XXI Biennial National Symposium

Doubling Farmers' Income Through Agronomic Interventions Under Changing Scenario

24-26 October 2018
Maharana Pratap University of Agriculture & Technology, Udaipur, Rajasthan

Organized by

The Indian Society of Agronomy
Indian Council of Agricultural Research
New Delhi

and

Maharana Pratap University of Agriculture & Technology, Udaipur, Rajasthan

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Recommendations and Highlights

of

XXI Biennial National Symposium

on

"Doubling Farmers' Income through Agronomic Interventions under Changing Scenario"

24–26 October 2018, MPUAT, Udaipur, Rajasthan

Organizers

The Indian Society of Agronomy, New Delhi
Indian Council of Agricultural Research, New Delhi
and
MPUAT, Udaipur

Recommendations of the XXI Biennial National Symposium of the Indian Society of Agronomy on "Doubling Farmers' Income through Agronomic Interventions under Changing Scenario" organized during 24–26 October 2018 at Rajasthan College of Agriculture, MPUAT, Udaipur, Rajasthan

Supervision and Guidance
Dr A. K. Vyas
President, Indian Society of Agronomy
ADG (HRM), ICAR, New Delhi

Compilation and Editing
Dr T. C. Jain, Ex-Senior Agriculturist, World Bank, Gurugram
Dr Shiva Dhar, Principal Scientist, ICAR-IARI, New Delhi
Dr D. S. Rana, ICAR-Emeritus Scientist, IARI, New Delhi
Dr P. K. Ghosh, National Coordinator, NAHEP, ICAR, New Delhi
Dr N. K. Jain, Principal Scientist, ICAR, New Delhi

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Dr Y. S. Shivay
Secretary
Indian Society of Agronomy
Division of Agronomy
ICAR-Indian Agricultural Research Institute
New Delhi 110 012
Phone: 011-25842283; *Email: secretary_isa@hotmail.com*
Website : isa-india.in

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Recommendations of the XXI Biennial National Symposium of The Indian Society of Agronomy on "Doubling Farmers' Income through Agronomic Interventions under Changing Scenario" organized during 24–26 October 2018 at Rajasthan College of Agriculture, MPUAT, Udaipur, Rajasthan

Rajasthan College of Agriculture, Udaipur

In pursuance of the mandate of disseminating knowledge of agronomy, encouraging research in the field of soil, water and crop management and providing suitable platform for exchange of ideas to research workers, the Indian Society of Agronomy has organized 04 International Agronomy Congresses, 01 International Conference and 20 National Symposia/ Seminars in the past, besides various publications including the popular scientific journal *Indian Journal of Agronomy* since 1956 and Text books for UG and PG students of agronomy. The Society is committed to provide best management practices (BMPs) for the welfare of the farmers of the nation, developed by dedicated professional Scientists.

Keeping in view the goal set by the Hon'ble Prime Minister Shri Narendra Modi "Double Farmers' Income" (DFI) by the year 2022–23, the Indian Society of Agronomy organized its XXI Biennial National Symposium on "Doubling Farmers' Income through Agronomic Interventions under Changing Scenario" from 24–26 October 2018 at Udaipur, in collaboration with the Indian Council of Agricultural Research, New Delhi, and the Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan. The aim was to take stock of "Agronomic Tech-

nology Capital" available for intervention to double the farmers' income through improvement in productivity, reduction in the cost of cultivation including enhancement in input-use efficiency, increase in cropping intensity, diversification towards high value crops and integrated farming systems and improved price realization by the farmers through post-harvest technologies. More than 400 scientists, administrators, industrialists, policy-makers, research scholars and farmers deliberated on these issues over 3 days under 09 technical sessions during the National Symposium.

It was felt that support of the Government is required to shift and diversify farm enterprises like low- to high-value crops production, cereals to vegetables, organic farming, contract farming, diversified dairy farming, seed production and value-addition practices. However, pricing policy of agricultural produce, access to credits for developing efficient irrigation infrastructure, involvement of agri-processing industries and trainings need to be relooked for raising farmer's income to the desired level. Future, increase in food demand has to be met inspite of less land and limited water resources, challenges from climate change and, emergence of new insect-pests and diseases. Therefore, emphasis should be given to enhance the production with greater efficiency, sustainability, equity, quality, environment safety, decent jobs and income enhancement through secondary agriculture. Based on the deliberations and discussion, following recommendations/ actionable points have emerged out.

I. New Strategies/Approaches

Despite considerable increase in agricultural production, the desired increase in farm net income and living standard as compared to other sectors was not registered. The National Sample Survey Organization (NSSO) data for 2011–12 revealed that, about 23% rural households with self-employment in agriculture as the principal occupation have income less than the poverty line. It is often felt that disparity between farm income and non-farm income is rising. Due to continuous rise in prices of inputs, uneconomical farm holdings, risks of assured production and continuous decline in net income of farm household, the farming is becoming unprofitable and unsustainable. As per the NSSO report, about 45% farmers want to quit farming if they were given a choice to pursue some other occupation. In view of this, some significant change is warranted in the Strategies/Approaches to address the goal of DFI within the timeline. Therefore, there is need to work in wider perspective beyond the crop production. The focus should be on integrated management of nutrient, water, weed, pests, crop and energy; integrated farming systems; quality enhancement; post-harvest management; value-addition; processing and effective marketing of produce for profit realization for income security of the farmers.

II. Reducing Cost of Cultivation and Improving Resource-Use Efficiency

The cost of inputs and labour is continuously on rise with a continuous decline in input-use efficiency and factor productivity leading to ever-increasing cost of culti-

vation, forcing farmers to resort to public or private loans, adversely affecting the farm income and making farmers' distress. Therefore, it is of paramount importance to bring down the cost of cultivation through various agronomic interventions along with conserving natural resources by:

