems, precious metals, coins: \$1.2 billion; Electronic equipment: \$256.2 million; Fertilizers: \$208 million; Machines, engines, pumps: \$115.8 million; Medical, technical equipment: \$105.5 million; Organic chemicals: \$86.9 million; Inorganic chemicals: \$35 million; Other chemical goods: \$29 million; Salt, sulphur, stone, cement: \$25.3 million and Plastics: \$21.4 million

How significant is India as a trade partner for Israel?

Since the establishment of diplomatic relations between India and Israel in 1992, bilateral trade and economic relations have progressed rapidly. For us, India is a top priority country. And we think Israel is important for India as well. This is because of what both can bring to the table compared to other countries. Some of the areas outside of defence and security are agriculture, dairy, water technologies, IT and many more. We also deal with other fields that bear fruits to both sides such as tourism, academia and development. These are strong foundations to base our economic and commercial relations on. The bilateral trade between India and Israel grew to over US\$ 4.5 billion. There are many Israeli investments in India mainly in high-tech and agriculture. Some Israeli companies have set up R&D centres, manufacturing plants and have opened subsidiaries or offices in India. Netafim is a

agriculture company demonstrating , manufacturing and selling in India. Indian company investing in Israel is Make in India. Indian companies are marking their presence in Israel through mergers and acquisitions and by opening branch offices. The first major acquisition occurred in 2007 when Jain Irrigation of India purchased a 50% stake in Naan-Dan, an Israeli irrigation equipment manufacturing company. In May 2012, Jain Irrigation purchased the rest of the stake in Naan Dan, acquiring 100% stake with an investment of nearly Rs. 200 crore. Israeli chemical companies which have been highly active in India in recent years are Makhteshim Agan, ICL Fertilizer Ltd and Adama. Agriculture is very important part of overall trade. We are not just an economic embassy. We emphasise on best practices instead of selling products.

What are the bilateral trade agreements signed between India and Israel in promoting trade in agricultural commodities?

We have been in negotiations on FTA for a while now, and we have no doubt that this could bring a new chapter in the relations of the two countries. It can not only improve the trade but more than that, it can intensify the cooperation between companies and individuals on both sides. Implementation of FTA will benefit immensely to both Indians and Israelis and will allow both of us to compete better in the international markets. There have been eight rounds of negotiations and it is a long process. The proposed Free Trade Agreement (FTA) in the pipeline, could be a strategic game changer, expanding the scope and volume of trade between both the countries.

In 2016, how will be the trade relationship between India and Israel? Any new agreements in the offing?

Given Israel's novel and efficient water technologies for waste water management, recycling waste water (80%), desalination, water security, and water conservation, there is ongoing cooperation between the two countries. In 2016, we look forward to focus more on water and water technology. We will sign MoU on final negotiation on issues of water between Israel and India. We are in touch with Ministry of Ganga and rejuvenation, Ministry of Urban Development and specific states like Rajasthan and Andhra Pradesh. We are working on minimising the loss of water, recycling it and using it for agriculture. The same will be implemented in our CoE.

NAM- RISING TO THE CHALLENGES



In the thick of the extensive damage to standing crops from unseasonal rains and drought in majority of agricultural states, a National Agriculture Market is expected to be launched on a pilot basis in some Mandis (APMC markets) from April this year. It is being perceived as a long-term solution to the prevailing agrarian crisis and is being promoted as an instrument for reforming the existing marketing system and for resolving issues of information asymmetry that exist in agri-commodity markets.

Under NAM, it has been proposed that over a period of three years ending 2018, a total of 585 regulated markets will be integrated with a common

e-platform to provide farmers and traders with access to opportunities for purchase/ sale of agri-commodities at optimal prices in a transparent manner across the country. Besides, private players will also be allowed access to the e-platform thereby augmenting its outreach. A budget of Rs. 200 crore has been set aside for the Central Sector Scheme for Promotion of National Agricultural Market through Agri-Tech Infrastructure Fund (ATIF) from 2015-16 to 2017-18. The Scheme is applicable on All-India basis and for integration with the e-platform the States/UTs will need to undertake prior reforms in respect of (i) a single license to be valid across the State, (ii) single point levy of market fee and

(iii) provision for electronic auction as a mode for price discovery. Only those States/UTs that have completed these three pre-requisites shall be eligible for assistance under the scheme.

It is envisaged that NAM shall promote reform of the agricultural marketing sector and promote free flow of agri-commodities across India. This comprehends to superior farmer satisfaction on account of significant enhancement in marketing of his produce by improved access to market related information and better price discovery. This is implied from a more efficient, transparent and competitive marketing platform, which gives the farmer upgraded access to a greater number of buyers within the State and

from outside. It shall also escalate his access to markets through warehouse based sales and thus preclude the need to transport his produce to Mandi.

However it isn't easy to reform a time-honoured system which has witnessed limited success in establishing efficient agricultural marketing practices in India. Among many challenges that NAM shall be required to overcome, a few notable ones are (a) Legal issues, (b) availability of infrastructure, (c) Revenue sharing, (d) Grading and standardization, (e) Aggregation, (f) Participation of farmers, traders and middlemen.

Participation of farmers is vital for the initiative to succeed. Since small and marginal farmers borrow from agricultural input traders/commission agents, they are mandated to sell produce to these players as a part of the deal to borrow cash or buy inputs for the crop on credit. Therefore, just forming an e-platform or making the price information available is not going to help farmers who are not free to sell their produce. Government is confident about NAM by virtue of the experiment in Karnataka, where the Rashtriya e-Market Services (ReMS) (a joint venture of the state government and the NCDEX spot exchange) has created an online trading platform for 55 APMC markets and 400 sub-markets in which traders/buyers with a single state-wide APMC licence can purchase farm produce; and farmers, commission agents and other stakeholders in the transaction, can receive online payments. However, the suicide rate of farmers in Karnataka is no different from rest of the country.

Further, in majority of the states the sale of primary agriculture and horticulture produce take place at Rural Haats/ local Mandis. The participants in these markets are small farmers (acting as retailer as well), consumer, traders and commission agents. It would be a real challenge to the government to devise a suitable mechanism to integrate such markets with NAM platform and bring farmers with tiny lot size to trade at this platform. The small lot size reduces the marketability of the produce as well as the bargaining power of the farmers.



One of the approaches to resolve this issue may be aggregation of produce at village level through Farmer Producer Organisations. The states may pace up formation and promotion of FPOs for aggregation. These FPOs may be given membership to trade at the platform and provided with space in Rural Haats to operate as collection centre for marginal and small farmers. This would therefore build these FPOs as vital connecting link between Rural Haats and NAM.

