₹80/-

DECEMBER 2019

AGRICULTURE TODAY

The National Agriculture Magazine

VOLUME XXII | ISSUE 11 www.agriculturetoday.in

FERTILIZERS

INDIA NEEDS A BALANCING ACT

4TH GLOBAL AGRICULTURE SUMMIT 2019

DECEMBER 2019 | VOLUME XXII | ISSUE 12

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

E-mail: editor@agriculturetoday.in
business@agriculturetoday.in

Any issues? contact us at the above addresses!

www.agriculturetoday.in

Pages in the magazine: 60

From the Editor's Desk

INTEGRATING CHEMICAL AND ORGANIC FERTILIZERS FOR FOOD SECURITY

Agriculture in India has emerged from the shackles of paucity to the one of profusion. The sector of course got its leverage from unending government support and from a host of agro inputs. Fertilizers played a key role in this transformation. Today the Indian fertilizer industry ranks third in the world in terms of fertilizer production. India, in the meantime, has also emerged as the second largest consumer of fertilizers.

Subsidies played a major role in increasing the reach of fertilizers to the farmers. Subsidy or concession schemes have been an integral part of Government policy to sustain agricultural productivity.However, the subsidies have had a deleterious impact on the soil health. Over reliance on Urea and improper nutrient management have led to multi-nutrient deficiencies in Indian soils.With nutrient application / additions never keeping pace with their removals by crops, the fertility status of Indian soils has been declining rapidly under intensive agriculture, and are now showing signs of fatigue, especially in the Indo-Gangetic plain. The partial factor productivity has gone down, necessitating additional inputs to obtain similar crop yields. Soil nutrition is closely linked with nutrition. Crops grown on soils deficient in micronutrients are also generally deficient in micronutrients. These deficiencies are linked with malnutrition and health disorders in humans and animals.

Considering the threat raised by the unwise use of chemical fertilizers and the associated problems it has raised, it becomes imperative to develop an approach for sustainable agriculture.However, to disapprove chemical fertilizers and replacing them with organic sources would be an imprudent decision as the chemical fertilizers have already demonstrated their ability to raise agriculture yields, and future is not going to be any different, if not worse. The Long Term Fertilizer Experiments have indicated very clearly that the response to the fertilizers could be raised significantly with balanced application of fertilizer nutrients along with organic manures. Integrated nutrient management (INM) encourages conjunctive use of chemical fertilizers including secondary and micronutrients, organic manures, composts/vermicomposts, biofertilizers and green manures merits adoption on a large scale. The system enhances nutrient-use efficiency, maintains soil health and enhances crop yields and farmers' profitability.

Chemical fertilizers have undoubtedly played an important role in increasing food grain production in country. However, excessive use of fertilizers have affected the balance of nutrients in soil. There is an urgent need to take steps to rationalise over usage of chemical fertilizers in country in order to restore fertilty of soil. A strategy may be worked out to promote the balanced use of fertilizers in the Country. Farmers need to be educated on this aspect and a massive awareness campaign may be launched by the Government to educate farmers regarding balanced and judicious use of fertilizers. Unless a robust agriculture extension system is established in the country with special emphasis on training of farmers about good agricultural practices, provision of essential agricultural inputs and dissemination of technologies, bio-fertilizers etc., developed by agricultural institutions, it would be difficult to secure our environment without jeopardizing agricultural productivity.

Anjana Nair

CONTENTS

VOLUME XXII | ISSUE 12 | DECEMBER 2019

Cover Feature

20

FERTILIZERS: INDIA NEEDS A BALANCING ACT

Editorial 03
Editorial Comments 06
News Corner 10

COVER FEATURE

Fertilizers: India Needs a Balancing Act 20

4th Global Agriculture Summit & Agroworld 2019 30

SUSTAINABILITY

Stubble Burning : An annual story 46

INTERVIEW

Mr. T. R. Kesavan, President, Tractor Manufacturers Organization and COO, TAFE 48

Mr. Satish Sharma, President Apollo Tyres Ltd. (Asia Pacific, Middle East and Africa) 52

Mr. Rajesh Jejurikar – President, Farm Equipment Sectors, Mahindra & Mahindra Ltd. 54

MY PAGE

Fostering a Conservative Farming Vertical is Vital to Sustainable Development 56

Different Strokes 58

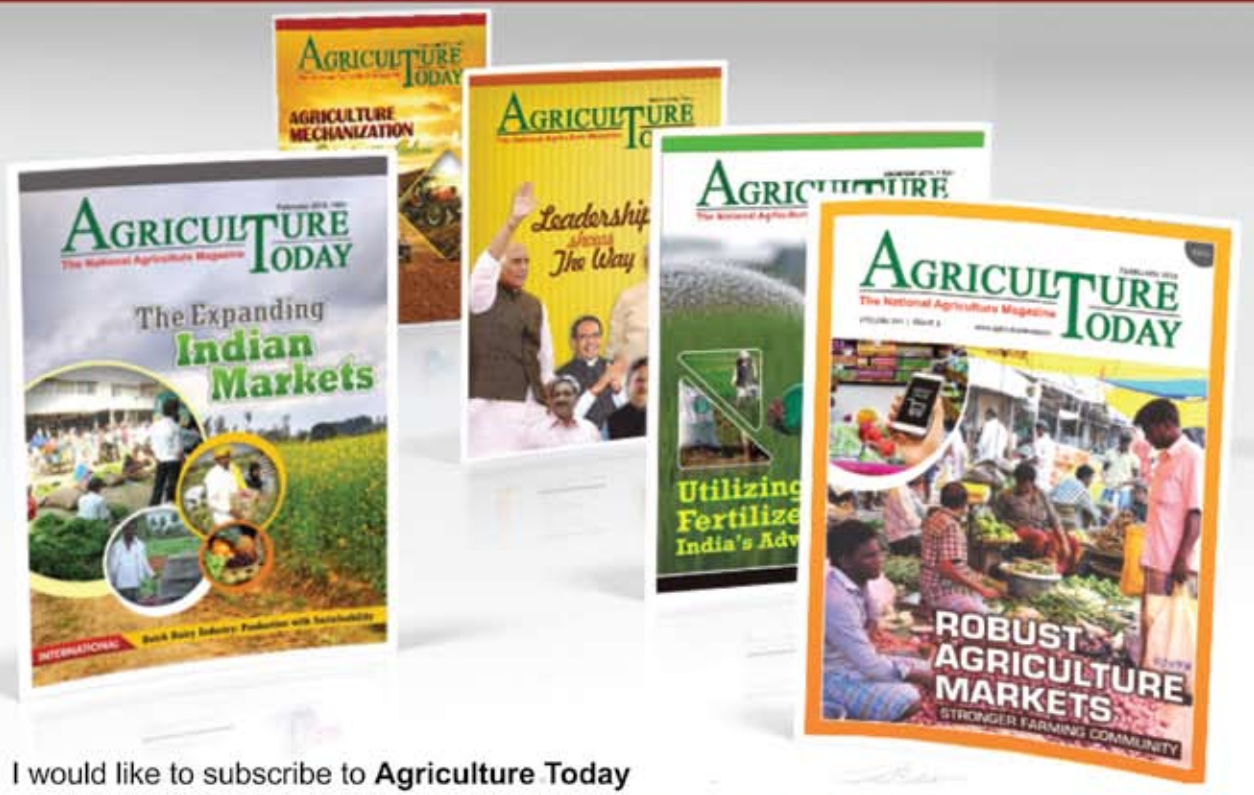
30

4TH GLOBAL AGRICULTURE SUMMIT 2019

32

GLOBAL AGRICULTURE AWARDS 2019

Subscribe Now!



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

Term	Institutions, Companies & Library	Individuals	Students
☐ One Year	Rs. 1200	Rs. 800	Rs. 500
☐ Three Years	Rs. 3000	Rs. 2000	Rs. 1200
☐ Life Membership	Rs. 15,000	Rs. 10,000	NA

I will Pay with

Demand Draft ☐ Cheque ☐ Cash ☐

No. _____ Bank Draw _____ Dated _____

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

Name: Ms/Mr: .....

Organization Name: .....

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

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

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

Terms & Conditions: Rates and offer is valid in India only please allow one weeks time for the delivery of magazine by post. For the subscription related quries please contact: 306 Rohit House Tolstoy Marg, New Delhi- 110001, Ph: 91-11-23353406, 91-11-23731129, E-mail: subscription.at@gmail.com

www.agriculturetoday.in

AGRICULTURE TODAY

India's RCEP Egress – A boon to Indian Agriculture

The government's decision to opt out of RCEP is in the larger interest of farmers

India made a momentous decision recently when the government opted out of the Regional Comprehensive Economic Partnership (RCEP) after a long suspense amidst protests and concerns. The farmers across the nation who have been vehemently protesting the deal, finally succeeded in thwarting a death blow to an already sagging agriculture sector. Lessons learnt from previous trade deals and the current state of agriculture economy have nudged the farmers to voice their consternations.

RCEP, a proposed free trade agreement in the Asia-Pacific region between the ten member states of the Association of Southeast Asian Nations (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam) and their five FTA partners (Australia, China, Japan, New Zealand, and South Korea), is touted to be the world's largest trade agreement. While the RECP opens up markets for India to other countries and vice versa, there are serious apprehensions raised by primary producers such as farmers on the impact of these imports on them. Imports will be flooding the Indian markets on lowered trade tariffs and resource starved Indian farmers will be fighting the sudden deluge of cheaper foreign products. The equation was flawed from the beginning.

The concerns raised by farmers across India is not ill founded. The impact of previous Free Trade Agreements (FTAs) on the Indian agro commodities are pointers to the fact what cheaper imports could do to Indian rural economy. The Indo-Sri Lanka FTA and ASEAN FTA on Indian farmers especially in the plantation sector —tea and coffee, spices reduced the prices of the commodities. The plantation sector in India, especially Kerala, bore the worst impact of FTAs (starting with the Indo-Sri Lanka FTA) signed in December 1998, and which came into force from March 2000. Tea, pepper, nutmeg, coffee, rubber, cardamom and coconut were badly hit. The removal of quantitative restrictions in April 2001 under the WTO regime further exposed these crops to international competition.

The ASEAN FTA gradually reduced import duties for tea, coffee and pepper while natural rubber, cardamom and few tariff lines on coffee were kept under the exclusion list. Yet, rubber farmers suffered losses due to large-scale imports. Farmers have been repeatedly complaining of inferior Vietnamese pepper coming through Nepal or Sri Lanka leading to fall in prices.

The presence of China, Australia, New Zealand and Japan in RCEP would have affected sericulture, horticulture as well as floriculture in India. Another sensitive sector would have been the dairying segment. The RCEP would have allowed the dairy industry of Australia and New Zealand to compete with our dairy farmers. It is notable that New Zealand exports 93.4 per cent of its milk powder, 94.5 per cent of its butter and 83.6 per cent of its cheese production. Removal of tariffs, which at present are 60 per cent for milk powder and 40 per cent for fats, would facilitate dumping of these products.

While increasing agro exports have become the government's solution to double farmers' incomes, the agriculture sector hasn't outgrown its inherent inadequacies and hence not ready to face the larger, more open and competitive global market. Lack of competitiveness of Indian agro products have held India's exports back. We are yet to fully develop our infrastructure and our capabilities. Until then it is better to back off from trade deals.

ECA – Destructive and Distorting

ECA must be repealed for farmers' welfare

Essential commodities Act has been regulating the production, supply and distribution of a whole host of commodities in India that are deemed 'essential' by the government with the objective of making them available to consumers at fair prices. In practise since 1955, the act includes commodities such as drugs, fertilisers, pulses and edible oils, and petroleum and petroleum products. The list is also expanded to include new commodities as and when the need arises, and is taken off the list once the situation improves.

The law although seems to be innocuous and deeply humanitarian at first glimpse, harbours a deep mistrust to storage of commodities to the point that it crimianlises their storage. Farmers and agriculture traders are sometimes at the receiving end of this law. Agriculture being seasonal, the availability of products can wane and wax with the harvest. It is natural for the price to mellow with harvest and to shoot up in off season. A bad weather or rogue pest can tilt the demand supply balance. If farmers (or traders) store produce, supply is smoother and price volatility reduces. It is beneficial to the farmers as they get a stable and steady income. However, the ECA effectively criminalises the storage of agricultural goods, and hence acts as a deterrent as it disincentivises investment in crop warehouses and storage.

The ECA empowers the government to control the storage and sale price of any good which is included in the list of commodities. All food items including oil seeds are included in the list. Another extreme feature of this law is that the restrictions on price or quantity are not placed in the primary legislation.The ECA delegates this power to the executive at the Centre and the states to set prices through delegated legislation called Control Orders. This delegation means no debate or deliberative process in any legislature is required to place any restriction. Without notice, the government can change the quantity of food that a trader can store or the price at which it is sold. A trader may have existing contracts to purchase from farmers, but to honour those contracts, they may exceed the holding limit. Sometimes, traders buying forward contract goods would get arrested for entering into contracts when there were no limits but taking delivery of the goods (at a later date) when a Control Order was in effect (made in the time between the contract and the delivery of goods). In effect ECA has created a peculiar situation that has distorted the market and income recovery proposition for the farmers.

Restrictive Government policies like the ECA also restrict the role that the private trader can play in the markets of some staple essential food items like onion, rice, and wheat. This also discourages further private investment in the market. Farmers' inadequate knowledge of the pre- and the post-harvest technology also results in massive waste along the value-chain. Thus despite having the potential, India is unable to tap global market opportunities.

The act is also a hindrance to enhancing agro exports. The Agro Export Policy 2018 unveiled by the government aims at doubling agricultural shipments to over $60 billion by 2022. The policy aims to boost exports of agriculture commodities such as tea, coffee and rice and increase the country's share in global agri-trade. As long as ECA remains with excessive powers to include and exclude the commodities from the 'Essential category', the objective of increasing the exports can never be met.

The ECA, a successor of a series of war-time regulations passed by the British government during World War II, unfortunately is still followed in India. It is high time, India come forward and repeal these acts for the betterment of the farming community and aligning markets to the demands.

Agri Start Up Revolution

The NASSCOM report emphasizes the potential of agristart ups in India

Agritech Startups are the next big thing in Indian agriculture, so states the latest NASSCOM report titled,"Agritech in India -Emerging Trends in 2019". The report states that Indian start-ups in the agritech sector received more than $248 million funding in the first six months this year registering 300 per cent growth as compared to the same period last year.Growing at the rate of 25 per cent year-on-year, India currently hosts more than 450 start-ups in the agritech sector.

This is interesting at a time when agriculture sector is passing through distress with high price volatility, climate risks, and indebtedness. The spike in the interest in the agritech sector, both from entrepreneurs as well as investors, can be considered a good sign. It is observed that there has been a 1.7-times increase in average farmer income in the last decade, enabling farmers to try new tech solutions. Besides, central government schemes such as PM SAMMAN and other similar schemes introduced by some state governments that guarantee direct cash transfer, have increased the spending potential of the farmers. The extra incomes may have spurred the interest in investing in new technologies. Adoption of technology in agriculture demands a structured institutional focus according to Debjani Ghosh, President, Nasscom. It is this space the technology firms are trying to break into with newer business models.

The fact that every ninth agri-tech startup in the world is originating from India, demonstrates the potential of the agritech industry and the opportunities that India presents in the agriculture and farming landscape. Indian companies are increasingly looking at global markets as well to expand with a focus on regions like South East Asia, Europe, Africa and South America. According to the report, more than five global agritech companies have ventured in India in the last 5 years, as compared to more than 25 Indian agritech companies with a global presence. Corporates and investors are playing a vital role in supporting this with over $200 million investment in B2B start-ups in the past 18 months, making it as a key revenue-generating segment in the overall agritech sector.