- Optimizing management of low-cost on-farm inputs and minimizing the use of costly off-farm inputs.
- Promoting *in-situ* moisture conservation measures for groundwater recharge in the arid and semi-arid regions.
- Developing and promoting agro-techniques preferably, the use of micro-irrigation to increase water productivity of crops.
- Emphasizing multitier-cropping, runoff farming/*khadin* farming and rainwater harvesting structures to increase cropping intensity and reduce the soil loss in arid regions and enhance the production per unit area and time.
- Promoting off-site gainful utilization of crop residues for composting and power generation.
- Promoting mechanization for *in-situ* management of crop residues.
- Utilizing solar energy to encourage solar farming.
- Promoting successful adoption of conservation agriculture (CA), as it would improve productivity, profitability, soil health, energy/fuel economy, climate change mitigation and resource-use efficiency across the regions. Therefore, well-tested techniques of reduced/ zero tillage may be promoted in specific crops and cropping systems in different eco-systems. For example, reduced tillage/ zero tillage (ZT) in pulses and oilseeds in rice-fallow areas of eastern India; zero tillage permanent broad and flat bed with residue in cotton–wheat, pigeonpea–wheat and maize-wheat systems in North-Western parts of India and triple zero-till in rice–wheat–mungbean system in North-Western parts of India.
- There is an urgent need to promote modern tools/technologies of resource-conservation techniques such as integrated nutrients/ weeds/ pests management, precision land leveling, efficient crop-establishment techniques, use of precision planter for seed economy, pressurized irrigation, efficient nutrient management, use of slow-release fertilizers, nitrification inhibitors, site–specific nutrient management (SSNM), LCC-based N management, geographical information system (GIS), decision support system (DSS) and fertigation.
- Developing and promoting small and marginal farmers' friendly, cost effective and efficient farm machines.
- Low-cost technologies such as seed/seedlings treatment with fungicide/ insecticides or *Trichoderma* for pest management, bio-fertilizers for nutrient saving and seed priming for better crop stand under stress conditions should be promoted.

- For promotion of organic farming, standardization of all organic inputs specific to crops in a particular region is urgently needed.

III. Increasing Productivity Per Unit Area

Yield enhancement without increasing the cost of production is a better option for long-term sustainability. Productivity of majority of the crops has struck at a plateau, therefore, and requires path-breaking agronomic interventions. On an average, the yield gap across the states and crops varies between 30 and 50%. These yield gaps can be minimized through adoption of scientific agro-technologies at farm level to achieve significant gain in production and income. Farm productivity and income can be enhanced in many ways:

- Diversification can be a major game changer. There is need to promote diversification of crops, varieties, seeds, pesticides, enterprizes along with inclusion of agroforestry and protected cultivation options.
- Sustainable crop diversification to high-value and high-production potential crops such as baby corn, spinach, bottle gourd, vegetables, onion, spices, medicinal and aromatic plants and flowers and integration of apiculture, sericulture, fish culture, mushroom cultivation, protected agriculture, dairying, etc. with farming systems; should be adopted for enhancing income of small and marginal farmers.
- For improving productivity of rice-fallow, there is need to promote adoption of suitable crops (lentil, grass pea, pea, chickpea, blackgram, greengram, rapeseed and mustard and groundnut) and their varieties after rice; water harvesting and storage; use of resource-conservation technology (DSR, ZT, Crop residue retention) and, use of improved recommended practices.
- Development and promotion of region-specific Integrated Farming System (IFS) models for variable resource base of farmers. Location-specific IFS Models comprising of field and horticultural crops, animals, fish, poultry, etc. with protected cultivation as advocated by the State Agricultural Universities (SAUs) and ICAR-Research Institutes should be adopted by small holders in all agro-ecological zones for increasing productivity, sustainability, profitability, employment generation and food and nutritional security.
- In Kerala, coconut-based farming systems, use of multispecies cropping of coconut with black pepper, banana, nutmeg, pineapple, ginger, turmeric and elephant foot yam need to be promoted along with cross-bred cows, poultry birds, goat, and pisciculture, as it generates a net income much higher than that of coconut mono-crop.
- Similarly, arecanut-based farming system with cocoa, banana and black pepper as component crops has demonstrated promising outputs along with dairying, freshwater aquaculture and fodder grass (Hybrid Napier) components need to be popularized among farmers of Kerala and adjoining areas.
- Redesign Integrated Crop Management (ICM) practices to tackle issues of

production, resource and climate vulnerability. All the Best Management Practices/Good Agricultural Practices (BMP/GAP) i.e. INM, IWM, IDM and IPM should be integrated to get maximum benefit/profit.

- Developing and promoting climate-resilient agronomic practices. Using cultivars resistant/ tolerant to lodging, heat, extreme weather along with new planting date to minimize the effect of temperature increase and reducing spikelet sterility. There is need to change crop calendar for reducing the negative effects of increased climatic variability in arid and semi-arid tropics to avoid extreme weather events.
- Development and promotion of precision-farming machines and technologies suited to small farms need to be emphasized. Need-based intensive agricultural mechanization is recommended across the country for improving the socio-economic conditions in the rural areas through its impact on enhancing productivity, reducing production cost, reducing requirement of farm workers and their drudgery, and efficient processing and value- addition.
- There is urgent need to enhance the production of certified seed of high-yielding varieties and hybrids having multiple resistances to biotic and abiotic stresses and ensure their timely availability to the stakeholders.
- For increasing productivity and profitability of aerobic rice, nitrogen schedule of 100–125% of recommended dose and *Dhaincha* intercropping and its incorporation at active vegetative stage with application of 2, 4-D @ 0.5 kg/ha is promising along with pre- and post-emergence herbicide application.
- For higher sugarcane productivity, integrated weed-control technology comprising pre-emergence herbicides + trash mulching followed by application of post-emergence herbicides should be adopted to provide season-long control of the weeds in sugarcane in North-West part of India.
- Spray of water-soluble complex fertilizers (19 : 19 : 19) @ 0.5% + zinc and iron @ 0.5% through zinc sulphate and iron sulphate, respectively is very effective for drought-affected crops for quick relief, hence need due attention.
- Exploring the prospects of non-traditional crops like quinoa for assured production and enhancing farmers' income under saline soils of India even at higher salinity (16.0 and 24 dS/m) where other sensitive crops fail to grow.

IV. Post-Harvest Management and Secondary Agriculture

Post-harvest management and value-addition of agricultural produce are the high potential areas which have not received due attention of farmers. Post-harvest losses in food crops or commodities vary from 5 to 30%. It is said that "*Food saved is food produced"*. Post-harvest technology enables value-addition and establishment of agro-processing enterprizes for additional income and employment generation. Now-a-days, consumers buy more "ready-to-eat" or "ready-to-cook" food while farmers generally produce and market raw agricultural produce.

- There is need to shift some focus from raw produce to value-addition at the

farm level for realizing higher income like Grain to Flour/Multigrain Flour/ *Dalia*/*Suji*/*Maida*; Pulse to *Dal*/*Besan*; Oilseed to Oil; Sugarcane to Jaggery etc. Besides sale of produce in packets of suitable weight like *dal*, fruits, vegetables etc. can enhance the profit significantly.

- Direct marketing and production of value-added products can improve net profitability of farmers many fold. Value-added products may open new markets, bring farm viability and extend the marketing season.
- There is need to promote low-cost PHT as harvesting at optimum time; use modern infrastructure/ machinery for reduction of losses in handling, packaging, transportation and storage; processing into a wide variety of products; and home-scale preservation, etc. Besides, use of thermal processing, low temperature, drying, chemical and biological reactions coupled with other preservation techniques to enhance the storability.

