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INDIAN COUNCIL OF FOOD AND AGRICULTURE

AGRO WORLD 2018

OCT 25-27, 2018| IARI PUSA CAMPUS | NEW DELHI

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2 Indian Poultry Equipment Manufacturers Association (POULTRY INDIA)
3 Indian Council of Agricultural Research (ICAR)
4 Ministry of Consumer Affairs, Food& Public Distribution
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10 Ministry of Environment, Forest & Climate Change
11 Crystal Crop Protection
12 Horticulture Dept - Government of Mizoram
13 Food and Nutrition Board
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43 CBC Corporation (india) Private Limited
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45 Green Zone
46 Bihar Agricultural Management & Extension Training Institute (BAMETI)
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SUCCESS STORY OF TRACTOR TYCOON

SONALIKA
HEAVY DUTY. JAISE AAP.

Mr. L. D. MITTAL
Chairman, Sonalika Group

Q. Your firm has created a new record sale of 1 lakh tractors (100,194) in just 10 months(Jan-Oct'18), while beating your previous record. Tell us about your journey so far?

A. "Sapne voh nahi hote jo neend me aate hain, sapne voh hote hain jo sone nahi dete".

We established Sonalika with a core principle to serve & empower the agriculture sector by providing complete agriculture solutions to farmers globally.

We believe that farmers across the globe growing different crops have different needs. In order to cater these requirements, we offer crop centric solutions & have developed 1000+ variants in the widest product range from 20-120HP. This approach of providing crop centric solutions has helped us not only to increase our footprints to over 100 countries but also be No.1 tractor Brand in 4 countries.

Believing in not only in the concept of 'Make In India' but also make quality products in India, we have built the World's No.1 largest integrated tractor manufacturing plant at Hoshiarpur, Punjab. The plant is fully equipped to manufacture from sheet metal to the whole tractor under one roof leading to supreme quality & been trusted by over 9 lakh farmers globally.

All these clubbed with the teams passion has led us to surpass our milestone and register 1 lakh tractor sales (100,194) in just 10 months (Jan-Oct'18).

Q. Your journey towards success is very interesting, & recently your auto-biography has been published. Please share some major highlight points of your journey?

A. "Main akela hi chala tha janib-e-manzil magar, log saath aate gaye aur karvan banta gaya"

This book is not just an auto-biography but a sheer experience of my life from being a gold medalist of Punjab University to an insurance agent and now being fondly known as a tractor tycoon. This is a success story which might inspire people to never stop dreaming.

The major highlights of my journey are :

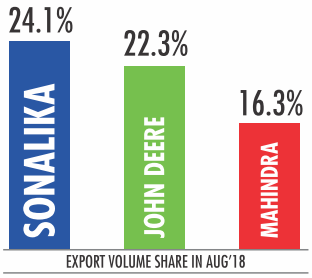
- 1st Sonalika Tractor roll out in 1996
- Being awarded with the most prestigious award "Pride of the Nation" in 1999
- 1st Tractor Export to France in 2000
- Ernst & Young Entrepreneur Award in 2006
- World's No.1 Largest Integrated Tractor Manufacturing Plant inaugurated by Capt. Amarinder Singh in 2017
- Record Sales of 1 lakh tractors in one year (FY18)

Q. You have recently been awarded with Global Agriculture Leadership Award, please tell us more about this?

A. "Kisan ka beta jab khud Kisan Banne ka Soche tab Bharat ko taraqi karne se koi nahi rok sakta"

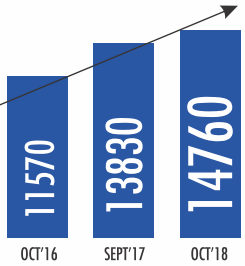
Being a customer centric brand and while providing crop centric solutions to farmers globally has led us to be a proud recipient of the Global Agriculture Leadership Award'18. It was a great moment of pride to receive the award from Hon'ble Home Minister Shri Rajnath Singh. Our core belief of providing superior technology to farmers globally has also been a reason to be chosen by Govt. of India to be a part of NITI Aayog for doubling farmer's income by 2022.

NO. 1 BRAND IN EXPORTS*



HIGHEST EVER MONTHLY SALES

IN OCTOBER'18*

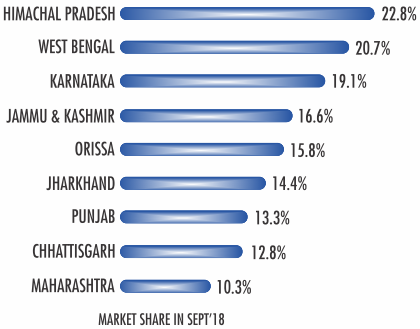


Our R&D team which is one of the biggest in the tractor industry conducts detailed market surveys to understand the evolving needs of farmers & provide best possible solutions. Our focus has led us to continuously invest in bringing the latest technologies following which we have set-up the new innovation center in Delhi NCR to provide technologically advanced tractors.

Q. Beyond providing best tractor, How Sonalika is helping society?

A. We at Sonalika, believe in the concept of growing together. Following which we have set up more than 54 skill development centers across India to provide training to farmers on different topics. While touching million hearts, we have uncompromisingly catered towards the development of the society & inspired farmers to excel in their fields. Initiatives like Udaan for women empowerment, Clean & Green for environmental protection, Swach Dhara for water sanitation etc. are in line with the growth of society. We are extensively working on scalable solutions to curb crop residue burning and air pollution and in line with the same we have adopted 25 villages in Haryana to implement this project.

NO. 2 BRAND IN 9 STATES*



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Inaugural Ceremony

Dignitaries on the Dias

1. Sh. Radha Mohan Singh, Hon'ble Minister of Agriculture & Farmers Welfare
2. H.E. Mr. K. Rajasekharan, Hon'ble Governor of Mizoram
3. Sh. Mahadev Jankar, animal husbandry minister, Maharashtra
4. Ms. Christine Dougherty – Global Vice President, PepsiCo, USA
5. Dr. AK Singh, Director, Indian Agriculture Research Institute (IARI)
6. Mr. Tran Thanh Nam, Deputy Minister of Agriculture, Government of Vietnam
7. Ambassador of Vietnam, H.E. Mr. Ton Sinh Thanh
8. Anis Ansari, Chairman, CARD
9. Dr. MJ Khan, Chairman – ICFA
10. Mr. Alok Sinha, Director General - ICFA
11. Mr. CP Shoran, Director - ICFA
12. Mr. Mamta Jain, Director – ICFA

Lightening of the Lamp

Welcome Address by Dr. MJ Khan: greeted everyone presented on the dais and expressed his overwhelmed feeling to start the AgroWorld in presence of experts from agriculture sector.

Shri. Radha Mohan Singh: He started off with, when India was ruled by Britishers, Gandhi ji said that "the soul of India lives inside the villages", by villages he meant farmers. When farmers were maltreated back then Gandhi ji went to a village and stayed for more than a year and heard their problem faced that were written down by one person. That person was given the responsibility of the position of Agriculture minister, who worked in field with the farmers i.e. Dr. Rajendra Prasad. Another man who used to listen and understand farmers was Sardar Patel and then Lal Bahadur Shastri who came in as an aid to the farmers. Green revolution took place; farmers became progressive but what about side effects? From 1980 to 1999 no reform happened but from 1999- 2003 many reforms did happen. Raj Nath Singh promised and formed farmer's commission. Farmer's income can be increased with good marketing, input management and output management. Cost reduces then input cost has to be reduced now in this context from 1999 to 2004 Atal ji formed a committee YURIA and Radha Mohan asked for its right in his area but 30%-40% yuria manufacturing factory was handed to chemical factories and it used to be an outcry in season. Report was made and suggested if yuria was neem coated then duplicity and adulteration can be avoided. Even a field trial was initiated and reported to the council but no action was taken till 2010 and this is even pointed out by Prof. Swaminathan himself. That report was raised and questioned by Narendra Modi and now if a single seed of yuria is produced it doent hit the market without neem coated even while importing the has to be applied.

He further talked about the Soil health measures taken and the distribution of large number of soil health cards. Some 10,000 soil-testing labs have been set up. Enlisting the government's achievements in the agriculture sector he said that the Farm budget under the UPA in 2009-14 was Rs 1,21,082crore which increased to the tune of Rs 2,11,694 crore in budget 2014-19. Budget for mechanization of farming has been increased more than 10 times. A corpus of Rs 40,000 crore has been created for 99 irrigation schemes which are about to be completed in a year time.

He pointed out that whenever the prices fell below MSP; the government had intervened thereby compensating the loss of the farmers. The government has focused on procurement of multiple crops. He explained how the scale of finance is ascertained and the premium is fixed according to the estimated production in the Pradhan Mantri Fasal Bima Yojna thus, protecting farmers from the losses due to natural disasters. He further pointed out that a contingency plan against drought has been created for all districts. There was a record production in food grains and horticulture in 2017-18. Milk production has risen by 23%, fish production by 26%, dairy farmers' income by 30%, egg by 25% and honey by 28%. In the milk sector, under the Rashtriya Gokul Mission, a

corpus of Rs 15,000 crore was created for the protection of indigenous cows. He also said that the government has decided to promote deep sea fishing owing to the low prospects of fisheries production along the coast. He also pointed out that the government is focusing on the using new technology for increasing fish production under "Blue Revolution: Integrated Development and Management of Fisheries" scheme. He mentioned 26% growth in fisheries production. States like Jharkhand, Bihar and Haryana have become self-sufficient in fisheries production thereby promoting foreign exchange. He stressed on the need of development of efficient human resource. He mentioned "Yuva Sahakar-Cooperative Enterprise Support and Innovation Scheme" by National Cooperative Development Corporation (NCDC) to cater to the needs and aspirations of the youth. He also mentioned Krishi Kumbh which would be organized in Lucknow in order to promote modern technique and diversification in agriculture.

Ms. Christine Dougherty: She began with greeting everyone and thanking them to allowing her to present the report. The report was commissioned by research organization – The International Agricultural Consulting Group for the assessment of socio economic impact of PepsiCo's sustainable water resource development and managing programme. The report suggested management of water efficiently and equitably which meant replenishing, recycling, availability and strategies for clean and safe water. As per her research and collected data, agricultural income can be increased through irrigation, farmer practices, multiple cropping. Water levels can be managed by innovation due to better ground water charge through rain water harvesting and structures to collect the water. Adoption of irrigation through bet5ter management or drip irrigation can increase crop productivity and especially with the help of women through the building self health groups within the community have led to better availability of micro credits for entrepreneurship activities for poultry and goat farming.

Apart from this report, her thoughts on agriculture were definite. She agreed with the minister regarding systemic change is needed as global food system is at an inflection point. Inter related challenges in public health, nutrition climate change and resource scarcity and human rights require us to act. The vast network of farmers, traders, processors, manufactures and retailers that feed the world must embrace the change for healthier future for our people and planet. Around the world agriculture is more than 1 billion people worldwide it produces 2.5 trillion dollars for global economy and it is a critical factor for growth in every community. As resources become scarcer and population grows it becomes important to make agricultural practices sustainable. The pending change to impact on agriculture market is unlike we have seen before. Farmers worldwide will need to increase crop production and simultaneously promoting sustainable agricultural practices. PepsiCo is in a position to create solution that they believe will sustain the planet for future generations, aligned with the approach that the UN sustainable development has set out. PepsiCo through its performance with purpose agenda looks to make sure that the foods and beverages they produce use resources responsibly and the lives and livelihood they support are a success to the community and to the company to the world. Their performance with purpose agenda is standing on 3 pillars-

1. Portfolio transformation of products: - reduce sugar, salts and saturated fats and increase positive nutrition.
2. People: - advancing prosperity and respect for human rights.
3. Planet: - their goals for water, responsible sourcing and reducing carbon footprints.

She notified that PepsiCo sources 20 crops in over 40 countries. They have been working with 24,000 Indian farmers in 14 states through variety of Agri-programs. She informed that through pioneering efforts in collaborating farming there will be doubled network of farmers in next 5 years and expanded in new regions. They have saved over 19 billion liters of water through their efforts and with the report and collaborations they are willing to save more. In addition to this, with their performance with purpose vision they promote sustainable practice in India through collaborative partnership approach which allows engagement with farmers to continuously drive into improvement with a focus of driving positive change for a long term. Her closing statement was that India agriculture has been a key partner with PepsiCo and they are planning to invest more than 5 million by 2020 and continuing to promote sustainable farming in India.

Sh. Mahadev Jankar: he announced that with 700 crores of budgets, Maharashtra Government has initiated 38% increase in the incomes of the farmers indulged in animal husbandry, dairy and fisheries with the support of Radha Mohan Singh and has also been awarded with excellent state. He also stated that he came to attend Agro World to learn about the exhibitions and other agriculture related knowledge that they can constitute in Maharashtra and thanked Dr. MJ Khan for inviting him and wished him support.

H.E. Mr. K. Rajasekharan: Welcomed all the dignitaries and guests and resumed with acknowledging the previous accomplishments of ICFA in such a short period of time. Further he added, agriculture in India continues to engage more than 60% of population who are dependent on the vocation, directly or indirectly, to a large extend. Agriculture in India is more or less a family based occupation. Green Revolution in the 60's though covered only some parts of the country has today transformed India from food deficit to food surplus country at least in terms of cereal. This self reliance in food sufficiency has helped in strengthening and expansion of Indian economy, however, food and nutrition security is for the rising population is challenge. There is a widening gap between demand and supply of pulses and oil seeds putting massive annual burden on the country. For a food and

nutrition secure India it is imperative that we have established R&D linked with farmer and extend linkages to market a

value addition chain. Today's youth is not very keen to continue farming, reasons are being low profitability and certainties like of sustainable credits, technologies and marketing support.

Agro World 2018 will provide a global platform to Indian government, institutions, industries and states to showcase the world its potential and achievement and opportunities. It will establish contact between farmers and key stake holders in agriculture segment especially in the area of marketing, logistics, post harvest management and entrepreneurships experiences. Agro World can be a training point in Indian agriculture. He was certain that Agro World would help all the eminent speakers, guests, delegates and expert will think out loud to all the concerning issues of agriculture and food sector and will come out with new ideas and approaches for the way forward. Lastly he wished Agro World and dignitaries a grand success.

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- Adjudged the best Emerging Company in India by ET NOW.
- Winner of India's Small Giant Award in International SME Convention 2018.
- Introduced its first patent product "VALXTRA" in 2017 followed by "TEKNOX" & "INOVEXIA" in 2018, in India.
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- Sow certified seeds-reap bumper fields

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Ph. No.: 040-23235939, 23232577
E mail: tsscadir@gmail.com

ALL INDIA AGRI STARTUPS CONVENTION AND AWARDS

AGRI STARTUPS EXPO 2018

In a bid to double the farmer's income by 2022, the Government of India, under the leadership of Hon'ble Prime Minister is increasingly looking for ways to bolster agricultural production, food processing and marketing avenues through the integration of latest technologies and innovations; thus creating a huge scope for food and agritech startups in the country.

India has made a strong name for itself in the global startup community. India ranks amongst the top five countries in the world in terms of number of startups founded. It is estimated that India houses around 4200 start-ups, creating more than 85,000 employment opportunities. It is projected that the number of Start-Ups in India will increase to more than 11,500 by 2020, with job creation from these entrepreneurs reaching 250-300K by 2020.

These start-ups are providing missing links in the agri value chain and distributing efficient products, technologies and services to the farmers on one hand and the consumers on the other hand. From ICT apps to farm automation and from weather forecasting to drones and from inputs retailing and equipment renting to online vegetable marketing, and from smart poultry and dairy ventures to smart agriculture and from forefended cultivation to innovative food processing and packaging, it's proliferation of all innovations and technology driven startups set to revolutionize the food and agriculture sector. Government of India with its programs like Skilled India, Start Up India, Stand Up India, MUDRA to ACABC scheme and Udaan are additionally fortifying budding entrepreneurs to commence and scale new ventures. However, many of the subsisting agri- enterprises, despite savoring initial prosperity, are facing difficulties to scale and expand. They are looking for ideas, inspirations and support to scale to newer heights. In this context, ICFA convened All India Agri Startups Convention and Awards 2018 in the mega event AgroWorldwith the aim to bring all the startups in food

and agri space on single platform for sharing of success stories and exploring business and marketing linkages, technology and financial tie-ups and partnership opportunities.

The participation of Government officials and institutions like NABARD, NASSCOM, Indigram Labs Foundation, Ankur Capital, PHD Chamber of Commerce and industry exposed Startups and potential agri-entrepreneurs to various government schemes, programs, business modelling and financial participation. The convention provided a platform for experience and knowledge sharing, synergies, connects and partnerships, collective and creative thinking to create pro-startups environment for ensuring success and sustainability of upcoming startups and attracting youth towards entrepreneurship in food and agri sectors. The convention had 6 technical sessions during two days of the event. On second day the agri startup awards were presented to the startups with outstanding performance in food and agriculture sector. The startups won awards in 12 categories. The inauguration function was presided over by Mr. CP Shoran, Executive Director, ICFA and the awards were presented by Mr. JyotiKalash IAS, Principal Commissioner, Nagaland House, New Delhi.