The changing face of agriculture has warranted interest in new technologies and new frontiers. New emerging areas like market linkage, digital agriculture, better access to inputs, FaaS and financing are attracting the agripreneurs. Numerous agritech start-ups are bringing forth farming-related advanced technological innovations to help local farming, attain a sustainability and profitability.

The state governments are also pitching in to make way for new technologies to seep into farming sector. Maharashtra launched 'Agri – Tech' scheme for digitally tracking agriculture management, Karnataka set up an Agritech fund of $ 2.5 million with an aim to target at least 21 startups, NITI Aayog has started a pilot project on precision agriculture using AI in 10 districts from seven states and Telangana, Tamil Nadu, Maharashtra have launched an agri open data portal to promote technology as an important tool in agriculture.

Farmers and farming have evolved rapidly over the past few years due to digital penetration and funding and this has spurred the growth of agristart up segment. Realising the vision of "Make in India", for the world, it is estimated that by 2020 the agritech sector will be at the centre-stage of innovation and will lead India's journey towards overall transformation.

Stop soil erosion, Save our future

This is the campaign of this year's World Soil Day

Soils form the foundation of human existence on planet earth. Soil filters our water, provides essential nutrients to our forests and crops, and helps regulate the Earth's temperature as well as many of the important greenhouse gases. As all the other resources, our soils are abused, neglected and eroded periodically. World Soil Day observed on December 5 annually celebrates the importance of soil as a critical component of the natural system and as a vital contributor to human wellbeing.

Today the equivalent of one soccer pitch of soil is eroded every five seconds, and the planet is on a path that could lead to the degradation of more than 90 percent of all the Earth's soils by 2050. Erosion, triggered by intensive agriculture, tillage, mono-cropping, overgrazing, urban sprawl, deforestation and industrial and mining activities, all contribute to accelerating soil erosion, which can result in crop yield losses of up to 50 percent. This year's theme of "Stop soil erosion, Save our future" is highly relevant. This will help to raise awareness on the importance of sustaining healthy ecosystems and human well-being by addressing the increasing challenges in soil management and, raise the profile of healthy soil by encouraging governments, organizations, communities and individuals around the world to engage in proactively improving soil health.

Nearly 30% of its land area, as much as the area of Rajasthan, Madhya Pradesh and Maharashtra put together, has been degraded through deforestation, over-cultivation, soil erosion and depletion of wetlands. This land loss is not only whittling away India's gross domestic product by 2.5% every year and affecting its crop yield, but also exacerbating climate change events in the country which, in turn, are causing even greater degradation. India faces severe problems of soil erosion. On an average, the country is losing soil at a rate of 16 tonnes per hectare annually, which is more than three times the acceptable limit of 4-5 tonnes. About one millimetre of top soil is being lost each year with a total loss of 5,334 million tonnes annually due to soil erosion.

Agriculture is an important factor that has influenced soil erosion at many levels. Soil erosion rates on conventionally ploughed agricultural land or intensively grazed pasturelands are notably greater than erosion under native vegetation - and much higher than soil formation rates - implying that we are depleting a non-renewable resource. Vegetation cover - including shrubs, trees, resistant grasses, cover crops and stubble -can reduce wind erosion by more than 80 percent and also enhance water absorption capacity, mitigating soil compaction and impeding the creation of rills and gulleys that impede agricultural work. Reduced or no-till practices are also effective, especially in drier regions.

Erosion-control measures should be adopted to protect soils and also the livelihood of farmers. Terracing , a capital-intensive and highly effective approach practiced for thousands of years, today is prone to failure due to poor management and design as well as abandonment, which is widespread in almost all regions where they are found, making natural solutions a logical tool for soil governance. At the same time, many of erosion's impacts occur far from the source, as demonstrated by agrochemical runoff that can pollute and eutrophize water sources downstream, which further raises the importance of considering soil erosion control as an issue warranting tangible public support.

It is time we find sustainable solutions to increase agricultural productivity and farmers' income. It takes hundreds and thousands of years to form 1 inch of the topsoil. Each grains of soil is thus worth protecting.

Godrej Agrovet honoured for Sustainable Environment Initiatives

The Oil Palm Plantation (OPP) Division of Godrej Agrovet Ltd. was honoured with the Bombay Civic award for Sustainable Environment Initiatives by the Bombay Chamber of Commerce and Industries. The award was presented to the OPP division headed by Mr.Nasim Ali, CEO, Oil Palm Plantation Business, Godrej Agrovet. This award was in recognition of continuous efforts by Oil Palm Division to promote environmental sustainability through their initiatives such as increasing use of renewable energy (99%), resource conservation, moving towards water use neutrality, reduction of Greenhouse gases etc. Elated at receiving this award, Mr. Balram Yadav, Managing Director, Godrej Agrovet said, "At Godrej, our initiatives are broadly classified under GOOD – Community CSR initiatives and GREEN – Environmental Sustainability Initiatives. It is driven by the desire to create a more inclusive and greener India. 2019 was a good fiscal year in terms of our environmental performance. The increased participation and involvement from the cross-functional team along with the awareness and motivation to reduce environmental impacts of our operations has led us to achieve this prestigious feat." The OPP business was also recently honoured with "Silver Award" by Society of Energy Engineers and Managers (SEEM) to recognize efforts taken by various sectors for improving energy efficiency, thereby supporting India's journey towards climate change mitigation and sustainable development. Unlike other awards, SEEM National Energy Management Awards does not focus on the percentage of energy-saving achieved during the assessment year, instead, systematic actions towards sustainable energy performance are considered for recognition. This approach ensures that the assessment does not get skewed based on production levels. In addition, the business was also conferred with a verification certificate for compliance of the Indian Palm Oil Sustainability (IPOS) framework. IPOS framework is similar to RSPO (Round Table on Sustainable Palm Oil)/MSPO (Malaysian Sustainable Palm Oil)/ISPO (Indonesian Sustainable Palm Oil). The IPOS code covers social, agronomic, occupational health & safety and environmental criteria.

Kan Biosys introduces accelerated straw incorporation solution to stubble burning and building soil carbon

Kan Biosys, a specialized agri-biotech company working in the field of plant nutrition and pest management, has launched Speed Kompost, an Eco-friendly product that tackles the problem of stubble burning. The product, accredited by various research institutes and accreditation bodies, does not pose any risk to the environment and helps in enhancing the soil quality and agricultural yield. Speed Kompost is microbial formulation which consists of a unique stabilized blend of cellulose degrading, starch degrading, protein degrading bacteria and fungi. These microbes when added to the raw compost heap, germinate to produce hyphae or cells.The various microbes, which digest the plant waste, present in Speed Kompost help in recycling of crop residues and wastes effectively along with soil reclamation hence resulting in enhanced soil quality. Apart from this, the usage of the product also ensures a significant increase in the nutrition value of the soil. Taking all the factors into account, 'Speed Kompost' addresses many issues. The easy, cost effective, and standardized on-farm process of the unique formulation/technology allows farmers to incorporate rice stubble in 15 to 20 days after harvesting. With this, the farmers can make their field ready for the next crop. Apart from solving the above mentioned issues, the product increases organic matter in soil, enhances water holding capacity of the soil, makes the usage of fertilizer efficient and improves the soil microbial activity. With the launch of the innovative product, Kan biosys is exploring strategic relationships to make it a pan-India practice.

Dhanuka Agritech reports 5.18 % Revenue Growth in Q2 FY 20

Dhanuka Agritech Limited, one of India's leading agrochemical formulations companies, listed on the Bombay Stock Exchange of India (BSE: 507717) and National Stock Exchange (NSE: DHANUKA), announced its Q2 and half yearly financial results for FY 2019-20. The company reported a profit of 59.99 crores in the quarter ending September 30, 2019 which is up by 8.25 % as against a profit of Rs. 55.04 crores in the corresponding period last fiscal. The performance for the first half-year ending September 2019 was up by 4.62 per cent at Rs. 74.67 crores in half-year ended September 30, 2019 as against a profit of Rs. 71.22 crores in the corresponding period last fiscal. EBITDA of the company stands at Rs. 78.19 crores for Q2 FY20.Speaking on the results and performance of the Company, Mr M.K. Dhanuka, Managing Director, Dhanuka Agritech, said, "The Company's financial performance in Q2 and first half of this year has been satisfactory, with 5.18% growth in turnover. This year we launched three competitive products for paddy, cotton and chilli crops which has seen huge acceptability among farmers. Further, rainfall this year though delayed has been normal, which impacted the sales and our company's performance. He further added, "In order to create awareness about increasing spread of spurious agrochemicals Dhanuka Agritech has been organizing seminars for reaching and informing relevant policymakers about the severity of the issue. Further, we are educating farmers about it. By introducing latest products, the company has been working to upgrade farming practices in the country."

Mahindra & Mahindra unveils unique Precision Farming Solutions at AGRITECHNICA 2019

Mahindra & Mahindra Ltd. (M&M), the world's largest tractor manufacturer by volumes and a part of the USD 20.7 billion Mahindra Group, showcased innovative Precision Farming solutions powered by advanced digital technologies for the very first time, at Agritechnica 2019. On display are a Smart Fertilising Solution & a Smart Spraying Solution that translate the power of imagery analytics, artificial intelligence and machine learning into commercial benefits for the small landholder.Accounting for 98% or over 550 million of the world's agricultural holdings, small landholders with under 50 hectares of land play a critical role in farming. Highly vulnerable to the uncertainties of farming, they would benefit enormously from the transformative potential of digital technologies. However, the steep prices and high complexities of existing solutions that use these technologies make them unaffordable and inaccessible to smaller landholders. To address this challenge, Mahindra is pioneering Farming as a Service (FaaS), a new delivery model that will provide solutions that are progressive, and at the same time affordable and accessible to these farmers. FaaS is holistic and will integrate agronomy advisory, mechanization services and high-tech digital solutions to offer farmers support across their full crop cycle. FaaS will provide small landholders access to knowledge and new age practices thus enabling them to improve productivity and profitability in a manner similar to large landholders. Under FaaS, Mahindra is working on various farm centric solutions to help farmers with smaller landholdings reduce cost of cultivation, improve productivity and therefore income. To develop and deploy next-generation solutions that improve farmers outcomes, Mahindra is investing in future ready technologies to provide holistic and affordable offerings to the global farming community and is building technology skillsets beyond farm equipment (Farm Machinery & Tractors). Mahindra has partnered with global names in farm machinery and has strategically invested in agri and technology start-ups, to develop some of the best farming solutions at affordable prices.

APEDA eyes $60 billion agriculture exports with support of new policy

With the support of new agriculture export policy which has helped in bridging the gap between Ministry of Commerce and Ministry of Agriculture the agri exports from the country are likely to touch export target of US $ 60 billion by the year 2022, said Agricultural and Processed Food Products Export Development Authority (APEDA) a statutory body under Ministry of Commerce.Achieving an agriculture export target of $60 billion by 2022 does not look ambitious, given the current global market conditions. More so, because India's export basket largely comprises meat, marine products, and basmati rice whose demand in the world market is on constant increase, said Tarun Bajaj, GM, APEDA, while speaking at a seminar at an organic products trade fair Biofach India 2019. With an integrated approach and better cooperation among the two union ministries for boosting agriculture production and trade increase export of organic food products as well as to double Agri-exports to $60 billion by 2022 from current $38 billion" said Bajaj."APEDA has been promoting the export of various agricultural commodities and provides a platform to showcase India's quality produce to the global market. After the announcement of Agri Export Policy (AEP) by the government, all the concerned ministries which includes Ministry of Commerce, Ministry of Agriculture, Ministry of Animal Husbandry, Ministry of Food Processing Industries and other agencies are working in close coordination, they are also focusing on exports. In addition, involving states since they also have an important role in encouraging exports of agriculture products from the region," Bajaj added.

Government extends relaxed fumigation norms for onion imports till December 31

The Agriculture Ministry on Wednesday extended relaxed fumigation norms for imported onions up to December 31, in a bid to improve domestic supply and check prices that have skyrocketed up to Rs 100 per kg.On November 6, the ministry had liberalised fumigation provisions under the Plant Quarantine (PQ) Order, 2003 till November 30 to facilitate import of the key kitchen staple from Afghanistan, Egypt, Turkey and Iran to boost availability and check price rise. In its latest order, the ministry has extended these relaxed provisions till December 31 for onion imports with some conditions. Traders who have imported onions without fumigation or having endorsement of such treatment on phytosanitary certificate (PSC) will be allowed to fumigate in India through an accredited treatment provider, it said. The consignment will be inspected thoroughly by quarantine officials and released only if found free from pests and diseases of concern to India, it said. Also, such consignments of onions will not be subjected to the four times additional inspection fees on account of non-compliance of conditions under the 2003 PQ Order, it added.

Agriculture Ministry told to prepare 'zero edible oil import' plan

The commerce ministry has asked the agriculture ministry to prepare a road map for India to attain self-sufficiency in edible oil production. The need for a zero edible oil import plan was discussed by commerce minister Piyush Goyal at an inter-ministerial meeting. India spends over Rs 70,000 crore to import about 15 MT edible oil to meet its annual requirement of 25 MT, making it one of the biggest buyers of the cooking medium. The aim is to help farmers and local industry, apart from reducing the current account deficit, said a senior commerce ministry official who was present at the meeting. Finance minister Nirmala Sitharaman, while presenting the budget, had also urged farmers to make India self-sufficient in edible oil production. The government is taking serious steps for attaining this. The government has already constituted a Group of Secretaries (GoS) for launching a nationwide oil seed mission to minimise oil imports. It will be rolled out soon, the official said, adding that the government may levy a 2-10% cess on import of crude and refined edible oil to fund the mission. Earlier, a fund of Rs 10,000 crore was mooted to support this mission for five years. But, now, they (GoS) are looking at raising it through levying cess on industry, the official said. The industry, however, wants the government to set aside a corpus from the revenue it earns from the duty on crude and refined edible oil imports.

FCI asks states to pick-up food grains from central pool in advance

The Food Corp of India has written to states to pick up food grains required for six months from the central pool in a bid to make room in its storage facilities as rice procurement is likely to peak in eastern part of the country, a senior government official said. States can pick up stocks from the central pool six months in advance to distribute among beneficiaries under the national food security plan and several other state-run social welfare schemes, the official said. If states do not pick up stocks in advance we will not have space left to store rice this season. They can take it from us and distribute among the beneficiaries in advance, he said.

Govt support to J&K farmers producing saffron, walnuts, peaches

Finance Minister Nirmala Sitharaman said after the successful procurement of apples from Jammu and Kashmir this season, the Centre would extend a similar support to farmers of the union territory for the sale of saffron, walnuts, peaches and other agricultural produce. "We [have] procured apples from J&K this time so that there was not one farmer left without his apple being sold," she said referring to the National Agricultural Cooperative Marketing Federation of India's (NAFED) move to buy apples of J&K offering higher rates to the farmers. Sitharaman was speaking at the 6th World Congress on Rural and Agricultural Finance, organised by the National Bank for Agriculture and RuralDevelopment (NABARD) in New Delhi. The finance minister directed NABARD to take up immediate and necessary steps to extend support to the farmers of J&K. "I have requested chairman of NABARD [Harsh Kumar Bhanwala] to visit J&K, so that NABARD can support the farmers there," Sitharaman said. She also asked the development finance institution to promote solar energy in Ladakh. The government will form 10,000 farmer producer organisations (FPOs) so that the agriculturalists can get the correct price for their produce and also credit and other assistance from the government can be extended to them through that channel, she said. The finance minister said the government is encouraging farmers to produce oilseeds in place of other crops to reduce India's import dependency, particularly imports of edible oil such as palm oil. She said the Centre is making efforts to promote sustainable and renewable energy sources in rural areas, which can be an additional source of income for the farmers.