Hence, to work out the intricacies at national level, solutions are to be worked out to ensure small and marginal farmers get to trade on their own or may be in small groups. Capacity building is an integral part of scheme because farmers are required to be exposed to new system and procedure for participation in order to avail benefits. Also, there is an argument that availability of proper infrastructure would ensure outreach of the scheme at village level. This certainly is logical as majority of farmers face this challenge due to poor economic conditions. Present APMC markets surely have many loop holes, but instead of attempting to dispense the whole system, government needs to expand the same at village or Taluk level and assure procurement of all the 23 crops for which the procurement prices are announced. Only then

farmers will participate in such a praiseworthy initiative. Supporting APMCs in providing mobile procurement of commodities or by investing in creation of infrastructure and involving Gram panchayats in procurement may be some interventions that can be considered.

In order to realize the full benefits of proposed NAM, the APMCs in India have to go for certain phenomenal changes. A few among them may be to move gradually towards a scenario where only certified graded commodities are traded in APMCs using e-trading platform. This will facilitate the APMCs in discovering the true price of commodities and also help them in attracting buyers from distant places. However, looking at the current circumstances, it may not be possible to motivate marginal and small farmers to opt for such a mechanism with small lot size. But with the formation of FPOs for various commodities, the issue of lot size can be resolved.

Rising to these challenges requires introduction of interventions keeping small farmers in mind first and rest of the stakeholders subsequently. Thoughtful planning and proper implementation shall imply good governance.

Sangeeta Nain & Enamul Haque
Associate Consultants, NABARD
Consultancy Services, New Delhi

INDIAN AGRICULTURE: STEPS TOWARDS SUSTAINABILITY

Indian agriculture has gone through a complete transformation after initial struggle to cope up with food requirements of the country post independence. The sector has demonstrated a marked shift from subsistence farming to commercial, and extensive to intensive farming systems. This is evidenced from the linearly increasing and record production of food grains from almost stagnant NSA of around 141-142 mha over the past several years. Besides, the same land mass is being put under multiple crops placing India as second largest producer of fruits and vegetables in the world. However, the responses of agri production factors has started slowing down during these years.

Intensive agriculture, while increasing food production, has caused second generation problems in respect of nutrient imbalance. Negative nutrient balance has resulted in over 30 percent reduction in response of fertiliser (response ratio has decreased from 15 kg per kg of NPK during 5th FYP to about 6 kg /kg grains during 12th FYP). The problem is not only confined to intensive cultivation (assured irrigation) belts of the country. Even in the vast non irrigated dry lands; overall nutrient balances are negative as removals exceed additions by 7 to 1 ratio. These lands are estimated to receive 10 % of the fertiliser used in India, but account for 30% of the total nutrient removal.

Soil Health

A healthy soil would ensure proper retention and release of water and nutrients, promote and sustain root growth, maintain soil biotic habitat, respond to management and resist degradation.

Crops extract more nutrients from soils than are added to the soil through chemical fertilisers or organic manures. This leads to a negative balance if adequate supplementation is not done. As per estimates, the total "negative



nutrient balance" is at a staggering 8 to 10 million tonnes a year. At the present trend, the gap between nutrient supply and crop uptake is estimated to reach around 15 million tonnes by 2025. Such a wide gap will definitely affect the quality and yield of farm produce. Critical factors contributing to this woe in India are:

- Greater mining of soil nutrients depleting soil fertility – due to imbalanced nutrient application
- Decreased incorporation of organic carbon in soil – neglect of organic/ biological sources is disrupting natural processes led by soil microbes.
- Decline of water table and its quality- caused by over exploitation/ neglect of water conservation.
 - o Far reaching impact on biodiversity and biological activities in soil system restricting beneficial enzymatic and hormonal support to plant system.
 - o Water from deeper aquifers are generally not suitable for irrigation

The loss of three major plant nutrients i.e. nitrogen, phosphorus and potash – is usually made up, to an

extent, with fertilisers. But the depletion of equally essential micronutrients is often not taken care of.

Indian soils are increasingly showing not only deficiency of N, P and K but also of secondary nutrients (Sulphur, Calcium and Magnesium) and micro nutrients (Boron, Zinc, Copper and Iron etc.) in most parts of the country. Single nutrient deficiency of N in 1950 has aggravated as a multinutrient deficiency and posing greater challenges to meet food production goals. Soil health enhancement holds the key to improving the return from investment in other inputs like seeds and water.

Balanced fertilization

The most critical factor for management of soil health is defined by the timely application of essential plant nutrients (which include primary, secondary and micronutrients) in readily available form, in optimum quantities and in the right proportion, through the correct method, suitable for specific soil/crop conditions. As a benchmark N: P: K combination aggregated for the country is 4:2:1. Currently the N: P: K ratio is

distorted to the level of around 8:3:1 due to overuse of Nitrogen (particularly urea) under both irrigated and rainfed situations.

Correction of this distortion is one of the major challenges before agricultural experts and policy makers which led to the introduction of NBS (Nutrient Based Subsidy) and is considered a landmark policy decision in crop nutrition sector in the recent past. However, imbalance in nutrient application has emerged as one unintended outcome of NBS policy which left urea out of its ambit. For instance, the consumption of Urea has gone up from 264.51 Lakh MT in 2009-10 to 308.83 Lakh MT in 2014-15, while that of DAP and MOP has declined by about 30-33% (101.51 LMT in to 75.89 LMT) post NBS regime. It is pertinent to mention that with the implementation of NBS for P&K fertilisers, subsidy outgo has declined by about 40% i.e. from Rs 41500 crore in 2010-11 to Rs 24670 crore in 2014-15. But the advantage has been negated by rising Urea subsidy which constitutes about 75% of MRP compared to 35-40% in case of DAP and MOP.

Integrated Nutrient Management (INM) – a panacea for soil health and productivity

Conjunctive use of chemical fertilizers, organic manures and biofertiliser enhances nutrient use efficiency, soil health, crop yields and profitability. Efforts are required to augment supplies of organic manures, fortified, coated & customized fertilizers supplying secondary and micronutrients, biofertiliser and soil amendments to have sound INM and maintaining soil health. There is huge gap in availability and use of organic manures which is responsible for low response of fertilisers. At present, availability of organic manures is 383 million tonnes against the moderate requirement of 900 million tonnes / annum (@5 t / ha on gross cropped area of 185 MHa).

Site specific nutrient management

Precise and timely soil diagnostics (The service presently inadequate with a



capacity to analyze only 7 million soil samples/ annum against 130 million farm holdings in the country.) is one of the most important enablers to improve and maintain soil health. The ambitious Soil Health Mission initiated by Govt of India is one big step in this direction but it needs to be ensured that recommendations of soil health cards get adopted. There are about 12 MHa acidic and 7MHa salt affected soils in the country. With accurate working of lime and gypsum requirement through soil test and their appropriate application, fertiliser requirements can be significantly reduced which otherwise is adding cost to the farmers and impacting ecological balances.