V. Improved Price Realization by Farmers

Improved price realization and enabling policies are essential for achieving higher farm income. Increasing minimum support price (MSP) seems to be the simplest way to enhance the farmers' income. But it has its own limitations. Recent initiatives on establishment of online National Agriculture Marketing (e-NAM) platform which integrates Agricultural Produce Market Committee (APMC) *mandis* across the country is really a game changer.

- Online trading and opening market to traders outside the *mandis* should be encouraged to significantly raise the farmers' income.
- Concerted efforts should be done for linking agricultural diversification with market and contract farming system.
- Need to focus value chain approach, i.e. Field to Plate. Farmers should not stop with the production of produce but extend their activities by reaching the consumers of the produce for much higher profit.
- Better prices can be realized by quality attributes of the produce, consumer's awareness and purchasing power, emergence of value chain for specialized products and awareness about health effect of food.
- There is need for price stabilization and removing gaps from MSP and market price.
- Organic agriculture with higher premium price of produce is more profitable (22–35%). Therefore, proper certification process and assurance for better market is the need of the hour.

VI. Protecting Environment

- Adopt resource-use efficient and eco-friendly technologies. Carbon sequestration is important for sustaining the productivity of crops in long run and reducing the global warming potential.

- Continuous practice of raising the crops organically has good potential to sequester the C (up to 63% higher C stock in 10 years), higher soil organic carbon (22% increase in 6 years), reduction in energy requirement (by about 10–15%) and increase in water-holding capacity (by 15–20%), thereby promoting climate resilience in farming. Therefore, research priority should be towards Integrated Organic Farming System mode for getting chemical-free food.
- Shifting from conventional surface irrigation to drip irrigation in India has proved increased water productivity by 42–255% for crops like banana, cotton, sugarcane and sweet potato. Benefits of the techniques may be extended to other water-demanding crops as well.
- Networking of bore-wells shall be done to enable other farmers to access irrigation, increase cropping intensity and income gains.

VII. Agronomy Education and Training

Modern Agronomy has the capacity to find practical and real time solutions for most of the challenges of Indian agriculture. However, there is need to reorient present agronomy education to enhance the competency level of students.

- In changing scenario, the horizon of agronomy has to be widened to include various new courses like Hi-tech agronomy, Specialty agronomy, Ecological agronomy, Conservation agriculture, Organic farming, Precision farming, quality production of crops and marketing for global competitiveness, value-addition, and integrated management of biotic and abiotic stresses.
- There is need to explore collaborative agronomy education and research programmes at national and international levels in public and private sectors to promote excellence and futuristic agronomy.
- Course curriculum should be revised in such a way that it can help to prepare the Agronomists with desired skills and confidence in Agri-business.
- Training and awareness of farmers on socio-psychological aspects like importance of sincerity, motivation and high thinking. Modernization and fast-changing technology have caused psycho-social changes among farming communities.
- For bridging gaps between potential and farmer's yield, there is an urgent need to transfer the BMP of different inputs, crops, cropping systems, conservation agriculture, organic farming and farming systems through front-line demonstration, KVKs, Krishi Gyan Mela and capacity building of extension workers and farmers through training and dissemination of modern tools and technology.
- Training and capacity building on micro-irrigation in large scale is essential for the stakeholders, especially emphasizing on developing irrigation extension workers.

- Strengthening of links between the government, private sectors and NGOs; awareness campaigns for farmers and the financial Institution support for micro-credit and micro-enterprises, etc.
- Strengthening of self-help groups for the preparation of organic inputs, support structures for small farmers, group certification.

VIII. Policy Support

- There is an urgent need to provide appropriate policy support to farm and farm families, to ensure better storage, market, fair prices, processing and value-addition.
- Industrialists should support and promote development of future agro-products, which would provide cost-effective and eco-friendly options to the farmers.
- Twin challenges of present water scarcity and future demands for water calls for a country-level policy with Mission Mode Project on Drip Irrigation and Fertigation with short-, medium- and long-term goals, timelines and outcomes with an orientation to achieve sustainable higher productivity.
- Climatic water balance study on daily basis of different agro-climatic regions of the country using long-term weather data and soil types of the region will be very much helpful to assess the severity of drought/ moisture stress and also to frame out further research programme. Thus, there is a need for creation of database of rain, surface and ground water resources through GIS/GPS.
- As a national level policy, 10% of the command area should be brought under micro-irrigation with the objective to create the intermittent water structures.
- Agronomists should be deputed as the nodal officer in developing national level water policy and water management research programme and they should be given the responsibility to lead the water management research projects.
- Appropriate market policy may be developed, especially for high value, high volume and perishable crops to avoid risk under more production than demand. At the same time, there is a need to develop post-harvest and value-addition infrastructure for organic products separately. There should be enough provision for storage, refrigerated bins and other structures and transport. A referral laboratory on organic farming should also be established at state level in the country.
- Use district-level contingency crop planning available with ICAR and SAUs both for rainfed and irrigated conditions for higher productivity, resource-use efficiency and profitability under aberrant weather condition.
- Institutions are to be identified or established for tracking demand and supply patterns of the products/ produce in production and consumption areas.
- Government should pay immediate attention and support for mechanization of small farm-holders.

- Government shall promote adequate crop insurance preferably assessing loss through digital sysytem, more coverage, simple procedure for claims and early payment of claim.
- There is a need to change the approach of producing job seekers to job providers. Further, the special skills required to match the job opportunities need to be identified.
- Centre and State Governments should ensure timely availability of inputs such as improved quality seed, fertilizers, herbicides, insecticides, canal water, electricity supply, subsidy on inputs, etc. to the farmers for timely sowing of crops, which is a single most zero-cost input for higher productivity.
- The Government has to ensure that farmers get only pure and good quality inputs.
- Entrepreneurship development through AGRI-UDDAN Program–*Startups* and MEGA FOOD PARKS as *Food Processing Hubs* could go a long way in the progress of agribusiness sector in the country.

Conclusion

The symposium has helped in identifying crops, enterprizes, farming systems and agronomic interventions for different resource base of farmers and agro-ecological regions with the possibilities of value-addition. Collectively, all stakeholders have deliberated to find ways and means to make and project farming both intellectually satisfying and economically rewarding through technological and managerial upgradation of agronomic interventions and by enlarging the scope for agro-processing and agri-business. Certainly, the emerged recommendations not only have the potential to double the farmers' income but also address food, nutrition, environment and livelihood security.