Arunachal on way to become highest producer of large cardamom in the country: Taki

Arunachal is on its way to become the highest producer of large cardamom in the country,' said state minister for agriculture, horticulture, animal husbandry, veterinary & fisheries TageTaki during the regional seminar on spices in North-eastern region organized by the Spices Board India. Arunachal has already become the second largest producer of large cardamom in the country. The SBI and all stakeholders should work together so our state becomes the highest producer of large cardamom in the years to come and thereby meet the entire domestic and international consumer demands, he stated.While lauding the SBI for its efforts towards encouraging state's

large cardamom growers and making spices one of the major earning sources, the Minister urged the Board to also put similar thrust on production of other spices like black pepper, cardamom, chilli, ginger and turmeric in the state. The Minister further pointed out the issue of animals damaging cardamom plantations and appealed to the Spices Board India to consider implementing scheme for protection of large cardamom plantation by providing farmers assistance for laying fencing around their plantation.He further emphasised the need for government agencies to promote Farmer Producer Organization (FPO) so that the economic activities of the farming community increase without involvement of middlemen and help the farmers to harness more profit. He also appealed the Govt. of India to take efforts to control the fluctuation in prices of large cardamom and to ensure stable price for the growers.

Kerala Agriculture Minister leads agro-technology drive

Kerala's ruling communists are now eagerly embracing the path of technological upgradation in the agrarian sector with the state's young Agriculture Minister V.S. Sunil Kumar providing a prime example. The Minister said that he has set up a full fledged Mission Mechanisation Programme in his department where a registry is currently being prepared of all the machinery owned by the department.As part of it we have currently repaired machines like, tractors, tillers, weed cutters and similar agricultural implements. We have put back machines worth Rs 3.40 crore and this would be available for farmers. For this the agriculture department will work closely with them. An app is also getting ready where farmers can have a look at what all equipment is available in their locality, said Kumar.The registry would very soon include such machines and equipment that are available with farmers and can be given out for rent, he said.The biggest addition that has already undergone field trials is an agro-drone which can be used for spraying fertilizers, micronutrients and pesticides. Next month this will be officially launched in Thrissur. We are working out a protocol for this drone for when it will be used for spraying chemicals as here the safety of society has to be taken into account.

Rs 5,000-cr irrigation plan for Mandi

The Agriculture Department, Mandi, is geared up to enhance agriculture production and help farmers of the district to deal with drought-like conditions effectively by implementing the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY). The department has decided to cover 51,000 hectares under the five-year irrigation plan in Mandi district at a cost of Rs 5,000 crore. The district has a potential of adequate water resources for irrigation but farmers are unable to take the advantage in the absence of proper planning. According to agriculturists, due to lack of irrigation facility in villages, farmers of the district are dependent on rainfall for moisture in their agriculture fields for sowing crops. Sometimes, drought-like conditions affect agriculture production badly, leaving farmers to suffer economically.

500 'organic clusters' to be formed in Goa

Around 500 'organic farming' clusters will be formed in Goa, with around 50 clusters in Bardez alone, under the Paramparaghat Krishi Vikas Yogana (PKVY), assistant zonal agricultural officer Bardez Sohan Uskaikar said on Tuesday. Each of the clusters will have an area of 20 hectares and the farmers will be given organic fertilisers and pesticides and will also be provided training on organic farming.

Kashmiri apples to be exported to Middle East

The famed Kashmiri apples are being exported to the Middle East market. The LuLu Group, which runs more than 180 hypermarkets and shopping malls across the Middle East, shipped 10 containers (200 tonnes) of three apple varieties on Saturday, a company spokesperson said. This initiative is the direct result of meetings held during the recent visit of Prime Minister Narendra Modi to the UAE, where Yusuffali M A, LuLu Group chairman and prominent NRI businessman, shared his willingness to procure Kashmiri agricultural produce and set up a logistics hub in Srinagar for uninterrupted supply, the spokesperson said. Apart from apples, LuLu Group has also placed orders for saffron and would soon be sourcing rice, walnuts, pulses and spices from Kashmir, the spokesperson said. This shipment of 200 tonnes is actually just the first lot, we expect this to increase in the coming days. Soon, we will be having a 'Kashmir Promotion Week' in our Lulu hypermarkets to popularize the high-quality agriculture produce of the state, which I am sure will further boost the export and trade sector in Kashmir, Yusuffali said. The first shipment is slated to reach UAE shores by the end of the month and would be available in LuLu hypermarkets shelves in the first week of November 2019. A high-level delegation, led by A V Ananth, director of the group, along with procurement experts, personally visited various farms and processing units to oversee the packaging and shipment process.

First ever international Buyer- Seller meet in Arunachal Pradesh

The Agricultural and Processed Food Products Export Development Authority (APEDA) under the Department of Commerce held the first ever international buyer seller meet on Agriculture & Horticulture produce in Arunachal Pradesh on 14th November 2019.Ten International buyers from seven countries of Bhutan, Bangladesh, Nepal, Indonesia, UAE, Sultanate of Oman and Greece participated in the meet and interacted with exporters.Growers and exporters showcased the products of Arunachal Pradesh like Mandarin oranges, kiwi, pineapple, king chilly, large cardamom, organic products, other fresh fruits, vegetables, flowers and spices.To promote export of agricultural products and to facilitate market linkages for agri- exports from the North Eastern Region (NER) especially Arunachal Pradesh, APEDA and Department of Agriculture & Horticulture, Government of Arunachal Pradesh organised the Conference cum International Buyer- Seller Meet in Itanagar. Minister of Agriculture and Horticulture, Government of Arunachal Pradesh inaugurated the two days programme along with Chairman, APEDA and Secretary, Agriculture and Horticulture, Government of Arunachal Pradesh, BidolTayeng. This conference was held to provide a platform for B2B and B2G meetings of international buyers with the importers and exporters and the progressive farmers and growers from the North East Region (NER) particularly from Arunachal Pradesh to explore the opportunities and prospects of agriculture and horticulture exports.

India, EU to work towards trade and investment pact

India and European Union (EU) underscored the necessity of having a Bilateral Trade and Investment Agreement and agreed to continue working towards it, with the EU side expressing interest for a ministerial dialogue on economic and trade matters. "The meeting covered the entire spectrum of the India-EU relationship with a view of identifying areas to strengthen the cooperation and also identify possible deliverables at the next round of India-EU summit planned to be held in early 2020," a Ministry of External Affairs release said. Both sides also expressed commitment to increase the engagement, including in areas of digital economy, climate change, and cooperation at the multilateral forums. On its part, the EU mission in India said both sides welcomed the current momentum in EU-India relations, based on converging priorities such as climate change, digital economy, the strong belief in multilateralism and the rules based international order.

New Zealand sees big potential to cooperate with India in dairy sector

Soon after India's exit from the multi-lateral trade pact, Regional Comprehensive Economic Partnership (RCEP), a prominent partner in the mega trade bloc, New Zealand, has extended a helping hand for best practices in the dairy sector by offering technology and systems. On the last day of his three-day visit to India, Damien O'Connor, New Zealand's Minister of State for Trade and Export Growth, engaged with Amul at the milk capital of India, Anand, and tried to understand India's cooperative structure and the functioning of the dairy market in the country. He hinted that New Zealand will continue to explore the Indian dairy market with the right products at the right time using Indian milk with advanced technology. Asked if New Zealand looks at India as a potential market, O'Connor stated: Our countries share a lot of similarity in legal systems, cultural background. About 5 per cent of our population in New Zealand is Indian or of Indian descent. So, we believe it's a market we should talk to. There is also an opportunity for more trade with India. O'Connor, who is also Minister for Agriculture, spent a day meeting dairy farmers and visiting Amul's milk product manufacturing facilities around Anand.

India and Germany likely to sign agreement on artificial intelligence in farming

Germany and India are likely to sign agreements including a partnership on the use of artificial intelligence in farming during a three-day visit to New Delhi by Chancellor Angela Merkel that begins, the German ambassador said. Merkel will be accompanied by several cabinet colleagues and a business delegation, ambassador Walter J. Lindner told reporters. Merkel and Indian Prime Minister Narendra Modi are expected to discuss trade, investment, regional security and climate change. Both countries could sign agreements in areas such as artificial intelligence and green urban mobility, Lindner said. This time, the focus will be on economic and trade relations, innovation and digitalization, and climate protection and sustainable development, Merkel said in a message ahead of the visit released by the Indian embassy in Berlin. Bilateral trade between the two countries rose to $24.06 billion in the 2018/19 fiscal year ending in March from $22 billion the previous year, while German companies have invested nearly $12 billion in India since 2000. Germany is India's largest trading partner in Europe and more than 1,700 German companies are operating in India.

India's marine exports to China touches $800 million; on course to cross $1 billion mark

India's exports of marine products to China tripled in the last nine months touching $800 million and is expected to cross the $one billion mark this year, according to an official statement. The big push of marine exports to China were part of India's efforts to widen its export base to bridge huge trade deficit with the world's second largest economy, which last year climbed to $57 billion. The Indian Embassy in Beijing along with Marine Products Export Development Authority (MPEDA) organised a promotional event and buyer seller meet on marine products on Wednesday on the sidelines of China Fisheries and Seafood expo in the eastern Chinese port city of Qingdao. K S Srinivas, Chairman of MPEDA led a delegation of 40 plus Indian exporters and exporters associations for the event which witnessed huge response from Chinese importers with more than 50 participants from 25 major importing companies participating in the event, a press release issued by the Indian Embassy said.

India, 16 others complain to WTO about EU's residue limits for pesticides

India and sixteen other countries such as Brazil, Colombia, Argentina and the US have complained at the World Trade Organisation (WTO) against the EU decision to amend its policy on the maximum residue levels (MRLs) for a wide range of pesticides mainly used in the cultivation of citrus fruit and bananas. The countries raised the matter at the meeting of the WTO Committee on Sanitary and Phytosanitary (SPS) measures on November 7-8 in Geneva and underlined that the new requirements were not backed by science. The seventeen countries that raised their voices against the lowered MRL levels by the EU alleged that the bloc was following a precautionary stance in taking its decisions and was disregarding scientific evidence presented by relevant international organisations recognized by the SPS Agreement, a Geneva-based trade official said. The seventeen countries that jointly raised their concern include Colombia, Costa Rica, Côte d'Ivoire, Ecuador, Guatemala, India, Panama and Paraguay. Argentina, Brazil, Canada, Dominican Republic, El Salvador, Honduras, Peru, United States and Uruguay. The pesticides for which the MRL has been lowered include buprofezin, diflubenzuron, chlorothalonil, ethoxysulfuron, glufosinate, imazalil, ioxynil, iprodione, molinate, picoxystrobin and tepraloxydim.

Indian rice exporters need certification of inspection to export to European Union

Indian rice exporters will now have to obtain a certification of inspection from a government agency to ship both the basmati and non-basmati varieties to countries of the European Union (EU). Export of rice (basmati and non-basmati) to European Union (EU) countries will require certificate of inspection from Export Inspection Council/Export Inspection Agency with immediate effect, directorate general of foreign trade has said in a notification. Two aromatic basmati rice varieties -- PB1 and 1401 -- witness maximum export to the EU. The European Commission had brought down in basmati rice the maximum residue limit (MRL) level for Tricyclazole, a fungicide used by farmers against a disease, to 0.01 mg per kg from 0.03 mg earlier. This was done for all countries. India, the world's top rice exporter, exports about 3 lakh tonnes of basmati rice to the EU. The Export Inspection Council (EIC) is the official export certification body of India which ensures quality and safety of products exported from India. It was set up by the government of India under the Export (Quality Control and Inspection) Act, 1963 to ensure sound development of export trade of India through quality control and inspection.

India organic products' export rises by 49%: APEDA Chairman

Agricultural Processed Food Products Export Development Authority (APEDA) a statutory body under Ministry of Commerce claims that India exported organic products worth Rs. 5151 Crore (over US $ 757 million) in 2018-19, from Rs 3453 Crore in 2017-18 (US$ 515 million). It registered an increase of about 49 per cent and the major demands under the organic product category are for flax seeds, sesame and soybean; pulses such as arhar (red gram), chana (pigeon pea); and rice, along with tea and medicinal plants, said Paban K Borthakur, Chairman of APEDA while inaugurating the Biofach India 2019 India's largest international trade fair of organic products in Greater Noida. USA and European Union member-countries were the biggest buyers of organic products from India There is a growing demand from Canada, Taiwan and South Korea in recent years, Germany is one of the biggest importers of Indian organic products. Now, many new countries are also taking interest he said. As per the industry estimates, India organic agricultural products market is about 8500 crores. Exports account for nearly 60% at 5150 crore while domestic market is estimated at Rs 2500 crore. Compared to international trade of about 97 billion US$ Indian market seems to be very small but it is growing very fast," he added. APEDA proposes to extend NPOP into organic AYUSH products, organic textiles and organic cosmetics. National Programme for Organic Production (NPOP) is a certification services program which enjoys equivalence with European Union and Switzerland and has recognition agreement with the USA.

Many countries will soon have access to MSME products from Himachal Pradesh as Amazon inks MoUs

Jeff Bezos Amazon' India business will onboard small businesses from the mountain state Himachal Pradesh to help them export their products to Amazon's customers in more than 90 countries through its programme called Amazon Global Selling Program — for international sellers. The online retailer, which competes with Walmart-owned Flipkart in the Indian e-commerce market, announced signing a memorandum of understanding (MoU) with the Himachal Pradesh Department of Industries to conduct workshops to help state's MSMEs export globally. Amazon also signed three other MoUs to support the state's development of handloom, handicraft, and horticulture. Amazon will conduct workshops at pre-identified clusters based in Baddi, Solan, and Shimla to help them create their seller account and list their products on Amazon's marketplace. The channel will help take Made in India to global audiences, Amazon said in a statement. Similarly, the company also partnered with Himachal Pradesh State Handicrafts & Handloom Corporation Limited (HIMCRAFTS) and Himachal Pradesh State Handlooms & Handicrafts Development Cooperative Federation (HIMBUNKAR) to help Himachal's weavers and artisans sell their products in India. The units from clusters in Manali, Sainj, Ropa, and Sera will sell shawls, pullan, footwear, jewellery, handicraft woven on handlooms, woodcraft, leather, embroidery etc.

India to produce record cotton crop for 2019-20, predicts USDA

India is set to retain its numerouno position in cotton cultivation globally. The latest United States Department of Agriculture (USDA) estimate for the marketing year 2019-20 has projected India's cotton crop at 305 lakh US bales (each of 217.7 kg), which works out to 390 lakh India bales (each of 170 kg). Last season in 2018-19, India's cotton crop was reported decade-low at 312 lakh bales by the apex cotton trade body, Cotton Association of India (CAI). Production in India — the leading cotton producer — is forecast at 30.5 million bales, 15 per cent above 2018-19, and the second highest on record, as both area and yield in 2019-20 are expected higher. Harvested area in India is projected at a record 12.9 million hectares in 2019-20, as domestic prices and internal support price prospects favour cotton over competing crops," USDA stated in its international outlook on cotton crop, which was released on October 15, 2019. The report also noted that the recent above-average monsoon rainfall will likely provide an extended picking season, which is expected to increase the yield to a 3-year high. The cotton trade bodies in India are yet to come out with their own crop estimate while, the first advance estimate by the Government of India has projected cotton crop in the country at 322.7 lakh bales.

Campco Launches 'Spice Toffee' with Pepper and Ginger as Key Ingredients

The Central Arecanut & Cocoa Marketing and Processing Cooperative Ltd (Campco) launched 'Spice Toffee' with black pepper powder & ginger extracts as its main ingredients. S R Satishchandra, Campco President released the new product. Speaking at the launch, Managing Director of Campco, Suresh Bhandary said that the 'Spice Toffee' is made from sugar-based syrups infused with natural black pepper powder & ginger extracts. Bhandary explained that "The toffee is a first-of-its-kind product in the organized sector. Only natural products have been used in the manufacture of the toffee and there is no artificial flavors. The extracts of ginger, pepper powder & glucose in 'Spice Toffee' are helpful for body balance and relief from tiredness. In addition, it acts as a body-cooling agent & a mouth freshener. It decreases thirst when consumed". The best thing is that the price of a toffee is just Rs 1. He added that in the 1st phase, Campco will market around 12 tonnes of this product all over the country.