In order to make soil tests and Soil Health Card scheme more practical and adoptable, fertiliser retailers need to be integrated. This integration will provide scientific base to the retailers for supply of required nutrients to the farmers which is the ultimate aim of providing soil health cards.

State of Farmers

The cost-risk-return structure of farming is not in a healthy state which results in growing despair and indebtedness at farming household level. Though the Govt is facilitating farmers by way of subsidies on inputs as well as offering minimum support prices for major outputs, inadequate post harvest back up is negating these supports. Agricultural Produce Marketing Committees are not able to offer transparent systems and the ultimate victim is producer farmer.

As indicated in the report of National Commission on Farmers,

policy reform in agriculture is long overdue. A policy reform should be pro-small farmer and pro-women and pro-landless agricultural labour. It should pay particular attention to the promotion of conservation agriculture and remunerative marketing. However, the Government has taken steps to set up an online national agriculture market (NAM) by integrating 585 wholesale markets across India — a move that would help farmers realise better prices. This will enable seamless transfer of agriculture commodities within the state and the market size for farmers would increase as he won't be limited to a captive market.

Another area of concern is crop insurance specifically under increased uncertainties and risks in agricultural production system. Insurance policies based on input-cost mechanism are not going to help farmers unless they are designed to protect the income of farmers from agricultural risks which are more prominent under increasing climate change impacts. Besides, technological advancements like land record digitization and satellite images should be used for quicker and precise assessment of crop damage and settlement of dues to farmers. There are high expectations from the Govt of India which is exploring to recast the present agricultural insurance policy. It will be well advised in case all agricultural subsidies are directed towards premium for agricultural income assurance schemes and enable farmers to operate in a free environment.

*Kapil Mehan, Group CEO and
K.K. Singh, Operations Head – Agri
Services, Adventz Agri Business*

STATE FOCUS

STEERING TOWARDS GREATER HEIGHTS

AGRICULTURE IN TAMILNADU

Located in the southernmost part of the Indian Peninsula and bordered by the union territory of Puducherry and the states of Kerala, Karnataka, and Andhra Pradesh, Tamil Nadu is the eleventh largest state in India by area and the sixth most populous state in India. The state was ranked sixth among states in India according to the Human Development Index in 2011 and it was the second largest state economy in India in 2012. The state has the highest number (10.56 per cent) of business enterprises and stands second in total employment (9.97 per cent) in India, compared to the population share of about 6 per cent. In the 2013 Raghuram Rajan panel report, Tamil Nadu was ranked as the third most developed state in India based on a "Multidimensional Development Index".

Tamil Nadu has about 5.96 percent of Nation's population, occupies 4 percent of the land area and has 3 percent of the water resources of the nation. In the state, agriculture provides

livelihood to about 40 percent of the population. Hence, the state's economy swirls around agriculture and allied sectors. Therefore, any disturbance in the growth of the agriculture sector will influence the state's overall growth rate, ultimately leading to deceleration in its economic growth. Realizing agriculture sector's importance, the Government of Tamil Nadu has taken many

far reaching policy decisions to usher in Second Green Revolution in Tamil Nadu, by introducing numerous path breaking initiatives to bring in a paradigm shift in agriculture - from a subsistence production to a highly diversified, technology driven and market oriented commercial production. High priority has been accorded to agriculture sector to achieve the goal of inclusive growth



through Sustainable Agriculture initiatives.

Tamil Nadu's Agriculture

Tamil Nadu has been historically an agricultural state and is a leading producer of many agricultural products in India. Tamil Nadu performs well in the all India scenario in productivity of major food crops. It ranked (2009-10) second in productivity of rice next to Punjab. The State ranked first position in the case of maize and oilseeds productivity. The State also holds first place in groundnut productivity surpassing Karnataka and Gujarat. Similarly, in productivity of sugarcane, it is the Numero Uno State and its productivity is nearly 4 percent more than the National average. In the case of vegetables and fruits productivity, it ranked first and second place respectively at National level.

The Cauvery delta region is known as the Rice Bowl of Tamil Nadu. In terms of production, Tamil Nadu accounts for 10 per cent in fruits and 6 per cent in vegetables, in India. Mango and banana are the leading fruit crops in Tamil Nadu accounting for over 87 per cent of the total fruit production. The main vegetables grown are tapioca, tomato, onion, brinjal (eggplant), and drumstick. Tamil Nadu is also a leading state in the production of flowers. The main flowers grown in Tamil Nadu are jasmine, chrysanthemum, marigold and rose.

Tamil Nadu is the largest producer of turmeric. The state is the largest producer of bananas, turmeric, flowers, tapioca, the second largest producer of mango, natural rubber, coconut, groundnut and the third largest producer of coffee, sapota, tea and sugarcane. Tamil Nadu's sugarcane yield per hectare is the highest in India. The state has 17,000 hectares of land



under oil palm cultivation, the second highest in India.

Rice is the staple food occupying 33 percent of the gross area sown. Of the total rice area, 93 percent is irrigated and balance is under rainfed lands mostly under semidry conditions. Millets occupy 11 percent of the gross area sown and the major millets cultivated are Chulam, Cumbu, Maize and Ragi. Pulses occupy nearly 11 percent of the gross area sown in the state of which only 8.73 percent is irrigated. Cotton occupies nearly 2 percent of the gross area sown. Sugarcane is a major irrigated crop of the state next to rice which plays a vital role in the state's economy. It is a high water and labour intensive crop occupying 5.5 percent of the gross area sown. Tamil Nadu ranks first in the productivity of oilseeds in the country. Oilseeds occupy 7.7 percent of the gross area sown. Major oilseeds grown in Tamil Nadu are groundnut, gingelly, sunflower and castor.

The salient features of Tamil Nadu's agriculture are: a) marked water scarcity, the need for a shift and diversification from present concentration of cultivation from water intensive crops



like rice and sugarcane to more nutritious but less water consuming crops like pulses, millets, oilseeds and so on in terms of total irrigated land and b) predominance of small and marginal farmers in overall agriculture production.

Towards Second Green Revolution

The Tamil Nadu Government which has resolved to usher in a Second Green Revolution under the auspices of Hon'ble Chief Minister has formulated multifarious policies over the years to achieve equitable, competitive and sustainable inclusive growth in agriculture.

The State Government has in-

STATE FOCUS

introduced a plethora of revolutionary strategies giving impetus to agriculture. Various agrarian reforms such as - bringing fallow lands back to cultivation, consolidation of fragmented land holdings through area saturation approach, augmenting water resources, Integrated Input Supply Management System, Mission mode approach to increase the food grain area and production, Promotion of Traditional agro-products, Eco friendly sustainable agricultural practices, Pluralistic Farmer Oriented Integrated Agricultural Extension System through Intensive Multi disciplinary village level campaign and system of fixed scheduled village visits of extension functionaries - have been introduced by the state government to develop agriculture. Empowerment of women in the whole gamut of agricultural activities, revival packages to the farmers at the time of distress and ICT based extension deliverance, farm mechanization, integrated infrastructure development, strengthening farmer - extension system interface, promotion of market led agriculture & supply chain management have also helped in the agricultural upheaval of the state. As a result of these initia-



tives, the State has achieved a commendable performance in food grain production during 2014-2015.