Glimpses of XXI Biennial National Symposium of The Indian Society of Agronomy, 2018


Paying Tribute to Maharana Pratap, The Great King of Mewar


Registration of Delegates




Welcome of Delegates





Inaugural Function

Inaugural Function

Dr P S Lamba Memorial Lecture by Prof. Ramesh Chand, Member Agriculture, NITI Aayog, Government of India

Technical Sessions


Poster Session



Cultural Evening

Meeting of General Body of ISA

Exhibition

Food Court

Valedictory Function

TECHNICAL PROGRAMME
NATIONAL SYMPOSIUM ON
Doubling Farmers' Income Through Agronomic Interventions Under Changing Scenario
24–26 October, 2018

Venue: Rajasthan College of Agriculture (RCA), MPUAT, Udaipur

Registration	**Venue: Outside New Auditorium, RCA**
	October 23, 2018 **Time : 14.00 PM TO 19.00 PM**
	October 24, 2018 **Time : 8.00 AM TO 18.00 PM**

DAY 1 : OCTOBER 24, 2018

10.00–12.00 **Inaugural Function and Award Ceremony**

Venue: New Auditorium, RCA

Chief Guest : Prof. Ramesh Chand, Member, NITI Aayog, Govt. of India

Chairperson : Prof. U.S. Sharma, Vice Chancellor, MPUAT, Udaipur

Guest of Honour : Dr N.S. Rathore, DDG (Education), ICAR, New Delhi

12.00–12.30 High Tea

12.30–14.00 **Dr P.S. Lamba Memorial Lecture and Farmers' Experience**

Venue: New Auditorium, RCA

Chair : Dr N.S. Rathore, DDG (Ag. Education), ICAR, New Delhi

Co-Chair: Dr S. Pasupalak, Vice Chancellor, OUAT, Bhubaneswar
Dr G.L. Keshwa, Vice Chancellor, Agricultural University, Kota

Convener : Dr N.K. Jain, Principal Scientist, HRM Unit, ICAR

Rapporteur : Dr Shiva Dhar, Principal Scientist, IARI, New Delhi

Farmers' Experience :
1. Shri Nand Lal Dhakar, Udaipur, Rajasthan
2. Shri Rajesh Kheri, Kaithal, Haryana
3. Shri Ravinder Thakur, Indore, M.P.
4. Sh. Vadibhai Ravjibhai Patel, Banaskantha, Gujarat

Dr P.S. Lamba Memorial Lecture : Prof. Ramesh Chand, Member NITI Aayog, Govt. of India

India's Agricultural Challenges: Opportunities and Development Policies

Lecture : Dr T.C. Jain, Former Senior Agriculturist, World Bank

Outlining the Role of Agronomists in Doubling Farmers' Income in Changing Scenario

14.00–14.45 Lunch

14.45–17.00 **CONCURRENT TECHNICAL SESSIONS**

Session IA: **Efficient Management of Low-or no-cost Inputs and Bioresource Utilization**

Venue: New Auditorium, RCA

Chair: Dr Arvind Kumar, VC, RLB CAU, Jhansi, Uttar Pradesh

Co-chair: Dr D.K. Sharma, Former-Director, CSSRI, Karnal, Haryana
Dr R.K. Rai, Former Professor and Head, Agronomy, IARI, New Delhi

Convener: Dr J.S. Mishra, Head, Crop Research, ICAR-Res. Complex for Eastern Region, Patna, Bihar

Rapporteurs:	Dr Janardan Singh, Professor, Agronomy, CSKHPKV, Palampur, Himachal Pradesh
	Dr Farooq Ahmad Aga, Professor, Dte. of Ext., SKUAST (K), Shalimar, Srinagar, J&K
Keynote Speakers	Dr R.L. Yadav, Former Director, IISR, Lucknow, Uttar Pradesh ***Innovation in input management for enhancing farmer's income***
	Dr V.K. Singh, Head, Division of Agronomy, IARI, New Delhi ***Precision input management for higher resource-use efficiency and profits***
Lead Speakers	Mr. Neeraj Kumar Awasthi, Regional Agronomist, International Business Development, Sirius within India ***Poly 4 – A new dimension in improving farmers income and sustaining soil fertility with minimal carbon*** Footprint
	Dr H.B. Babalad, Professor and Head, Organic Farming Research Centre, UAS, Dharwad, Karnataka ***Organic agriculture- A scientific approach towards sustaining production and doubling farm income***
	Dr J.S. Mishra, Head, Crop Research, ICAR Research Complex for Eastern Region, Patna, Bihar ***Low cost technologies for rice fallow management***
	Dr J.P. Saini, Head, Department of Organic Farming, CSKHPKVV, Palampur, H.P. ***Organic farming- A tool for doubling the farmer's income***
Rapid Fire Presentations	Dr B.G. Shivakumar, Officer-in-charge, IGFRI- Southern RRS, Dharwad, Karnataka, ***Enhancing monetary returns through improved agro- techniques in congo-signal grass* (Brachiariaruziziensis) *in sub-tropical conditions of northern plains of Karnataka***
	Dr V.S. Khawale, Professor of Agronomy, College of Agriculture, Nagpur, Maharashtra ***Response of cotton to different fertilizer grades fortified with humic acid***
	Dr V.P. Singh, Head, Crop Production, IISR, Dilkusha, Lucknow, Uttar Pradesh ***Impact of trash mulching as an active component of integrated weed management technique for season-long weed control in sugarcane***
	Dr B. Sreedevi, Principal Scientist, IIRR, Hyderabad, Telangana ***Impact of nitrogen dosage and weed interaction on the performance of aerobic rice***
Session-IB:	**Efficient Rain and Irrigation Water Management**
Venue:	Seminar Hall, Directorate of Research, RCA Campus
Chair:	Dr A.S. Faroda, Former Chairman, ASRB, ICAR, New Delhi
Co-chair:	Dr A.K. Gupta, Dean, College of Agri-Business, SKNAU, Jobner, Rajasthan
	Dr M.K. Arvadia, Principal, NM College, Navsari, Gujarat
Convener:	Dr G. Ravindra Chary, PC AICRPDA, CRIDA, Hyderabad, Telengana
Rapporteurs:	Dr P.S. Bodake, Chief Scientist, AICRP on Water Management, MPKV, Rahuri, Maharashtra
	Dr A. Velayutham, Professor of Agronomy, Water Technology Centre, TNAU, Coimbatore, Tamil Nadu
Keynote Speakers	Dr D.P. Singh, Former Vice Chancellor, JNKVV, Jabalpur, M.P. ***Genetic and management options for improving productivity and economic efficiency of water in irrigated and rainfed environments***
	Dr V. Praveen Rao, Vice Chancellor, PJTSAU, Hyderabad, Telengana ***Doubling farmers income: Microirrigation – An efficient tool to achieve the goal***
Lead Speakers	Dr G. Ravindra Chary, PC AICRPDA, CRIDA, Hyderabad, Telengana ***Rainwater management in semiarid and subhumid regions: Key challenges and strategies***
	Dr B.J. Pandian, Director, Water Technology Centre, TNAU, Coimbatore, Tamil Nadu