FERTILIZERS

INDIA NEEDS A BALANCING ACT

The wealth of a nation lies in its soil. For a country like India, where half of the population earns its living from agriculture, the statement stands unrefuted and established. Before green revolution, much of the country's agriculture survived on traditional varieties and minimal nutrition. The results weren't spectacular but mediocre, and to a point insufficient. With introduction of improved varieties and fertilizers, the scene drastically changed. Our production increased and our dependency on other countries for food grains reduced. Moreover, we became number one producers of many agricultural commodities and also an exporter.

Fertilizers – Enhancing soil health and Augmenting Yield

Fertilizers have today become indispensable component of agriculture world wide. It has proved its worth in Indian agriculture and since its debut on Indian farms, the fertilizers have garnered an irrefutable space in Indian agriculture. India has achieved a remarkable growth in agriculture, increasing food grain production from 83 mt in 1960-61 to about 252.7 mt (fourth estimate) in 2014-15. Fertilizer consumption likewise has been showing a continuous upward trend, with consumption from less than 1 million tonnes of total nutrients in the mid sixties to almost 25.6 million tonnes in 2014-15. About 50 percent increase in agricultural production in the post Green Revolution era is attributed to the use of fertilizers.

During 1950-51, Nitrogen consumption in India was 55 thousand tonnes which increased to 16.95 million tonnes in 2017-18. Phosphate and Potash fertilizer consumption also saw a spike in period. P consumption increased from 8.8 thousand tonnes to 6.85 million tonnes, whereas K consumption expanded from 6 thousand tonnes to 2.77 million tonnes. The total fertilizer consumption thus saw a phenomenal jump from the minimal 69.8 thousand tonnes in 1950-51 to 26.59 million tonnes in 2017-18.

A variety of micronutrients carrying fertilisers are available in the country. These include 17 straight micronutrient fertilisers, 23 fortified fertilisers with zinc and boron, 30 crop- and area- specific customized fertilisers, 204 state-specific micronutrient mixtures, and a number of 100% water soluble mixtures of fertilisers with secondary and micronutrients. Sulphate salts of zinc, iron, manganese and copper; borax and sodium/ammonium molybdate are the major micronutrient carriers. Zinc sulphate (available both as hepta and monohydrate) consumption is maximum (188,300 tonnes in 2015-16) followed by 21,200 tonnes of iron sulphate and 20,000 tonnes of borax.

By 2025, India will require about 300 MT of food grains. This would necessitate use of about 45 MT of nutrients. While about 6-8 MT of nutrients could be supplied through existing organic sources, the rest has to come from chemical fertilizers. Therefore, the fertilizer industry has to keep pace with the growth

of population and increasing food demands in the country.

Fertilizer Industry – Supporting Indian agriculture

Indian Fertilizer Industry has shown tremendous growth in the last five decades and at present ranks third in the world. India is the second largest consumer of fertilizers after China. - India also ranks second in the production of nitrogenous fertilizers and third in phosphatic fertilizers, whereas the requirement of potash is met through imports since there are limited reserves of potash in the country. According to the Food and Agriculture report, world demand for total fertilizer nutrients is estimated to grow at 1.8% per annum from 2014 to 2018. The demand for nitrogenous, phosphatic, and potash is forecasted to grow annually by 1.4%, 2.2%, and 2.6%, respectively, during the period. Over the next five years, the global capacity of fertilizer products, intermediates and raw materials will increase further. The global demand for nitrogenous fertilizers is expected to grow AT around 5.6% to 119.4 MT in four years through 2018, according to the Food and Agriculture

Organization of the United Nations. Asian nations, led by China and India, are expected to account for 58% of this increase.

Fertilizer sales, dependent on monsoon performance, this year registered a moderate increase. Total nutrient consumption (N + P2O5 + K2O) increased from a total of 25.95 million metric tonnes (million MT) during 2016-17 to 26.79 million MT during 2017-18. N consumption at 17.17 million MT, P2O5 at 6.84 million MT and K2O at 2.78 million MT recorded increase of 2.6%, 2.0% and 10.8%, respectively, during 2017-18 over the previous year. Per hectare use of total nutrients increased from 130.8 kg in 2016-17 to 135 kg during 2017-18. All-India NPK use ratio changed from 6.7:2.7:1 during 2016-17 to 6.2:2.5:1 during 2017- 18.

The production of total fertilizer nutrients ($N + P_2O_5$) showed a marginal increase of 1.2% in 2017-18 over 2016- 17. While the production of N at 13.42 million MT during 2017-18 registered a nominal increase of 0.3% over 2016- 17, production of P_2O_5 at 4.72 million MT recorded an increase of 3.8% during the period. In terms of

product, production of Urea at 24.03 million MT and SSP at 3.91 million MT declined by 0.7% and 9.1%, respectively, during 2017-18 over 2016-17. In contrast, production of DAP at 4.65 million MT and NP/NPKs at 8.24 million MT increased by 7.4% and 4%,respectively, during the period.

Supply of domestic gas to fertilizer plants declined for fourth consecutive year. Domestic gas supply declined from an average of 20.7 MMSCMD in 2016-17 to 18.1 MMSCMD in 2017-18. Share of domestic gas in total gas supply to fertilizer plants declined from 49.0% in 2016-17 to 42.8% in 2017- 18. The balance requirement was fufilled by imported LNG. Increase in share of more expensive imported gas increased the pooled gas price for urea plants.

During 2017-18, import of urea and MOP increased significantly from the level of the previous year. Import of DAP and NP/NPKs, however, reduced during the period. Import of Urea, DAP, NP/NPKs and MOP was of the order of 5.98 million MT, 4.22 million MT, 0.50 million MT and 4.74 million MT, respectively, during 2017-18.

Availability of fertilizers from opening stock at the beginning of the year, domestic production and imports was adequate to take care of demand for the full year. All-India stock of urea at various points was more than 2 million MT at the beginning of the year. Similarly, inventory of DAP and NP/NPKs together was about 1.5 million MT, SSP 0.56 million MT and MOP 0.54 million MT. In addition, large stocks were also lying with the dealers for which separate data are not available.

The basic retail price of Urea remained unchanged at Rs.5360 per tonne since November 2012. W.e.f. 25th May, 2015, Government of India made it mandatory for all indigenous urea manufacturers to produce 100% neem coated urea of their total urea production. The same policy is applied for imported urea at the port. GoI allowed the manufacturers/ importers to charge 5% extra on the MRP of urea. Therefore, the retail price of neem coated urea (excluding tax) works out to Rs. 5628 per tonne. The retail prices of P & K fertilizers covered under NBS scheme are market driven and announced by the fertilizer companies from time to time.

Most of the raw materials and feedstock for the fertilizer industry are imported. Due to constraints in the availability of gas in the country, which is the preferred feed stock for production of nitrogenous fertilizers, a near total dependence of the country on imported raw materials for production of Phosphatic fertilizers and full import dependence for MOP, joint ventures have become an important exercise of the Indian fertilizer companies. Existing joint ventures, namely Oman India Fertilizer Company (OMIFCO), Oman in Urea and Industries Chimiques du Senegal (ICS), Senegal and Indo-Maroc Phosphor (IMACID), Morocco in Phosphate have given the Country assured sources of supplies of Urea and Phos acid, a critical input for production of Phosphatic fertilizers.

When Supply exceeds Need

Green revolution inspired millions of farmers to embrace modern agriculture. The response of plants to fertilizers were too spectacular to be ignored. The government backed subsidy programmes too helped

farmers to increase this input in their agriculture.

Unfortunately, there was indiscriminate use of Urea due to subsidy policy of the Government. Over reliance on Urea and improper nutrient management led to multi-nutrient deficiencies in Indian soils. In the early sixties, when fertilizer responsive varieties were introduced in India, optimum yields were obtained with the application of nitrogenous fertilizers alone. However, the bumper harvests soon depleted other nutrients, and their deficiencies started showing up. With nutrient application / additions never keeping pace with their removals by crops, the fertility status of Indian soils has been declining rapidly under intensive agriculture, and Indian fields are now showing signs of fatigue, especially in the Indo-Gangetic plain. The partial factor productivity has gone down, necessitating additional inputs to obtain similar crop yields.

Declining soil fertility is often cited as one of the reasons for stagnating or declining yields. The inadequate and imbalanced nutrient use coupled with neglect of organic manures, with time has caused multi-nutrient deficiencies in many areas. The imbalanced fertilizer use in terms of NPK is evidenced by their wider consumption ratios of 31.4:8.0:1 and 27.7:6.1:1 against a desirable one of 4:2:1 in agriculturally important states of Punjab and Haryana, respectively, during 2014-15. Further, out of total 525 districts in the country, about 292 districts account for 85 % of the total fertilizer consumption. Today, the nutrient deficiencies at the country level are of the order of 89, 80, 50, 41, 49, 33, 13, 12, 5 and 3 % for nitrogen, phosphorus, potassium, sulphur, zinc, boron, molybdenum, iron, manganese and copper, respectively. The continuous use of high analysis chemical fertilizers (devoid of sulphur impurities) has made sulphur a limiting nutrient in many soils of the country. The deficiencies are becoming more critical for sulphur, zinc and boron. The limiting nutrients do not allow the full expression of other nutrients, thereby, lowering the fertilizer responses and crop productivity. The Indian agriculture, presently, is operating with a negative balance of plant nutrients in the soils.

Soil nutrition is closely linked with nutrition. Crops grown on soils deficient in micronutrients are, also generally, deficient in micronutrients. These deficiencies are linked with malnutrition and health disorders in humans and animals. For instance, Zn deficiency has become a big public health issue in India and is second in importance to Fe. It is assumed that around 25 % of Indian population is under risk of Zn deficiency related problems.

Another issue of concern is the environmental pollution caused by the excessive use of chemical fertilizers. There are reports of nitrate pollution of ground water above the permissible levels (10 mg NO3-N/L of water as safe limit in drinking waters) in agriculturally intensive areas of Punjab, Haryana, Gujarat, Maharashtra and Andhra Pradesh. Only 35-40 percent of urea applied is available to plants and the rest gets leached into the ground water, or irrigation sources nearby. Split application that can be synchronizing with the demand of growing plant, instead of one time heavy dose, placement of fertilizer, use of slow releasing N-fertilizers and nitrification inhibitors, inclusion of leguminous crops with deep and extensive root system in crop rotation with shallow rooted crops are some of the measures resorted to mitigate such problems.

Nitrous oxide (N_2O) is a potent greenhouse gas which has been calculated to have 298 times the global warming potential of CO_2 over a 100 year period. Fertilizer is the largest source contributing around 77% of the total direct nitrous oxide emissions from agricultural soils. The most efficient management practices to reduce nitrous oxide emission are site specific integrated nutrient management, use of nitrification inhibitors, supplementation of nitrogenous fertilizers by biofetilizers, organic manures, demand driven N application using Leaf Colour Chart

(LCC), intercropping with legumes and use of deep embedded urea super granules. The mitigation strategies have twin benefits; first, raising N use efficiency thus reducing the consumption of nitrogenous fertilizers and secondly, lowering the nitrous oxide gas emission vis-à-vis global warming.

Integrated Nutrient Management – A Solution?

Considering the threat raised by the unwise use of chemical fertilizers and the associated problems it becomes imperative to develop an approach for sustainable agriculture. However, to disapprove chemical fertilizers and replacing them with organic sources would be an imprudent decision as the chemical fertilizers have already demonstrated their ability to raise agriculture yields.

The Long Term Fertilizer Experiments have indicated very clearly that the response to the fertilizers could be raised significantly with balanced application of fertilizer nutrients along with organic manures. Integrated nutrient management (INM) encourages conjunctive use of chemical fertilizers including secondary and micronutrients, organic manures, composts/vermicomposts, biofertilizers and green manures on a large scale. The system enhances nutrient-use efficiency, maintains soil health and enhances crop yields and farmers' profitability.

The basic concept underlying the principle of integrated nutrient management is to maintain or adjust plant nutrient supply to achieve a given level of crop production by optimizing the benefits from all possible sources of plant nutrients. The basic objectives are to reduce the inorganic fertilizer requirement, to restore organic matter in soil, to enhance nutrient use efficiency and to maintain soil quality in terms of physical, chemical and biological properties. Bulky organic manures may not be able to supply adequate amount of nutrients, nevertheless their role becomes important in meeting the above objectives. Long-term studies being carried out under all Indian Coordinated Research Project have indicated that it is possible to substitute a part of fertilizer N needs of kharif crop by FYM without any adverse effect on the total productivity of the system in major cropping systems such as rice-rice, rice-wheat, maize-wheat, sorghum-wheat, pearl millet-wheat, maize-wheat and rice-maize. Sustainable yield index (SYI) of maize-wheat cropping system after 27 years at Ranchi was the highest with integrated use of 100 percent NPK and FYM.

Biofertilizers are also an important component in INM. Rhizobium is relatively more effective and widely used. Considering an average N fixation rate of 25 kg N/ha per 500 g application of Rhizobium, it is expected that 1 tonne of Rhizobium inoculants will be equivalent to 50 tonnes of nitrogen. Azotobacter, Blue Green Algae (BGA) and Azolla have been reported to be effective in certain traditional rice growing areas in the country. Meanwhile, if BGA applied at 10 kg/ha fixes 20 kg N/ha, then 1 tonne of BGA has an equivalent fertilizer value of 2 tonnes of nitrogen. Another important role of biofertilizers is liberation of growth substances,

'Soil Health Card' (SHC) scheme was a landmark reform that was introduced in the Indian agricultural scene. SHC is a printed report that a farmer will be handed over for each of his holdings. It will contain the status of his soil with respect to 12 parameters, namely N,P,K (Macro-nutrients); S (Secondary-nutrient); Zn, Fe, Cu, Mn, Bo (Micro - nutrients); and pH, EC, OC (Physical parameters). Based on this, the SHC will also indicate fertilizer recommendations and soil amendment required for the farm.During the 1st Cycle (2015-16 & 2016-17) 253.49 lakh soil samples were collected and 1073.89 lakh soil health cards were distributed to farmers. During the 2nd Cycle (2017-18 & 2018-19) as on 11.12.2018, 255.48 lakh soil samples have been collected and 643.25 lakh soil health cards have been distributed to farmers

which promote germination and plant growth. Against the total anticipated biofertilizers demand of 1 million tonne in the country, the current supply position is very low (<10 000 tonnes).

Holistic plan for Better Soil Health

Chemical fertilizers have undoubtedly played an important role in increasing food grain production in country. However, excessive use of fertilizers have affected the balance of nutrients in soil. There is an urgent need to take steps to rationalise excessive use of chemical fertilizers in order to restore fertility of soil. A strategy may be worked out to promote the balanced use of fertilizers in the Country. Farmers need to be educated on this aspect and a massive awareness campaign may be launched by the Government to educate farmers regarding balanced and judicious use of fertilizers. Unless a robust agriculture extension system is established in the country with special emphasis on training of farmers about good agricultural practices, provision of essential agricultural inputs and dissemination of technologies, bio-fertilizers etc. developed by agricultural institutions, it would be difficult to secure our environment without jeopardizing agricultural productivity.

Exclusion of Urea from NBS and decontrol of price of P & K fertilizers have led to imbalanced application of nitrogen vis-a-vis phosphatic and potassic fertilizers in the country. Present policy of fertilizer subsidy also exclude liquid fertilizers, bio-fertilizers, farm organic manure etc. which are considered more effective and environment friendly to restore soil fertility and enhancement of agricultural productivity. Fertilizer subsidy regime should be such that they promote environment friendly fertilizers and hence must be revised.