The state's specific smart policies has been instrumental in increasing agricultural production of the state. The state has achieved immense success with policies such as weather proofing cultivated area for different monsoon scenarios, Crop diversification, rejuvenation of soil and fertility and encouraging organic farming. The government has drafted a comprehensive organic farming policy to achieve

sustainability in agriculture production without affecting the food security initiatives. Apart from establishing five model organic villages, the government has been pro active in improving soil organic content at the rate of 50,000 acres of land every year by production and distribution of 1000 MT of quality green manure seeds. To complement the organic farming in the state, 15 Bio Fertilizer Production Units, seven new liquid bio-fertiliser laboratories in addition to 15 existing labs, two new laboratories for the analysis of organic



STATE FOCUS



fertilizers and a laboratory complex at Tamil Nadu agricultural university to standardise the organic practices and promote research activities in organic cultivation were established. Development of 150 model "Eco-Friendly Integrated Pest Management Villages", 250 demonstration cum training to benefit 12500 farmers, production and distribution of 525 MT of BGA and 500 MT of Azolla and 753 Vermi compost units have been established to boost organic farming in the state. Management of water resources and Promotion of Micro Irrigation are crucial areas for a state like Tamil Nadu. A water starved state, Tamil Nadu has embarked upon on a journey to conserve water promoting the policy of "More Crop per drop of water". Apart from farm ponds, rain gun and mobile sprinklers, the state has made some impressive investments in rain water harvesting.

In the past three years, 908 rain water harvesting structures have been constructed at a cost of Rs.9.97 Crores. Micro Irrigation is another area in which the state has excelled. Considering its importance and to encourage farmers, first time in India, the State Government is providing Micro Irrigation System with 100 per cent subsidy for small farmers / marginal farmers and 75per cent for other farmers. Micro irrigation has been covered in 1,27,458 ha of land so far at a cost of Rs Rs.490.47 Crore, in the last three years. Micro irrigation exclusively for

pulses was promoted. Intensive Red gram cultivation through transplantation coupled with micro irrigation had increased the area of pulses to 8.80 Lakh Ha during 2013-14 which was the highest in the past decade.

Tamil Nadu has been quite focussed on assuring the supply of quality inputs to the farmers. The state government has developed a wide and diverse network to share the information on availability of inputs in the AGRISNET portal of Agriculture Department. A Special Purpose Vehicle (SPV) with a revolving fund of Rs.50 Crores manages the assured and timely supply



of quality inputs to the farmers under the various Agricultural and Horticultural schemes. Several future plans are underway such as "Tamil Nadu State Seed Development Agency(TANSDA)" and "Integrated Agricultural Extension Centres" which would assure supply of seeds. Quality of seeds are also of utmost importance and the state government has made some notable achievements in this sector. Coimbatore seed testing laboratory of Seed Certification department has received accreditation of International Seed Testing Association (ISTA). This is an exclusive and unique achievement which has not been achieved by any other public sector undertaking in the country. State Horticulture Farms Model nurseries and Tissue culture units ensure the timely supply of quality planting materials.

Besides seeds, the TN government has elaborate plans for assuring the quality of fertilizers. The Government checks the veracity of fertilizers through strict periodical sampling and analysis in 14 notified Fertilizer Control Laboratories. To protect the farmers from escalating fertilizer cost due to the introduction of NBS by GOI, TN has exempted 4% VAT levied on chemical fertilizers besides exemption for biofertilizers, agricultural implements and other inputs which is first time across the country.

TN government has embarked upon a mission mode approach to intensify farm Mechanization. The government has adopted a three pronged approach i.e., Purchase of heavy duty high value machinery for the Agricultural Engineering Department for custom hiring at first level, Procurement of medium sized agricultural machinery / implements by the PACCS for custom hiring to farmers at second level and Subsidy assistance to farmers, Farmers Group and Self Help Group to acquire agricultural machinery / implements at third level. Besides this several custom hiring centres and Agriculture Skill Development centres have been established to augment the state government's efforts in mechanization.

"Farmer Oriented Integrated Agricultural Extension System" was intro-

STATE FOCUS



duced in TN to encourage adoption of scientific cultivation practices for increased productivity. The government established Integrated Agricultural Extension Centres in Agriculture and Horticulture Departments for all the activities of agriculture and allied departments; ICT tools were a big part of it. A village level mass contact programme, 'Uzhavar Peruvizha', was also conducted benefitting 80.86 lakh farmers.

Farmer Crop Management System (FCMS) coupled with SMS advisories through automated Bulk SMS system have been developed to provide inter-

face between individual farmer with extension and Research wing. TN is propagating "Farm level planning" concept through FCMS. Tamil Nadu stands first at all India level in providing SMS and Voice advisories to farmers' mobile. The state's Agro Marketing Intelligence & Business Promotion Centre disseminates timely information on prices and market which has been linked to Farm Crop Management System for generating messages on Post Harvest Management practices and market advisories. Besides this, another system, PHMS (Post Harvest Management System), an extension of FCMS, is under devel-

opment wherein the farmers growers' clusters formed for various commodities at village level in the node would be directly connected to traders in the hub for realization of fair and remunerative price for agricultural produce. Input Supply Management System and On-line Farm Machinery Booking system are the other IT linked systems in TN.

Introduction of crop specific technologies was yet another decisive factor in increasing the food grain production of the state. With an aim to increase the rice yield with minimum use of water, labour and cultivation expense, System of Rice Intensification (SRI) method of cultivation was launched in the state. TN has also launched, System of Pulses Intensification to augment the pulses production and to meet the dietary protein requirement with seven key technologies being promoted as whole village approach. Precision Farming method of cultivation, which has been adopted in the state to an extent of 23,178 acres is mainly intended to save water through adoption of micro irrigation and save nutrient through adoption of drip fertigation with water soluble fertilizers, for synchronized maturity. Farm based interventions, Formation of commodity groups and Farmers Producer Organisations (FPOs), have also paid rich dividends to the farming commu-



nity. Farmers Producers Organizations (FPOs) are being actively pursued in the state thereby facilitating access to fair and remunerative markets including linking of producer groups to marketing opportunities through market aggregators. The State Government has strengthened regulated markets by providing sufficient facilities like Godowns, drying yards, transaction sheds, traders shops, market complexes, cold storage, rural business hubs etc., in the regulated markets for the benefit of farmers.