	Micro irrigation intervention - New approach to increase, farmers income
	Dr N.D. Yadava, Head, Regional Research Station, CAZRI, Bikaner, Rajasthan
	Efficient rainwater harvesting and management for crop production in Arid Western Rajasthan
Rapid Fire	Dr B.K. Kandpal, Joint Director, Tripura Centre, ICAR-RC-NEH Region, Tripura
Presentations	***Agronomic interventions for higher productivity and profitability in North-East Hill Region***
	Dr Rakesh Sammauria, Professor, RARI, Durgapura, Jaipur, Rajasthan
	An approach to sustainable livelihood by suitable integrated farming system model for small farm unit under semi-arid irrigated plains of Rajasthan
	Dr S.P.S. Tanwar, Principal Scientist (Agronomy), CAZRI, Jodhpur, Rajasthan
	Rainfed farming systems for Arid Zone of India
	Dr Chandra Gupta, Principal Scientist (Agronomy), IISR, Lucknow, Uttar Pradesh
	Enhancing sugarcane productivity through different planting methods and irrigation scheduling
17.00–17.30	**Tea**
17.30 –18.30	**Special lecture**
	Venue: New Auditorium, RCA
Speaker:	Prof. Janat Shah, Director, IIM, Udaipur, Rajasthan
	Management perspective of doubling farmers' income
Chair:	Dr T.C. Jain, Former Senior Agriculturist, World Bank
Co-chair:	Dr U.S. Sharma, Vice Chancellor, MPUAT, Udaipur, Rajasthan
Convener:	Dr V.K. Singh, Head, Agronomy, IARI, New Delhi
Rapporteur:	Dr S.K Sharma, ZDR, MPUAT, Udaipur, Rajasthan
19.00–20.30	**Cultural Programme**
Venue:	**Bhartiya Lok Kala Mandal, Udaipur**
20.30–22.00	**Dinner**
Venue:	**Bajaj Rotary Club, Infront of Sanjay Park, Fathesagar Road**
	DAY 2: OCTOBER 25, 2018
9.00–11. 00	**CONCURRENT TECHNICAL SESSIONS**
Session- IIA :	**Diversification for Sustainable Resource Use and Farm Income Under Changing Scenario**
	Venue: New Auditorium, RCA
Chair:	Dr G.B. Singh, Former DDG (NRM), ICAR, New Delhi
Co-chair:	Dr A.K. Singh, Vice Chancellor, BAU, Sabour, Bihar
	Dr S. Bhaskar, ADG (Agronomy, Agroforestry & Climate Change), ICAR, New Delhi
Convener:	Dr B. Gangaiah, Head, CIARI, Port Blair, Andaman & Nicobar
Rapporteurs	Dr M.D. Vyas, Professor, COA, Sehore, Madhya Pradesh
	Dr V.P. Singh, Head, Crop Produciton, IISR, Lucknow, Uttar Pradesh
Keynote	Dr P.K. Ghosh, National Coordinator, NAHEP, ICAR, New Delhi
Speakers	***Soil carbon management through crop diversification and sustainable intensification***
	Dr S.V. Angadi, Professor, New Mexico State University, USA
	Crop diversification for sustainable soil and water resources use in Semi-Arid Regions of USA

Lead speakers	Dr N.C. Jain, APCCF, WP&FS, Rajasthan, Jaipur, Rajasthan
	Forestry interventions for enhancing farmers income
	Dr D.S. Rana, ICAR-Emeritus Scientist, IARI, New Delhi
	Agricultural diversification: An option for managing human-wild life conflict
	Dr H.P. Maheswarappa, Project Coordinator (Palms), CPCRI, Kasaragod, Kerala
	Doubling farmers' income through Palm based cropping/ farming systems under different agro-climatic regions of India
Rapid Fire	Dr C.S. Praharaj, Head, Crop Production Division, IIPR, Kanpur, Uttar Pradesh
Presentations	***Enhancing pulses production in constrained rice fallows of India***
	Dr V. Chandrika, Professor, S.V. Agricultural College, Tirupati, Andhra Pradesh
	Evaluation of remunerative foxtail millet (Setaria italica L.) based intercropping systems under late sown Conditions
	Dr B. Gangaiah, Head, NRM, CIARI, Port Blair, Andaman & Nicobar Islands
	Farming diversification trends, opportunities and challenges in Islands regions of India
	Dr S.C. Negi, Chief Scientist, Agronomy, CSKHPKV, Palampur, Himachal Pradesh
	Evaluation of alternative cropping systems for mid hill condition of Himachal Pradesh
Session IIB :	**IFS and ICM for Different Agro-ecosystems and Resourcefulness**
	Venue: Seminar Hall, Directorate of Research, RCA Campus
Chair:	Dr A.K. Dahama, Former Vice Chancellor, SKRAU, Bikaner, Rajasthan
Co-chair:	Dr N.P. Singh, Director, NIASM, Malegaon, Baramati, Mahrashtra
	Dr A.S. Panwar, Director, IIFSR, Modipuram, Uttar Pradesh
Convener:	Dr U.V. Mahadakar, Associate Dean, COA, Dapoli, Maharashtra
Rapporteurs:	Dr W.N. Narkhade, Professor, Agronomy, VNMKV, Parbhani, Maharashtra
	Dr Rajiv Kumar Singh, Principal Scientist, Agronomy, IARI, New Delhi
Keynote	Dr B. Gangawar, Former Director, IIFSR, Modipuram, Uttar Pradesh
Speaker	***Integrated Farming Systems Approach for doubling farm income under changing climate***
Lead speakers	Dr A.S. Panwar, Director, IIFSR, Modipuram, Uttar Pradesh
	Opportunities and challenges of doubling farmers income in Indo-Gangetic Plains (IGP) through Integrated Farming Systems
	Dr S.D. Singh, APCCF, Uttarakhand
	Topic: Agro-forestry options for enhancing farm income
	Dr C. Jayanthi, Director, TNAU, Coimbatore
	Integrated cropping and farming systems management strategies for efficient resource use and enhanced Profitability
	Dr J.S. Borha, Head, Department of Agronomy, IAS, BHU, Varanasi, Uttar Pradesh
	Integrated farming system for enhanced productivity and income of small and marginal farm households of Eastern Plain and Vindhyan Region
Rapid Fire	Dr A.M. Patel, Chief Agronomist, S.D. Agricultural University, Sardarkrushinagar, Gujarat
Presentations	***Sustainability of farm and farmers through Eco-friendly Integrated Farming System approach under North Gujarat Agro-climatic situations***
	Dr M.S. Yadava, Chairman, Department of Agronomy, BAU, Kanke, Ranchi, Jharkhand
	Improving farmer's income by integrated farming systems