Session 1: Agri Startups: Potential and National Perspective

Mr. Sudhir Gupta, Member Strategic Advisory Broad, Millennium Alliance opened the session and emphasized on 4Cs to understand the agri opportunities in terms of the interventions that are possible- Community, Capacity, Credit, Channel. He further elaborated the term community- any form in which collective groups are formed to work together; capacity essentially means skill development, advisory services, best practices, all things which are related to how to do agriculture better; credit - any activity you need to have some source of funding whether it is short term credit or long term credit for buying a tractor, or any other means you require finance for which is a whole ecosystem in itself; channel essentially means input and output linkages, input covers all the pesticides, insecticides- all the things you require to grow your crop and output linkage which is the most critical aspect and it is majorly missing in our system right now is the good price to the farmer and the time when he needs money after crop is harvested which is a big query of intervention which has not got the attention it deserves. Further, he detailed about the organization which is practicing these 4Cs on ground level- "Samunnati". They are working with FPOs and call it the AMLA approach which is the same thing with a different name. The AMLA approach means aggregate the produce, provide market linkage and provide advisory services to farmers to do better job in farming. Samunnati also provides working capital and finance to the farmers in entire value chain. He further briefed that the 4Cs approach summarizes the entire scope for interventions in terms of agriculture, there are some themes which focus on diversity of interventions we can have like Advisory services, input & output, storage of crops after harvesting, processing, credit, agritech, farm machinery, horticulture, animal husbandry.

Dr. Sudhir Kochhar, designation who was also chairing the session, commenced the talk by mentioning the potential of startups taking business from scratch to sustainable climax. He gave examples of some successful startups like Amazon, which became 2nd US company to reach USD 1trillion value and Alibaba which is predicted to become 1st trillion dollar internet firm. He then decoded the meaning of agri-business startup- A young company with around 50 employees earning revenue 5-25Cr, engaged in development, production, distribution of new product or services related to agri & food sector is in 1st stage of its operation and trying to discover something unknown in business box to disrupt the existing market or creating new ones. He then shared the Indian Startup Ecosystem Perspective- (1) Safeguards conceptualized under national IPR policy, have been translated to actual practice for i.e Preferential treatment and concessions to startups for the protection of their IPR, Financial support to startups schemes. (2) Mindset of persons into startups should be tuned to- IP portfolio management, Licensing/Contract management and Data Confidentiality, Handling equitable benefit sharing issues (3) Paralegal approaches of dispute settlement will build more confidence in the startups.

Mr. Rajpal Singh Gandhi, Owner, Green Valley Stevia, started the session by elaborating the meaning of startups. He

then emphasized on the need of Agri- Startups in current scenario to solve the problems of farmers by providing them information, techniques and efficiencies for pre harvest and post-harvest applications and connecting them to markets (B2B, E-Commerce platforms) thus generating better returns which adds to farmer's income. Startups are bringing in new technology in agri sector also provide employment opportunities for youth. He then pointed out the huge productivity gaps and large agri market size which provides huge opportunities for startups stressing on the potential of Indian Agricultural sector. He highlighted 5 focus areas for Agristartups- (1) Big Data (2) Farming-as-a-service (3) market linkage models (4)fintech for farmers (5) IOT for farmers. As agriculture is a state subject there is a strong influence from central government. He also listed some challenges faced by agristartups. As agriculture is a complex

system to target with multiple operations involved in it, investors find agri sector a risky proposition which impacts the entrepreneurs decision and refrain from entering in this sector. He ended his talk by highlighting the schemes of government to develop agriculture sector and helping farmers like Pradhan Mantri Fasal Bima Yojna, Pradhan Mantri Krishi Sinchayee Yojna and Paramparagat Krishi Vikas Yojna.

Mr. Om Routray, Community Lead, Nasscom, focused on Agritech Startups and why is agritech so critical for India. He

started by highlighting how world failed at MDGs and now we have a second chance with SDGs. India is a signatory and we have a responsibility towards eradicating hunger, poverty and achieving sustainable development. He mentioned that the success of this program globally will be determined by the success of it in India. Because India has the most complex agricultural ecosystem as well as the largest number of poor in this country. But india also has one of the largest and most innovative IT ecosystems in the world. Agritech gives us a chance to use our biggest strength against one of our lasting weaknesses. He then pointed that for agritech, both the potential and challenges are global. In this sector, potential competitors collaborate. Between the software and hardware, data, device and platform, numerous combinations to collaborate are possible and one should focus on speeding up the process. Pointing out the challenges, he mentioned policy as one of the biggest challenges and gave example of data localization stating that we need to work on ways to iron out the cost and regulatory complexities for startups. He stressed on the role of government to act not only a policy maker but also be a consumer of these technologies, acting as a platform to enable partnerships, work on validations and exchange of technologies. He concluded that Agritech is not just about introducing new technologies into agriculture. It is a whole new approach to each and every step in farming. That is why, we need to engage with all stakeholders and enable new ways in which they can contribute to sustainable and profitable farming. We need to work on knowledge exchange sessions where the development and technology sectors can come together and share issues and experiences.

Mr. Anurabha Pradhan, Senior Consultant, NRDC, emphasized on increasing AgriTech startups. India has become a booming field with numerous startups working with technologies such as data analytics, machine learning and satellite imaging, among others, enabling farmers to maximise their output. The Government of India has undertaken several initiatives and instituted policy measures to foster a culture of innovation and entrepreneurship in the country. In the recent years, a wide spectrum of new programmes and opportunities to nurture innovation has been created by the Government of India across a number of sectors. From engaging with academia, industry, investors, small and big entrepreneurs, non-governmental organizations to the most underserved sections of society. He gave example of how startups are provided handholding facilitis by the government programs. In order to foster curiosity, creativity and imagination right at the school, Atal Innovation Mission recently launched Atal Tinkering Labs (ATL) across India. ATLs are workspaces where students can work with tools and equipment to gain hands-on training in the concepts of STEM (Science, Technology, Engineering and Math). Atal Incubation Centres (AICs) are another programme of AIM created to build innovative start-up businesses as scalable and sustainable enterprises.

Session 2: Current Scenario of Agri& Food Startups

Mr. Deepak Parekh commenced the session by quoting Prime Minister's aim of doubling farmers income by 2022 can only be achieved by innovative application of agriculture technology. He highlighted that India is among top 6 countries globally both in number of deals (53) and active startups (350+) in AgriTech, after US, Canada, UK, Israel and France. We are receiving 10% Global funding in Agritech. He listed 6 Technology Megatrends shaping future of Food & Agriculture Sector- Big Data, Block Chain, Artifical Intelligence, Machine Learning, Cloud Computing, and Internet of Things.

Ms. Kanupriya Saigal, introduced her organization, Bee Positive and stressed on creating women entrepreneurs and involving rural youth in entrepreneurship. She then explained her model- Rural youth is trained as consultant who will train rural women on bee keeping. 100 trained women get 500 hive setup through cashless model and harvest beehive products. Women then inform GATI via App that produce is ready for harvest. GATI collects products from many centers and brings to main hub (private or govt.) for testing, packing, processing. Money is transferred online to the accounts of women and this transparency in the system maintains the trust of women and they indulge other women also which slowly is increasing the chain.

Ms. Shivani Malik, introduced her organization Mother's Kitchen. She said while technology and startups form a critical part of urban India's narrative, agriculture remains a mainstay for India's rural population that currently constitutes almost 70% of the nation's 1.2 billion. Now, a wave of agri startups who are acting as a catalyst for Indian agriculture, addressing supply chain management and enhancing the sector's marketing infrastructure, key developments that will eventually raise farmers' incomes. Gluten-free snacking is amongst the hottest trends internationally right now. From movie stars to sportsmen and women and fashion icons to corporate honchos - everyone is constantly on the lookout for healthy snacking options. For her, the idea to launch a gluten-free snack brand came less from a need to cater to this burgeoning demand, and more from a personal necessity. Struck by a series of personal losses, she had to do something to pull herself out of it. She needed to create a steady source of income for herself. She said as a young mother to a gluten-intolerant child, I already knew how to make basic dishes for those allergic to gluten. Arming myself further with traditional recipes belonging to her mother and grandmother, i decided to convert daily practice into a brand that is now gaining popularity in several countries across the world. 4 years down the line, Mother's Kitchen is a small and stable brand, eager to break into the big league. My passion to serve healthy, hygienic and nutritious snacks to all has kept going through what's been a tough journey, along the way I have also acquired a quiet resolve to help empower as many mothers. She ended her talk with a suggestion for all budding entrepreneurs- have a purpose in life! Dream about your purpose! And the day you wake realizing that your future lies in the hands of your dream, start working towards it from that day. Make it real! Make it count!

Panel Discussion: Financing of Startups: Connecting with Banks, FIs and VCs

Panelists:-

Ms. Rema, Cofounder, Ankur Capital

Mr. Lokesh, Co-founder/COO, farMart

Mr. Ashwani Rana, VP, NOBW

Mr. Hari raj gopal, VP- Capital market, Samunnati

Mr. Mohammad Azhar, Program Lead, INVENT

The session was chaired by Ms. Rema Subramaniam. It was a panel discussion in which every speaker touched on all the aspects of finance sector for the Startups- equity capital from VC, equity capital from strategic investor, grants for R&D, pilots, redeemable capital, working capital especially seasonal needs. Lack of funding turns to be one of the common reasons. Money is the bloodline of any business. The long painstaking yet exciting journey from the idea to revenue generating business needs a fuel named capital. There are numerous financing options and routes available for startups and small businesses. Venture Capital is becoming increasingly attractive for small businesses looking to raise funds and accelerate their develop and presents a readily available capital raising opportunity. Furthermore, not only will VCs inject capital into a business, they will also actively work alongside startups as coaches and advisors, assisting founders in developing their businesses and curating their strategic direction.

2. Session 1: Government Programs & Policy Support for Startups

Dr. Manisha opened the session throwing light on Agripreneurship, which brings professionalization & commercialization in Indian agriculture, boosting agribusiness in primary, secondary and tertiary sectors. Agripreneurship in Food Processing Industry brings immense benefits to the economy by raising agricultural yields, enhancing productivity, creating employment opportunities and improving the standard of living of people. She then listed schemes and their benefits by Government of India to support innovation and entrepreneurship. The Indian government has introduced over 50+ startup schemes in past few years. She shared some schemes like the startup India scheme which gives the benefits of self-certification, tax exemption; Scheme for Promotion of Innovation, Rural. lndustries and Entrepreneurship' (ASPIRE), Innovative Ventures and Technologies for Development (INVENT) program and many more. Each startup scheme is missioned towards boosting the Indian startup ecosystem. Close to 4,400 technology startups exist in India and the number is expected to reach over 12,000 by 2020. India is also at third place behind US and Britain in terms of the number of startups. Keeping this in mind, Indian government support the Indian startups, SMEs, MSMEs, Businesses, Research Institutes, Incubators, Accelerators, etc. She then listed funding support available to startups by incubators like National Initiative For Developing And Harnessing Innovations (NIDHI) Seed Support System which provides funding of 25 lakhs to 1 crore; NIDHI PRAYAS (Promoting and Accelerating Young and Aspiring innovators & startups) provides funding of maximum 10 lakhs; NIDHI-EIR(ENTREPRENEUR-IN-RESIDENCE) grant maximum of Rs.30,000/- per month with a minimum level of Rs.10,000/- per month for a period of 12 months, for first

generation innovative entrepreneur, who has no prior source of income.

Dr. Pitam Chandra, commenced the session stating the demographics of India. Starting from the definition of startup he detailed that India has 1399 AgriStartups, 128 Incubators and 44 accelerators. In the current scenario, Fintech, Edutech and Healthtech are the emerging verticals, E -Commerce and Aggregators have become matured. Bangalore has been listed amongst the world's 20 leading startup cities in the 2015. He then listed 5 components required for startup- Idea, Team, Work, Support and Timing. Moving on to the major points he then listed the ways to fund startups- Bootstrapping, Crowd funding, Angel investment, Venture Capital, Government Schemes etc. There are more than 50 Government Schemes meant to promote Startups from different Ministries, to name a few, Credit Guarantee Fund Trust for MSME, Credit Linked Capital Subsidy for Technology, SIDBI Make in India, Dairy Entrepreneurship Development Scheme and many more. Along with the government, there are many private bodies who are supporting startups via there programs like Wipro, IBM, Barclays etc. Dr. Manisha in her speech focused on the constraints faced by startups. Talking about the infrastructure which is very unequal across the country, Regulations and bureaucracy are often said to be big and inefficient in India. He ended his talk by stressing on what needs to be done to encourage startups in agriculture sector. Firstly, we need to consolidate startup schemes of different Ministries and States to create a single window mechanism thus making the system more efficient. Second, there is a need to differentiate between Startups and other business modes for a greater focus on startup schemes and their promotion. Thirdly, to boost the enthusiasm of startups and making people passionate about entrepreneurship we need to develop a system which shows entrepreneurship as full of opportunities not a risky proposition.

Dr. Jatinder Singh, initiated the talk by introducing the government schemes for startups. In the recent years, a wide spectrum of new programmes and opportunities to nurture innovation have been created by the Government of India across a number of sectors. The Government of India has undertaken several initiatives and instituted policy measures to foster a culture of innovation and entrepreneurship in the country. He listed few of India's efforts at promoting entrepreneurship and innovation (1) Through the Startup India initiative, Government of India promotes entrepreneurship by mentoring, nurturing and facilitating startups throughout their life cycle. (2) Designed to transform India into a global design and manufacturing hub, the Make in India initiative was launched in September 2014. (3) The Digital India initiative was launched to modernize the Indian economy to makes all government services available electronically. (4) A flagship initiative of the Ministry of Skill Development & Entrepreneurship (MSDE), this is a Skill Certification initiative that aims to train youth in industry-relevant skills to enhance opportunities for livelihood creation and employability.

3. Growing through Partnering with Industry and Farmers

Mr. Deepak Parekh, Founder, My Crop Technologies, chair of the session, commenced the talk by listing 9 key challenges faced by AgriTech Start Ups- (1) Last mile access (2) Data stacking issues of farmers and the farm (3) complexity of farming (4) heterogeneous value chain (5) revenue assurance (6) solution scalability (7)long feedback loop (8) difficulty impact assessment (9) lifecycle funding challenge. Selling products and technologies to farmers is a big challenge and aligning with the farmers' needs and committing to improve productivity is not an easy task. The potential in the sector is huge, but the challenges are even bigger.

Further, he spoke about the stakeholders of agroecosystem and how to connect farmers to them. He explained the stakeholders of every sector like in Agriculture Input we have seed companies, fertilizer companies, farm mechanization companies, next we have Agriculture output which covers aggregators, commodity traders, food processors etc. lastly in the ancillary services there are banks, insurance companies, academic institutions etc. In order to strengthen their businesses there needs to be a shift in focus to forward and backward integration to bolster Forward and backward linkages for their margins. The focus on improving competence of agriculture and allied sectors encompasses activities and processes to create a strong brand for agricultural and allied products.

Mr. Praveen, COO and Promoter, Ergos introduced his organization. It has a very unique model of providing doorstep access to warehousing services to farmers and leverages a strong technology platform (Offline-to-Online) to ensure seamless services to farmers almost akin to a "grainbank". The company's current operations are based in the state of Bihar (a large agrarian state but also one of the most backward states in the country). Most farmers in India all rush to sell their produce immediately at the time of harvest as they either do not have access to warehousing services or because they are financially stretched and have debts to repay. This results in farmers realizing an extremely low price during the harvest season where they sell their produce to traders, who then typically aggregate small lots and warehouse them at commodity consumption centres and gradually sell them over a period of time to realise 20-30% higher prices. Ergos' model tends to address all these need gaps for the farmers by having warehouses at the village level, reduce wastage by quality warehousing, fulfilling financial needs by working with NBFCs and help farmers sell their produce in the off-season

Mr. Navin Singhania, introduced his organization Barracuda Technologies, which makes sugarcane sweetner by Panther Separation system. Current Sugar manufacturing process is very old and basically very little innovation has been done to extract maximum value from sugarcane. A new and revolutionary process to separate 4 Sugarcane components before any crushing to obtain juice. He then listed the products obtained- Pure Cane Juice, Pith Cellulose, RIND Fiber, Organic Wax which can be used to make various beauty and health products.he mentioned that this new technology will also help farmers in revenue generation. The panther separation system uses less of energy, labor, water, power and generates more output.

Mr. Prashanth Patil, introduced his organization Mera Kisan which is a prominent leader in the agri business closely working with various farmers and FPO assuring purity and quality of the food.The brand cares of customers in terms of health and taste. They work in essential human food

commodities such as Fruits, Vegetables, Staples and Organic Products. Since its inception, we have witnessed unmatched growth fuelled by an active foreign investment strategy, establishing relationship with specialized food producers across India. He stressed on the point that working with farmers is core of Merakisan. Building strong relationships with farmers is successful working foundation of MeraKisan. We ensure product quality and organic certifications of the farmers/FPOs with our own locally based field officers and many times farmers/FPOs approach us through the word of mouth from their communities. We are specialised in sourcing certified organic produce from various location across India where it is specially grown and this complex yet promising algorithm is USP of MeraKisan. We encourage and thus source best quality produce directly from the farmers who believe in ethical farming practices. Empowering our farmers is what we are striving for. We also support farmers for certifications and guidance.

After the technical sessions, Startup Awards 2018 were presented for the endeavors and outstanding performance. The awards will motivate the winners and all other startups to put in their best and excel in their field. The awards were presented by Mr. JyotiKalash IAS, Principal Commissioner, Nagaland House, New Delhi. He congratulated all the winners and appreciated this attempt of connecting different people related to agri sector, which is a great step to bring back change in Indian economy as envisioned by hon'ble PM.