TN has strengthened the regulated markets by providing 88 modern storage godowns with capacity of 2000 MT to 10000 MT and 70 cold storage with 25 MT capacity. Market complex with Cold Storage facilities had been created for mango at Krishnagiri, for tomato at Dharmapuri and Salem, for grapes at Theni, for onion at Tiruppur and Perambalur, for hilly vegetables at Karamadai, for Chillies at Paramakudi and for fruits and vegetables at Dindigul, Villupuram and Coimbatore districts.

The State Government has initiated to establish Agro processing industries with appropriate models in 10 backward districts to strengthen the post harvest management including value addition and Processing of agricultural produce with adequate arrangements for forward and backward linkages for ensuring remunerative price to the farmers and employment generation at local level at a cost of Rs. 25.00 crore.

TN has strengthened the regulated markets by providing 88 modern storage godowns with capacity of 2000 MT to 10000 MT and 70 cold storage with 25 MT capacity. Market complex with Cold Storage facilities had been created for mango at Krishnagiri, for tomato at Dharmapuri and Salem, for grapes at Theni, for onion at Tiruppur and Perambalur, for hilly vegetables at Karamadai, for Chillies at Paramakudi and for fruits and vegetables at Dindigul, Villupuram and Coimbatore districts

Another interesting programme, Peri Metro Vegetable Cluster Development Programme is under implementation. Under this scheme, 700 clusters with 12,070 farmers have been formed in 9 districts around Chennai and Coimbatore which will be further extended to other Metros. This programme will help to have a price gain for both the producers and consumers besides ensuring continuous supply of fresh vegetables to the burgeoning urban markets and to create forward linkages from rural to urban areas.

As a result of all these agri centric policies and plans, the productivity of rice during 2014-15 has increased by 5 per cent (4325 Kg/ha) compared to the previous best of 4123 Kg/ha obtained during 2013-14. The total millet productivity which has been pegged at

4282 Kg/ha is an increase of 18 per cent over the best productivity of 3643 Kg/ha obtained during 2011-12. Likewise, the pulses productivity has increased by 2 per cent (770Kg/ha) over the productivity of 752 Kg/ha obtained during 2013-14.

The ingenious approach introduced by the Government has helped in achieving the highest Food grain production of 101.52 LMT during 2011-12 for which the State bagged Krishi Karman award from Government of India and again during 2013-14 for the highest pulses production of 6.14 LMT. It is noteworthy that the state had obtained 110.02 LMT in food grain production in 2013-14 and 127.96 LMT in 2014-15 which has surpassed its earlier production.

The food grain production of the state pegged at 127.96 LMT for 2014-15 is an all time high achievement in the annals of Agriculture. This is 16.3 per cent increase over the previous best obtained during 2013-14. Likewise, the Rice production has been estimated to be 79.14 LMT which is 6 per cent increase over the previous best of 74.59 LMT obtained during 2011-12. The Pulses production has been pegged at 7.24 LMT which is 18 per cent increases over the best production of 6.14 LMT obtained during 2013-14.

Agriculture in Tamil Nadu still remains exposed to the vagaries of the monsoon and it is beset with a number of characteristics such as wide seasonal variations, fragmented land holdings predominance of small and marginal farmers (92%), stress of cultivable land and water resources, degraded and problem soils, soil nutrient deficiency in the cultivable area, low productivity, non-availability of sufficient farm labourers, etc. Despite these challenges, agriculture in Tamil Nadu has registered an impressive growth. Understanding that a strong base of primary sector is the prerequisite for accelerated growth of state economy, the Tamil Nadu government has initiated multi faceted approaches to solve major problems prevailing from sowing till marketing in agriculture.





India – Africa cooperation in agriculture can ensure long term global food security

Indian council of Food and Agriculture hosted a 14 member African delegation from eleven countries mounted by African Union in New Delhi on 18 Jan, 2016, led by Michigan State University, US. The visit to India was coordinated by The Energy and Resources Institute (TERI), which is the Consular General of Michigan State University in India. On this occasion, ICFA signed two MoUs with Michigan State University and with TERI for working on technology transfer, training and entrepreneurship development in Africa and conducting global studies on trade, technology and food security related issues. ICFA Chairman, Dr. MJ Khan also announced the launch of ICFA Working Group on Africa to be hosted by ICFA in India and co-hosted by MSU and AU with 15 members each from India and Africa and five members from US.

Welcoming the delegation, Dr. MJ Khan, Chairman ICFA highlighted in brief the genesis of ICFA formation and its broad vision in areas of policy research and advocacy;

business and trade facilitation and as apex platform for partnerships. He is of the opinion that the future developments in a country like India shall be driven by a vibrant entrepreneurial climate and the Start-Up India Programme launched recently in the country. Similarly, the African nations too can pursue an entrepreneurship led development of their respective countries with India

as a partner. He pointed out that training and exposure visits are important for introducing the African agriculture community to the latest technologies and practices in the sector in a country like India. This can be effectively facilitated by the partnerships in the form of letter of intent between this delegation and ICFA. Dr. Khan referred to the globally recognized IT prowess of India and pointed out India's strength



in implementation of information and communication technologies (ICT) from which Africa could benefit greatly. Dr. Khan stressed the need for trustable accreditation in today's world and African nations could benefit from the learnings of Indian accreditation and Quality standardisation institutions like Quality Council of India (QCI), which has also association with ICFA. He mentioned about the current activities going on in India on Farmers' Producer organizations (FPOs) co-ordinated by agency like SFAC, which has been so far a good experience. Dr. Khan announced the launch of ICFA Working Group on Africa and expressed hope that it would pave the way for increased interactions and flow of India's learning and experiences for African agriculture development.

Director General of ICFA, Mr. Alok Sinha highlighted the importance and relevance of India Africa collaboration in the agriculture sector. He pointed out the diversity of India in terms of its agro-climatic zones and the African nations could benefit from this experience of India in agriculture as a country. He mentioned about the very large pool of scientists and specialists available in India with the most intensive field experiences in agriculture from which the African nations could greatly benefit.

Prof. Karimbhai Mareadia, leader of the delegation and Senior Associate Dean, College of Agriculture and

Natural Resources in the Michigan State University, said that African Biosafety Network of Expertise (ABNE) is a continent-wide initiative whose overall goal is to assist African countries in their efforts to build functional biosafety systems for sustainable and safe application of agricultural biotechnology with the Michigan State University as the facilitator. The main goal of ABNE is to enhance the capacity of African countries in harnessing modern agricultural biotechnology for improved food security, increased income and livelihoods, while at the same time avoiding potential risks to the environment and human health. Prof. Mareadia expressed





hope that the MoU with ICFA signed that day will be facilitating the best learning in biotechnology in areas like Bt cotton in a country like India along with several other areas of agriculture. He expressed hope that the African nations would also gain a lot from the works of the likes of Prof. Kurien, the father of dairy cooperative movement in India, who was an alumni of Michigan University.