	Dr R.P. Sharma, Professor, Agronomy, BAU, Bhagalpur, Sabour, Bihar
	Integrated farming system options for augmenting income of small and marginal farm holdings of Bihar
	Dr Sanjeev Kumar, Principal Scientist, Agronomy, ICAR-RCER, Patna, Bihar
	Productivity and income sustainability through integrated farming systems for small and marginal farmers of Bihar
11.00-11.30	Tea
11.30–13.30	**CONCURRENT TECHNICAL SESSIONS**
Session –IIIA:	**Conservation Agriculture and Climate Resilient Agronomy**
	Venue: New Auditorium, RCA
Chair:	Dr V. Praveen Rao, VC, P.J. Telangana State Agriculture University, Hyderabad, Telengana
Co-chair:	Dr M.S. Shaktawat, Former Director Extension, MPUAT, Udaipur, Rajasthan Dr A.R. Sharma, Director Research, RLB CAU, Jhansi, Uttar Pradesh
Convener:	Dr T.K. Das, Principal Scientist, Agronomy, IARI, New Delhi
Rapporteurs:	Dr S.P.S. Tanwar, Principal Scientist (Agronomy), CAZRI, Jodhpur, Rajasthan
	Dr L.R. Yadav, Professor, Agronomy, SKNAU, Jobner, Rajasthan
Keynote	Dr S. Pasupalak, Vice Chancellor, OUAT, Bhubaneswar, Odisha
Speakers	***Crafting physical science for Climate Resilient Agriculture***
	Dr S. Bhaskar, ADG (Agronomy, Agro-forestry and Climate Change), ICAR, New Delhi
	Addressing climatic variability through Climate Resilient Agronomy
Lead speakers	Dr A.R. Sharma, Director (Res), RLB CAU, Jhansi, Uttar Pradesh
	Myths and realities of conservation agriculture systems
	Dr Sammunder Singh, Professor & Head, Agronomy, COA, CCS HAU, Hisar, Haryana
	Doubling farmers' income through efficient weed management – role of agronomic interventions and climate change
	Dr M.L. Jat, Senior Cropping Systems Agronomist, CIMMYT, New Delhi
	The new edge agronomy for conservation agriculture based sustainable intensification in India
	Dr T.K. Das, Principal Scientist, Division of Agronomy, IARI, New Delhi
	Cereal system conservation agriculture-Lesson learnt and way ahead
Rapid Fire	Dr N.K. Sharma, Head, Soil Science and Agronomy, IISWC, Dehradun, Uttarakhand
Presentations	***Conservation agronomic practices for sustainable production in North Western Himalaya Region***
	Dr Sunil Kumar, Head, Crop Production Division, IGFRI, Jhansi, Uttar Pradesh
	Innovations for climate resilience in semiarid-tropics of central India through resource conservation on perennial fodder-food based systems
	Dr Narendra Kumar, Principal Scientist (Agronomy), IIPR, Kanpur, Uttar Pradesh
	Long-term CA practices effect on system productivity, soil health and sustainability of rice–wheat cropping system in IGP
	Dr D.R. Palsaniya, Senior Scientist, IGFRI, Jhansi, Uttar Pradesh
	Resource conserving technologies (RCTs) for improving productivity, income and soil health in fodder sorghum based cropping systems
Session- IIIB:	**Organic, Precision and Contractual Farming**
Venue:	Seminar Hall, Directorate of Research, RCA Campus

Chair:	Dr P.S. Rathore, Vice Chancellor, SKNAU, Jobner, Rajasthan
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	Dr P.K. Ghosh, National Coordinator, NAHEP, ICAR, New Delhi
Convener:	Dr Dilip Singh, Professor and Head, MPUAT, Udaipur, Rajasthan
Rapporteurs:	Dr Dinesh Kumar, Principal Scientist, Division of Agronomy, IARI, New Delhi
	Dr J.K. Bisht, Principal Scientist, VPKAS, Almora, Uttarakhand
Keynote	Prof. Arun K. Pujari, Vice Chancellor, Central University, Bandar Sindri, Ajmer, Rajasthan
Speakers	***Scope and prospects of contractual farming for enhancing farmers' income***
	Dr N. Ravisankar, Project Coordinator, IIFSR, Modipuarm, Uttar Pradesh
	Organic farming: Research experience, challenges and way forward for India
Lead speakers	Dr R.K. Avasthe, Director, NOFRI, Gangtok, Sikkim
	Cluster-based organic farming for doubling income of small and marginal land holders of North-East India
	Dr S.K. Sharma, ZDR and Director CAFT on Organic Farming, MPUAT, Udaipur, Rajasthan
	Strategies for achieving sustainable food systems through organic agriculture
	Dr D.K. Singh, Professor, Agronomy, GBPUAT, Pantnagar, Uttarakhand
	Organic farming: Opening avenues for ecological and economic sustainability
Rapid Fire	Dr P. Parasuraman, Head, Centre of Excellence in Millets, TNAU, Tiruvannamalai, Tamil Nadu
Presentations	***Effect of organic foliar spray on growth and yield of ragi (Eleusine coracana) in Tiruvannamalai District***
	Dr Dinesh Kumar, Principal Scientists, Agronomy, IARI, New Delhi
	Long-term influence of nutrient management practices on productivity and profitability of organic rice-based cropping systems
	Dr Aditya Kumar Singh, Principal Scientist, IIMR, Ludhiana, Punjab
	Precision nutrient management and conservation agriculture practices for enhancing productivity, profitability and water-use efficiencies of maize-wheat-mungbean cropping system
	Dr Hari Ram, Senior Agronomist (Wheat), PAU, Ludhiana, Punjab
	Site specific nitrogen management through Leaf Colour Chart and Green Seeker in different wheat varieties in North-Western Plains
Session III-C	**Rapid Fire Presentations**
Venue:	**IPM Theatre, RCA**
Chair:	Dr D.P. Singh, Former Vice Chancellor, JNKVV, Jabalpur, M.P.
Co-chair:	Dr R.L. Yadav, Former Director, IISR, Lucknow, Uttar Pradesh
	Dr J.P. Sharma, Joint Director AE & Research, IARI, New Delhi
Convener:	Dr Raj Singh, Principal Scientist, Division of Agronomy, IARI, New Delhi
Speakers	Dr S.S. Walia, Senior Agronomist, PAU, Ludhiana, Punjab
	Organic farming maize-potato-onion cropping system
	Dr S.S. Rao, Principal Scientist, Agronomy, NBSS&LUP, RC, Udaipur, Rajasthan
	Land resource utilization by different crops in India: Need for effective land use planning
	Dr P.S. Bodake, Chief Scientist, AICRP on Water Management, MPKV, Rahuri, M.S.
	Potential irrigation management options for climate resilience under scarcity zone of Maharashtra

Dr G. Pratibha, Principal Scientist, CRIDA, Hyderabad, A.P.