Robust registration process of fertilizers and regular check are ways to ensure that only qualitative fertilizers are produced and sold in the market. Also present system of certification of new fertilizer is cumbersome, and time consuming. There is a need to streamline the existing process and constitute Fertilizer Development and Regulating Authority to streamline the process, certification of fertilizers and continuous quality check.

Maintaining an ideal balance of chemical fertilizers is important to manage the food demands of human population. The possibilities of treating the soil and plant to surplus fertilizers may do more harm than good. The idea of displacing chemical fertilizers may permanently destabilize the food security of the country. Under such circumstances, it becomes imperative to rationalize fertilizer application and explore possibilities of specialty fertilizers that work on the principles of extended release. Judicious use of fertilizers can help us build a food sufficient country.

ORGANIC FARMING ON THE RISE IN INDIA

Commonly called as Organic farming, India is slowly opening to this chemical less method of cultivating crops. According to the World of Organic Agriculture Report 2018, India has the largest number of organic producers in the world. With over 835,000 certified organic producers, it is home to more than 30 percent of the total number of organic producers (2.7 million) in the world. However, it has been observed that when it comes to the area under certified organic cultivation, India contributes only 2.59%, i.e., 1.5 million hectares of the total organic cultivation area of 57.8 million hectares. Thus, amongst the regions with the largest areas of organically managed agricultural land, India ranks 9th. India witnessed a jump of nearly 50 per cent in organic product exports touching the Rs 5151 crore-mark ($757 million) in 2018-19.

Several states in India are converting their farm lands to organic farms. Sikkim became the first organic state in the world with all its farmlands being certified organic. Sikkim was awarded UN Food and Agriculture Organisation's (FAO) Future Policy Gold Award (Gold Prize) for its achievement in becoming the world's first totally organic agriculture state. Mizoram has also passed the legislation to go fully organic by becoming the first in the country to legislate for turning its entire agricultural produce organic. It passed the Mizoram Organic Farming Act, 2004 on July 12, 2004. Many states such as Gujarat, Kerala, Karnataka, Andhra Pradesh, Madhya Pradesh, Himachal Pradesh and Nagaland have come forward pledging their allegiance to organic cultivation.

NEW APPROACH TO FERTILIZER SECTOR

Satish Chander
Director General
The Fertiliser Association of India

Indian farmers have served the country well during the last forty-five years. They have not only ensured the food security of this vast country but also generated large surplus for exports of food grains and other commodities earning valuable foreign exchange. Food grains production increased from less than 100 million tonnes in 1974-75 to 285 million tonnes in 2018-19. But these quantitative achievements have now been over shadowed by a number of adverse developments. Our crop yields per hectare of major crops are much lower than China and other neighbouring countries. For example, average yields of paddy in India is 3695 kg/ha compared with 6937 kg/ha in China and 4618 kg/ha in Bangladesh. Poor use efficiency of plant nutrients particularly that of nitrogen in India is one of the reasons of low crop productivity. This has adversely affected economic viability of agriculture and farmers' income. The second important development is deteriorating soil health and over-exploitation of natural resources like water. Third, imprudent use of inputs has not only affected the crop yields but has raised environmental and sustainability issues. Fragmentation of land holdings has also prevented penetration of modern technology in farm practices.

Fertilizer remains the major input in realizing potential of high yielding variety seeds. Simple laws of mass and energy conservation dictate that one cannot realize high yields without input of sufficient plant nutrients to the soil. Sources other than chemical fertilizers can at best supplement the nutrient requirement of modern agriculture. However, it is equally true that there is a need for very judicious use of chemical fertilizers. In fact, organic carbon content of soil is extremely important for physical, chemical and biological health of the soil. Application of organic fertilizers helps in better water use efficiency and in improving use efficiency of chemical fertilizers. Therefore, maximum benefit can be derived only when entire basket of plant nutrients from all sources - inorganic, organic and biological is utilized.

Policies related to fertilizer sector were formulated in 1970s with two objectives: first to encourage use of chemical fertilizers for realizing high crop yields with HYV seeds and the second to promote domestic fertilizer production to maintain supply of this vital input. Both these objectives were very well met which was reflected in spectacular growth both in consumption and production of fertilizers in the decades of 1980s and 1990s. Fertilizer consumption increased from 2.6 million tonnes nutrients in 1974-75 to 27.2 million tonnes nutrients in 2018-19. Simultaneously, production increased from 1.52 million tonnes to 17.9 million tonnes nutrients during the same period. Such a growth in consumption and production was achieved because the policy ensured affordable prices of fertilizers for the farmers and reasonable return on investment for fertilizer producers.

Subsequent distortions and lack of reforms in policies for the sector are hurting both agriculture and industry. These policies are partly responsible for imprudent use of inputs and creating sustainability issues. The present heavy subsidy on urea is acting as barrier for introduction of more efficient products which are being used world over. These products give much higher nitrogen use efficiency than urea. The present policies have also badly affected the viability of domestic production after 2000. Last but not the least, huge fertilizer subsidy which is basically public money can be utilized better

to address the issues of soil health, crop yields and farmers' income. Therefore, in the interest of all stakeholders *viz.*, farmers, industry and public, there is a need for fresh look on fertilizer policies and reboot the same at the earliest.

Any new policy for the sector has to be successful on three parameters. First or foremost, it should encourage balanced use of plant nutrients in integration with organic sources. The policy has to also take into account that India has committed at United Nations for Sustainable Management of Nitrogen. Resolution on Sustainable Management adopted by UN Environment Assembly recognizes the importance of nutrients including nitrogen 'in global crop production and food security'. But the resolution also states 'nitrogen use across global economy is extremely inefficient leading to water, air and soil pollution'. Efficient use of nitrogen in agriculture will have to be part of strategy for sustainable nitrogen management. One of the important considerations to promote efficient use of nitrogen is the pricing of nitrogen through different products. It should be same through different products and it should also be in correspondence with prices of the other two primary nutrients *viz.*, phosphorus and potash. Therefore, new policy has to ensure that there is no distortion in prices of different nutrients as is the case today. It should also encourage introduction of new and more efficient fertilizer products to improve nutrient use efficiency.

Second, the policies should ensure viability of domestic production. India is the second largest consumer of fertilizers in the world. India is heavily dependent on imports of raw materials and finished products. The present level of self-sufficiency built over the years is absolutely essential to secure our suppliers and avoid exploitation in the international markets. The complete distortion of original policy has nullified one of the objectives of policy i.e. reasonable return on investment in urea production facilities. Many plants are logging negative return while others are operating on wafer thin margins. Present policies for the sector have put the domestic production of both urea and NP/NPK fertilizers at disadvantage *vis-à-vis* imports. Discrimination is there in terms of taxation regime, reimbursement of reasonable cost and timely settling of the bills of fertilizer subsidy. These issues need to be addressed in new policy to ensure continued viability of the sector.

Third, and equally important consideration in formulation of policies is the fiscal sustainability. For last several years, government is finding it difficult to make adequate provision for fertilizer subsidy in Union Budget. Therefore, the level of subsidy should not only be calibrated to derive maximum benefit for soil and crop yields but should also be fiscally sustainable.

Keeping in view the above discussion, theme of the FAI Annual Seminar 2019 has been kept 'New Approach to Fertilizer Sector'. The Seminar will be held during 2-4 December, 2019 in Hotel Andaz Delhi, Aerocity, New Delhi. Eminent economists, scientists, technologists and policy makers will make presentations and participate in discussion. Recommendations emerging out of this important event should help the policy makers in overhauling the policy environment of this vital sector which is critical to viability of Indian agriculture and well-being of rural population.

ICFA

INDIAN CHAMBER OF FOOD AND AGRICULTURE

AGRO WORLD 2020

India International Agro Trade and Technology Fair - 2020

3 - 6 November 2020 | IARI Pusa Campus | New Delhi

Concurrently with

AgTech Startups Meet

Global BioAg Congress

World AgTech Congress

Global Agriculture Summit

Swaminathan Global Dialogue on Climate Change and Food Security

Global CEO Panels on Seeds, Crop Protection, Plant Nutrition, Animal Health & Food Processing

Bringing Agro World on One Platform

B-Wing, Naurang House, KG Marg, New Delhi-110001
Ph: 011 - 41501465, 41501475 | Fax: 011 - 23353406
Email: info@icfa.org.in | Website: www.agroworldindia.com

4TH GLOBAL AGRICULTURE SUMMIT 2019

INDUSTRY-FARMER PARTNERSHIP FOR GROWTH

Left to right: Mr UP Singh, Secretary, Ministry of Water Resources; Dr MJ Khan, Dr. Purvi Mehta, Head of Asia for Agriculture, Bill & Melinda Gates Foundation, Dr. Ashok Dalwai, CEO, NRAA and Chairman, Task Force on Doubling Farmers Incomes, Dr. Douglas Ry Wagner, President, International Agribusiness, AlgaeEnergy, Spain, and Mr Pravin Srivastava, Director General, ICFA

In an effort to bring on a common platform the best practices, technologies, processing and marketing techniques that can help contemporary agriculture, agri and allied sectors, Indian Chamber of Food and Agriculture organized 4th Global Agriculture Summit 2019 and AgroWorld 2019 from November 5-8 on the theme "INDUSTRY FARMER PARTNERSHIP FOR GROWTH".

The event was organized with the support of the Government of India and several states, and in technical collaborations with a large number of industry associations, national and international institutes and research organizations. Agro food industry experts, agri-specialists and key stakeholders in food, agriculture, horticulture, animal husbandry, fisheries and allied sectors from around the world, shared their prized insights on available technologies, trade and business models and sector-specific innovations.

Speaking at the inaugural session of the 4th Global Agriculture Summit 2019 organized on November 5, Mr UP Singh, Secretary, Ministry of Water Resources, said that water footprint will be as vital as carbon footprint in the future discourse of development globally. Mr Singh said that European buyers are using the water footprint benchmark as the parameter for deciding on trade. Therefore sensitization on water footprint shall be the determinant for the export strength of Indian produce and products. Mr Singh said that time is fast approaching where Indians shall have to collectively undertake water budgeting to address concerns of water scarcity. Water budgeting shall be useful for farmers too, so that ground water and other water resources are not depleted to alarming levels.

Mr Ashok Dalwai, CEO NRAA and Chairman, Taskforce on Doubling Farmers' Incomes, said India needs strong focus on food supply chain management, and building global and efficient supply chains. Mr.Dalwai said that global dependence on fossil fuels shall have to end, and biological production systems were the solution to this challenge and create a circular economy for mankind.

Dr.Purvi Mehta, Head of Asia for Agriculture, Bill and Melinda Gates Foundation, said we need dual purpose in our production – use for domestic consumption and strengthen exports. Dr Douglas Ry Wagner, President, International Agribusiness, AlgaeEnergy, Spain, said micro algae has the potential to effectively address the big crisis of humankind.

The Agriculture Today Year Book 2019 was released on the occasion.

FarmerPlus: ICFA's support system for farmers

Setting the tone for the focus of the 4th Global Agriculture Summit, Chairman, ICFA Dr. MJ Khan said that industry-farmer partnership is essential for farmer prosperity. He said that these partnerships will catalyze growth in agriculture. Dr Khan said that with self-sufficiency in most agricultural sectors, it is essential to move the focus from production to post-production, in order to increase farmer income. Export focus will lead to price stability and improve the entire value chain.

Dr. Khan said that ICFA was focusing on creating a support system for farmers, called FarmerPlus. He said that about 25 corporate sector companies and institutions are coming together for the FarmerPlus program, helping the farmer in crop-specific programs, livestock-specific programs, safe food production, good agricultural practices, required certification and linking the farmers to the export markets.

Dr. Khan also spoke about ICFA's thrust on trade facilitation. He said that the Chamber is creating commodity-specific boards, and 25 commodities have been identified.

Dr. Khan said that the efforts were focused in the direction of how to link farmers with the global market, because exports will bring a lot of stability to the farming sector in terms of prices. "A strong export market would improve the production system and the entire value chain, and lead to quality enhancement through competition. New technologies like artificial intelligence, robotics, big data analysis, internet of things, blockchain would also play a vital part in the farming sector," Mr. Khan said that agtech start-ups were writing a new chapter in the growth story of modern agriculture.

GLOBAL AGRIC

"Sustainable use of resources essential"

Dr. Trilochan Mohapatra, Director General of Indian Council of Agricultural Research (ICAR), gave away the coveted awards.

Addressing the august gathering, he congratulated ICFA for institutionalizing the award system at the global level in the field of agriculture. Dr.Mohapatra said that the input supply system, the natural resource base – all have to be sustainably utilized. He also stressed upon the challenges of climate change and environmental degradation.

Dr.Mohapatra highlighted that 85 per cent farmers are small and marginal, with small and fragmented land holdings and limited resources. Hence, diversification and post-harvest processing were essential. He urged the Indian farming sector to be globally competitive and lead global agriculture by excelling in diverse areas such as use of optimum fertilizer systems, input delivery system through informatics, market delivery systems, technology development and other fields.

- **Global Research Award:** National Agri-Food Biotechnology Institute.
- **Global Academic Award:** Lovely Professional University.
- **Global Policy Award:** Dr.Pramod K Joshi, Director for South Asia, International Food Policy Research.
- **Global CSR Award:** Walmart India Pvt. Ltd.
- **Global Co-operation and Development Award:** Mr. Sudhakar Tomar, President, India-Middle East Agro Trade & Investment and Managing Director, Hakan Agro, DMCC, Dubai.
- **Global Business Award:** Dr. Ken Mishra, President & CEO, ProFarm Seed International, USA.
- **Global Development Award:** National Commodity & Derivatives

ULTURE AWARDS 2019

Exchange Limited.

- **Global Corporate Award:** Bayer CropScience India Ltd.
- **Global Information & Communication Technology:** Agrometrics Inc.
- **Global Technology Award:** Indo Gulf Fertilisers of Grasim Industries Ltd, part of the Aditya Birla Group.
- **Global Industry Award:** Coromandel International Limited.
- **Life-Time Achievement Award:** Prof. Chittaranjan Kole, Raja Ramanna Fellow, DAE, Govt. of India, ICAR-NIPB.
- **Global FPO Award:** Sahyadri Farmers Producer Company Ltd.
- **Global Farmer Leadership Award:** Mr. Yudhvir Singh, General Secretary, Bhartiya Kissan Union.
- **Global Agribusiness Award:** Dr. Douglas Ry Wagner, President, International Agri Business, AlgaEnergy, Spain.
- **Best Horticulture State Award:** Himachal Pradesh.
- **Best Animal Husbandry State Award:** Haryana.
- **Best Agriculture State Award:** Tamil Nadu.

Multiple global conferences on diverse challenges in the food and agriculture sector were held on the opening day of AgroWorld 2019. These included the Session on International Trade and Cooperation, Session on Agriculture Policies, the Seed CEOs Session, the Crop Protection CEOs Session, the Plant Nutrition CEOs Session, the Bio Agriculture CEOs Session and the Food Processing CEOs Session.