Distinguished Fellow and Senior Director of TERI, Dr. Vibha Dhawan said that TERI as an organization with its 1200 employees is trying to do its bit in the area of agriculture and food security of the nation. She recalled how in 1988, through her first and direct work in the agriculture sector on quality planting material, she was introduced to the intricacies of the agriculture sector and the farming community of the country. The way farmers cope with various uncertainties while farming is something that is seen to be believed and organizations like TERI realizes the hardships of farmers and tries to work its way towards

providing meaningful solutions. She expressed her hope that this kind of interaction would be sustained in the coming days too and the Memorandum of Understanding signed between ICFA and TERI will provide a meaningful platform towards further work and associations.

Agribusiness expert, Mr. Vijay Sardana highlighted the immense untapped potential of the African nations in agribusiness. He pointed out that Africa can make an annual business of at least USD 10 billion annually just from agricultural trade with India. He pointed out how from his recent visit to several African nations, he noticed a strong competitive advantage of the continent in terms of soil, social system and infrastructure like roads. Through the distinguished delegates present in the meeting, he urged the African countries not to underestimate their potential and that time has come for both India and Africa to engage in "Agri-based Diplomacy". He also urged the delegates to take lessons from India's several failures of the past in agriculture and not to copy

everything from India.

Dr. RP Singh, Secretary, All India Agricultural Universities Association, highlighted the strength of some African markets for India in agriculture in terms of seed, farm machinery, inputs and irrigation. Countries in the Northern and Western Africa have surplus irrigation water and a large part of it is going waste. He mentioned that the Western and Southern part of Africa is good for growing pulses. Apart from various agri commodities, the continent can also focus on meat and dairy industry.

Mr. Ravi Verma, MP and ICFA Parliamentary Working Group Chairman referred to the recent Indo African Summit which provided a clear intent and stronger message of India's commitment and more active interest at political level in India to engage with Africa for bilateral relationship and trade.

Dr. Dinesh Kumar, ICFA Working Group Chairman on Cooperatives and CEO of NCUI, highlighted the similarities between India and Africa. These similarities provide a strong ground for cooperative led growth in

agriculture in both India and the African nations. He mentioned how the cooperative movement in Namibia is led by a lady co-operator and that women farmers cooperatives can do wonders in fostering growth and development in the sector. He said India has currently about one million cooperative societies and Africa, which is relatively weaker in cooperatives, can increase its strength from the learning of India in this area.

ICFA Horticulture Working Group Chairman and President of the Indian Horticulture Society, Dr. Chadha mentioned that soon after the green revolution in India, focus of the government shifted to diversification in agriculture through horticulture, dairy etc. Horticulture sector of India has grown by leaps and bounds and currently India is the second largest producer of fruits and vegetables, largest producer of coconut and spices apart from becoming important producer country in various other horticultural products. India has over the years developed a robust system in the field of horticulture with the availability of quality planting materials and also separate institutions for products like citrus, grapes, banana, onion, garlic etc. He urged the delegation to identify important areas where the respective African countries could benefit from the experience of India in horticulture and also urged to adopt a cluster approach for planting various horticultural crops.

Dr. M. Moni, Chairperson of ICFA Working Group on Information and Communication Technology (ICT) and former DG, NIC underscored the vast experience of India as a country in implementation of ICT in agriculture for over 30 years now. As a part of South South Cooperation, India can facilitate adoption of cutting edge ICT in agriculture for various African countries and help them develop an information system for agriculture. ICFA through its Working Group on ICT can provide support in this regard. He also pointed out that several courses can be introduced on e-governance in the African countries.

This was followed by the signing of two important agreements, one Letter of Intent between ICFA and MSU and another Memorandum of Understanding between ICFA and TERI

Anil Jauhri, CEO of the National Accreditation Board for Certification Bodies (NABCB) under the Quality Council of India (QCI) provided a brief overview of some of the important activities of QCI in terms of quality control and accreditation and also highlighted the importance of quality control for African Countries. He informed that QCI has formed a global consortium in training and has already trained 16 countries in areas of quality control. He highlighted how accreditation is becoming increasingly important in International trade. Mr. Jauhri informed that under India- Africa Cooperation, training programs in quality control and accreditation have already been conducted and was sponsored by India.

Dr. JS Sandhu, Deputy Director General of ICAR said that ICAR is the largest research body in the field of agriculture globally with over 100 institutions under its aegis and being equipped institutionally on biotech and biosafety and now a deemed university coming up on agri-biotech in the eastern part of India. Working aggressively in areas of food grain production and other areas of agriculture, ICAR is playing its role in providing food and nutritional security to the 1.25 billion population of India and the African countries can benefit from this rich experience of ICAR.

Dr. MM Alam, Executive Director, Centre for Agriculture and Rural Development (CARD) pointed out

the ongoing activities of CARD in important areas of training and exposure visits. The long experience and competence of CARD in this area could prove to be handy for various African countries interested in learning from Indian agricultural systems and practices through various educational and exposure tours to India.

ICFA Board Member and the largest grower and marketer of Stevia in India, Mr. Gandhi highlighted the opportunity of stevia as an exportable agri commodity. He said that like India, many parts of Africa too have got congenial agro-climatic conditions for growing stevia on large acreage. Countries like Japan have high demand for stevia but the agro-climatic conditions of these countries are not suitable for stevia cultivation and this provides a lot of opportunity for India and the African countries to promote stevia, which is good for the society too from health point of view, as it is an alternative to sugar for diabetes patients.

The delegates from the Africa included Mr. Ouro-Koura Agadazi (Togolaise), Mr. A. W. Gemelal (Ethiopia), Ms. V. A. Opoku-Agyakwa (Ghana), Mr. Moussa Savadogo (Burkina Faso), Mr. K. M. N. Shongwe (Swaziland), Mr. A. Tokoro (Togolaise), Mr. S. O. Obwogo (Kenya), Mr. I. A. Mdee (Tanzania), Ms. A. G. Kamau (Kenya), Ms. L. Mbongo (Namibia), Mr. H. M. Moimbo (Kenya), Ms. D. K. Musonda (Zambia), Mr. C. I. Okpoko (Nigeria) and Ms. O. O. Olajitan Popoola (Nigeria). All the delegates expressed their happiness to be a part of this interaction organised by ICFA and hoped to put in use the rich experiences in their respective countries for the development of agriculture.

This was followed by the signing of two important agreements, one Letter of Intent between ICFA and MSU and another Memorandum of Understanding between ICFA and TERI. The documents were signed by Director General of ICFA, Mr. Alok Sinha, Prof. Karimbhai Maredia of MSU and by Dr. Vibha Dhawan of TERI.