Conservation agriculture for sustainable intensification of rainfed regions

Dr Ummed Singh, Dean, Agriculture University, Mandor, Jodhpur, Rajasthan

Multi-nutrient supplements enhances chickpea (Cicer arietinum L.) yield under on farm trials

Dr Ravindra Singh, Principal Scientist, NRCSS, Tabiji Ajmer, Rajasthan

Off season production of leafy coriander under shade net covered walk in tunnels for doubling farmers Income

Dr S.K. Sarangi, Principal Scientist, Agronomy, CSSRI, RRS, Canning Town, W.B.

Zero tillage potato cultivation with paddy straw mulching increase yield, water productivity and income in the coastal saline soils

Dr Raj Singh, Principal Scientist, Division of Agronomy, IARI, New Delhi

Crop diversification and intensification strategies: A key to doubling small and marginal farmer's income

Dr P.K. Nayak, Principal Scientist, NRRI, Cuttack, Odisha

Rice- Fish- Live Stock based integrated farming system: A viable option for farm sustainability and doubling of farm income in Eastern India

Dr R.K. Agrawal, Principal Scientist & P I (AICRPFCU–Agronomy), IGFRI, Jhansi

Real-time contingency plan to cope with midseason drought in rainfed sorghum under semi arid rainfed conditions of Bundelkhand

Dr V. Maruthi, Principal Scientist, CRIDA, Hyderabad, Telangana

Small farm cropping systems for progressive establishment of IFS module for climate variability in semi-arid tropics

Dr S.S. Rathore, Principal Scientist, Agronomy, IARI, New Delhi

Agri-horti system for enhancing farm productivity and doubling profitability under limited irrigation Conditions

Dr M.R. Umesh, Agronomy, UAS, Raichur, Karnataka

Need based nitrogen fertilizers application by use of leaf colour chart thresholds and its effect on productivity of maize (Zea mays L.) in Vertisols

Dr Anil K. Choudhary, Sr. Scientist (Agronomy), IARI, New Delhi

Integrated crop management modules for enhancing system productivity and profitability in soybean wheat and pigeonpea–wheat cropping systems in Indo-Gangetic plains region

Dr R.R. Hasure, Agronomist, RS and JRS, MPKV, Rahuri Kolhapur Maharashtra

Response of tomato crop to micrometeorological parameters with different foliar sprays under drip irrigation in inceptisol

Dr Latheef Pasha, Senior Scientist (Agronomy), PJTSAU, Hyderabad, Telangana

Crop and livestock diversification for lucrative farming under marginal households

Dr B.S. Raskar, Agricultural Research Station, Niphad, Nashik, Maharashtra

Development of integrated farming system model for marginal and small farmers of Western Maharashtra

Dr K.J. Kubde, Associate Professor, Agronomy, Dr PDKV, Akola, Maharashtra

Climate resilient blackgram production technique through high density planting and fertilizer management

Dr Magan Singh, I/C Agronomy Section, NDRI, Karnal, Haryana

Yield and Quality performance of forage sorghum cultivars under different nutrient management

Dr Ram Avtar Jat, Senior Scientist (Agronomy), DGR, Junagadh, Gujarat

Productivity, profitability, and soil health under conservation agriculture in groundnut-based intercropping systems in black calcareous soils of Saurashtra in Gujarat

Dr Teekam Singh, Senior Scientist (Agronomy) IARI, New Delhi

Weed competitiveness of boro rice varieties under different establishment techniques

Dr Kapila Shekhawat, Senior Scientist, Division of Agronomy, IARI, New Delhi

Nitrogen and weed management in conservation agriculture based maize-wheat cropping system

Dr Deepak Kumar, Rajasthan College of Agriculture, MPUAT, Udaipur, Rajasthan

Zero budget natural farming

Dr Amit Jha, Assistant Professor, Agronomy, JNKVV, Jabalpur, Madhya Pradesh

Raised bed planting system to mitigate the climatic effect on soybean–wheat cropping system Madhya Pradesh

Dr Kailash Prajapat Scientist (Agronomy), CSSRI, Karnal, Haryana

Prospects of Quinoa for assured production and enhancing income under saline soils of India

Dr B.A. Gudade, Scientist, Agronomy, RRS, Spices Board, Tadong, Gangtok, Sikkim

Effect of in-situ soil water conservation practices on growth and yield of large cardamom at North Sikkim

Dr R.S. Bana, Scientist (Senior Scale), Agronomy, IARI, New Delhi

Sustainable intensification of pearlmillet-mustard systems through conservation agriculture for enhancing productivity and resource use efficiency under semi-arid ecologies

Dr C.M. Parihar, Scientist, IARI, New Delhi

Impact of long-term conservation agriculture practices on crop productivity and soil and environmental Health

Dr S.L. Jat, Scientist, IARI, New Delhi

Nitrogen and residue management in conservation agriculture for enhancing productivity and profitability of maize systems

Dr M.A. Ansari, Scientist, ICAR Research Complex for NEH Region, Imphal, Manipur

Doubling the farmers income, livelihood and nutritional security through sustainable intensification of integrated farming in hill ecosystem

Dr R.L. Choudhary, Scientist, Agronomy, DRMR, Bharatpur, Rajasthan

Conservation agriculture for enhancing resource-use efficiency, cane productivity and soil health in sugarcane cropping system

Dr Pravin Kumar Upadhyay, Scientist, Agronomy, IARI, New Delhi

Residual effect of time and rate of panchagavya application in combination with different NPK doses on yield of lentil

Dr G.A. Rajanna, Scientist, Agronomy, IARI, New Delhi

Water and nutrient interactions in soybean genotypes under different land configurations

Dr Raghavendra Madar, Scientist (Agronomy), ICAR-IISR, Khandwa Road, Indore, M.P.