SESSION ON INTERNATIONAL TRADE AND COOPERATION

Dr. Maharaj Muthoo, President, Roman Forum, Rome; Mr. Girish Aivalli, CEO, South Asia AgTech Hub for Innovation Private Limited; Mr. Ben Horsbrugh, Global Team Leader, Global G.A.P, Belgium, Mr. Pedro Mariano Martins Pontes, Head of Economic Section, Embassy of Brazil; Mr. Vijay Sardana, Chairman, ICFA Working Group on Agro Trade, Mr. ALeen Mukherjee, Executive Vice President, NCDEX and Mr. Vijay Setia, President, All India Rice Exporters Association

SESSION ON AGRICULTURE POLICIES

Mamta Jain, Director, ICFA; Mr. Amit Vatsyayan, Partner – Agriculture Practice, Ernst & Young, India; Dr. Sunil Gulati, ACS – Animal Husbandry & Dairying, Haryana and Dr. Anis Ansari, Chairman, CARD and former APC, UP

SEED CEOs SESSION

Chairman ICFA Dr MJ Khan, Dr. Arvind Kapur, CEO, ASCEN HyVeg Private Limited; Dr. NK Dadlani, Convener, India Seed Forum; Mr. Ajai Rana, CEO, Savannah Seeds P. Ltd and Dr. Ken Mishra, President & CEO, ProFarm Seed International, Inc, USA

CROP PROTECTION CEOs SESSION

Dr MJ Khan, Chairman ICFA; Sh. RG Agarwal, Chairman, Dhanuka Agritech Limited; Mr. Asitava Sen, CEO, Croplife India; Mr. Devinder Chawla, Partner, Ernst & Young, India; Mr Raju Kapoor, Director Corporate Affairs, FMC Corporation and Mr. Vipin Saini, CEO, BASAI

PLANT NUTRITION CEOs SESSION

Dr Prashant Puri, President and Head Technology and R&D, Aditya Birla Grasim Ltd; Ms Mamta Jain, Director ICFA; Mr. Kapil Mehan, Chairman, ICFA Working Group on Plant Nutrition; Dr. Uttam Gupta, Fertilizer Policy Expert and Dr. Soumitra Das, Director, South Asia - Zinc Nutrient Initiative, IZA

BIO-AGRICULTURE CEOs SESSION

Mr. Dhananjay Edakhe, Sr. Vice President, Zydex India Ltd; Mr. Soumendu Ghosh, Commercial Director, Indian Sub-continent at Acadian Seaplants; Mr. Debabrata Sarkar, CMD, MicroAlgae Solutions India P. Ltd and Dr. Arjun Singh Mehta, MD, Gujarat Life Sciences Pvt. Ltd.

FOOD PROCESSING CEOs SESSION

Dr. Samresh Dwivedi, Director Research & Nutrition, Ananda Dairy; Mr. Rakesh Kumar Gambhir, Business Head, Future Consumer Ltd; Mr. Anand Vijay Jha, VP & Head, Public Policy and Sustainability, Walmart India Ltd and Dr AK Tyagi, ED, Haldiram Snacks P. Ltd.

NATIONAL CONFERENCE ON DOUBLING AGRI EXPORTS

NEED TO REVIEW REGULATIONS GOVERNING EXPORTS UNDER ESSENTIAL COMMODITIES ACT: VICE CHAIRMAN NITI AAYOG DR RAJIV KUMAR

Mr Sanjay Dave, Chairman ICFA Agri Exports Council; Mr. Rajesh Maheshwari, CEO, Quality Council of India; Dr. SK Malhotra, Agriculture Commissioner GOI; Dr. Rajiv Kumar, Vice Chairman NITI Aayog; Mr. Paban K Borthakur, Chairman, APEDA; Dr MJ Khan, Chairman ICFA and Dr Anis Ansari, Chairman CARD launching the ICFA Agri Exports Council

The National Conference on Doubling Agri Exports was organized by Indian Chamber of Food and Agriculture (ICFA) at National Agricultural Science Complex in New Delhi on November 6. The conference was organized by ICFA as part of the four-day AgroWorld 2019 from November 5-8.

Delivering the inaugural address, Vice Chairman Niti Aayog Dr Rajiv Kumar said that there is need to review the regulations governing exports under the Essential Commodities Act. These regulations are like a sword hanging over farm producers. They must be

Dr S.K. Malhotra, Agriculture Commissioner, GoI inaugurating the India International Agro Trade and Technology Fair

reviewed in the interest of farmers and the economy.

"Today, India is foodgrain surplus. If we improve our post production value chain, our foodgrain surplus shall be efficiently utilized. We have to improve on labour productivity and yield in all crops, and focus on capacity building of farmers. Our costs must be globally competitive. We need a second green revolution to increase farmer income and double exports," said Dr Kumar.

Dr Kumar and other distinguished guests released the IndGAP document, standardizing good agricultural practices for the country. The ICFA Agri Exports Council was also launched on the occasion.

Union Agriculture Commissioner Dr SK Malhotra said the impressive export of table grapes from India has proved that our country has the capability to be at the top globally in agri export. Dr Malhotra said that farmers must be aware of challenges related to pesticide residue.

Dr Malhotra said that the benchmarking of the IndGAP document to Global GAP was at an advanced stage. Farm-based modules and crop-based modules were essential to increase awareness and popularity of IndGAP, he said.

Mr Paban K Borthakur, Chairman APEDA (Agricultural and Processed Food Products Export Development Authority) said that the traditional approach in India was that surplus products were exported. "There has to be a paradigm shift in how we look at exports," he urged.

Mr Rajesh Maheshwari, CEO, Quality Council of India said that India hasn't kept pace with adoption of good agricultural practices (GAP), which included food safety regulations. It was important to reach out to farmers in every state for awareness regarding GAP.

Chairman ICFA Dr. MJ Khan said that the creation of commodity boards has played a key role in export promotion of key agricultural products and commodities worldwide. He said that ICFA has undertaken a similar effort to set up commodity boards so that they can provide production stewardship program and ensure the adoption of good agricultural practices and facilitate the required certification.

Mr Sanjay Dave, proposed Chairman of ICFA Export Council, said importers have stringent rules on food safety. It was extremely essential for farmers to adopt good agricultural practices and ensure traceability of products.

Dr Rajiv Kumar inaugurated the India International Agro Trade and Technology Fair with more than 100 agri start-ups. Major events at the India International Agro Trade and Technology Fair include – Farm Tech World, Digi Tech World, AgTech World and AgPro Tech World.

International conferences focusing on quality production and GAP certification, role of horticulture in driving growth of Indian exports, infrastructure, value chain and promoting Brand India for greater value and increased market access were organized on Day Two of AgroWorld.

Dr Rajiv Kumar bats for Zero Budget Natural Farming

Dr Kumar said that "organic or natural farming is the sunrise sector of Indian agriculture". He said that exports from this sector have risen significantly, and have great potential for growth. He urged the agricultural scientists to evaluate Zero Budget Natural Farming, organic or natural farming on merit.

Addressing the agricultural scientists, Dr Kumar said, "Don't dismiss this model by saying that it will lead to a drop in agricultural production or will compromise food security. Please conduct studies and evaluate this model with due consideration. Zero Budget Natural Farming (ZBNF) will meet our food security requirements and lead to a healthier and wealthier India," he emphasized.

Dr Rajiv Kumar said that soil degradation was taking place rapidly. ZBNF, organic or natural farming was the only way to reverse this degradation. Dr Kumar said it was essential to increase the share of ZBNF in Indian agriculture. He urged all farmers to examine how they can move away from the use of chemicals in agriculture and adopt zero budget natural farming practices.

SESSION ON PROMOTING BRAND INDIA FOR GREATER VALUE AND INCREASED MARKET ACCESS

Left to right: Mr Sanjay Dave, Chairman ICFA Agri Exports Council, Amb Anil Trigunayat, President, MIICCIA, Mr. N.P. Mohapatra, Chief General Manager, NABARD,Dr. C. Vasudevappa, Vice Chancellor, NIFTEM Mr. Neeran Gautam, CEO, Himalaya Research and Development , Mr. Nitin Gupta, Vice President, Olam International, Dr. Rajaram Tripathi, CEO, MDHP

SESSION ON INFRASTRUCTURE AND VALUE CHAIN DEVELOPMENT FOR EXPORTS

Left to right: Mr. Amit Vatsayan, Partner, Ernst & Young; Ms. Suman Sarkar, AGM, EXIM Bank of India, Mr. Gokul Patnaik, Chairman, Global Agri Systems; Dr. KL Chadha, Chairman, ICFA Working Group on Horticulture

WORLD AGTECH CONGRESS

IOT, BIG DATA, DRONES AND ROBOTICS WILL PLAY MAJOR ROLE IN PRECISION FARMING, HIGHER PRODUCTIVITY AND QUALITY

The India International Agro Trade and Technology Fair was part of AgroWorld 2019. Major events at the Fair included Farm Tech World, Digi Tech World, AgTech World and AgPro Tech World

World AgTech Congress was organized by Indian Chamber of Food and Agriculture (ICFA) at National Agricultural Science Complex in New Delhi as part of AgroWorld 2019.

Delivering the inaugural address, Dr RS Paroda, former Director General of the Indian Council of Agricultural Research (ICAR) said government must ban the broadcasting of fertilizers upon crops and also ban flooding of fields by irrigation. He said that these bans are essential, like the ban on straw burning. But they will work only if these were driven by farmer organizations, and farmers are provided solutions.

Acknowledging the role played by private enterprise in agriculture, Dr Paroda said, "We need to embrace private sector more aggressively than in the past. Paid and private extension services can show the way forward. There are options and opportunities for strong public private partnership. We need a mindset change or we will miss an opportunity at our doorstep." He called for the creation of National Agriculture Innovation Fund.

Dr MJ Khan, Chairman, Indian Chamber of Food and Agriculture said that India boasts of great diversity of production. There are immense opportunities for growth in Indian agriculture, and digital tools and technology shall be the key drivers in the coming times.

Mr Bryan Henninger, President and CEO, Ag World Support Systems, USA; Mr CS Liew of Pacific AgriScience, Singapore; Mr David Davis, Founder and CEO, AgUnity, USA and Mr Dotan Borenstein, CEO, Salicop Technologies, Israel were part of the distinguished panel who spoke at the inaugural session of World AgTech Congress.

The conference on digital agriculture focused on harnessing the power of technology and global innovations. Agri scientists from across the world spoke on smart farming, which implied leveraging the power of AgTech and farm technologies. Some speakers spoke in favour of converting rice straw into CNG so that farmers can use it commercially instead of burning it.

To bring global initiatives and developments in digital agriculture technologies to one platform for greater synergy of action for the benefit of Indian and global farmers, ICFA launched the 25-member Global AgTech Council on November 7. The Council aims at establishing India's leadership in new-age agriculture technologies and technology start-ups worldwide.

Conference on Digital Agriculture: Harnessing the power of technology and global innovations

Right to left: Mr. Om Prakash Routray, Vice-President Marketing, Source Trace; Mr. Sanjay Borkar, Chief Executive Officer & Co-founder, Shivrai Technologies Pvt. Ltd; Mr. AmiteshAhir, VP- Business Development, WRMS; Mr. MadhuJamallamudi, Founder & CEO, AGROMETRICS LLP, India & USA; Mr. LokeshLohiya, Business; Development Lead , Cisco's Digital Transformation Office; Mr. Nalin Rawal, CEO, NCML Agribusiness 7. Ms. Deepti Dutt, Head- Strategic Initiatives, Amazon and Mr. David Davies, founder & CEO, AgUnity

Conference on 'IoT, Big Data, Drones and Robotics in Agriculture: Driving precise solutions for every field'

Left to right: Mr. Samuel Jeffson. J, Executive Director, St. John Group; Mr. NipunBhuyan, DGM and Head Digital Farming Strategy, Mahindra & Mahindra; Dr. Puneet Mishra, Scientist Computer Vision, Wageningen University& Research; Mr. Jatin Singh, Founder and MD, Skymet Weather Services; Mr. Achal Sharma, Accenture Interactive - India Lead;Mr. Chris Van Ray, Anatomize, Principal Consultant, CSIRO, Innovation Mentor Cicada Innovations, Grow Lab Mentor;

CEOs Panel on Farm Mechanization and Presentation of Farm Power Awards 2019

Winners of the Apollo Farm Power Awards with the distinguished CEOs panel at World Agtech Congress

Mr. Mohit Singh, Product Head, HSPP; Mr. Sunish Shah (President – Export Division), Captain Tractors; ShriYudhvir Singh, General Secretary, Bhartiya Kisan Union; Dr. Anwar Alam, Former VC, IGAU Raipur and Former DDG(Agri Engineering) ICAR; Mr. TR Kesavan, President, TMA; Prof Gajendra Singh, Ex-President, Former DDG (Engineering), ICAR; Dr. PitamChandra,Former Prof of Food Engineering, NIFTEM and Former Director, ICAR-CIAE, Bhopal
Mr. Ravi Beri, MD, BeriUdyog; Mr. Bimal Kumar, Executive Director, CNH; Mr. Farid Ahmed, Head- Marketing, Apollo Off Highway Tyres

Conference on Smart Farming: Leveraging the power of AgTech and Farm Technologies

Left to right: Dr. Sangeeta Ladha, VP Jain Irrigation; Mr. Dotan Borenstein, CEO, Salicop Technologies; Mr. Devinder Singh Chawla, Partner and Sector Leader – Chemicals &Agri, Ernst & Young LLP; Mr. Siddhant Bhomia, Cofounder– The Krishi; Mr. CS Liew, Managing Director, Pacific AgrisciencesPte Ltd

IN A NATIONAL FIRST, APOLLO TYRES & ICFA INSTITUTE FARM POWER AWARDS TO RECOGNIZE EXCELLENCE IN FARM POWER INDUSTRY

Winners of the Apollo Farm Power Awards with the distinguished panel at World Agtech Congress, part of AgroWorld organized by Indian Chamber of Food and Agriculture (ICFA)
Dr Anis Ansari, former APC, Uttar Pradesh; Shri Yudhvir Singh, General Secretary, Bhartiya Kisan Union; Mr TR Kesavan, President TMA; Dr Ashok Dalwai, Chairman NRAA and Chairman, PM Task Force on Doubling Farmers Income; President Apollo Tyres Mr Satish Sharma; Dr Gajendra Singh, former DDG Engg ICAR and currently Adjunct Professor at Indian Agriculture Research Institute and Dr MJ Khan, Chairman Indian Chamber of Food and Agriculture (ICFA)

Leading tyre maker Apollo Tyres partnered with Indian Chamber of Food and Agriculture (ICFA) to institute the Apollo Farm Power Awards to recognize excellence in farm power industry and reward research and development in this sector. The Apollo Farm Power awards were given away in a glittering ceremony during World AgTech Congress.

The initiative was taken up to recognize the efforts of the farm mechanization industry and bring them all on a common platform to counter such future challenges jointly. Tractor is the main source of farm power across the world. The Indian Tractor Industry has grown four-fold in the last 20 years to become world's largest tractor producing country, helping to improve farm productivity through mechanization. Partnering with ICFA, Apollo Tyres group initiated a unique approach to reward research and development in this sector.

The eminent panelists discussed the challenges ahead for the growth of small and marginal farmers, frequent climate changes, agriculture labour shortage with male workforce shifting in urban areas. Members also discussed the innovations needed in mechanization to meet the demand for changing cropping pattern, and the challenges caused by decreasing water table across diverse agro climatic zones.

The 18 awards were divided in 11 categories. The awards were won by 11 leading tractor manufacturers and three Self Power tools developers for exemplary contribution in the development of new models, with technological integration to take care of the growing demands in agriculture mechanization. Individual products and brands were selected by the eminent jury panel chaired by Dr Punjab Singh (President NAAS), members from CFMTTI, ICAR and Farmer Opinion leaders based on multiple important aspects like performance, technical specification, and the versatile nature and choice of farmers considering distribution channels support and services.