All India Agri Startups Awardees 2018

	CATEGORY	ORGANIZATION	NAME
1.	AgriStartup	I support farming	Vijayakumar Mani
2.	Food (SCM)	FRESHOKARTZ	Rajendra Lora
3.	Dairy	Stellapps Technologies	Prasanna Ramachandran
4.	Fisheries	Odaku Online Services Private Limited	Xavier Lawrence
5.	Startup Incubator	Indigrams Lab Foundation	Manisha Acharya
6.	Farmtech	Sickle Innovations	Nitin Gupta
7.	E- Commerce	KISAN E STORE Pvt Ltd	Gaurang Patel
8.	Horticulture	Areca Tea	Nivedan Nempe
9.	Technology	My Crop Technologies	Deepak Pareek
10.	Organic	Mera Kisan	MAYURI JADHAV
11.	Agri Inputs	Miklens Bio Pvt. Ltd.	Santosh Nair
12.	Digital marketing	Digital Agri Media	Jagdish Dhanani

Farmers Conventions 2018

Agriculture is the largest employer in India @ 50% and a predominant sector of India's economy with an annual output of $ 370 billion. While India ranks 12th in manufacturing and 11th in services sector, it is the 2nd largest agricultural GDP in the world, $90 billion more than USA. Agriculture is deeply embedded into Indian culture, festivals and life philosophy, being the principal economic activity for the majority of our population. Indian Agriculture has undergone a momentous metamorphosis from the days of 'ship to mouth' and now exporting agri produce worth $ 40 billion. Our farmers have made India proud with their zealous and diligent hard work, supported by government policies and technologies from the industry.

However, in the last two decades there is a paradoxical situation emerging. On one hand, there are massive scale success stories and innovative agribusiness models, powered by policies and substantially enhanced engagement of the industry, banks and government institutions. On the other hand, natural resources are depleting, rural urban income gap is widening and farmers' suicide deaths continue unabated. A silver lining, nonetheless is that educated youth understand the potential and are engaging in farm ventures and agribusinesses, progressive farmers in many parts of the country are innovating conventional practices to become successful farm entrepreneurs by leveraging upon the strengths of the markets, industry and institutions.

Indian Council of Food and Agriculture (ICFA) and All India Farmers Alliance (AIFA) envisioned to provide exposure and market connect to farmers by sharing successful agribusiness models, fostering partnerships and connecting them with policies, schemes, technologies and markets. Rewarding evolution will be evident when farmers themselves become role models for fellow farmers. With this aspiration, All India Progressive Farmer Conventions was organised. The forum aimed to establish a platforms for progressive farmers to share their success stories and connect with the industry and key stake-holders for collaboration and growth opportunities.

25th Oct 2018 - Sharing Agri Business Models and Farmers' Success Stories

The session was inaugurated by Dr. Rajaram Tripathi (National Convener of All India Farmers Alliance and Chairman of Maa Danteshwari Herbal Product Limited) and Mr. G.N. Sharma (Member of All India Medicinal and Aromatic Plant Association) thanking the farmers, corporates and institutions for becoming a part of AGROWORLD 2018. In this scenario farmers as an individual would be exploited in the near future but if they unite to from a Club or Corporative, they enhance their reach and showcase their capabilities to the world. Corporative Partners and Sponsors of All India Farmers Convention 2018 like Willowood, TATA Trusts and Radio Amity 107.8FM have taken the initiative.

Tata Trusts' 'Lakhpati Kisan: Smart Villages' programme has touched nearly 96,000 tribal households of the Central Indian belt. The focus is to implement best practices and enhance skills through community empowerment, leading to higher productivity and overall prosperity. Mr. Kishore Kumar, Ms. Savitaben Natubhai, Ms. Parameswari Hembram, Mr. Rajan Dhanai, Ms. Sangeeta and Ms. Virja Dewi were few farmers of Jharkhand, Uttrakhand and UP regions who shared their experience while working with and under TATA trust guidance.

Dr. Krishan Bir Chaudhary, Editor of Kisan ki Avaaz, National Magazine of Farmers' Voice gave the concluding remarks for the session. His words directly remarked that farmers shouldn't be depend on the Government to provide them with subsidies. Farmers of this country should live independent and have the right to sell out their agricultural produce at MSP. Also being the Former Chairman of State Farms Corporation of India, and Former Chairman of Indian Sugarcane Development Council Ministry of Agriculture, Govt. Of India, Dr. Chaudhary have closely observed the problems of farmers and is on the path to provide complete support thereby raise farmers' voice and question the government. Presently, he is also the President of Bharatiya Krishak Samaj.

26th Oct 2018 - Fostering Market Linkages: Transforming Farmers into Agri Entrepreneurs

Dr. Ajay and Dr. Sunil from Corteva Agrisciences started with the inaugural session explaining systematic agricultural marketing in India and Corteva initiatives in helping Indian farmers to get right price for their produce. They also showcased a presentation showing innovative ways to fight with weeds in paddy crop and to enhance production.

Mr. Ashok Kumar (Member of All India Medicinal and Aromatic Plant Association) exclaimed the future of Medicinal and Aromatic plants, its uses and importance. Interesting facts show that top 10 herbal mandis are situated in Amritsar, Bengaluru, Chennai, Dehradun, Delhi, Jaipur, Kolkata, Lucknow, Mumbai and Neemuch. India's domestic herbal industry is represented by 8610 licensed herbal units which is largest in the world.

Our Community Partner, Radio Amity 107.8FM have been engaged actively with farmers in the nearby areas. Mr. Ankit Sharma (Editor) with his team have performed various baseline surveys, inspected nearby mandis and interviewed many farmers about their problems in Market Linkages.

Mr. Harpal Singh Bajwa from Bajwa Veggiecraft Pvt. Ltd deals in contract farming and agro-processing. He strongly believes in doubling farmers' income which is possible by

value addition and processing. Increased shelf life of products, good taste and texture, packaging etc. added on the produce helps famers in earning more profits. Farmer Producer Organization is one such model.

Col. Promod Sharma, a voluntarily retired army officer, now serving and helping the farmers in farming, banking services, advisory and marketing. He motivated farmers to do independent farming or do with another farmer. Adoption of Contract Farming Model should be adaptable for complete village.

Mr. Sukhjeet Singh, Owner of A-One Seeds in Sangrur, Punjab, is an experienced entrepreneur in Marketing of Goods. He shared his experience and emphasized on farmer training and exposure visit programs. Government should mobilize farmers from one state to another in order to get exposure to technologies and market supply demand chain. Education and Training are important.

Leader of Tamil Nadu Progressive Farmers Association, Raju Narasimman compared the markets of North India and South India. MSP problem are faced by all regions but it's the farmers' job to be smart and sell his crop in profit. Rural adaptability ration is still less as compared to the Urban.

The concluding remarks were given by a senior farmer leader, Mr. Yudhvir Singh. He's the General Secretary of Bhartiya Kisan Union. He speaks for the farmer community and addressed them with main demands of the agitating farmers include implementation of the recommendations of the Swaminathan Commission report, removing ban on the use of tractors which are more than 10 years old, clearing out pending payments of sugarcane purchase, increased price of sugar supplied and minimum support prices.

27th Oct 2018 - Accessing Inputs, Technologies, Credit and Government Flagship Programs

Opening remarks by Dr. Himanshu (Corteva Agrisciences) explaining how they can bring integrated and greatly expanded solutions that combine genetics, chemistry and precision agriculture. They help farmers maximize the value of their investment through high-performing genetics and effective science-based solutions that optimize yield and crop quality.

Mr. Sanjay Nath Singh (President – All India Farmers Association) pointed out the disruption on farmers via various black schemes, false promises and dreams by government.

Mr. Harsh (Progressive farmer from Uttarakhand) stated organic farming and value addition is a must. Farmer faces a lot of problems in financing a loan and other banking services.

Mr. Bhim Singh (Program Coordinator of Lupin Human Welfare & Research Foundation, Rajasthan) form farmer clusters and groups to provide training on Aquaculture, Bee keeping, developing new varieties, livestock management, poultry and hatchery etc.

Concluding by Bijender Dalal (President of Pragatisheel Kisan Club). Pragati Kisan Club of Palwal is the best platform for local farmers. All the members of this farmers club were engaged in horticulture, vegetables production and animal husbandry. The club has five progressive farmers namely Ramesh Cauhan (Medicinal crops-Aurangabad), Lokman Sharma (Organic farming-Solda), Randhir Singh (floriculture), Anil Shrivastava (Medicinal farming), Babramdas (Hi-Tech dairy product) Ajay Sivan Gahlan(Polyhouse & Hi-Tech vegetable production). Mr. Dalal won many prestigious award also. He is always passionate to motivate other farmers and love to work with the farming community.

International Conferences on Seeds

The International Conference on Seeds was held on 25-26th October 2018, Fair Ground IARI, PUSA, New Delhi. The Conference was chaired by Dr. JS Sandhu, Vice Chancellor, NDUAT, Faizabad and Chairman, ICFA Working Group on Technologies. Dr. J. S. Sandhu, inaugurated the conference by introducing eminent speakers and panellists. They brainstormed on the opportunities of global seed industry, technological interventions in seed industry and mechanisms of expanding Indian seed trade.

Dr. Manjit Misra, Director, Seed Science Centre, Iowa State University, USA, deliberated upon various opportunities and challenges faced by seed industry on the global level. He discussed that seed trade and export is facing challenges in the global market. He further dwelled upon the regulations that do not keep abreast of the personal challenges.

Dr. Paresh Verma, President, South East Asia and Director Research in Shriram Bioseed Genetics, explained the research and development in hybrid seeds. He further talked about the factors affecting the hybrid seed market in India and abroad. He further explained how seed production is governed by strict quality protocols and the guidelines prescribed by the International Seed Testing Association.

Mr. Raju Barwale, Chairman Mahyco, discussed the significance of using quality seeds and their effects on crop production. He further discussed research, development, production, processing and marketing of products in agriculture. He further added how sustainable agricultural growth starts with high quality of planting material.

Mr. C. Parthasarathy, Principal Secretary (Agri), Govt. of Telangana, laid down that the main goal of the public sector today is meeting the national seeds requirement for high volume and low value of the self-pollinated crops such as rice or wheat. The production of hybrid seeds is mostly done by the private sector. Thus there is need of development of public sector in seed development so as to provide sustainable development in seed industry.

Mr. B. Rajasekhar, Special Chief Secretary (Agri), Govt. of Andhra Pradesh, discussed about the seed supply, seed farms, seed village programme and various regulations and supply under various ongoing schemes of government.

Dr. Manish Patel, Executive Director, Incotec India, Ahmedabad, discussed various technologies in seed production including, film coating, priming, upgrading, encrusting and pelleting. He further introduced benefits maintain of seed hyegine.

Dr. U. S. Singh, Director, IRRI – South Asia Regional Center, Varanasi, discussed hybrid seed production technology in Rice under north Indian conditions. He further discussed the need for optimization of the dose of gibberellic acid (GAa) for hybrid rice seed production. He explained how the cost of the female parental lines of rice are based on wild abortive (WA) cytoplasm due to which about 25 -33 per cent of the spikelets are enclosed in the flag leaf sheath making them unavailable for pollination.

Dr. Malavika Dadlani, President, Indian Society of Seed Technology. Discussing the unpredictability of agriculture which is based on monsoons, she discussed the impact of changing planting density and seed rate in various crops. She discussed how various agronomic practices could help in enhancing the farm yields. She discussed the various agro-techniques for reducing seed rate of wheat.

Mr. K. Niranjan Kumar, Former Secretary, Seedman Association, Hyderabad, discussed the new introduced hybrids in cotton, corn, rice and vegetables that benefit – farmers significantly through higher yields and superior quality produce. He placed a strong emphasis on research in

its plant breeding programmes. He discussed how newly developed plant varieties are gaining adaptability.

Dr. K.V. Prabhu, Chairperson, PPVFRA, discussed the need of redefining basmati rice in India. Since rice is one of the staple food crops then it is important to enable development of high yielding basmati rice. This would help farmer in competing effectively in the International markets.

Mr. M. Prabhakar Rao, President, Naziveedu Seeds, talked about the new germplasm and modern technologies to develop hybrids in different crops. These hybrids possess higher resistance to pests, diseases and enhanced quality and offer extensive adaptability.

Dr. P.R. Dasgupta, Director, Syngenta Foundation, discussed scaling up small holders' access to and adoption of improved technology. He discussed how seeds2B can act as a holistic approach to connect relevant players in value chain.

Dr. Shivendra Bajaj, Executive Director, ABLE-AG, explained the contribution and the future potential of research in seed technology. He discussed the need to incentivise seed companies to increase their agricultural biotechnology research to create even newer and more modern seed technologies.

Dr. D.K. Yadav, Head and Principal Scientist, Seed Science and Technology, IARI, talked about seed production research, seed quality evaluation, policy intervention in national seed sector, human resource development and extension. He focussed on the need of identification of storage spaces and standardization of seed enhancement technology throughout the country.

Dr. K. Keshavulu, Director, Telangana Seed & Organic Certification Agency & Managing Director, Telangana State Seed Development Corporation, He explained how Telangana State is bestowed with congenial climatic conditions to take up the seed production round the year and store the seed safely under ambient conditions. He further discussed the role of public and private players in achieving this state. Explaining the need of huge certified seed requirement in future years he emphasised on the need of development of staff, infrastructure, online seed certification and its operational area.

Dr. Kuldeep Singh, Director, NBPGR, discussed the various issues related with germplasm conservation of various crops in India and abroad. He further discussed various germplasm exchange networks and their impact on the economy of various countries.

Dr. S. R. Rao, Senior Advisor, Dept. of Biotechnology, discussed the role of biotechnology in the production of hybrid seeds. He further laid emphasis on quality seed production because the purity of any commercial product propagated by seed begins with the genetic purity of the seed planted.

Dr. Narendra Dadlani, discussed the need to develop common protocols for the use of modern tools like DNA markers for variety identification for the purpose of enforcement of IPR laws. He brought forward the concept of essentially derived variety.

International Conferences on Crop Protection:

The International Conference on Crop Protection was held on 25th -26th October 2018, Fair Ground IARI, PUSA, New Delhi. The Conference was chaired by Mr. Ram Mudholkar, Director Global BioAg Linkages and Chairman, ICFA Working Group on Crop Protection. The conference was attended by eminent speakers who delivered informative presentations on trends, vistas, opportunities, challenges and efficient regulatory systems to avoid spurious chemicals in crop protection.

Mr. Ram Mudholkar inaugurated the session by by providing overview of the industry and various opportunities and challenges in global crop protection market. He talked about the losses faced by farmers due to insect pest and disease attack and the need for innovative crop protection measures and strengthen regulatory framework in the country to overcome the issue of spurious products in the market.

Dr Markandeya Gorantla, CMD ATGC, emphasized on the role of semio-chemicals in preventing insect pest attack by changing the behavior of insects. He introduced cost effective mating disruption semio-chemicals. These formulations are natural pheromones and hence reduce the load of synthetic chemicals on the soil. The chemicals were effective against a wide range of insect pests of rice cotton, coconut, datepalm and corn.

Dr. NV Murugesan, SGM, T Stanes, deliberated upon microbial crop protection techniques. He introduced various microbial stains(biofertilizers, bio-remidators) which have deleterious effect on insect pests. He also introduced neem based formulations and nematode eradication formulations developed by T-Stanes.

Mr. N. Srinivasan, Chairman, Asthagiri Herbal Research Foundation, shared his work on bio products including bio pesticides, botanical fungicides and botanical active ingredients. He introduced about his projects- synthesis of pheromones through value addition, identification of semiochemicals to manage mango stone weevil and synthesis of attractant coumpounds.

Mr. CS Shukla, Chairman, Crystal Crop Protection Ltd, discussed the various innovations in crop protection. Foreseeing the growth of agrochemical industry in India, he introduced technologies to develop new molecules which could be a boon to Indian agriculture.

Dr. IC Chaddha, Excel Crop Care, delivered a presentation on effective fumigation for the safe storage of food grains. He emphasized on the need of fumigation for minimizing losses and enhancing quality of food produce. He further presented various fumigation products like phosphine, celphos and the manner in which it needs to be used. Briefing about the reasons of fumigation failure he mentioned the need of monitoring of fumigation. He finally concluded by introducing the concept of zero tolerance to insect pests which has made fumigation indispensible.

Mr. Dhananjay Edakhe, CEO, PlantBiotix, introduced the scenario of crop protection market in India. He then introduced the concept of various agri-biologicals', their usage and challenges for commercialization. Enumerating the various types of registrations of bio pesticides he also described the procedure for the same. He further introduced the Plant Biotox product portfolio which included bio-control, disease control, bio-nutrition and soil health improvement certified organic products.

Dr. G S Pruthi, Ichiban Crop Science Limited, examined the opportunities and challenges of crop protection market. He discussed increased chances of manufacturers due to the changes in CIB regulatory norms. He further talked over the impact of Union budget on industry and the shift from agriculture to agribusiness. He concluded with the success story of ICHIBAN Crop Science which offers crop solutions for almost all high pesticide consuming crops.

International Conferences on Horticulture:

The International conference on Horticulture was held on 25th and 26th October, 2018 at the Mela Ground of IARI, Pusa New Delhi. Dr.K.L.Chadha, President, Horticulture Society of India, New Delhi chaired the conference and Dr.R.K.Pal, Former Director, ICAR-NRC on Pomegranate, Solapur was co-chairman of the conference. During the two days conference 15 speakers from various governmental and non governmental organizations from India, USA and Japan presented their papers on various issues viz. sustainable eco-agri model for ever green revolution, hi-tech horticulture including protected cultivation, precision tools and automation, value chain development in horticulture for increased profit, post harvest management and policy issues.