Residue and potassium management practices under conservation agriculture based maize-wheat cropping system in indo-gangatic plains India

Dr A.G. Shitu, ICAR International Research Fellow & Ph.D. Scholar, ICAR-IARI, Pusa, New Delhi

	Rethinking conservation agriculture through modelling seven year agricultural cycle for doubling farmers' income and improved welfare
13.30-14.30	**Lunch**
14.30–16.30	**CONCURRENT TECHNICAL SESSIONS**
Session – IVA:	**Farm Mechanization, Post-harvest Management, Processing, Value Addition and Marketing**
Venue:	**New Auditorium, RCA**
Chair:	Dr N.S. Rathore, DDG (Education), ICAR, New Delhi
Co-chair:	Dr R.P. Singh, Former Head, Agronomy IARI and Executive Secretary, IAUA, New Delhi
	Dr A.M. Patel, Director of Res. & Dean, PGS, SKDAU, SK Nagar, Gujarat
Convener:	Dr L.M. Garnayak, Dean, COA, OUAT, Bhubaneswar, Odisha
Rapporteurs:	Dr Ramamurthy V. Principal Scientist, NBSSLUP, Bengluru, Karnataka
	Dr Arun Kumar Barik, Professor, Agronomy, Visha Bharti University, Sriniketan, West Bengal
Keynote	Dr N.S. Rathore, DDG (Education), ICAR, New Delhi
Speaker	***Mechanization and secondary agriculture***
Lead speakers	Dr A.K. Mehta, Director Research, MPUAT, Udaipur, Rajasthan
	Post harvest management and value addition – A step ahead in Food Security
	Dr S.S. Burark, Former Director of Research & Emeritus Scientist, MPUAT, Udaipur, Rajasthan
	Opportunities for agri-business in India
	Dr P.S. Tiwari, Head, Agricultural Mechanization Division, CIAE, Bhopal
	Farm mechanization, post harvest management, processing, and value addition
	Dr A.K. Singh, Head, Farm Mechanization, IISR, Lukhnow, Uttar Pradesh
	Enhancing income of farmers through mechanization in sugarcane based cropping systems
Rapid Fire	Dr Anchal Dass, Principal Scientist, Agronomy, IARI, New Delhi
Presentations	***Machine-planted system of wheat intensification improves wheat productivity***
	Dr S.J. Sindhi, Assistant Professor, Agronomy, COA, JAU, Khapat, Porbandar, Gujarat
	Potential and challenges of Gujarat state in doubling farmers' income
	Dr Amit Bhatnagar, JRO, Agronomy, College of Agriculture, GBPUA&T, Pantnagar, Uttarakhand
	Effects of mechanized simultaneous earthing up and urea application on maize
Session - IVB:	**Agronomy Education, Training, Technology and Enabling Policies to Support Income Generating Activities**
Venue:	Seminar Hall, Directorate of Research, RCA Campus
Chair:	Dr V.M. Bhale, VC, Dr Panjabrao Deshmukh Krishi Vidyapeeth Krishi Nagar, Akola, Maharashtra
Co-chair:	Dr Kalyan Singh, Former Dean, IAS, BHU, Varanasi, Uttar Pradesh
Presentations	Dr S.D. Singh, APCCF, Uttarakhand
Convener:	Dr Anil Dixit, Principal Scientist, Agronomy, NIBSM, Raipur, Chhattisgarh
Rapporteurs:	Dr B. Sreedevi, Scientist (Agronomy), IIRR, Rajendranagar, Hyderabad, Telangana
	Dr Rakesh Sammauria, Professor, Agronomy, RARI, Durgapura, Jaipur, Rajasthan
Keynote	Dr Arvind Kumar, Vice Chancellor, RLB CAU, Jhansi, Uttar Pradesh

Speaker	***Innovative agronomic approaches for enhanced crop productivity and income under climate change Scenario***
Lead speakers	Dr B.S. Mahapatra, Professor, Agronomy, GBPUA&T, Pantnagar, Uttarakhand
	Agronomic education, training, technology and enabling policies for income generating activities
	Dr R.K. Pannu, Former Dean and ICAR-Emeritus Scientist, HAU, Hisar, Haryana
	Dynamics of agronomy education for doubling the income of farmers
	Dr N.P. Singh, Principal Scientist, NIAP, New Delhi
	Mainstreaming climate change adaptation into Indian rural development landscape
	Dr Joska Gerendas, K+S Fertilizers (India) Pvt. Ltd., Pune, Maharashtra
	Building Capacities of Women Farmers through Better Farming Practices for Rural Prosperity
Rapid Fire	Dr Jayant Deka, Dean, Faculty of Agriculture, AAU, Jorhat, Assam
Presentations	***Reorientation of Agronomy Education for Entrepreneurship Development***
	Dr R.K. Paikaray, Professor, Agronomy, OUAT, Bhubaneshwar
	Future of agronomy education–A way forward to meet the trends and challeges of agriculture
	Dr M.L. Kewat, Professor, Agronomy, JNKVV, Jabalpur, Madhya Pradesh
	Agronomy education in India: Time for a change
16.30–17.00	**Tea**
17.00–20.00	**General Body Meeting of the Indian Society of Agronomy**
	Venue: New Auditorium, RCA
20.00–22.00	**Dinner**
	DAY 3 : OCTOBER 26, 2018
9.00-11.00	**Technical Session-V : General Session**
	Venue: New Auditorium, RCA
Chair:	Dr T.C. Jain, Former Senior Agriculturist, World Bank
Co-chair:	Dr N.T. Yaduraju, Former Director, DWSR, Jabalpur, M.P.
	Dr R.M. Kummur, Former CGM, NABARD, Mumbai
Convener:	Dr S.P.S. Tanwar, Principal Scientist, CAZRI, Jodhpur, Rajasthan
Rapporteurs:	Dr Rakesh Kumar, Principal Scientist, NDRI, Karnal
	Dr Subhash Babu, Scientist, ICAR Research Complex NEH, Region, Shillong, Meghalaya
Speakers	Dr T.C. Jain, Former Senior Agriculturist, World Bank
	Overview of job opportunities for agronomists
	Dr S.K. Soam, Joint Director, NAARM, Hyderabad
	Developing winning research proposals
	Mr. Yogendra Kumar, Marketing Director, IFFCO
	Industry expectation from research institutions
	Dr P.K. Jain, Former Professor, MLS University, Udaipur, Rajasthan
	Enhancing interpersonal and communication skills
	Dr Kalpana Jain, Head Department of Psychology, MLS University, Udaipur, Rajasthan
	Psycho-social issues in farmer's entrepreneurship
11.00-11.30	**Tea**

11.30-13.00	**Valedictory Function**
	Venue: New Auditorium, RCA
Chief Guest	Dr S.L. Mehta, Former VC, MPUAT, Former DDG (Edu.), ICAR
Chairperson	Dr A.K. Singh, DDG (AE) ICAR and Director (A), IARI, New Delhi
President ISA	Dr A.K. Vyas, ADG (HRM) , ICAR, New Delhi
	Presentation of recommendations of each technical session by respective Rapporteur/ Convener
Emerging Recommendation	Dr T.C. Jain, Former Senior Agriculturist, World Bank
13.00–14.00	**Lunch**
14.00–17.00	**Field Visit**

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