CONTINENTAL – SOLUTIONS FOR AGRICULTURAL VEHICLES

Continental is among the leading suppliers to the automotive industry worldwide. As a relatively new entrant in India, Continental have scaled up rapidly over the past few years with around 5,000 people employed in seven manufacturing plants in Bangalore, Kolkata, Delhi & NCR, Modipuram and Pune. Headquartered in Bangalore, Continental Automotive Components has three Automotive Divisions, Chassis & Safety, Powertrain, Interior represented by several strong business units, each with an extensive product portfolio. The company develop and manufacture a wide range of electronic products in the Bangalore plant including engine management, power steering ECUs, immobilizers, body control modules, and instrument clusters. They also manufacture complete brake systems, powertrain and chassis sensors, fuel supply modules and fuel rail assemblies in other locations in India. In addition, they also supply ABS/ ESC, airbag ECUs, pumps, injectors and sensors amongst other products. Continental recently announced the integration of Emitec Emissions Control Technologies, adding metallic substrates, partial flow filters and SCR dosing systems to complete powertrain portfolio. Earlier this year, a brand new, state of the art facility in Bangalore was inaugurated to meet local market requirements as well as those of their locations worldwide. Continental's Rubber Group comprising Continental Tyres and ContiTech, specialist in rubber and plastics technology, are both well represented in India. Continental's newly upgraded tyre plant in Modipuram manufactures and supplies both radial and bias tyres for a range of vehicles while ContiTech has a power transmission plant in Sonapat and conveyor belt production unit in Kolkata. In an interview with Agriculture Today, Dr. Michael Jorg Ruf, Head, Business Unit CVAM, Continental Automotive GmbH, discusses Continental's role in agri segment.



What are the cutting edge technologies Continental focuses on?

Precision farming as a means to increase productivity will remain one of the key trends. We therefore see related advanced electronics such as rear controllers and fully programmable terminals as an important trend. They help to facilitate easier monitoring and control of all vehicle and implementation functions. Already today, our electronic based solutions help to increase the efficiency of agricultural machines whilst making sure our products meet the targets of environmental friendliness and conservation of resources. For example, the set up, control and monitoring of automated processes as required by precision farming is made possible by solutions like our MultiViu High Terminal. Rubber tracks, which have been added to the product range since acquiring

Veyance Technologies in January 2015, offer a secure grip on soft yielding ground to heavy tractor units or combine harvesters, including those with drive powers above 500 hp. Compared with wheels, they distribute the weight of the vehicle more evenly across a larger surface and prevent soil compaction.

What is the share of agri machines segment in Continental's automotive business?

It is our general corporate policy not to break our revenues down below the automotive segment. The automotive industry accounts for about two thirds (61 percent) of our overall revenues of 34.5 billion Euros in 2014.

Please brief us the product profile of the

company in the agri vehicles section?

Continental offers a very comprehensive range for modern agricultural technology ranging from electronic solution to rubber solutions and goes on to exhaust gas treatment. The focus of our products and solutions is on efficiency and environmental friendliness. Electronic solutions range from comprehensive instrumentation solutions (single instruments, instrument clusters, terminals) to camera solutions for a better overview, sensors such as fuel and urea sensors as well as VCUs and Body Controllers. We also offer telematics units as a central interface through which data are transmitted from and to the vehicle, thus enabling a wide range of data-based applications. Whilst offering solutions for the higher end markets we also offer our customers price competitive solutions for the emerging markets. Due to our longstanding experience in electronics, we can also offer the complete range of E/E system architecture services, helping to optimize the performance, safety and dependability of the vehicle while reducing the costs for electronics. Continental supports the vehicle manufacturers along the entire process from requirements analysis to validation of the EE architecture, ensuring conformance with current safety standards. We also offer a wide range of conveyor belt technology for sowing through harvest and on to transport and storage makes work easier throughout the whole agricultural process chain. Rubber tracks, which have been added to the product range since acquiring Veyance Technologies in January 2015, offer a secure grip on soft yielding ground to heavy tractor units or combine harvesters. Tractor and combine harvester components can safely be lifted, driven and controlled with the Continental high-pressure hydraulic hose. A pneumatic spring improves the ergonomics for the driver. Continental also offers complete exhaust gas treatment solutions for off-highway vehicles, including of series solutions for EU IIIB / US Tier 4 and for EU IV. At Agritechnica, there was a preview of the technologies for the next emission stage, EU V: oxidation

catalysts and reductant injection with integrated vaporization and hydrolysis modules, along with SCR-coated particle filters, will help to bring a lasting reduction in nitrogen oxide. Continental has produced agricultural tyres for decades, using various brand, e.g. General and Simex. The brand Continental was sold to MITAS under a license agreement until 2019. In 2019 Continental will again offer agricultural tyres under the brand Continental.

What sets Continental apart from the rest?

One fact that sets us apart is that we can offer a wide range of solutions from electronics to rubber based solution to exhaust gas treatments worldwide to all key markets for our OE customers. With the tyres business back in 2019, we will offer everything in the tractor apart from the engine.

What according to you are the future challenges in the operations of agri machines?

We can differentiate between two points of view. The operator of the machine on the one hand side and the management of the complete farm on the other side. The operator is facing more information that need to be considered to make an operating decision. It is key to provide him only the necessary information at the correct time. The operator needs to be supported instead of being distracted during work. Also for operating a complete farm we see the challenge to have a management system which has access and the capability to handle all data that is necessary and result in management decisions to achieve the highest possible efficiency.

What are the emerging technologies in this segment?

Overall, connectivity will play an important role in further establishing Telematics solutions in the agricultural sector. These can help to manage the fleet more effectively and to make use of agricultural data to make as effective use of resources as possible (such as fertilizer, seeds, pesticides etc.) A strongly increasing world

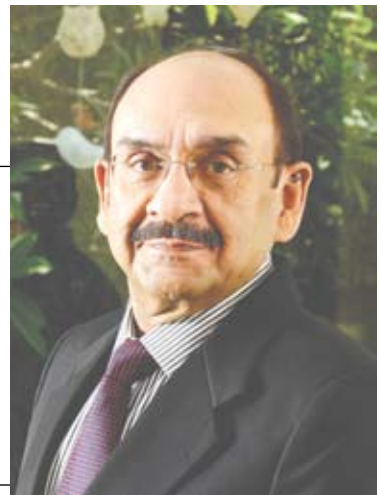
population (from grow from 7.3 bn (2015) to 10 bn (in 2060) according to the UN) and thus an increased demand in foods is one of the most important global developments. Electrification of the tractor, for example replacing the hydraulic based control functions through more reliable and cleaner electrically driven functions (no oil leakage, less breakdowns) will be another trend to come in the future. The Cabin of the future will have more electronics. Connectivity and but also Multi media will be more and more important, either as integrated solution or separate components depending on the OEM E/E architecture. Functional safety will also have high priority. Another emerging trend is the use of Unmanned Aerial Vehicles (UAV). Unmanned Aerial Vehicles equipped with sensors (e.g. infrared sensors, cameras) can help to collect and process precise data, e.g. on the soil and plant conditions but also on potential obstacles on the ground (animals, holes etc.). Such a "sensor platform" extends the viewing area of the farmer and his machine. The sensor data can help to make a more effective use of the resources such as fertilizer or seeds. For example, through a site specific application of nitrogen, the mineral fertilizer expenditure on heterogeneous fields can be reduced in average by 7%. Continental offers related connectivity devices such as the above mentioned telematics platform, but also the terminals needed for display and control.