Dr. Chadha inaugurated the conference and highlighted the

global issues on R&D in Horticulture. He stressed the need for innovations on new varieties, planting materials, peri-urban horticulture, organic horticulture and also mentioned the need for appropriate post harvest management.

Mr. Ganesh Neelam from Tata Trust presented their work on improving quality of life in rural areas through production of healthy seedlings as one of the major entrepreneurship development programme.

Dr. Bipin Bihari Project Director of JOHAR, Jharkhand, explained their activity of increasing the real income of farmers involving 17 lakh SHG, 3500 FPO with approximately 2,00800 farmers through various agricultural operations, protected cultivation, soil testing, pack-houses and establishing linking for marketing.

Mr. Amit Kumar Singh of Tanejar International narrated their success stories on TOT for enhancing farmer's income with 22,000 farm families. Thus they provide economic and social opportunities for farmers to enhance their livelihood.

Mr. Rajendra Lora, CEO of Freshokartz explained how the farmers can get approximately 15% more price of their produce using their IT platform of Pranam Kissan using collaborative trading model and reducing the involvement of middlemen.

Dr.P.V.N Rao, Dy Director of National Remote Sensing Application mentioned the use of space technology of Geo-informatics for crop insurance, area assessment, drought management, mitigation of climate change etc.

Dr.M.Hasan, Principal Scientist of CPCT, IARI, New Delhi delivered presentation on low cost and indigenous technology of protected cultivation including green houses, plastic houses, shade houses, lath houses, hot beds and cold frames. Similarly,

Dr. Harshvardhan, Principal Scientist, Vegetable Science, IARI New Delhi explained in detail about the choice of crops, season and varieties for enhancing farmers income using protected cultivation technologies developed by IARI, New Delhi.

Dr. Garth Watson of Garden Village Group emphasized the need of regeneration of natural soil using Geoponix and farm business partnership through legacy land lease agreement.

Dr. Shigeki Kawakami, of Osaka University, Japan described the new technology of bio-preservation using innovative biopolymer as ethylene absorbent that can extend the shelf life of fruits and vegetables.

Sh. Amlan Roy Choudhary of ITC explained the consumer centric approach of value chain with the elements of integration, management of post harvest loss, processing and value addition, R&D and extension being followed by ITC.

Dr.T. Janakiram, ADG (Hort), ICAR made a holistic presentation on quality panting material than can successfully address the yield gap in horticultural crops.

Dr. Umesh Srivastava, former ADG(Hort) ICAR also emphasized the need for increased capital investment in Horticulture for improving the livelihood security of rural population.

Dr.M.K.Verma, Principal Scientist, IARI, New Delhi mentioned that the quality planting material can increase the productivity of horticultural crops by 15-25%. Entrepreneurship on production of quality planting materials as corporate horticulture, formulating policy for uniform nursery accreditation and model nursery act etc. are the need of the hour.

Dr. Akhilesh from Eden Horticultural Services presented their activities on various aspects of skill development of farmers for enhancing their income.

Dr.R.K.Pal, Former Director of ICAR-NRCP presented the various entrepreneurship opportunities on post harvest technology, value addition and total utilization of horticultural produce for creation of wealth from wastes.

At the end Dr. R.K.Pal concluded the conference summarizing the presentations and made recommendations on Innovation on production technologies, Entrepreneurship on production of quality planting materials, More capital investment in the horticulture sector and Use of IT based platform for establishment of linkage for marketing.

International Conferences on Food Processing:

The International Conference on Food Processing was held on 25-26 Oct 2018, Fair Ground, IARI, PUSA, New Delhi. In the two day conference, speakers from various governmental, non-governmental and International organizations had a brainstorming session on various prospects, limitation and way forward in the sector. They presented their papers on various issues viz. Value addition, frozen foods, thermo-processing industries, dehydrated food markets, governmental schemes and policies issues for making the market more competitive.

Mr. Alexis Bossuyt, Trade and Investment Commissioner, Embassy of Belgium introduced the new innovative technologies used in food processing in Belgium which has made it leading food processing country in Europe. Belgium is a land of small companies of which 90% is FDI, yet frozen foods generate around 50 billion Euros. It is famous for processed foods, fruits and vegetables and chocolates. In order to evaluate food quality, they undertake 332 pilot tests. He further concluded by explaining the necessity of participation of India and Belgium in state visits so as to expand knowledge base and profits.

Dr. Mustafa Sassa, Chairman, Raj Group of Companies, UAE, conversed about the need of water harvesting in agriculture. He stressed on the reduction of wastage of water resources by the introduction of modern techniques of farming. He focused on skill development of farmers so as to further promote crop production.

Dr. SK Jha, Principal Scientist and Professor, Division Food Science and Post-harvest technologies, ICAR-IARI emphasized on the prospects of food processing industry in doubling farmer's income. He introduced the status of the industry in India, opportunities and challenges in the sector. He explained the advantages and disadvantages of fabricated foods and also the technological options for overcoming the same. He also introduced extrusion cooking and its advantages over conventional cooking. He concluded with the future scope of food processing in achieving nutritional security.

Mr. Vijay Sardana, VP & Head – Food Security, Agribusinesses, Policies & Projects. Company UPL Limited, discussed the criteria to identify the opportunities in food processing. He further suggested the necessary policies which need to be formulated by the government. He also discussed the limitations which hamper the advances including lack of innovation, short sighted governmental policies and non-serious industry players.

Dr. Neeraj, Associate Professor & Associate Dean, NIFTEM, delivered presentation on Opportunities in Fruit and Vegetable processing in doubling farmers' income. He introduced the pilot plants of NIFTEM on Fruits & Vegetables, Meat & Poultry, Milk & Dairy Products and RTE & Traditional foods which have been established to meet the additional needs of business incubation, entrepreneurship and start-ups. He discussed the challenges at grass-root levels and the changing trends of market and consumers. He also explained how developing market infrastructure will foster in addressing challenges like actual price realization, hoarding and quality concerns. He concluded with NIFTEM's extension activity viz. Village Adoption Programme.

Mr. DB Parakh, Ex- Principal Scientist, Division of Plant Quarantine, Plant Virology Laboratory, ICAR-NBPGR, discussed the significance of connecting farmers with mrket for enhancing food processing industry. He further added the need of FDI in processing and retailing of fresh fruits and vegetables is a great idea. He also stressed that investment in the agriculture sector, is extremely necessary.

Mr. KP Sudheer, Professor, Kerala Agricultural University, discussed issues in food safety, quality enforcement and harmonizing standards. They discussed the need of harmonization of food safety regulations at the national and global level.

Mr. Vishnu Chandra Srivastava, Deputy Advisor, QCI, focused on the Food safety initiative taken by QCI to prevent food borne illness that affects large populations. He emphasized on the adoption of Good Manufacturing Practices(GMP) that ensure the quality of the product and

HACCP to control food safety hazards. He also explained how Department of Commerce has advised on relying upon IndGHP, IndGAP and IndHACCP certification schemes.

Dr. AK Tyagi, Executive Director, Haldiram Snacks Pvt Ltd. explained the benefits of food processing for the empowerment of farmers. Only around 10% of the food produced in India gets processed thereby providing large scope of development. He further mentioned the measures required to be taken to accelerate the growth of the industry viz. better linkages between industry and farmers, more rigorous sorting practices, supportive GoI policies and enhancement in infrastructure. Elaborating the work of Haldiram in promoting farmer welfare he demonstrated its role in extensive sourcing, removal of middlemen, enhancing exports and providing fair price to farmers.

Dr. Abhijeet Kar, Scientist, IARI, discussed the potentials of Microwave Heating Technology for Select Food Processing Applications. Discussing the advantages of microwave sterilization he explained the shell life and the economic importance of microwave sterilization process. He further discussed pasteurization, sterilization and blanching techniques. He finally concluded by enumerating advantages and development of unique single systems for microwave blanching, waste treatment and safety of food processed in microwaves.

Dr. Ashok Wadhwan, Project Consultant, Win Win Solutions stressed on using our resources sustainably thereby incorporating the use of silage as livestock feed resource and/or its further processing to obtain value added products. He introduced the vacuum packing unit and its advantages in fermenting forage and thereby increasing production packaging in shorter intervals of time. He thus recommended the inclusion of fruits and vegetable silage, spent grain and other value added wastes in animal feed.

International Conferences on Eco Agriculture:

The International Conference on Eco Agriculture was held on 25-26th October 2018, Fair Ground IARI, PUSA, New Delhi. The Conference was chaired by Dr. MH Mehta, Chairman, Gujrat Life Sciences and Chairman, ICFA Working Group on Eco-Agriculture. The conference was attended by distinguished speakers and panelists from various governmental and non-governmental organizations who delivered informative presentations on national and global outlook on eco-agriculture, sustainable models for evergreen revolution, markets and emerging trends of agri-bio inputs, field inputs and way forward towards sustainable development.

Hon. Dr. K. Dorji, ex-PM, Bhutan, emphasized on the need of sustainable agriculture for promoting chemical free healthy living conditions for future generations. Around 60% of the community of Bhutan is engaged in agriculture and thus the Government of Bhutan aims of enhancing sustainability and climate resilience of forests and agricultural landscapes. He discussed the threats which climate change is posing and thus the need of developing in a sustainable manner by taking care of the needs of future generation.

Dr. PVSM Gouri, proposed solutions for the transition from conventional to eco agriculture. He suggested farmers to take the best out of organic farming and combine them with modern scientific knowledge by using local and low-tech methods. He focused on the need of local and regional solutions for increasing crop yield by organic farming

methods. He also suggested the need of developing demonstration farms for the training and extension activities.

Dr. Ashish Gupta, IFOAM Int., discussed the need for higher investment in pro-smallholder science, technology, infrastructure, services and innovation and for policies at all levels to promote sustainable organic smallholder systems and businesses.

Dr. Satish Babu Gadde –Andhra Pradesh, explained how Andhra Pradesh became India's first Zero budget Natural farming state, thereby contributing towards the UN Sustainable development goals.

Dr. Ashok Patel, Vice-Chancellor, Sardarkrushinagar Dantiwada Agricultural University, discussed the various sustainable agricultural practices and their benefits in the conservation of soil and energy resources. He further discussed the need of promoting social equity in order to promote sustainable development.

Dr. Prem Singh Gelawat -Akhil Bhartiya Kisan Maha Sabha, discussed the issues of farmer suicide, farmer migration, and disintegration of youth from farming and marginalization of farms.

Mr. Sumit Gupta –Global Org. Textile, discussed the need of development of comprehensive rules for ecological and socially responsible agricultural production. He focused on the need of certification, labeling and licensing of products and the mechanism of doing the same.

Dr. Bijender Singh, Dalal Farmers Association, discussed the need of organizing farmers into an association. Enlisting the activities taken up by farmer clubs he explained how these clubs are bridging the gap between farmers and the agriculture department. of the club. All the members of this farmers club were engaged in horticulture, vegetables production, animal husbandry. The club used to organize monthly meeting with Deputy Director Agriculture along with the chairman.

Mr. Saurabh Aggarwal, MD,Stevia Biotech, discussed the benefits, uses and market development of Stevia. He also explained why Indian farmers are struggling to ensure how Stevia can become a product of the masses. He focused on the need of forming associations to push cultivators towards growing Stevia.

Dr. Nutan Kaushik –DG, Food and Agriculture Foundation, emphasized on the need of adopting biological pesticides over conventional chemical pesticides. She discussed the growing pesticides pollution which affects plant, soil and human health. Thus, she brought forward the concept of bio-prospecting.

Dr. Pradeep Mohapatra, Team leader, Udayama, discussed Organic farming as an innovative farming mechanism towards sustainable agriculture in India. He discussed the need of going to the roots of poverty and work on it in order to reduce risk & vulnerability. He focused on promoting livelihoods through rejuvenating the resource base with an empowerment and enabling process.

Dr. Tiket Rajesh, All India Farmers Organization, discussed the need of uniting for the common cause of farmers. Even after decades of independence, farmers are still not free from the bondage of poverty and risk. In order to mitigate risks and help farmers secure a better future, it is the need of the hour to collaborate and work towards sustainable development.

Dr. Virendra Dhingra, Director, BIOTOX, discussed the importance of harnessing Smart AgBiologicals for Sustainable Eco Agriculture. He introduced various fungal bio insecticides and PGPRs for enhancing crop production and protection.

Dr. Sanjay Deshmukh, National Organic Certification Agro Pvt. Ltd., explained the benefits of farm certification, different types of certification or food and farm produce and the manner of attaining the same.

Mr. Ashmeet Kapoor, I say Organics, discussed the scope and need of certification of organic food and also explained the manner for the same because the use of chemical fertilizers and pesticides is increasing indiscriminately thereby leading to health issues. Thus use of organic products need to enhance in order to cater the millennium development goals.

International Conferences on Farm Mechanization:

The International Conference on Farm mechanization was held on 25-26th October 2018, Fair Ground IARI, PUSA, New Delhi. The conference was inaugurated by Dr. SM Ilyas who discussed the status and opportunities of farm mechanization in India. Speakers brainstormed on various issues like role of farm mechanization in enhancing farm incomes, Global advances in farm mechanization, success models of Asian countries, Machinery for Post-harvest and Agro Processing and the role of various states in formulating various policies to enhance farm mechanization in India.

Mr. Ben Edmunds, Director of Hale River, Adelaide, Australia, discussed how mechanization of farms is leading to sustainable agriculture development. He further explained how farmers can move on from subsistence farming to market-oriented farming by increasing harvest outputs which would in turn appeal to the rural youth who increasingly seek employment in urban settings rather than in the fields.

Mr. Surendra Makhija, Consultant Strategic Advisor, Marketing, Jains Irrigation system Limited, discussed the need of weather resilient farming tools in agriculture. He further emphasized that the tools are environmentally sound, economically affordable, adaptable to local conditions. The mechanization should focus on achieving larger and better harvests and increased income or new jobs for farmers.

Dr. SP Singh, Principal Scientist, Division of Agriculture Engg(IARI), discussed the benefits of farm mechanization by reducing the hard labour involved with farming. He pointed out how mechanization can also ensure higher outputs regardless of the age, gender or physical well-being of the farmer. The problem of labour shortages can be relieved. It can improve timeliness of agricultural operations thereby ensuring the efficient use of resources. It also enhances market access by allowing farmers to sell more than just the raw product and contribute to mitigating environmental damage.

Mr. Dinesh Vaishishta, Chief Sales and Marketing, Tirth Agro Pvt Limited, discussed the need and efficiency of various farm tools including sowing and planting tools, tools for seed bed preparation, crop management, harvesting and crop residue management. They discussed their various products which are suitable for Indian farmers taking into consideration the needs of marginal farmers. Thus they discussed the need of development of cost effective machines.

Dr. RC Srivastava, VC, RPCAU, focused on the increasing demand for agricultural products due to increasing human footprint on Earth. Thus, to feed such a large population, there is need to increase the food production. It is required to designate appropriate machines and tools to the agricultural production chain to increase outputs in a sustainable way. When farm machinery is carefully chosen it allows crops to be grown and harvested with minimum-to-no soil disturbance thereby ensuring that the soil surface remains protected by organic cover so as to enhance soil health and conserve crop nutrients.

Mr. Tushar Pandey, Consultant & Advisor – PPP, Agriculture, Social Equity, discussed institutional innovations in climate smart agriculture. He discussed how long-term strategy needs to be implemented which would prepare farmers to adapt and respond appropriately to climate change, and effectively overcome the consequences. Climate-Smart Agriculture, increases agricultural productivity. This can be facilitated through Public Private Partnership or by efficient co-operative mechanisms.

Dr. IM Mishra, Head, Division of Agriculture Engineering, discussed the global overview of farm mechanization and the geographical spread of farm equipment manufacturers in India. In Indian scenario, small holders are under continuous pressure to increase production and overall returns from their production output. Thus, Custom Hiring represents an important mechanism through which most small holders can access services of agricultural machinery. Thus, he concluded that it is one option that can ensure the use of improved farm machinery, even to small and marginal farmers.

Mr. Nitin Gupta, Sickle innovations, discussed how farm mechanization is developing successfully in the Asian countries. He introduced land consolidation approach in Japan, the experience in Korea with horticultural crops, in

which they employ the use of appropriate farm machinery and implements, from the seedling nursery to production to post-harvest, village-based cashew nut processing in the Philippines and rice mechanization in Vietnam.

Mr. Kaushik Gadhia, Escorts, discussed the technological trends of various countries which can be successfully adopted under Indian conditions. He further discussed the issues and constraints under Indian conditions and the measures to resolve them.

Dr. Tapan Kumar IARI, talked about the status of small farm mechanization in Asian countries. He pointed out that the average operational farm size in Asia ranges from 1.0 to 3.7 hectares, with Thailand topping the list. The share of the Asian and Pacific region in the global agriculture machinery consumption is only 10 percent compared with Europe. As of 2002, Japan had the highest number (1,042,000 units) of harvesters-threshers in use, followed by China (197,000 units), while Sri Lanka had the lowest number of only 10 units of harvester-threshers.

Mr. GS Randhawa, Escorts, discussed various machineries for post-harvest processing of agriculture produce. He discussed how mechanization can reduce cost, time and labour thus, leading to enhancement of quality and marketability of farm produce by value addition. He focused on transforming from 'produce' to 'producer-cum-processor' to get more remunerative price and increase profits.