WINNERS OF APOLLO FARM POWER AWARDS 2019

1. Tractor of the Year < 30 HP, Mini Tractor: Captain Tractors Private Limited
2. Tractor of the Year < 30HP, Eicher 242: TAFE Motors and Tractors Ltd (TMTL)
3. Tractor of the Year 31-40 HP, 3037 Tx: CNH Industrial (India) Pvt Ltd
4. Tractor of the Year 41-50 HP, MF 245 Smart: Tractors and Farm Equipments Limited (TAFE)
5. Tractor of the Year > 50 HP, MF 9500 Smart 2WD/4WD: Tractors and Farm Equipments Limited (TAFE)
6. Tractor of the Year > 50 HP, FARMTRAC 6055, Escorts Ltd
7. Most Stylish Tractor of the Year, Brand: International Tractors Limited
8. Farmer Choice of the Year, Brand: International Tractors Limited
9. Best Launch of the Year, Powertrac Euro 42 Plus: Escorts Limited
10. Latest Innovation of the Year, Abhiman 4X4: Force Motors Ltd

11. Latest Innovation of the Year, Agromaxx 4060E: Same Deutz Fahr India Pvt Ltd
12. Best Harvesting Solution of the Year, IH – Sugarcane Harvester: CNH Industrial (India) Pvt Ltd
13. Best Harvesting Solution of the Year, Standard Tractor Driven TSC-51: Standard Corporation India Ltd
14. Micro Power of the Year, Bahubali Power Tiller: Greaves Agri, Greaves Cotton Ltd
15. Micro Power of the Year, MH710: Andreas STIHL Pvt Ltd
16. Implement of the Year, Avtar 20 Brush Cutter: Honda Power Products Ltd
17. Farmers Choice of the Year, brand: Mahindra and Mahindra
18. Best Harvesting Solution of the Year, W 70 Combined Harvester: John Deere

AGRI BUSINESS AWARDS 2019

The much-coveted Agri-Business Awards were presented to companies operating in India who are serving the farm or food sector with good quality products, technologies or services. The distinguished panel that gave away the awards comprised Dr. SK Malhotra, Agriculture Commissioner, Government of India; Dr. Pravin Malik, Commissioner - Animal Husbandry, Government of India; Dr. RB Singh, Chairman, ICFA Knowledge Transformation Platform and Former Chancellor, Central Agriculture University; Mr. Vijay Sardana, Chairman, ICFA Working Group on Agro Trade, Dr. MJ Khan, Chairman, ICFA and Ms. Mamta Jain, Director ICFA.

The proud awardees of the 2019 Agri-Business Awards are:

* Dr. Gopal Lal, Director, National Research Centre on Seed Spices, Rajasthan
* Prathista Industries Limited, Telangana
* Skymet Weather Services Pvt Ltd
* Kisan e-Store Pvt Ltd
* Organic Bazar
* Gopal Biotech Agro Farm
* Aries Agro Ltd, Maharashtra
* Digital AgriMedia, Gujarat
* CropIn Technology Solutions Pvt Ltd
* Dr. PPS Pangli, President, Borlaug Farmers' Association for South Asia
* Mr. Sukhjeet Singh, Director, A ONE Seeds
* Central Herbal Agro Marketing Federation of India
* Dr. Karanjeet Singh Dhaliwal, Group General Manager Cane, Ramdev Sugar Pvt. Ltd, Madhya Pradesh
* Heavenly Farms
* Indian Institute of Food Processing Technology (IIFPT), Thanjabur, Tamil Nadu
* Dr. Pravin Malik, Commissioner, Animal Husbandry, Government of India

STUBBLE BURNING
AN ANNUAL STORY

As stubble burning season in Punjab and Haryana begins once again, the concerns of poor-quality air grip the nation. Delhi Government, National Green Tribunal and Central Government are once again enforcing measures such as ban on burning, fines, financial aids and "odd-even" to address the situation. Despite being banned since 1981, stubble burning has gone to become a cyclical and annual phenomenon and now merits more than these short-term solutions. Looking at this grave situation, one needs to look at long term solutions and prepare for them in advance.

What is stubble burning?

Every year, August onwards, farmers are left with straw on their fields, post harvesting their rice, wheat and other crops. This straw is "waste" and farmers, especially the marginal and small-scale farmers, are left with little choice but to burn them. However, this leads to excess pollution and affects nearby states like Delhi. Apart from health impact, stubble burning also leads to loss of nutrients from the soil, further impacting the nutrition of the crops that are grown thereafter. This lasting environmental and health impact forces us to view stubble burning as impeding to our nutrition and food security as well.

Technological solutions

Long term solutions for stubble management require technological interventions which empower farmers- small scale and big, alike. Farmers must be encouraged to use combined harvesters with adjustable cutting-bars so that they can harvest crops closer to the ground. The government has been promoting machines such as happy seeders, mulchers and straw-shredders in this regard. This way, to begin with, the amount of straw leftover is minimal.

A point can be made on farmers' concern over investing in a machinery that is used for just 15 days in a year.

Next, the straw that is left, makes for excellent biogas fuel and can be used to initiate a green-fuel innovation.

Each year, 30 million tonnes of paddy stubble is generated in Punjab and Haryana alone, in merely 2 months. This is a 'gold-mine' for generating the CNG-biogas fuel and high-quality manure. Hence, stubble which has been considered as waste can help farmers generate extra income. For this, machines such as balers help in collecting the harvested straw and creating bales for easy transportation to the nearby biogas plants.Custom Hiring Centres are also helping to provide machines to the farmers at nominal rates, thereby encouraging mechanization without heavy investment.

In addition, some experts, have demanded incentives of about Rs100-400 per acre so as farmers do not resort to farm burning remove stubble using machinery or manual.

Upskilling farmers

Farmers need to be trained in using these machines and with the Central Government's initiatives to open biogas fuel plants, the entire industry is slowly but surely coming together to train farmers and provide machines on rent, so that everyone can benefit from the technology.

This is interesting and viable option. Can be explained.

For example, the Confederation of Indian Industry (CII) in India, has adopted 100 villages in Punjab and Haryana to engage with farmers, local industries, students and youth, to train farmers and undertake awareness drives. The entire project aims to contribute to zero stubble burning in these areas. Under the pilot initiative, most of the farmers from the area adopted these machines for the first time and recycled close to 25,000 tonnes of rice straw into the soil and saved 115 tonnes fine particulate matter (PM2.5) from being released.

Infrastructural changes

Steps in this direction were taken in October 2018 with SATAT (Sustainable Alternative Towards Affordable Transportation) which was launched by the Ministry of Petroleum and Natural Gas with the target to produce 15 million tonnes of compressed biogas by 2023. In addition, new innovations such as high calorific value Carbon-Enriched Fuel (CEF) should be promoted. The Punjab state government recently tied up with a private solid waste management company using "'carbonisation-devolatising process' which has been successful in the past to convert municipal waste into CEF. Through similar initiatives, Punjab and adjoining state governments must find more avenues to connect farmers with private companies so that stubble management can lead to productive alternatives.

Opportunity to engage youth

The challenge of stubble burning calls for innovative solutions which is an opportunity to engage with the youth. Startups and individuals alike, can use technology, innovation and creativity to come up with alternate uses of the stubble to incentivize farmers. For example, IIT Hyderabad has come up with bio-bricks which uses agriculture waste products. A more sustainable alternative to clay bricks, bio bricks can help in dual requirements of stubble management and sustainable architecture. If more youth and agri-tech startups are incentivised to research in this field, they can help encourage youth to find their feet in agriculture industry.

There are also similar solutions to dispose stubble such as furniture making and fuel for smokeless stove.

Like most challenges, the solutions to stubble burning are known to us. The gap essentially comes in implementation and enforcement. As news of cases of stubble burning hit the internet, a common man does worry about the growing health concerns. However, if the above mentioned steps are taken today, we can look forward to a better situation next year.

Dr. Shivendra Bajaj,
Executive Director,
Federation of Seed Industry of India.

INDIA NEEDS AN EMPOWERED AGRICULTURAL COUNCIL

Farm mechanization has the potential to raise farmers' income and hence can play a significant role in bringing about a transformational change in Indian agriculture. With the industry evolving according to the Indian conditions, farm machines have started to become more accessible and integral part of Indian farms . In an interview with **Rajni Shaleen Chopra, Executive Editor, Agriculture Today,** ***Mr. T. R. Kesavan, President, Tractor Manufacturers Organization and COO, TAFE expresses similar views and is very confident regarding the diffusion of precision technologies in India. As the Chairman of FICCI Committee on Agriculture, Mr. Kesavan wants the government to take a complete relook at the way it is addressing the agriculture portfolio.***

What scope of growth do you see for the tractor industry in India?

India has huge scope for mechanization. We are going to see major changes in the entire farming process in the country in the next ten years. Precision farming will grow significantly. In ten years, we will see farmers cutting down on input costs of all the items associated with agriculture. Seeds, fertilizers, pesticides, water consumption, maintenance of soil health – all this will be related to precision agriculture. This will drive farmer income and will also reduce wastage of inputs. In India, tractors still fall short of the required farm power per hectare. The shift towards precision agriculture will require much more than tractorization. India has bright potential for mechanization of agriculture. This shall drive intense mechanization processes on farms. That is why I see the future not just as a process of tractorization but as total mechanization.

The tractor industry is seeing a downfall. April to November, there has been approximately 15 per cent drop in overall industry. What are the key reasons for this downfall?

The tractor industry has always been fluctuating. It has always witnessed highs and lows. This is closely linked to the amount of rain that we receive, and the sentiment driven by water availability in the mind of farmers. Farmers are highly sensitive to what they perceive to be the prospects in the immediate future. If they find it bleak, tractor sales go down. But given the overall growth of the industry, the trend is positive. A three to four per cent CAGR will continue over the long period perspective. We believe that the growth shall be five to seven per cent in the near future if the monsoon of 2020 is good. Going by estimate of the meteorological department, it is expected to be good. In terms of total mechanization, the growth can be as high as 10 per cent.

With the advent of technology, there is greater availability of smaller equipment which can remove the drudgery of work for farmers, and also what they may feel as the menial nature of the job. Both men and women shall be able to operate these small tools with ease, like we have seen in car driving

What government intervention do you recommend for the growth of the agricultural sector?

There is huge government intervention required in overall agriculture. Agriculture is not a concurrent subject between the Centre and the state. It is a state subject. At the same time, there are various Central ministries involved from farm to fork, and in diverse sectors – fertilizers, water, seeds, the Department of Heavy Industry, the Ministry of Road Transport. Agriculture is a multiple ministry, multiple bureaucracy subject. But it is sad that all ministries, departments are working in silos. There is no long-term focus on agriculture in an integrated manner. India needs an agricultural council similar to the GST Council. We need a regulatory body which shall cut across all ministries and departments to ensure a measurable target and progress. The regulatory body must be such that both the Centre and the states remain totally committed to agriculture.

What innovations is the tractor industry planning for small and marginal farmers?

Small and marginal farmers will benefit from the mechanization drive. The benefits will cover the entire sector. There shall be no differentiation between small and big farmers. With increasing technological advancement, we have small equipment to work in small farms.

With the ratio of women in the farming community increasing, what changes will the farm mechanization sector witness?

With the advent of technology, there is greater availability of smaller equipment which can remove the drudgery of work for farmers, and also what they may feel as the menial nature of the job. Both men and women shall be able to operate these small tools with ease, like we have seen in car driving. Modern farming techniques have reduced the

power needs in soil preparation. The new range of equipment is unisexual. The affordability of small equipment is improving steadily. The smaller equipment driven by technology can be mass produced and made available. Technologies like hydroponics and aeroponics will grow. This will not be the kind that Europe understands. We shall see technology that is relevant to India. Equipment made with local equipment and technology can make possible rooftop farming or kitchen gardens viable on a mass scale, with ease of operation for men and women alike and increasing the yield multifold.

What are the new integrated solutions of farm mechanization being developed to address the harvest and post harvest losses?

Farm to fork, the harvesting and post-harvest losses in India are as high as 35-40 pc. If we can cut down on this wastage, our food security will be taken care of till 2050 with a small increase in productivity. All government efforts should be in this direction – cutting down wastage and over-use in inputs for farming, and cutting down harvesting and post-harvest losses. Ensuring that there is enough storage capacity at village level or in close vicinity will address this challenge. This will also ensure that farmers don't sell crops under distress. Post harvest, we need good logistics and transportation facility which can feed central hubs and the needy states. This requires the joint efforts of road, air and water transportation to enable bulk movement and also climate-controlled transportation facilities. A major thrust in the conversion of produce to saleable commodities can also enhance shelf life and increase reach. We are in the global arena and require a consistent export and import policy, not whims and fancy measures catering to only our own needs. The world shies away from us, thinking that we are not all-weather partners. Farmers and traders are confused for lack of clarity. The government must address these issues on urgent basis.

How have Custom Hiring Centers changed the outlook of Farm Mechanization in India? Do you think that CHCs will eventually replace individual ownership of farm equipment?

Custom Hiring Centers (CHCs) can work only in a 7-8 km radius, and has to be very localized. They have to compete with local farmers offering machines on rent. CHCs cater only for a specific area and season, with only 40-80 days of work in a year. Even if you invest capital to buy equipment at a subsidized rate, with work for only about 80 days a year, it cannot be profitable.Sweating the capital is the only way to make money. Subsidy is a one-time provision. If the CHC has to continue operations, we have to look at replacement of machinery. In order to run as a profitable venture, CHC has to compete with local farmers who are willing to rent or hire equipment at any rate. Tractors and equipment are available at sunk cost. This is why farmer-to-farmer platforms work best. Our J Farm app enables this farmer-to-farmer equipment rental model. 400,000 farmers have benefited with this, and over 1 million hours of work has been done. We have tied up with nine state governments. The Central government is also working with us to popularize this model. This model can lead to large scale coverage. It can also enable the farmer to earn Rs 1.5 lakh to Rs 2 lakh additional income.

While the sale of tractors has dropped, companies manufacturing small self-powered tools have seen a 30 to 50 per cent growth. Is the tractor industry looking at self-powered tools as an area of growth like HSPP, KOEL and Greaves?

The only model that has worked well in India is the locally manufactured agricultural equipment which serves local needs, supported by local service and back-up. Importing is a short-term solution, not a long-term viability.

A recognized autonomous research organization stated in a recent report on Indian agriculture that the annual sale of the tractor industry in India will double by 2030 from current level of 8 lakh. Do you agree with the same, or will the figure be different in your estimate?

The overall mechanization will grow at more than 10 per cent CAGR. This includes tractors and all other mechanized equipment. The hp need of our farms per hectare is high, and needs to be doubled as soon as possible. Hence the 2030 estimate isn't far-fetched. Precision equipment is the need of the hour.

As Chairman of FICCI Committee on Agriculture, do you think the government shall be able to achieve its aim of doubling farmers' incomes by 2022-23? What are the major challenges to realizing this? What policies and issues should the government focus on, for realizing the same?

I believe that unless the government does a complete relook at the way it is addressing the agriculture portfolio, the desired level of growth shall not be possible. The PM's Committee on Doubling Farmers' Income is only an advisory body. It needs to be more empowered. You need a regulatory committee which can also implement. It is essential to integrate all ministries through a common agricultural council. Otherwise India's progress towards doubling farmers' income will be very slow.

CARD

Centre for Agriculture and Rural Development

We bring hope

306, Rohit House, Tolstoy Road, New Delhi - 110 001
Website: www.card.org.in

MECHANIZATION IS THE ONLY WAY FORWARD

India has the largest tractor industry in the world. Farm mechanization, although not up to the world standards, is slowly revving up in India. The collaboration of Apollo Tyres and Indian Chamber of Food and Agriculture in constituting Farm Power Awards signals a palpable change in the perspective of the automotive industry toward farm mechanization. In conversation with **Rajni Shaleen Chopra, Executive Editor, Agriculture Today,** ***Satish Sharma, President Apollo Tyres Ltd (Asia Pacific, Middle East and Africa) discusses on the relevance of farm power segment and how the future in agriculture is dependent on mechanization.***

What is the vision of ApolloTyres for initiating Farm Power Awards in India?