How do you look at the global trends obtaining in automating the farm sector?

Automation in the farm sector has reached a significant level in some markets. To reach the level of full automation there will be many steps in-between with semi-automatic implementation of different functions. Even though some functions are already available in the market, there are still opportunities for optimization. We are of the opinion that the overall trend is beneficial in terms of efficiency and safety and the implementation will stay a trend also in the upcoming years.

BLUE BLOOD OF BUSINESS

Born into the family of legends, greatness and vision was inherited by Shri Ajay Shriram. Although the path he was to follow was laid down for him, he decided the course and nature of that journey. From the shop floors of his factories to being the Chairman and Senior Managing Director of DCM Shriram Limited, Shri Ajay Shriram's success was his own script.



Mr. Ajay S. Shriram, is the Chairman and Senior Managing Director of DCM Shriram Limited, a leading business conglomerate of India with a turnover of around Rs 5,700 crore. The Group with its forays into agricultural, chloro vinyl and value added businesses is a spin-off from trifurcation of the reputed erstwhile DCM Group in 1990.

Born on March 4, 1954 in Calcutta into the family of Lala Shri Dhar, an eminent and public-spirited philanthropist, an outstanding industrialist and one of the trend-setting visionary leaders of the Indian business community, Ajay Shriram was the second of four children of Shridhar and Prabha Shriram. He did his schooling in the prestigious Doon School, Dehradun. Mr. Shriram obtained a Bachelors degree in Commerce from Sydenham College, Bombay. He attended various training and management development programs in India and overseas and participated in the "Programme for Management Development" (PMD) at the Harvard Business School.

Business was not his first choice. "When I was in school, I was keen to be a Pilot. I got a pilot uniform and would go into the cockpit of an aircraft whenever possible," reminisces Mr. Shriram. However, as per tradition he was imbibed into the family owned enterprise. Despite being the family business, he realized there was no immunity from hard work. He spend time on the shop floor of factories to get hands on experience. He remembers his first assignment with immense clarity, "I was posted at Daurala Sugar Works, Daurala, near Meerut. I spent the next 2 years working with every equipment in the Sugar Factory and at the attached Distillery. Thereafter, I was given responsibility for molasses purchase for our Distillery and gradually additional responsibilities were added to my portfolio. After some years, I was given charge for our Distillery and Portable Alcohol Plant at Daurala. I lived at Daurala Sugar factory for 6 years".

He has been a Director of DCM Shriram Consolidated Ltd. since July 24, 1989. He is the Chairman of its subsidiary company, Shriram Bioseed Ventures Ltd. The immediate past president of Confederation of Indian Industry (CII), Mr. Ajay is also the Chairman of the Governing Body of Shri Ram College of Commerce (SRCC), a Trustee of SOS Children Villages of India and a Patron of Save the Children India. He was also the President & Chairman of International Fertilizer Industry Association (IFA), Paris, (2009-11); Chairman, Agriculture Committee, International Fertilizer Industry Association, Paris (2003-05); Chairman, Fertilizer Association of India (2000-02); Member, Asian Food & Agribusiness Advisory

Board, Rabobank International (2006-09); Member, Board of Governors, The Doon School, Dehradun (2002-08); Member, Board of Governors, Indian Institute of Management, Lucknow (2002-07); Board of Governors, Indian Institute of Foreign Trade, New Delhi (2003-06).

Shri Ajay Shriram firmly believes that agriculture is very much relevant to the Indian economy. "Our Company's belief is that agriculture is a critical part of the Indian economy, with 65% of the population living in Rural India. If we compare with international norms, the productivity levels and quality standards in India have still a long way to go. We believe in the philosophy of increasing farmers' profitability through improved technology practices, higher productivity, appropriate fertilizers applications, quality seeds etc. All these steps can help the farmer enhance his income while also ensuring food security for the country. Businesses do have its ups and downs, but our conviction is that agricultural improvement is critical for India's progress, and we want to be a part of it," avers Mr. Shriram.

DCM Shriram has been working in the agriculture sector with a vision to increase productivity and profitability of the farmers through its various businesses: Shriram Farm Solutions, Bioseed (Hybrid Seeds), DCM Shriram Sugar, Hariyali Kisaan Bazaar. DCM Shriram aims to achieve its vision by adding value to farmers through its large farm extension programmes and last mile delivery activities. Working for over ten years to support the farmers, the Shriram Krishi Vikas Programme (SKVP) is an Integrated Rural Development program covering over 500 villages annually. Under SKVP, help and guidance is provided to the farmers towards holistic development.

"In general, there is tremendous scope for improvement in agriculture, as the all India growth rate is well below the target of 4%. Fortunately, we have good examples of some States achieving over 10% agricultural growth consistently, so we can do it. I think better education of farmers is critical, and now with Digital India and the Direct Benefit Transfer Scheme moving rapidly, that would be possible over the next few years. Simultaneously, there is need to provide appropriate knowhow, fertilizers, seeds, insurance, irrigation, etc. Efficient water management and technological breakthroughs will be important for the future growth of Agriculture. One of the biggest problems for farmers is the controlled market for their produce. Similarly exports policies should be consistent and not influenced by temporary price fluctuations," believes Mr. Ajay Shriram.



Grain Fumigation



Post Harvest



Drought Mitigation Technologies



Crop Protection



Seeds



At the Forefront of Agricultural Technology

UPL is well positioned with technologies across the total Agriculture Value Chain from "Seed to Post Harvest".

UPL offers integrated solution to the grower across the globe.



www.uplonline.com



“If we see farmers, agriculture and villages in pieces, then the country will not benefit. We have to see agriculture in a holistic manner”

NARENDRA MODI
Prime Minister



“The key challenges faced by the Indian agriculture are the need to increase productivity by leveraging technology- especially for high yielding and resistant variety seeds and efficient utilisation of water, adapt latest IT to increase resilience to nature by phasing sowing, watering and harvesting and to increase the price benefits to the farmer by providing timely market information”

ARUN JAITLEY
Union Finance Minister



“Agriculture economy is facing lots of problems...thousands of our farmers are committing suicide. We will definitely encourage diversification of agriculture towards energy, power and bio-plastics which in turn would strengthen the hands of poor farmers”

NITIN GADKARI
Union Minister for Road Transport
and Highways Minister



“It is time to extend start-up India to the farm sector by replicating the success stories of enterprises in honey production, dairying and fisheries”

RADHA MOHAN SINGH
Union Agriculture Minister