Dr. Sandeep Mann, Principal Scientist (APE),ICAR-CIPHET, discussed the National Database on Post harvest Machinery which provides general information and details about equipment for processing of various crops and select livestock products. The criops are arranges under various categories.

International Conferences on Dairy:

The International Conference on Dairy was held on 26th October 2018, Fair Ground IARI, PUSA, New Delhi. The Conference was chaired by Dr. H Rehman, South Asia Representative, ILRI and Chairman, ICFA Working Group on Dairy and convened by Dr. MJ Saxena, MD Ayurvet The conference was attended by distinguished speakers and panelists from various governmental and non-governmental organizations who delivered informative presentations on next generation technologies and innovations in the dairy industry. They also deciphered the optimal path to enter the dairy industry for entrepreneurs.

Dr. Rehman, discussed the increasing investor's engagement in dairy industry, technologies of enhancing quality of fodder, need of development of cold chain facilities and various innovations in dairy business models.

Dr. MJ Saxena,, discussed the vital need of improving the health of livestock. Discussing the challenges of disease surveillance, nutritional security, increased disease susceptibility, vaccine delivery system, he explained how herbal health care products cater to the vital needs of livestock.

Mr. Raj Vardhan, Sr. Vice President: Russia CIS Region Outspan International LLC OLAM, emphasized on the need to develop food on international safety standards without compromising on nutrition, taste and functionality. He introduced his large scale dairy farms with processing facilities in Russia and Uruguay. Further discussing the issues of malnutrition in various developing countries, he emphasized on the need of enriching products with vitamins and minerals.

Mr. Sid Mehta, Executive VP, Emerging Ag, discussed pros and cons of investor's engagement in the dairy sector. He also discussed the factors affecting the competitiveness of small dairy farm holders. He also discussed the need of waste management and converting it into organic fertilizers. He focused on ensuring appropriate combination of commercial and technical skill sets in dairy.

Mr. Pankaj Nivani, Binsar Farms, conversed about the significance of providing high quality fodder to the cattle. He briefed about the importance of collaboration with farmers who grow fresh organic fodder so as to make dairy sector more sustainable.

Mr. RS Dixit, Chairman, Ananda Dairy Limited, talked about the stupendous growth and latest advances of India's dairy structure. He further apprised the introduction of milking parlors for milching. He also informed about Ananda's goal of investing Rs 200cr for producing organic milk. He also addressed the role of dairy industry in women empowerment by highlighting that women contribute nearly 60% of farm labor. he pointed out that nearly 37 million dairy farms are headed by women. He further stressed that it is best suited for them as it ensures steady cash returns throughout the year.

Mr. Amit Mittan, Country Manager, Agroy, talked about technology driven next gen- Innovations and Advances in Dairy Sector. He discussed how technological development in dairy industry leads to improved management strategies and farm performances. He explained the importance of daily milk yield recording, monitoring of milk components, pedometers, automatic temperature recording devices and daily body weight measurement. These help in increasing efficiency, minimizing cost and minimizing adverse environmental impacts.

Dr. Vaishnavi Sinha, Gopali Dairy and Farms, stressed on the need of development of cold chain facilities, transportation, infrastructure, traceability of farmers and consolidation of network of distributors. In order to supplement economic growth of dairy farmers she focused on value addition of dairy products. She also stressed on the use of organic milk by depicting the trends in prices over definite time period. In order to reverse the environmental degradation process, desertification of soil and restore micro-organism biodiversity, she promoted the use of cow dung as manure and production of biogas.

Dr. Inderjeet Singh, Director, PDDB, examined the socio-economic challenges, scalability and innovations in dairy business models. Highlighting the contribution of Dr. Verghese Kurein and Sh. Tribhuvan Das Patel, Dr. Singh enumerated the benefits of dairy business with low capital investment. He stressed on the development of comprehensive database of dairy animals, life cycle record of their pedigree, performance, diseases and also real time heat detection using electronic gadgets. He explained how embryo transfer technology and semen preservation is helping in increasing the overall dairy produce.

International Conferences on Poultry:

The International Conference on Poultry was held on 26 October 2018, Fair Ground IARI, PUSA, New Delhi. The Conference was chaired by Dr PK Shukla HOD – Poultry, DDUAS&V and Ex Joint Commissioner – Poultry, GOI. The conference was attended by eminent speakers who delivered informative presentations on measures to unlock the potential of poultry sector in India, the ongoing research and development taking place, opportunities, challenges and measures to meet the market demand.

Dr. OP Shukla, Joint Secretary (NLM), put forward his special remarks and highlighted the journey of poultry in the country from backyard activity to full-fledged source of livelihood. He also discussed the growth potential of the sector to be a major income and employment provider in the agriculture sector. He further briefed about the different policy initiatives and programmes by government to support poultry in the country.

Dr. Shukla Putting forward the scenario of poultry sector, he affirmed and deliberated upon how poultry turned out to be one of the fastest growing agriculture industries in India.

Dr. Pawan Kumar, Consultant USSEC, India & Nepal, talked about the availability of raw material as the key to future growth of animal feed sector. He discussed the trends of demand and supply of protein feed in South Asian countries and the changing market condition over time.

Mr. Vijay Sardana, discussed the methods of making more money in broiler business. Enlisting the benefits of consuming chicken he discussed the reasons of exploring market options. He further discussed important steps for chicken marketing.

Dr. Sujit Nayak, Assistant Commissioner (AH), DADF, MoA&FW, GoI, discussed the plans for a resilient Indian poultry sector. He explained how poultry sector needs a paradigm shift from food and nutritional security to women empowerment. Discussing the trends in poultry production over last 10years, he mentioned the factors affecting the same. He further discussed various biotechnological and immunological tools for robust development of poultry stock. Discussing measures to encourage brand development of indigenous poultry, he discussed strategies to increase share in world trade.

Dr. Vijay Makhija, Regional Marketing & Communication Manager Asia Pacific, discussed the innovations in animal nutrition. Stating the increase in global human footprint, he pointed out the need to inculcate animal protein as a part of balanced diet for a sustainable growth. He further discussed the efficient use of natural resources via enzyme technology in order to tackle societal issues of sustainable livestock production. He mentioned various feed tools like phytases, carotenoids, eubiotics and vitamins and their effect on enhancing feed efficiency.

Dr. DV Singh, Venkys, discussed the need to promote healthy poultry. He promoted diversification of activities to include SPF eggs, chicken and egg processing, broiler and layer breeding, genetic research and Poultry diseases diagnostic, Poultry vaccines and feed supplements, vaccine production, bio-security products, Poultry feed & equipments, nutritional health products and soya bean extract.

Dr. Simmi Tomar, Principal Scientist, In charge, Guinea fowl farm and Avian Biotech. Lab., AG&B Division, Central Avian Research Institute, Izatnagar, deliberated about value addition in poultry. She stated the importance of shifting focus from quantity to quality food which is low in cholesterol and rich in omega 3 fatty acids. This could be attained by changing production strategies and adoption of appropriate production processes. Stating the bottlenecks in the poultry processing sector, she discussed the various government aided schemes for its growth.

International Conferences on Precision Agriculture:

The International Conference on Precision Agriculture was held on 26th October 2018, Fair Ground IARI, PUSA, New Delhi. The Conference was chaired by Dr. HP Singh Chairman, Confederation of Indian Horticulture and Chairman, ICFA Working Group on Precision Agriculture. The conference was attended by distinguished speakers and panelists from various governmental and non-governmental organizations, who delivered informative presentations on tools, opportunities, light management, drones, robotics and improving farmer's income.

Dr. HP Singh inaugurated the conference by introducing various speakers and panelists. He enumerated the benefits of adoption of modern technologies, high precision positioning system, automated steering system, geo-mapping, integrated electronic communication, use of remote sensing and Variable Rate System. He emphasized on the need of management of crop production inputs in order to promote sustainable farming.

Mr. Ben Edmunds, Director of Hale River, Adelaide, South Australia, emphasized on the need of providing exact amount of nutrients required by plants. He laid stress on the use of sowing machines for planting seeds at appropriate depth. He emphasized on the use of technologically advanced farming practices, to supply quality produce with maximum yields, whilst developing environmental sustainability.

Dr SK Chaddha, MD, NAFED, New Delhi, discussed techniques of soil water mapping, water content and water stress to schedule irrigation, fruit yield map and crop duality prediction.

Dr. SS Sidhu, Head, IARI, New Delhi, discussed precision agriculture tools for climate smart farming. He discussed how improved fertilizer, soil and water management can significantly reduce green-house gas emissions.

Dr. Sangeeta Ladha, VP-Marketing and Business Development, Jain Irrigation, discussed the future water demands of various states in the country. She introduced bio-

fertilisers fortified with microbial cultures and soil fertility enhancers, Piping Systems for closed water conveyance, most cost effective yet very efficient Micro and Sprinkler Irrigation Systems as well as Green Houses and Shade Houses.

Dr. Dharmesh Verma, UPL Limited, examined the impact of climate change on agriculture and thus suggested climate smart farming. He further discussed the general framework for agricultural matrices. He enumerated the benefits of the various technologies. He also talked on site specific seeding of flood- tolerant rice varieties for fulfilling the NFSM. He further discussed recent initiatives on Development of Climate-Smart Rice varieties of IRRI.

Dr. VV Sadamate, Agri Extension Specialist & Former Adviser Agriculture, Planning Commission, GoI., talked about making small farms sustainable through scale neutral precision technologies which will be much more accessible to small farms, which depend on the unpaid services of family members, thus, in India where the small and marginal farmers are in large numbers.

Dr. Indramani Mishra, Professor in the Division of Agricultural Engineering, Indian Agricultural Research Institute, IARI, shared his views on Precision Agriculture on improving farmer's income.

Dr. Neelam Patel, Incharge, Principal Scientist, IARI, discussed about Precision Horticulture in green house for improving the profitability. She discussed how precision agriculture aims to improve farm management efficiency by adjusting field/crop treatments to conditions existing at specific areas within fields hence reducing inputs and maintaining product quantity and quality in an environmentally sensitive and economically sound manner.

Tyler Marshall, Founder, CEO, EYC Labs, discussed Drones and robotics in agriculture. He discussed the technologies that Support Drones & Robotics along all the stages of the supply chain. He further introduced IOT(automated precision farming), mobile technology for controlling and monitoring, AI, block chain in agriculture, geofencing, molecular spectrum analysis camera, aerial fertigation and natural ways of disaster management..

Ms. Smitha Kurup, shared her knowledge on Image based estimation of plant parameters and precision fertigation systems, she also discussed a machine vision system which provides access to a large proportion of the field. Such sensing capability, in conjunction with the implementation of appropriate variable-rate application hardware, potentially enables agricultural fields to be treated as a conglomerate of control units for fertigation operations.

International Conferences on Soil Health and Plant Nutrition:

The International Conference on Eco Agriculture was held on 26th October 2018, Fair Ground IARI, PUSA, New Delhi. The Conference was chaired by Mr. US Jha, Advisor, DFCL and Chairman, ICFA Working Group on Fertilizers. The conference was attended by distinguished speakers and panelists from various governmental and non-governmental organizations who delivered informative presentations on Economic outlook, subsidies and policy environment of soil health in the country. They also discussed global trade outlook for ensuring stable prices and sustainable supply in agriculture.

Dr. Jha, inaugurated the conference and introduced the distinguished speakers. He further talked about the basic need of protecting soil health which directly affects the economic condition of a country.

Mr. Nazmul Islam Choudhary, Strategic Lead Agriculture, Practical Action, Bangladesh, unfolded how undertaking inclusive agriculture can be a game changer in the agricultural markets. He further added that the need of the hour is to eradicate poverty and hunger which by adoption of R&D for crop diversification and innovative agricultural practices. Discussing the emergence of large barren sandy islands in rivers of Bangladesh, which disappear after 5 months thereby practically making cultivation impossible, he discussed solution for the same. He explained how Practical

Action helps to diversify the income of landless families by growing pumpkins and other crops on previously barren lands. Enumerating the benefits of sandbar technique, he revealed how it has led to 54% reduction in water usage and increasing land under cultivation. He further emphasized on the need of village based marketing and the need of cross boundary knowledge sharing in South Asia.

Dr. Rachana Jain, Senior Scientific Officer, Amity Food and Agriculture Foundation, discussed the need of development of Organic Fertilizer from Agricultural and Non-edible Oil Seed Waste for Enhancing Crop Productivity. Focusing on the indiscriminate use of chemical fertilizers, she stressed on the use of organic fertilizers. The level of organic carbon is very low, around 67% of the Indian soils, thus there is great scope of use of organic manure. Introducing neem oil based insecticides; she enumerated its benefits and finally introduced the products. She further explained the properties of non-edible oilseeds and also informed about their cultivation and harvesting. Discussing the trends of use of bio-fertilizers, she introduced major tree borne oilseeds and oilcakes along with the methods of processing them.

Dr. K Latha, Vice President (R&D), T Stanes and Co. Ltd, talked about various organic plant nutrient solutions and their benefits. She explained how bio-fertilizers are carrier-based microbes containing live or latent cells of efficient strains of Nitrogen fixing, phosphate solublising and cellulolytic microorganisms which accelerate certain microbial processes that facilitate the availability of nutrients in a form, which can be easily absorbed by the plants. Demonstrating the increase in yield of various crops, she suggested the methods of application for different crops. She introduced various products, dosage, mode of application and their benefits.

Mr. Ajay Ranka, Managing Director, Zydex Industries Pvt Ltd, conversed about the degrading soil conditions due to the indiscriminate use of chemical fertilizers. He discussed the need to sustainably boost the soil microbial population by the use of soil additives. He introduced various solutions which lower the farmers' dependence over chemical fertilizers. He indicated around 15-20% increase in yield, 20-30% increase in irrigation, 40-100% reduction in pesticide consumption by the use of soil additives. Taking account of climate change which is leading to unexpected droughts, he stressed on making plants drought resistant by balancing the microbial population.

International Conferences on IT in Agriculture:

The International Conference of IT in Agriculture was held on 26th October 2018, Fair Ground IARI, PUSA, New Delhi. The Conference was chaired by Prof. M. Moni, Former Director General (NIC) & and Chairman, ICFA Working Group on ICT. The conference was attended by more than twenty speakers who enriched the various sessions with their knowledgeable information. During the conference, speakers from various governmental and non-governmental organizations presented their work on various domains including vertical farming, AI, digitalized advisory services, blockchain and cloud computing in agriculture.

Prof. M. Moni, inaugurated the conference and introduced various ICT Tools and their role in enhancing the farmers' income by 2020.

Mr. Samson Selladurai, Director of Tribe Blockchain, Adelaide, Australia, elaborated the basics and advantages of block chain and its applicability in agriculture. He further explained how bringing transparency to the supply chain will allow us to identify bad elements thereby promoting ideal conditions from farm to market.

Mr. Krishnan Dharmarajan, Executive Director, CDFI, introduced KANCHI (Kisan Advancement through cashless innovation) which promotes digital financial inclusion thereby transforming FPOs.

Mr. Prashant Mehra, Associate Vice President & Chief Architect (Social Inclusion), MindTree Ltd, explained how MindTree is helping farmers convert into value chain owners.

Mr. Pedro Mariano Martins Pontes, Head of Economy Division, Embassy of Brazil, New Delhi, discussed about Brazalian innovations in agriculture which focus on research and supply push policy. He ensured a promising scenario of Agri startups by adopting Brazilian technologies.

Mr. BK Murthy, Scientist-SG and Group Coordinator, Ministry of Electronics and Information Technology, Government of India, informed about the status of digitization in India and the success of BharatNet, Common Service Centre, AADHAR, e-NAM and AGMARKNET.

Mr. Agam Khare, CEO, Absolute Foods, presented how radically transforming traditional farming to vertical farming can be a solution to contamination, adulteration, unavailability and non-reliability in agriculture. He explained how vertical farming can take agriculture to higher levels of profitability.

Ms. Samitha Haldar, Lead Business Development, M/s Cropin Technology Solutions Pvt. Ltd, introduced the Cropin model of digitizing farms by providing data storage, machine learning, satellite monitoring and weather analysis.

Mr. Aleen Mukherjee, Executive Vice President, NCDEX, presented how digital technology has helped in increasing the food production over the years. He further explained how NCDEX has served as a trusted benchmark for many agri commodities.

Mr. Anoop Gupta, Mission Leader, I-Care India, discussed the opportunities and challenges and opportunities in digital technologies in Agriculture in India. He demonstrated how cloud based platforms can be a game changer in agriculture systems.

Mr. Vishnu Chandra, Deputy Director General (GIS), National Informatics Centre, Ministry of Electronics and Information Technology, Government of India, explained how NIC provides external GIS services to facilitate standardization and integrate different stakeholders to make proper use of spatial data.

Mr. Ashok Prasad, Director and Co-Founder, Akshamaala Solutions Pvt Ltd, discussed how Unnati delivers high quality agricultural inputs to farmers using digital platforms thereby addressing the gaps in agriculture retail.

Dr. Sudhanshu, DGM, APEDA, presented how APEDA has developed online food traceability systems for monitoring of exported food products. He further discussed the challenges of food traceability in India and the means of eradicating them.

Mr. Samuel Jeffson, Executive Director, St. John Group, presented the challenges faced in agribusiness and how blockchain could possibly a solution. The logistics industry is increasingly relying on technology which can be facilitated by the use of block chain technology.