The Apollo Farm Power Awards to recognize excellence in the farm power industry and reward research and development in this sector are the identification of a gap in the automotive world. Plenty of magazines have institutionalized awards in the passenger vehicle (PV) segment, and all of them are popular. Our awards in the commercial vehicle (CV) segment are a decade old. We found that we were able to reach stakeholders and original equipment manufacturers, and enhance positive competitiveness for excellence.India has the largest tractor industry in the world and is growing. Our farming sector is under-mechanized, under-penetrated and there is large space for innovation. This partnership with Indian Chamber of Food and Agriculture (ICFA) for farm power awards has huge potential to build a strong institutionalized property coveted by all stakeholders. Through these awards, we are also creating a platform of thought leadership in this sector. The panel discussion amongst eminent individuals from related sectors was creation of this thought leadership and has immense potential for the sector.

Tyre is the main component of traction in the tractor, and suffer high wear and tear, depending on usage. Is Apollo Tyres working on any innovation for tyre development to reduce this cost and increase tyre life?

The tyre market isn't one size fits all. We have soft soil and hard soil tyres, to be used as per soil type. Also, tractors are multi-purpose vehicles in India. The Apollo Viraat tyres, with 23 lugs, have made a huge difference and have become the industry benchmark for haulage and traction. For paddy fields, we are making puddling tyres with deep lugs that do not sink in the field. Tractor tyres move in tandem with what the original equipment manufacturers (OEMs) want. Globally, it has been proved that radial tyres work best for traction and performance. But the affordability factor has restricted their market. OEMs don't want radial tyres because it jacks up the price of the tractor, even though it is a wiser long term decision. In the replacement market, farmers with large land-holdings have robustly adopted the use of radial tyres.

There has been a drop in automobile sales, including trucks and tractors. As a key component supplier to all these sectors, do you feel that the distress in these sectors has bottomed out, or is it likely to get worse?

The low sale period in the tractor industry bottomed out two months ago. In the PV segment, the low period ended last month. In the CV sector, it is bottoming out now. Look at the agri sector. The government is continuing to spend more on MSP. Plus there has been a good monsoon. The tractor sales have been the strongest sector. The fall in PV sales was 30-35 pc, and 60-70 pc in the CV segment. In the tractors segment, the fall in sales was only 12-18 pc. End of the year may reduce this fall further to single digit. Unlike other cousins in the automotive chain, the tractor industry wasn't hit. A fall of 7-8 pc is moderate. With the right government push and the fundamentals in place, I see a strong quarter coming up.

What steps are being taken by Apollo Tyres to step up agri-mechanization?

Mechanization is the only way forward. The tractor industry is aware that radial tyres have a longer life. They ensure greater user comfort. They are fuel efficient and address the slippage issue efficiently. We are trying to promote their use by providing test tyres for incubation. The response is positive.

DELIVERING FARM TECH PROSPERITY

With a presence in over 40 countries, Mahindra is the world's largest farm tractor manufacturer by volumes and is India's leading tractor manufacturer for over three decades. The company achieved a manufacturing milestone of over 3 million tractors (since inception) in FY19. During the year, FES sold 3,30,436 tractor units in both the domestic and export markets, with a revenue contribution of approximately $3.2 billion or about Rs.22,000 crores to M&M Group's overall revenues. In an interview with Agriculture Today, Rajesh Jejurikar – President, Farm Equipment Sectors, Mahindra & Mahindra Ltd., discusses Mahindra's involvement in Farm Mechanization.

Where does the Farm Equipment Sector (FES) stand within the Mahindra Group in terms of revenues and strategic importance?

The Farm Equipment Sector (FES) forms an integral part of the Mahindra Group. At FES, we aim to deliver Farm Tech prosperity through pioneering technologies for farmers across the world to enable them to Rise. FES has a strong tractor portfolio and is building technology skillsets beyond it. The company is working on introducing a range of farm machinery, with the idea of taking technologies used in large land holding farms around the world and making them affordable and accessible to small land holding farmers. A step in this direction are alliances and acquisitions in Agri start-ups in the last few years.

It's been about two years since M&M unveiled Farming 3.0. How has it evolved since then and how has it helped you better serve the farmers?

When we consider the global demand for food 20-30 years from now, we realise that food production needs to go up by around 70%. With most of the arable land already under cultivation there is limited land to work with. Hence productivity will need to drive the food needs of people, and we believe that we have a significant role to play in enabling that productivity. That new wave of productivity will come out of data, analytics and new age technologies around digitisation. When we started thinking about Farming 3.0, we were building a strategy to not just sell tractors and farm machinery, but to sell a solution, which helps our customers achieve an outcome. It is about traversing our business from being a manufacturing company, to one that will help the customer achieve outcomes, through improvement in yield and productivity. Farming 3.0

has multiple legs of how we will use technology. It comes from the vision of democratising technology for farmers with small land-holdings. There are many new technologies that are deployed on large farms around the world, and our idea is to make those new technologies affordable for and accessible to small landholding farmers, to help them achieve a better output. In line with our Farming 3.0 strategy, we have recently invested in start-ups like Resson Aerospace Corporation of Canada and more recently in a Switzerland-based agricultural-technology company Gamaya SA. Both start-ups will enable us to support the company's business by developing technology solutions, with the idea of making a difference in the way farming is done.

How are things doing on the exports front?

Global Farm Machinery makes up about 30% of the total revenue for Mahindra FES. We have an on-ground presence in North America, Brazil, Mexico, Finland, Turkey and Japan through our subsidiaries.Going forward we will continue to explore newer markets for our products and consolidate our presence in existing ones, introducing newer products including upgrades, while building our sales and service network.

Which tractors are selling more in the recent times for Mahindra and the overall industry in India – lower or higher horsepower? Do you see the trend to continue?

While demand for tractors in the 30-50HP makes up over 80% of tractor sales, over the last few years we have witnessed demand in the sub-30HP segment due to factors like niche applications like horticulture-based farming, which is becoming popular. Horticulture production now exceeds food grain production in India. This has created exciting mechanisation opportunities. Our new tractor Jivo, is a tractor in the less than 30HP segment which is enabling growth in this segment.

In the last few years, Mahindra has also made some important acquisitions in Japan (Mitsubishi Agricultural Machinery), Finland (Sampo Rosenlew) and Turkey (Hisarlar). Tell us about Mahindra FES's Farm Machinery play and how these acquisitions helped the FES so far?

The total global Agri equipment market is roughly about $160 billion, of which Farm Machinery makes up $100 billion and tractors $60 billion. We have a big opportunity in the Farm Machinery space and India is still a small market with a huge upside potential. At Mahindra, we have a complete range of products and solutions as part of our Farm Machinery portfolio. This is based on having established three global technology Centers of Excellence, through acquisitions we made over the last couple of years. These centres will allow us to bring back and adapt technologies relevant for the Indian market. The three Centers of Excellence are:

Finland – Sampo Rosenlew – 49% stake – For Combine Harvesters
Japan – Mitsubishi Agri Machinery – 33% stake – Rice value chain machinery
Turkey – Hisarlar – 75.1% – Global range of soil / farm preparation implements

Mahindra & Mahindra acquired a 11.25 per cent stake in a Swiss company called Gamaya, which focusses on farming. How do you plan to leverage on this acquisition?

With agriculture increasingly becoming technology intensive, we at Mahindra are investing in future ready technologies to provide complete solutions to the global farming community.Our latest acquisition of Gamaya, will enable us to develop and deploy next-generation farming capabilities, such as precision agriculture and digital farming technologies, giving us access to hyperspectral imagery analytics, artificial intelligence and machine learning, which captures and interprets useful information on the state of crops for the farmers. With this partnership, we expect to set new benchmarks in farming and its related services.

How happy are you with the overall product portfolio of FES at present and how do you see it evolving in the next three years?

At FES, we have one of the most comprehensive tractor portfolios in the industry. We have introduced products on Mahindra's next-generation tractor platforms – the Novo, Yuvo and Jivo. We have also introduced new product offerings from Swaraj. In addition to a strong tractor portfolio, we now have a full range of Farm Machinery solutions. As the Indian consumer is evolving and as we grow our tractor business, there is a greater need for implements and differentiated farm machinery. Horticulture is a big area of growth. We believe that this is an opportunity for us to leverage in the domestic market.

Tell us about the overall production footprint of FES. How are you utilising advanced technologies to become smarter at the manufacturing level?

FES has Manufacturing and CKD assembly in 8 countries – India, USA, Brazil, Finland, Turkey, Algeria, Australia and Japan.At Mahindra, we have embarked on a Digital Transformation Journey for manufacturing around 2 years ago. The Manufacturing Value Chain (Supply Chain & Manufacturing Processes) is Digitised and created for all processes, for Data Driven Decision Making through Self Service Analytics.

FOOD FRONT FOR INDIA

Fostering a Conservative Farming Vertical is Vital to Sustainable Development

Dr. Sudhir Kochhar
ARS (Retd.) Ex-ICAR
Agrobiodiversity and IPR Expert
kochhar.sudhir@gmail.com

Amidst the need to grow more food from less resources and growing environmental challenges, it is also in the 'larger interest' to keep alive the 'native traditional farming practices' in relevant niche by interested farming households. Government has already made budgetary announcement to support a conventional farming practice, namely, the zero budget natural farming (ZBNF). Supreme Court has directed central and few state governments to prepare and implement scheme to directly support marginal and small farmers to desist them from burning paddy stubbles. Yet, this is not a wholesome solution.

Motivations from the spiritual world, policy frames or legal pronouncements, etc., from time to time have supported the 'larger interest' of fostering conservative agriculture vertical. For example, teachings and personal engagement in farming by Guru Nanak, whose 550th anniversary we just celebrated with immense devotional fervor, had led to the rise of a hard-working and resilient farming community which played, in due course, a significant role in India's Green Revolution.

Guru Nanak's devotion to farming is illustrated in his sayings, for example, "Our mind itself is a farmer and our body is a beautiful farm. We should sow the farm with the seeds (of God's Name). These seeds germinate, grow and bear fruits (with the help of love). From this farm of mine, I shall cultivate so many crops that will provide food for my entire family." Similarly, in mythology, Lord Krishna and his brother Balram are also portrayed to have harmony with cow grazing and donning the plough.

The farming practices in Guru Nanak era over five centuries ago represented the conventional, non-commercial form of agriculture for sustainable livelihoods. Some Punjab farmers at the turn of the current century, in Faridkot and Taran Taran Districts, again resorted to such practices,

nicknamed 'Nanak Kheti', to help undo some of the speedy damage caused to soil, water and air (environment) due to unsustainable green revolution activity in the state. Also recently, few sacred forestry species were planted in Punjab and elsewhere in patches nicknamed 'Nanak Bagichi', which lay his vision of a world for humans to share a sensitive and inseparable bond with the nature and environment.

Broadly, the traditional farming practices are diverse, conservative and self-reliant; help in balanced use of natural resources, harbor the biodiversity on-farm, and ensure household food security to a large extent. The agro-ecological as well as demographic profiles of various niches that harbor such practices are not uniform. Therefore, it becomes difficult for government to launch/ implement relevant uniform scheme(s) that could promote the wide-ranging, niche-specific conservative farming vertical all over the country.

Zero budget natural farming (ZBNF) is one form of conservative agriculture practice that recently figured in the Union Finance Minister's Budget Speech 2019.It was stated that government will promote ZBNF to reduce cost of production of farmers and thereby double their income. This, however, faced implementation hurdle due to lack of any 'validation standards' or 'success indicators' in particular terms. Also, the question arises as to why such government support could not be uniformly available to the entire conservative farming vertical.

It is interesting that the practicing farmers of 'Nanak Kheti' use identical input like Jeevaamrita (a homegrown cow urine based microbial preparation) that is used under ZBNF. They claim that it takes care of 90 per cent of the defects in the seed, besides restoring soil productivity.

Therefore, to avoid difficulties in implementation, it is desirable to uniformly extend financial support for conservative farming vertical on the whole. The techno-legal validation of certain relevant claims of individual beneficiary households may be done under on-farm conditions in conventional farming niche in participatory mode. The research institutions and farms should be kept away from such testing or trials. Central Government may direct the Farmers' Rights Authority to develop and detail an overall supervisory mechanism required for implementing such farmers' welfare scheme.

Uplifting of the weakest section of the peasantry on Antodaya principle is vital to long-term, sustainable, agrarian growth and prosperity. Farmers engaged in conservative farming practices deserve to be hand-held by serious stakeholders to help them simultaneously avail the benefits of all farmers' welfare schemes applicable to them. Marginal and small farmers require orientation towards managing banking (Jan Dhan Yojna), direct bank transfers received as beneficiary farmers (DBT), credit (Kisan Credit Card), insurance (Fasal Bima Yojna), soil health (Soil Health Card for periodic assessment of available nutrient status), microflora, earthworms, other agro-biodiversity in their farmland, etc.

In due course, the practicing conventional farmers may be motivated to consider using drip irrigation and other precision agriculture technology to take benefit of other relevant schemes without losing sight of their on-farm bio-wealth. Eventually, a long term perspective of conservative farming should also include guidance for advancement towards branding of farmers' diverse, niche-specific commodities, and networking with agriculture value-chains wherein agro-industry could perform emphatic role under their corporate social responsibility.

It is more desirable that the financial support for marginal and small farmers engaged in conservative farming vertical is provided as DBT. It should be legitimately accounted for too. The footprint of ecosystem services provided by this vertical itself may more than suffice to repay the public money thus spent.

Government may leverage the corporate participation by agro-industries and services sector in hand-holding the farmers for their economic orientation towards agrarian prosperity under new government schemes. Similarly, government concessions may also be extended to new agro-startups willing to engage in this 'vertical' for farmers' participatory development and growth. A scheme to support collaborative R&D in farmer-industry partnership (FIP) mode in the sustainably developing, biodiversity-rich conventional farming vertical may likewise help in developing ethnic, geographically appalled, branded niche products for domestic and export markets.

"I want 'annadatta' to be 'urjadatta' also. We are working in a direction where we can install solar panels, turbines etc., so that farmers can generate power on those pieces of land where they are unable to grow the produce"

NIRMALA SITHARAMAN
Union Finance Minister

NARENDRA SINGH TOMAR
Union Agriculture Minister

"There is a need to address the issues of small and marginal farmers through generation of right knowledge access platforms and provision of basic agricultural inputs at affordable costs as these farmers predominantly comprises (around 86%) the farm sector today and their contribution towards national economy is quite significant. Earlier there was a time when the agriculture sector was not fully equipped but now with concerted efforts of farmers, scientists, and Government interventions like Direct Benefit Transfer, Crop Insurance etc., India's agriculture sector is flourishing and is now a safe sector. By 2050, if ongoing surge in population continues, tons more food grains will be required to be produced. It is going to be a challenge"

"The Netherlands and India could work together in areas such as agriculture and food security, water management and climate change"

KING WILLEM-ALEXANDER
The Netherlands

"India has the ambition to become the food factory of the world, to double farmers' income and to increase the export of agriculture & food products by 2022. The Netherlands is the ideal partner to realize these goals, and simultaneously work together to realize the UN Sustainable Development Goals (SDG's) by 2030,"

MARJOLIJN SONNEMA
Dutch vice minister of Agriculture

Organised by

ICFA
INDIAN CHAMBER OF FOOD AND AGRICULTURE

AIFA
अखिल भारतीय किसान संघ
ALL INDIA FARMERS ALLIANCE

FarmerConnect

All India Progressive Farmers Convention 2019

अखिल भारतीय प्रगतिशील किसान सम्मेलन

Tuesday, 17 December 2019

Constitution Club | Rafi Marg | New Delhi

Register Now

Awaiting to assist your participation

Dhwani Agarwal - 7290010847 | dhwani@icfa.org.in
Deepak - 8448482487 | deepak@icfa.org.in
www.icfa.org.in | www.progressivefarmer.in