Dr. P. Adhiguru, Principal Scientist (Agricultural extension), ICAR, emphasized on the need of smart farming to enhance the efficiency of farming. He further enumerated the various startups and organizations which are using AI and the benefits gained by the same.

Mr. Vignesh Khalanth, Technical Architect (BigData Analytics), M/s OTSI, USA, explained the significance of big data in agriculture and its trends in agriculture. He concluded by analyzing risks and way forward in digital agriculture.

Mr. Chakradhar G. Reddy, Head – Information Technology, M/s Vaya Finserv Pvt. Ltd, discussed Data analytics in agricultural bank finance and credit systems, thus bridging the gap between suppliers and consumers.

Mr. Sainath Ramanathan, Software Architect and Product Owner, M/s Sella Group, discussed the obstacles in supply chains and points where profits can be identified. He added how blockchain can further increase transparency in the supply chain from producers to the end users.

Mr. Ramakant Maurya, M/s Block Innovations Tech, explained block chain technology and how it works in the case of agriculture from farming to finally money generation to the final consumer.

Dr. Snigdha Tiwari, Assistant Professor, Shobhit University, deliberated upon the use of information technology in monitoring the plant and animal health for enhancing productivity sustainably.

Mr. Sharbendu Banerjee, Founder & Managing Director M/s MGINNE Pvt Ltd, discussed the challenges of farming value system in India and abroad and their solution using digital technologies. He further explained how apiculture in India can benefit from blockchain network so as to benefit small landholders and women farmers.

Mr. Alok Varshney, CEO, M/s Acetel Technologies, focused on the need of digitization, increased connectivity, role of automation and the use of drones and satellite imageries in agriculture. He further focused on the need of connected ecosystems and their advantages.

Mr. Venkat Marujo, Source Trace, explained how software solutions of Source trace are empowering digital agriculture. He further added how digital agriculture value chain from farmer to markets brings equity in agriculture. The farmers are benefited by receiving advisory services, latest ICT tools thereby helping in expanding market base.

Dr. SD Attari, DDG of Meteorology, IMD, revealed the economic impact of Agromet Advisory System under Gramin Krishi Mausam Seva. He indicated that the service has the potential of generating net economic benefit up to Rs. 3.3 lakh crores on the 22-principal crops when AAS is utilized by All farming households in the country.

Nalin Rawal, Head – Crop Weather Intelligence Group, NCML, discussed digital technology in Integrated Farm health Management system. Projecting the impact of climate change on agriculture he demonstrated how satellite based solutions can help in crop monitoring and protection.

Ms. Sai Gole, Founder, Lean Agri, discussed the need of disruptive technologies in agriculture. She further explained

how Lean Agri assists farmers by making use of optimized farming. She further demonstrated how agronomy can be developed as a service & Business Intelligence platform to benefit every stakeholder in the value chain.

Mr. P G Srinivas, M/s Magnetic Technologies L.L.C, Dubai, discussed the importance of overcoming productivity related issues through Smart Water which refers to restructured water at molecular level by applying magnetic field. It helps in improving nutrient uptake and enhances permeability of soil.

Mr. M.Ramakrishnan, M/s IntelloLabs, introduced their Image based quality grading application which is fast, scalable, cost effective and accurate means of quality assessment which has revolutionized the buying process of tomato wheat and cardamom. Thus they focus on customer satisfaction.

Indo-Japan Business Session

The Indo Japan Agriculture Session organized, provided with a blueprint for the use and potential of new technologies in Agriculture for both India and Japan.

Mr. CP Shoran, Executive Director, Indian Council of Food and Agriculture welcomed the audience and all the Japanese delegations with a small speech. He initiated by mentioning Indian History to be very unique and how India till 16th century, was in a poor shape, and imported commodities from US. Things changed, when Indira Gandhi went to US to ask for food and she was not treated well, so she came back and decided to do something for Indian agriculture. As a consequence of which she travelled across all the universities in India to promote Agriculture study, so that India grows its

own produce and become independent and self-reliant.

He further added, Mr. MS Swaminathan, the father of green revolution, being concerned about the sector, and brought a big change in Indian Agriculture as a result of which today our godowns and silos overflow with wheat and paddy, the 2 major grains in India. India is producing around 275million tones of grains, more than 300 billion tones F&V. PM Narendra Modi took oath to double the farmer's income by 2022, with this he has generated lot of enthusiasm all over the country among the people connected to agriculture sector. He ended his talk by focusing on the sectors which offer plenty of opportunities like dairy, poultry, fisheries and food processing.

Opening Remarks

Mr. Kenko SONE

Minister (Economics and Development), Embassy of Japan in India

He initiated the talk by highlighting the number of Japanese companies operating in Indian Market in 2017 which have reached around 1317. Responding to the Make in India policy introduced by the Indian government, the direct investment in India by Japanese companies have been rising significantly. He further added that in support of these investment activities by Japanese companies, the industry of Japan also launched the Japan India food dialogue in order to have discussions on food processing with active participation of Japanese government. The first food dialogue was held in September this year with 13 Japanese companies participating in it. Moving on to the release of Agriculture Today October Issue in the Indo-Japan session he threw light on the topics it will cover like Japanese agricultural technologies and the techniques used by the companies Shibuya Seiki and Senko. Lastly, he mentioned, among the presenters of current session, Nissan Steel industry has step up a booth to exhibit its products relating to New Technologies about Germ-free Preservation and Transportation for Fruits and Vegetable. He ended his talk by emphasizing on strengthening the ties between two countries on agricultural front. As India is the 2nd largest food producing nation in the world and major agriculture country where more than half work force is engaged in agriculture sector, improving agriculture productivity and enhancing farmer's income is therefore the crucial aspect of Indian economy. Japan on the other hand has limited farm land and farmers thus they are promoting the use of new technologies to enhance the productivity. These open new areas of collaborations for both the countries to empower their farmers and enhance their incomes.

Keynote address

Mr. Takami NAKADA

Deputy Assistant Minister, Ministry of Agriculture, Forestry and Fisheries of Japan

He focused that many Japanese companies are interested in investing in agriculture sector and allied sectors of India and they are working as well with Indian partners. He added about the companies presenting in Indo Japan session on various technologies which can be used in agri & food sector like special food packaging, cold chains, germ free preservation. He concluded his speech by mentioning new areas of collaborations and new agriculture technology for both the countries hoping the Japanese technologies will be able to contribute to the Indian agriculture and help in achieving the goal of doubling the farmer's income.

Session 1: Japanese Agriculture and Indian market

Mr. Jun Kuroki, General Manager, Mizuho Bank, Ltd., New Delhi Branch

He mentioned the Japanese investments made in India and highlighted that India from year 2002 to 2018 has received more than USD 28 billion from Japan making it 3rd biggest FDI source for India. It's interesting to note 1st and 2nd positions are filled by Singapore and Mauritius. In FY 2016-17, Japan invested USD 4.7 billion in India, this figure is greater by 14% than investment made by US, German and France in that period. He added, about 70% Japanese investments goes to Make in India initiative by PM Narendra Modi. Focusing on the importance of food processing sector, he said it to be the dominating sector in near future. He added, about 10% of agro output is processed in India and which is far less than the total output therefore India offers has huge opportunities for Japanese food processing companies. As evidence, every year around 70-100 new Japanese companies enter into India, and once they succeed they expand to other geographies of India, displaying their commitments. He shared approach that could be helpful for Japanese companies to enter Indian Market- Product, Profile, diversification, commercial and strategic alliance with Indian companies, strategic alliance with co- competitors and domestic and export market. The experts of Mizuho bank advise companies to look into 3 strategic points to enter into Indian Market-(1) Highly populated states and metropolis, (2) to look at huge opportunities with less competition in B2B market, (3) actively look for joint venture opportunity with local players. He shared the list of Japanese companies operating in food sector of India, thanking the governments of both nations for their cooperation. Japanese companies in food and agri sector have been increasingly establishing themselves in India. Majority of these companies are in B2B business, some companies are in B2C business too. India is of strategic importance for the global food value chain strategy of Ministry of Agriculture, Forestry and Fisheries, Govt. of Japan. He added that Mizuho Financial Grp have been working closely with MOAFF to prepare an Indian market entry guide for supporting Japanese food and agriculture businesses in India and also assisting them for the cold chain projects and processing plants in India. He ended his talk by introducing his organization Mizuho which is contributing to Agriculture industry via their financial solutions. Mizuho bank is operating in India from more than 2 decades and operating with 6 offices and working closely with those states to catalyze Japanese investments in India.

Session 2: New Technologies about Germ-free Preservation and Transportation for Fruits and Vegetable

Mr. Shigeki KAWAKAMI, Associate Professor, Osaka University Institute of Industrial Science and Technology

He introduced the new technology for freshness preservation of flowers and food products. First is to control the ethylene gas and second is sterilization technique. He described about the first method, controlling the ethylene gas via sheet which is called fresh mama. The sheet decomposes the ethylene gas. In the case of green tomatoes, this sheet suppresses the ethylene gas concentration. The sheet has 2 functions- (1) ethylene dehydration function and (2) microbial suppression function. He showed the process how fresh mama keeps the fruits and flowers fresh for long time. It helps reduce food loss from 30% to under 10%.

This new technology is effective at room temperature, and help to overcome “heat shock” throughout transportation.

Session 3: Introduction of Sakata Seed and its operation in India

Dr. Jai Singh, Managing Director & CEO, Sakata Seed India Co., Ltd

Dr. Jai Singh introduced Sakata seeds which deal in vegetable and flower seeds. Sakata seed in Japan is 105 yrs old company and along with vegetable and flower seeds in japan it also deals in young flower seedlings and lax seedlings. He stated that Sakata's always focused its products according to

customer's preference and they believe in innovation, quality, reliability and service which is the reason of their global presence. In India, the company started in 2010 and as India has diverse climatic conditions; Sakata screened its products according to the local area to suit the farmers requirements. Further he added, they are also providing extension services to farmers, where they plant Sakata seeds along with their local grown seeds to demonstrate the difference between the two to create trust among the farmers for the product they are buying. He ended his talk by highlighting Sakata's achievements, shared it covers 70% of market in broccoli being No. 1 in china. Sakata broccoli seeds can be grown in hot and humid climates and supplied to market almost 10 months in a year. Sakata is developing an R&D center in Bangalore to get in all the technology to Indian market and thus adding to the aim of doubling the farmers income.

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Session 4: Yanmar's operation in India and paddy mechanization

Mr. Arul Jothi S, Deputy General Manager, Yanmar Coromandel Agrisolutions Pvt. Ltd. (YCAS)

Mr. Rajat Kanti Ghose, Senior Manager, Yanmar Coromandel Agrisolutions Pvt. Ltd. (YCAS)

They introduced Yanmar which started in July 2014 in India with its head office in Chennai. Yanmar is the pioneer for small engines, has JV with Coromondal, with 6 business units established as of now and has developed 3 Agri support centers. They introduced 2 major equipment's- combined harvester 70 HP, rice transplanter starting from 4 row to 6 row. Yanmar is focusing majorly on 4 paddy states- Tamil Nadu, Andhra Pradesh, Orissa and West Bengal. He pointed Yanmar to be the first company to introduce agri support centers in India in different places to help farmers about increasing the productivity via using new technology. They have training labs in support centers to teach farmers about growing nursery, cultivation which is done every week. They believe in providing demo to farmers before using of machineries to gain the trust and it also boost their sales. Lastly, they emphasized on modified map type nursery which is cost effective which uses simple techniques and is ecological.

Session 5: Innovation for Farm to Fork industry between Japan and India

Ms. Naho Shigeta, Managing Director, InfoBridge Holdings Group Ltd

She commenced the session by introducing her organization Infobridge, started in 2006. She presented case study regarding agriculture and food processing in India. She stressed in India we can create a profitable FPOs network. They started AGRIBUDDY project 2 years ago in which rural entrepreneurs are created which were named buddy. 20-30 farmers are invited and their data is recorded- farming data, farmers family data, crop data etc. This data is shared with financial institutions which provide credit to farmers. She mentioned Infobridge doesnot provide any cash to farmers. They calculate how much we have to invest and how much we should invest and what kind of seeds and fertilizers we should use.

She mentioned that to overcome the language barriers in rural areas to understand what they want there is a need to work on adaptation and collaboration with local team. She rose the question-" why not we create an ecosystem in India of farm to fork?". India depends 70% on agriculture and it also has the biggest population with increasing middle class. And as the

middle class population is increasing the food habits are also changing and we need to think what kind of innovations and what kind of social developments we need to bring in to create that ecosystem. In the end, she concluded, that there is a need to focus on issues we have to change then we can combine technology and innovations and create a new step. The aim is increasing collaboration between Japan and India. For the next year she wishes to focus on 2 things for this- how to increase corporate collaboration in India and second is international collaborations. Like, Japan has great technologies and experience and India is much stronger than japan in software technology, so a combination of different aspects can be created to develop new innovation or technology for the world.

Session 6: Japanese Cold chain technologies

Mr. Masato IIZUKA, General Manager, Senko Company Limited
Mr. Tomoyuki MATSUDA, Manager, Senko Company Limited

They started with the current situation of disposed agri food products in India and gross food processing in India. Almost 40% of total amount of agricultural products have been abolished after harvest due to distribution channels, shortage of factories of food processing and storage facilities and transportation distances. On the other hand, the portion of food processing industry accounts for a small percentage at this moment. But in coming years we see this percentage doubling and it is an opportunity for importers to sustain the food processing industry. He then introduced Senko and the business areas. Senko, 100 yr old company, is working in logistics for major retails especially cold chain logistics which is highly sophisticated technical system. He pointed that the unit cost of product is less, but the storage and transportation cost is high, so in order to get rid of this we can provide fresh express service for food processing industries. The fresh express service means that a small lot is delivered to retailers of many products. He listed 3 points to make lower cost operations – (1) special vehicle (2) (3) high tech warehouse which is fully automated. He concluded, India is known as one of the largest agricultural country but unfortunately it does not have effective cold chain technology which can be used for preserving perishable commodities and their distribution. By introducing and promoting Japanese cold chain operations in India, we can deduce such food losses and take India and japan to prosperity.

Session 7: Japanese Fruit Sorting technologies

Mr. Dr. Rajendra Peter, Assistant Advisor, Shibuya Seiki Co. Ltd.
He commenced the session by introducing Shibuya Seiki, a group of 9 companies, parent company developing robotics and sterilizers, cell technology, also involved in packaging and lazer cutting technology. He then threw light on the food quality aspects. He mentioned, in India, E- commerce is emerging very fast for the perishables also but there is no quality assurance to customers for the things they buy. They may have 2 mangoes one of which may be rotten and one might be not that sweet which customer is unaware of, so we need to focus on quality assurance. In japan, Shibuya Seiki owns 65% market of grading and sorting machines assuring quality products to the customers. They provide 2 types of conveying system and also have an internal inspection system figuring out the skin defects in fruits which cannot be seen from human eye. They also have traceability system that tells where the fruit was grown and who was the owner and what all are the statistics. He ended his talk by mentioning, all the techniques they have applied in Japan, wish to do same for Indian market assuring the quality of food products.

After the sessions the Japanese Agriculture Special Session was released on Agriculture Today by Mr. Kenko SONE, Minister (Economics and Development), Embassy of Japan, Mr. Takami NAKADA, Deputy Assistant Minister, Ministry of Agriculture, Forestry and Fisheries of Japan and Mr. C.P. Shoran, Executive Director, ICFA.

Special Remarks, by Mr. CP Shoran, thanking all the Japanese Delegations for the session and recognizing the work of Japanese companies in India mentioning the collaboration between the two countries is increasingly acquiring a third country dimension.

Vote of Thanks was given by Mr. Tetsuya UETAKE, First Secretary (Agriculture and Food), Embassy of Japan in India, thanking all the participants and ICFA for organizing Indo Japan Session.

Concluding Ceremony

Concluding Ceremony of Agro World, 2018

Dignitaries on the Dias

1. Sh. G Khurshid A Ganai, Advisor to Hon'ble Governor, Jammu and Kashmir
2. Prof. Panjab Singh, President, National Academy of Agriculture Sciences
3. Dr Ashok Dalwai, IAS – Chairman, PM Task for Doubling Farmers Income
4. Sh. R G Agarwal, Chairman, Dhanuka Group
5. Sh. Yudhvir Singh, Director - South Asia International Farmers Alliance
6. Sh. Behzad Mirzai, Chairman Asian - Africa Committee HKGCC
7. H. E. Mr. Wassfi Hassan El-Sreihin, Secretary General - African-Asian Rural Development Organization
8. Dr. Raja Ram Tripathi, Convener – All India Farmer's Alliance
9. Dr. MJ Khan, Chairman – ICFA
10. Dr. Alok Sinha, Director General - ICFA
11. Ms. Mamta Jain, Director - ICFA
12. Mr. CP Shoran, Director - ICFA

Welcome address by Dr. Alok Sinha: welcomed all the dignitaries and expressed his feelings towards a successful event as Agro World came to an end.

Sh. Yudhvir Singh: showed his gratitude to all the farmers and agriculture experts/ scientists present. At first, he stated his observation about lack of information amongst the farmers associated with different sectors of agriculture and the growing demands of the nation. He thought that Agro World is a great initiative towards providing information, technical knowledge and creating awareness amongst the farmers and connecting them with agriculture industries through different sessions and exhibitions. He stressed on the fact that how various sectors of agriculture and food is related with each other and how the farmers have started to find their ways to establish not only their cultivation but also "agro processing units". He concluded his speech with an idea of instituting the event can be useful to the farmers as a training camp so that they can further communicate their knowledge gained to others and also a translator for better understanding of the farmers or those who do not understand English.

Sh. R G Agarwal: Appreciation to the private sector initiating such events for farmers but short of wide spread about this is one of the drawbacks as most of the farmers do not get the benefit of attending the same. A conference being held on different sectors of the agriculture, quite frequently, is a revolutionary step as it focuses on food security, nutrition and health security. As the population increases, the demand also increases due to which it becomes important to extend the new technical as well as theoretical familiarity to the cultivators. He strained on the inability of Indian government to expand education amid farmers. As per his conversation with Deputy Agriculture minister and ambassador of Vietnam, he realised that somewhere or the other India lacks dedication which is being the reason that Vietnam has progressed more than India in such a short period of time. His ideology of making new India by 2022 was based on few things- adoption of new technology, availability of water resources, marketing strategies, awareness of using authentic fertilizers or pesticides and removing the confusion or misconception of organic farming. In the end, being Indians, we should strive towards the mission new India with as much as contribution and dedication.

Mr. Sreihin: appreciated everyone's presence and expressed his gratitude for the event. He addressed the event as Mega and as international. The international conferences first World Agriculture Prize presented by Hon'ble Vice - President of India in presence of other ministers to Prof. M S Swaminathan. He hoped that the international delegates would have met their expectations from Agro World and witnessed a huge development achieved by India.
He found the expo at IARI remarkable and wished ICFA success in future.

Dr. Raja Ram Tripathi: The 3 days event is about to end and found the farmers are in few numbers. Such a mesmerising event for agriculture is only seen in outside India, celebrating

agriculture sector at such a grand platform. These events are required to make cultivation a profitable deal. The farmers are tired of listening to speeches and lectures; hence, they are more interested in exhibitions and stalls. Media plays an important role and media is not interested in showcasing farmers. Farmers only make headlines when a suicide case occurs. In this democracy, where media is a significant body there farmers and their issues are missing; therefore, this has been a reason where all the experts and associations all together can't make or publicise such events. Further, Dr. Tripathi partly agrees with Mr. Agarwal that we lack dedication and India needs food security and with that farmers also need to learn marketing and networking as well. Farmers are learning from these industrialists as there are many farmers who have achieved success with their hard work apart from suicide stories. Those farmers had this platform to be heard of although media didn't. ICFA has made an inspiring event that agriculture sector has a lot of opportunities and now is the time that farmers should learn entrepreneurship, precision, logistic and marketing for development of Agriculture sector.

He also requested the government official to include farmers in the committee and remove the bogus personalities. Talking about global marketing, farmers are not afraid of the pulses exported but the government should analyse the data rather than picturing fake statistics to general public. Farmers would compete with the global markets not with a stick but this time with brains and unity.

Sh. Behzad Mirzai: as experienced and learned through all the conferences, the connection or partnership between the farmers as producers- the important part of the chain, the government as policy makers and the scientist as creators or opportunity builders who also creates possibilities of agriculture in a scientific way to grow as the climate has been changing it affects the crop, their productivity. The farmers need to be educated through the scientists who build the crop in more efficient and productive way. With a commerce background and coming from Hong Kong, 96% of GDP is constituted by service as agriculture is not well known. Being a part of such a big organisation, Hong Kong is 1-5 when it comes to investment in different industries and sector which includes agriculture. India has a good eco system, enough resources in terms of knowledge and science and an accommodating government with plenty of farmers and their farms who produces products for such a big nation which also includes commerce and exports. Commerce plays vivid role in this as the production requires investment and entrepreneurship. The youth should be encourages to be "Agro-preneurs" by building their interest in agriculture and that would be possible with commerce industry involved in it. Entrepreneurs should find leverage from all the resources available. Commerce helps to product to enter the global market especially Hong Kong as it has infrastructure and free economy also trade with India. As Hong Kong comprises of Indian banks, which are there for more than 50 years, it is a great opportunity to help Indian agriculture sector and farmers.

Dr Ashok Dalwai: with a welcome note he agreed with the idea of a translator being appointed as India has a diverse language. Dr. Panjab Singh has been identified by ICFA and being awarded a Life Time Achievement Award which he found remarkable and also instituting World Agriculture Prize in India. This is a step towards providing significance to agriculture and recognising brilliant minds behind the revolution. As a new initiative, it is inspiring and motivating those who are concerned with agriculture. From past 2-3 years it has been observed that the educated class like IT professionals, graduates from IIT and NIT are returning back to their roots that is agriculture and as proposed by Hon'ble Prime Minster, income approach to agriculture and doubling the farmers income has to be given more emphasise and ultimately this would lead to more people joining agriculture. It is the duty of the people to bring a new turns in agriculture and food sector so that further, more people will be engaged in farming. Farming is not an ancient activity, however, it is present and future and farmer are a part of it.

Sustainable survival of the agriculture is based on to the responsibilities of the cultivator, the producer of inputs, the one who markets the output, the researcher and scientists who gives new knowledge. The problems and challenges needs to be tackled or solved and this is why we all are alive. One of the biggest problems with Indian agriculture and other developing countries is that there is a surplus in production but the value of it is not coming their way, the ratio of demand and supply not proportionate, enhance, market falls and this is the level where India is standing now. The solution for this is to produce those who have more demand but less supple, for example, every year 700 billion oil seeds are imported whereas, India has surplus of paddy crops and this problem can be solved by adopting new crop geometry.

Sustainability and bio-diversity is important not only in India but in other countries as well. On one hand, The Indo gigantic plane region is responsible for the nation's food security and as observed, the water and soil resources in these regions has

depleted. 24 million hectares of land in India has degraded out of 141 million hectares, it is acidic alkaline saline, which cannot be used for cultivation. With sustainable technology and practices, higher productivity and intensive cultivation can be achieved. On another hand, our profit motives made us shift to Mono-cropping, for example, America is full of corn belts or soya bean belts which have destroyed bio-diversity. Food patterns need to be bio-diversified. At the end he stated, we should understand the challenges and make agriculture sustainable for our survival and with this event where people gather from different parts of the world can work towards it and learn from each other.

Life time achievement award to Dr. Panjab Singh presented by Sh. G Khurshid A Ganai, Advisor to Hon'ble Governor, Jammu and Kashmir

Dr. Panjab Singh: Dr. Singh started with his relation with Dr. MJ Khan and how they both are connected to each other. Appreciated the event and constitution of First World Agriculture Prize by ICFA. He agreed with Dr. Dalwai that production is an issue and the partnership of farmers and scientists has helped the nation. We should not criticise Indian agriculture as we have all the resources available whether food, material etc. It is often said that farming has improved but farmers haven't and we must address farmer's issues now. Agriculture has a tremendous scope of entrepreneurship although it is a challenging job. Farmers are being used especially by politicians and not being given the benefit of it and even the farmer leaders have turned into politicians and all the progressive farmers have hidden behind them. The possibility of progression can be seen with farmers partnering with industries. The kind of farming and food system needs to be changed because we are losing our resources now whether be human resources, bio-diversity, land, water even though India has the best land.

The world has plenty of food that can feed the current population but due to the wastage it all goes away, the reason behind India housing the largest number of poor people today. The wastage of 1/3rd of the global produce. We should spend more on rural infrastructure, warehouses and cold chains for processing, value addition and for this entrepreneurs can be needed. Create jobs of 50-20,000 rupees right in the villages so that farmers have other way of income generation and won't quite farming. The change in farming system can be anything from space farming to sea farming, vertical farming, hydroponics, aquaponics, genomics and genetic modified plants. Changing of food habits is another thing and predictions are that we can carry food in hand i.e. plant grown meat, cultured meat, invetro meat, omega fish 3 etc. is being researched today because the nature will demand so. As we move forward to cultivate and grow meat it requires water and land which is not in abundance and needs to be stopped. Scientists and researchers are working on another green revolution, sustainability development, saving bio diversity and restoring fertility to be brought in practice to succeed. Global players have changed farming over the years and it will keep on changing due to other factors as well. We need to breed agriculture based entrepreneurs who can take up the challenge and have a different perspective. He concluded by saying, we can achieve what we are planning to achieve and India will finally lead the world.

Sh. G Khurshid A Ganai: he welcomed all the guests and delegates and showed his gratitude to ICFA and specially Dr. MJ Khan. He believed that farmers need to see things for better operations as we believe what we see. Live demonstrations of methods, technology, and process should be available for farmers for knowledge purposes. He agreed that the future is what told by Dr. Singh and agriculture technocrats and administers should follow the steps and the guidelines. Kashmir has a region which is rain fed and that is quite a challenge, apart from this the farmers of that region has engaged themselves into horticulture which is their source of income but maize which is a stable crop/ cereal has still been done as subsistence farming because of 2 reasons- a. Rain fed region and b. They are small farmers who cannot use inputs or technology. According to him, technology or modern techniques have not been utilised by the farmers at ground level neither we have constituted towards it. The farmers are not being given much support or hand holding in such matters and this can be an issue. India has quite a large number of farmers but they all are small and marginal which constrains them from using new technologies and inputs. Farmers grow those crops which they are dependent on, for example, when asked by Kashmir farmers to practice floriculture or horticulture but the transition which is required is difficult for them; we must ensure security, incentives to them which would motivate them to switch towards high yield farming or income. Lastly he stressed towards youth not being involved in farming even though we have heard a lot of success stories. The big industries in private sectors should hold hands and guide small industries for progression. Youth needs to be shown the atmosphere of the agribusiness to engage them into it which definitely involves good returns

and incentives. He ended his note by thanking the farmers and inviting the people on the dais to Jammu and Kashmir.

Dr. MJ Khan presented mementos to all the speakers on the dais and delivered his concluding thoughts.

Dr. MJ Khan: India is a diverse country and has diverse business models as well. We can learn and also spread our knowledge into the world. Global Leadership Summit and Agro World has initiated this wide spread of knowledge and 11 International Conferences, 600 agri-startups were brought together and different conventions of progressive farmers. Further, he congratulated Dr. Panjab Singh and all the awardees. Lastly, he thanked all his colleagues for making the event successful and the event anchor Ms. Sapna Gupta for her wonderful support and performance, IARI pusa fro infrastructure, caterers, media and all those who helped ICFA to make Agro World a great success.

India Agribusiness Award 2018

1. Dr. AK Tyagi, Executive Director, Haldiram Snacks Pvt Ltd

Dr. A K Tyagi, Executive Director, Haldiram Snacks Pvt ltd, has directed the company's global strategy for more than a decade and helped the Group to increase its market share through expansion, various green field projects, development of new innovative products and expanding network. Under Dr. Tyagi's leadership, the Company has grown 13 times over the past 12 years and established itself as a market leader in Salty Snacks and a leading brand within FMCG Sector inspite of stiff competition. A Graduate in Physics, Chemistry and Mathematics and Masters in Food Technology, MBA and Ph. D. in Business Administration, Dr. Tyagi has offered a visionary leadership to the Company. With proper organization in place and vision to increase its market share continuously, the Company has already made its road to expand production through in house expansion as well as third party operations and to grow inorganically through acquisitions. Since he joined 2006, the group's annual FMCG turnover has risen from Rs. 137 Crore to Rs.2950 Crore in 2017-18. Under his leadership and vision, the Company is exporting to 70 countries across the Globe taking the export turnover to Rs.270 Crores.

2. Mr. Pankaj Agarwal, MD, Treta Agro (Just Organik)

Just Organik, which signifies the Just and Ethical supplies of Organic produce, is an agriculture produce oriented group with the goal to provide access to safe and healthy food to the consumer at reasonable rates. Operating in Pulses, Millets, Cereals, Spices, Oils, Tea and Sweeteners categories, the growth of the company has been beyond the industry growth

and it has achieved multifold increase in the sales volumes year after year. In a very short span of time, Treat Agro has become a prominent domestic player in the organic segment with exports to USA, Australia, UK, France, Middle East and Singapore. The company was awarded the "Organic India Excellence Award". Owned by Tetra Agro Pvt. Ltd., Just Organik sources majority of its produce from the Farmer groups in Uttarakhand, Rajasthan and MP. Under the guidance of Mr Pankaj Agarwal, MD, Just Organik, has been successful in providing forward linkage to the farmer groups while recognizing the geographical diversity and the value of each of these farmers' group that add to the organic cause. Treat Agro has led the cause of women empowerment and 95% of the operational staff is all women and most of these women are the first time workers.

3. Mr. Gopal Bihani, Head - Farm Fresh Business, Future Group

Future Group, a leading national retailer has a foot print in more than 260 cities with more than 500 Million annual

customers footfall. Farm Fresh business, unit of Future Consumer Limited is a giant in the business of sourcing of fruits & vegetables from domestic and international market, doing value addition, selling & distribution to retail chain, food processing units and general trade market. **In the span of just three years**, fruits & vegetables **Business at a group level has reached closer to INR 12 billion and became the largest business category of Fruits & Vegetables in the country**. Gopal Bihani, the Head of Farm Fresh Business for the Future Group with more than 20 years of rich working experience in Retailing, food processing, FMCG & Food category, has been instrumental for creating & expanding integrated value chain Pan India from farm to retail customers, food processing units and general trade. His passion to bring growers and customers closer to each other through an end to end sustainable business model has paid fruitful dividends to the company and public in general.

4. **Mr. RG Agarwal, Chairman, Dhanuka Agritech Limited**

Manufacturer of a wide range of farm input products, Dhanuka Agritech Limited has a pan-India presence in all major states in India. Dhanuka Agritech ,the top five companies in India, in Brand sales has more than 200 registrations and 500 active SKUs. Having the largest market penetrations, Dhanuka maintains a close relationship with farmers and continually interacts with them through Krishak Goshthi organized in different parts of India. Under the dynamic chairmanship of RG Agarwal, Dhanuka, had been a forerunner in serving the farming community by advocating a holistic concept of 'Dhanuka Kheti Ki Nai Takneek' so as to sustainably enhance the crop productivity and farmers' income. In order to encourage innovative and progressive farmers and related organizations and institutions to meet the productivity, income and sustainability goals, Dhanuka Group instituted "**Dhanuka Innovative Agriculture Awards**". The company has amassed innumerable awards and recognition, notable among them are, Agriculture Leadership Award, Corporate Award, National Productivity Council Award, Udyog Vibhushan Award. The company was awarded Forbes Asia 'Best Under a Billion Company' Award three times and Dhanuka Agritech Limited has also bagged a place in the prestigious list of India's exemplary Companies: INC. INDIA - HALL OF FAME – 2014

5. Ms. Shabnam Hussain, Product Stewardship Lead, South Asia, Corteva

Corteva Agriscience, the Agriculture division of Dow DuPont has always displayed a deep commitment towards environment sustainability by showcasing the safe and responsible use of their product. In the year 2018, they reached 1,10,932 stakeholders which including 1258 trade channel partners, 780 Government officials and Key influencers and 1000 Agriculture and School students and researchers with the message of safe and responsible use of crop protection products via farmer meetings and leveraging digital platforms. Under the leadership of Shabnam Hussain, Product Stewardship Lead, South Asia, Corteva, the Sales and marketing teams did an outstanding job by conducting more than 250 farmer meeting across India. Collaborating with five agriculture universities, agriculture graduates were trained so that they can disseminate the Product Stewardship practices and knowledge to the farmers. Corteva is proactive when it comes to safety and they have distributed PPE kits to farmer for safe and responsible use of Products. They also have been leveraging digital platforms like farmer apps and Whatsapp platform to send messages on Good Stewardship Practices. Corteva has always furthered the cause of sustainable agriculture and has taken up numerous initiatives to effect this change.

6. Mr. Rajpal Singh Gandhi, CMD, GVS Biotech Pvt. Ltd

A farmer turned entrepreneur, Mr. Rajpal Singh Gandhi, is a stellar example in agripreneurship, who identified a potential opportunity and turned into an excellent agribusiness. Mr. Singh, Chairman of Green Valley Stevia Farm, is the pioneer for expanding the business potential of a zero calorie natural sweetener, Stevia commonly known as Mithi Tulsi. He set up extraction unit in India for producing stevia from the dry leaves, a first of a kind unit in the country, approved and supported by DBT/ BIRAC under Ministry of Science & Technology, New Delhi under Innovation scheme SBIRI. Starting with stevia farming in 2003-04 and realizing the lack of processing facility, Mr. Singh took up the challenge to establish this facility. Committed to bring Sweet Revolution with Stevia under the Mission of wealthy farmer and healthy society, Mr. Gandhi's struggle is still on to make this safe herbal sugar as ingredient of food industry and part of every kitchen. Mr. Gandhi has been a recipient of many awards and honours such as Farming Leadership Award in 2014 by ICFA, Punjab State award in 2014 and 2015 by Hon'ble Chief Minister of the State.

7. Mr. Raju Kapoor, Director-Industry & Public Affairs, FMC India Pvt Limited

FMC Professional Solutions, part of the Agricultural Products Group, has earned a reputation for offering powerful, dependable products while consistently breaking new ground in pest control technology. With the presence in more than 80 countries, FMC serves as a leader in providing termite and vector management solutions. As a leading global company FMC combines state of the art research and development facilities with technical expertise to create innovations for professional and specialized pest control situations. In India, the company has been involved in developing, marketing and selling all major classes of crop protection chemicals and plant growth regulators, which are used extensively in agriculture to enhance crop yield and quality by controlling a broad spectrum of insects, weeds and diseases. With powerful brands, extensive distribution network, expertise in local markets, crop / non-crop segments, successful strategic alliances and state of art R&D facility in Bangalore, under the powerful leadership of Mr. Raju Kapoor who serves as the Director-Industry & Public Affairs, FMC India Pvt Limited has developed into one of the leading companies in the Agro Chemical Industry in India.

8. Ms. Nancy Barry, President, Enterprise Solutions to Poverty

Nancy Barry, President of Enterprise Solutions to Poverty(ESP), over the last three decades, has engaged private sector leaders, policy makers and local organizations in emerging economies to build finance and enterprise systems that work for the poor majority. ESP works with over 150 companies and banks in India, China, Mexico, Colombia and Kenya to build profitable and inclusive business strategies. Nancy Barry´s thirty years of experience in building inclusive industry and financial solutions to poverty has enabled ESP to be a resource to financial institutions on building banking correspondent agent, mobile banking and micro-insurance solutions for rural India. Nancy serves on the Advisory Board for Strategy Development of China Mobile. Nancy has also served as the President of the Women´s World Banking, the largest microfinance network providing financial services to over 20 million low income clients and has also led various leadership positions at the World Bank, Named as one of the 100 Most Powerful Women in the World by Forbes magazine and one of America´s 20 Best Leaders by US News and World Report, Ms. Barry has an economics degree from Stanford University and an MBA from Harvard Business School.

9. Mr. Vinod Lahoti, MD, Geolife Agritech India Pvt. Ltd.

Mr. Vinod Kumar Lahoti, Chairman and Managing Director of Geolife Group, nurtures the vision of residue free farming and Organic Food Technology. Geolife, a fast growing group of an ambitious multi-activity business maintains an excellent track record of its growth in India. The Agri division of this energetic group, led by qualified professionals, started initially with retailing of Fertilizers, Seeds & Pesticides and then went onto research on Organic Agri Inputs. Focussing on unique, specialty and innovative offerings for the farming community, Geolife Organics was launched. Geolife brand has emerged well and a brand resonance has been created with its stakeholders inclusive of distributors, dealers, retailers and most importantly the farmers. Mr. Vinod Lahoti has metamorphosed the business venture into one of the fastest growing Agro nanotechnology company offering Biocontrol products, Biostimulants and Manufacturers of worlds' highest percentage of Organic NPK. Mr. Vinod Lahoti has been conferred with Bharat Jyoti Award in 2017, Most Influential Rural Marketing Award and Recognition for contribution to community in USA, 2014 and other international awards for achieving business success and his contribution to social welfare in a short span.

10. Smt. K Nirmala, MD, Telangana State Coopertive Oilseeds Growers Federation Ltd

Telangana State Cooperative Oilseeds Growers Federation Ltd (TSOILFED), established with the vision to increase oilseed production, has markedly achieved its goals and continues to stand tall since 1983. With latest technology in place, the cooperative has achieved highest OER of 18.43% which is an all time record and it became the first in achieving highest oil recovery for the year 2017. Telangana State Oil Palm farmers were paid highest FFB price of Rs. 10,048/- during the month of May'18 which is also all time record in India. Marketed under the brand name of VIJAYA Edible Oils, the final product of TSOILFED is marketed all over Telangana to various Public Distributing Systems, like Integrated Child Development Services, Department of Women Development & Child Welfare, Child Development Project Offices, Raitu Bazars, Hostels covered under Girijan Co-operative Societies and Anganwadis all over the Telangana State by maintaining the competitive price and with good quality. Under the able leadership of T Sudhakar Reddy, TSOILFED has expanded its operations with the application of many advanced technologies. TSOILFED was

also awarded the best Innovative award under Large Industries by Telangana Government.

11. Mr. Naresh Deshmukh, Executive Vice President - Marketing & Strategy, Smartchem Technologies Limited (STL)

SmartchemTechnologies Limited (STL), a wholly owned subsidiary of DFPCL, isone of India's largest and most renowned manufacturers of bulkand speciality fertilisers. Marketed under its flagship brand,Mahadhan, the company's fertilisers has grown from a local, toa regional and national brand. 'SMARTEK TECHNOLOGY' - anew revolutionary fertiliser –introduced by SmartChemTechnologies Limited utilises a unique technology which minimizescaking, regulates dust emission, enhances the appearance, increasesthe agronomic efficacy and modifies the nutrient releasecharacteristics. SMARTEK with the unique property of locking waterand nutrients to the soil particles during abnormal conditions andslowly releasing water and nutrients to plant roots, improves thecrop yield by 15 to 20%. Smartek has been a very strong innovation,which maximises yield, quality of the produce and saleability of theproduce. The quality of the produce has also helped farmers command ahigher price and sell their products more easily in the market.Naresh Deshmukh, Executive Vice President - Marketing & Strategy, Smartchem Technologies Limited (STL), hasbeen iinsrumental in expanding the reach of the product and has thushelped in significantly improving the financial stability andlives of farmers across India.

12. Mr. Manoj Rajan, MD & CEO, Rashtriya e Market Services Limited

Rashtriya eMarket Services (ReMS), special purpose vehicle formed to implement the ambitious agricultural reforms agenda of "One State - One Market" for Karnataka, is the role model for the National Agricultural Markets. A joint venture of Government of Karnataka & NCDEX e Markets Ltd., ReMS offers complete technology requirement through its Unified Market Platform (UMP) and management solution for modernizing primary agricultural markets. ReMS has ushered in the new structure in agricultural marketing of the state and have enhanced transparency, efficiency, simplified operations and increased competition by enabling boundary less participation of traders. This innovative model has contributed in growth of Agri-Business and has created significant impact in the agri-marketing sector of Karnataka. Karnataka Model of market reforms was recognized in "Economic Survey 2014-15", Government of India for implementing various initiatives in the agricultural marketing Sector. ReMS was also the recipient of Gems of Digital India Award 2017 for Excellence in e Governance and DL Shah Award - Platinum in the 11th National Quality Conclave. Karnataka was acknowledged as model state in the field of agricultural marketing reforms in "National Conference of Agriculture" chaired by Hon'ble Prime Minister held on January 2016, in Sikkim.

13. Mr. Abdul Awal Mintoo, CEO, Lal Teer Seed Limited

Lal Teer Seed Limited, the first Research-based and the largest seed company in private sector in Bangladesh, is the only ISO 9001:2008 certified seed company in the country. Engaged in developing, producing, processing and marketing high yielding seeds of good quality to develop sustainable foundation of agriculture and food security of the country and the world at large, Lal Teer at present markets 131 varieties of 33 vegetable crops in the country. The company develops high yielding year round nutritious and ecologically sustainable crop varieties for supply to the growers to alleviate the nutritional deficiency of the population of the country. Under the able leadership of Abdul Awal Mintoo, CEO of Lal Teer Seed Limited, the company has been successful in developing 55 hybrids and 76 Open Pollinated varieties. Lal Teer also markets 8 hybrid varieties of rice and 2 hybrid varieties of maize and 1 hybrid variety of cotton. Associating with about 6,200 contract growers along with 28,173 workers in 14 different production zones, the company has been successfully producing the best quality vegetable seeds. With a team of skilled researchers, the company has been successful in supplying highly environmentally adaptable and quality vegetable seeds which in turn has led to minimize seed import and build capacity to export seed.

14. Mr. Kaushal Jaiswal, MD, Rivulis Irrigation India Pvt. Ltd

Rivulis Irrigation Ltd, headquartered in Israel, provides water management solutions in more than 30 countries and has distribution partnership in 100 plus nations. A micro-irrigation solutions innovator, Rivulis has been offering the global agriculture sector the broadest portfolio in the market and the most comprehensive range of services. Rivulis Irrigation India Pvt Ltd is the fastest growing Micro Irrigation Company in India with a CAGR of 65 %. In last three years Rivulis India has doubled its production capacity and tripled the sales revenue. In last three years Rivulis has brought drip irrigation technology in the fields of more than 34,000

farmers and has been consistently creating awareness about water management practices. With innovation as its core values for growth, Rivulis has brought precision irrigation technology through its subsidiary Manna Irrigation in India. The company has been putting sincere efforts for helping farmers in adopting smart irrigation techniques by making satellite technology accessible at farmer's doorstep across India. Apart from empanelment with the PMKSY and corresponding schemes in 14 states, it is working closely with Tata Trust , Aga Khan Foundation, SWADES Foundation, University of Horticulture Sciences, Central Institute of Cotton Research and several sugar factories in the states of Uttar Pradesh, Maharashtra and Tamil Nadu.

15. Dr. M H Mehta, Chirman, Gujarat Life Sciences

An ISO 9001:2008 company today, Gujarat Life Sciences (P.) Ltd (GLS) was initially established as a not for profit, non-governmental organization by a team of young scientists-entrepreneurs. While that organization, The Science Ashram has emerged as one of the strongest institutions in biotechnology promotion, education and biosafety, GLS's association with the State Government and State Agricultural University enable the establishment of this highly successful venture. With other group company Global Life Sciences, GLS has not only developed new generation biotech-based products but also provided breakthrough solutions to safer, cost effective & eco-friendly products and technologies for agriculture, environment and health-care. GLS's all bio-products are 100% organic and certified by ECOCERT. GLS houses state-of-the-art R&D facilities to carry out research and product development in varied fields like biotechnology, microbiology, biochemistry, agronomy and life sciences. Besides in-house research, GLS also provides the facilities for contract research, training programmes and links with universities to develop young talent in the field of application oriented research. The company under the leadership of Dr. M. H. Mehta, one of the most respected scientists, technocrat, educationalist and administrator in India and abroad, has emerged as a pioneer in the area of the emerging Microbial Consortia Technology.

16. Dr. N. K. Dadlani, Director, Asia and Pacific Seed Association

Asia and Pacific Seed Association (APSA), with a mission to propagate sustainable agriculture through the production and trade of quality seeds for the world, has been in the forefront in addressing the needs and formulating recommendations to improve seed sector performance. APSA has always promoted the use of quality seed and stimulated technical and business co-operation among its members. Under the strong leadership of Dr. N. K. Dadlani, the Director of APSA, the organization has always represented the interests of the members at regional and international levels and facilitated the international movement and marketing of seeds and planting materials. APSA has also facilitated and contributed to the harmonization of regulatory procedures for seed and seed related issues toward internationally accepted standards. They have also promoted the establishment and protection of intellectual property rights for seeds, plant varieties and associated technologies. The Asian Seed Congress, their biggest annual event, attracts seed industry professionals from throughout the Asia Pacific regions and the world. With their presence, APSA has been able to maintain and sustain a regional forum critical in the era of global cooperation and development.

17. Shri Bijender Singh Dalal,Chairman, Haryana Kisan Club, Palwal

Pragati Kisan Club of Palwal, based in Haryana, has been hailed as one of the best platforms for local farmers. Coming into existence in 2002, the club was a gathering of farmers engaged in horticulture, vegetables production and animal husbandry. The Kisan club has served as a strong bridge between Agriculture Department and the farmers strengthened by the monthly meetings organized with the Deputy Director of Agriculture and the chairman of the Kisan club. Bijender Singh Dalal, the unopposed leader of the club, in association with IARI and Agriculture University of Hisar has been regularly conducting very useful seminars for farmers twice a year. These seminars have been proving to be useful to get better and more crop production. Mr. Dalal has won many prestigious awards for the stellar leadership exhibited by him in uniting the farmers and giving voice to their collective demands. He was also recognized in Israel for his outstanding contributions in the field of farming. He has always been committed to his role and consistently motivated the fellow farmers.

Glimpses of AgroWorld 2018

Glimpses of AgroWorld 2018

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SCHEMES UNDER ANDHRA PRADESH FOOD PROCESSING POLICY 2015-20

Sl. No.	Scheme	Eligibility	Maximum limit of grant-in-aid
1	Scheme of Food Parks i) Integrated Food Park ii) Mega Food Park	50% of Project cost 50% of Project cost	Rs.20 Crs Rs. 50 Crs
2	New Food Processing Units	25% of Project cost (Includes Plant & machinery, technical civil works)	Rs. 5 Crs and Interest subsidy 5 years from COD @ 7% (subject to Max 2 Crs)
3	Technology Up-gradation / modernization of existing FP units	25% of new/up graded equipment cost	Rs. 1 Cr
4	Setting up Primary Processing/ Collection Centres (PPCs / PCCs)	50% of Project cost	Rs. 2.50 Crs and Interest subsicy 5 years from COD @ 7% (subject to Max 1 Cr)
5	Cold chain units	35% of Project cost	Rs. 5 Crs and Interest subsidy 5 years from COD @ 7% (subject to Max 7 Crs)
6	Modernization of Abattoirs	50% cost of Plant & Machinery and Technical Civil works and other eligible items	Rs. 1 Cr
7	Reefer Vehicles	50% of cost of the reefer vehicle	Rs. 10 Lakhs each vehicle
8	Units for processing of waste produced in FP units in identified clusters	50% of Project cost	Rs. 2 Crs
9	Scheme for setting up / Upgrading Testing Labs (including NABL accreditation)		
	i) For NABL approved labs	50% of project cost	Rs. 3 Crs
	ii) For Existing Food Processing Units	50% of project cost	Rs. 3 Lakhs
	iii) For State Govt. organisations and Universities	a) 80% of eligible project b) 80% of cost of 2 technical staff in such Laboratories for 3 years	
10	Cold Chain units for Establishment of Shrimp Processing Units	50% of project cost	Rs.5 Crs and Interest Subsidy 5 years from COD @ 6% (Subject to Max 2.50 Crs)
11	Cold Chain units for Establishment of Fish Processing Units	50% of project cost	Rs.7 Crs and Interest Subsidy 5 years. from COD @ 6% (Subject to Max 2.50 Crs)

FISCAL INCENTIVES

- **Reimbursement of power consumption charges @ Rs. 1.50 per unit for 5 years / Rs.1.00 per unit for Fish & Shrimp Processing units.**
- **Reimbursement of Non-Agriculture Land Assessment (NALA) tax for the produce purchased direct from farmers.**
- **Reimbursement of 100% stamp duty, Transfer duty.**
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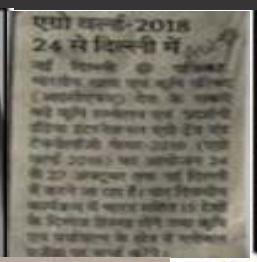
AGRO WORLD 2018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M.S. Swaminathan receives World Agriculture Prize

The cash associated with the prize will be used for creating fellowships at MSSRF


Farm loan waiver not a permanent solution


M S Swaminathan gets World Agriculture Prize NEWS TODAY


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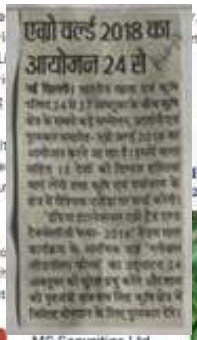
MS Swaminathan Gets First World Agriculture Prize, And $100,000

Nov 11, 2018 by Biotech Express 0 Comment

A renowned Indian geneticist a , MS Swaminathan, was recently awarded the first Worl sident Venkaiah Naidu, reported The Hindu Business L his contributions to Indian agri on food imports and achieving

While receiving the award insti Agriculture (ICFA), Swaminatha "There is no agriculture withou be commercialised."

The Vice-President called on p and to adopt a liberal approach we have the most favoured nat agriculture."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Agriculture post

VP offers Prof MS Swaminathan with World Agriculture Prize


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Tuesday, Nov 20 2018 | Time 12:17 Hrs(IST)

Prof Swaminathan to receive first World Agri prize on Oct 26

Chennai, Oct 23 (UNI) The global Jury of the First World Agriculture Prize has selected Prof M S Swaminathan, Chief architect of India's Green Revolution for the award.

The award, containing USD 100,000 would be presented by


first World Agriculture Prize to Prof. M.S. Swaminathan

October 27, 2018 Kailash Mani Tripathi

Naidu airs concern over farm populism during elections


Swaminathan gets 1st World Agriculture Prize


BUSINESS LINE

Renowned agricultural scientist and the chief architect of the green revolution in India, MS Swaminathan, was awarded the first World Agriculture Priz

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first World Agriculture Prize to Prof. M.S. Swar


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AGRI-BUSINESS

MS Swaminathan honoured

Agricultural scientist MS Swaminathan was awarded the first World Agriculture Prize by Vice-President Venkaiah Naidu here on Friday. The award, which carries a prize money of $1,00,000 (₹71,48,500), has been instituted by the Indian Council of Food and Agriculture.

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ICFA to launch World Agriculture Prize of $ 100,000, Swaminathan to head selection panel


DT NEXT

MS Swaminathan to receive first World Agri Prize on Oct 26

The global Jury of the First World Agriculture Prize has selected Prof MS Swaminathan, Chief architect of India's Green Revolution for the award.

Chennai: The global Jury of the First World Agriculture Prize has selected Prof MS Swaminathan, Chief architect of India's Green Revolution for the award.

The award, containing USD 100,000 would be presented by Vice President M Venkaiah Naidu at Vigyan Bhawan in New Delhi at a special session, 'Swaminathan Global Dialogue on Climate Change and Food Security' on October 26, organised by the Indian Council of Food and Agriculture (ICFA).

A release from ICFA here on Tuesday said, 'Prof Swaminathan, the most influential agriculturist and environmentalist of our times, who spearheaded the green revolution movement in India has been instrumental in leading India towards food security.'

'Recognised worldwide for his basic and applied research in genetics, cytogenetics,


पद्मश्री डॉ के. एच. घरदा को लाइफटाइम अचीवमेंट अवॉर्ड

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