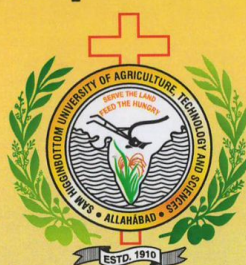


# PROCEEDINGS

**12<sup>th</sup> NATIONAL SYMPOSIUM  
ON**

**Convergence Building for Resource Sharing in  
Agriculture Research and Extension Sectors –  
Formation of State-Wise Agriculture Cabinet**

**27<sup>th</sup> - 28<sup>th</sup>, April 2017**



**Sponsored by**

**IAUA**

**Indian Agricultural  
Universities Association  
New Delhi, INDIA**

**Organized by**

**SHUATS**

**Sam Higginbottom University of  
Agriculture, Technology  
And Sciences Allahabad - 211 007, U.P., INDIA**





**Proceedings of**  
**12th National Symposium of IAUA**  
**On**  
**Convergence Building for Resource Sharing in Agriculture**  
**Research and Extension Sectors - Formation of State-wise**  
**Agriculture Cabinet**



*Sponsored by:*  
**Indian Agricultural Universities Association (IAUA)**  
**New Delhi**

*Organized by:*  
**Sam Higginbottom University of Agriculture, Technology and**  
**Sciences, Allahabad**

**Compiled and Edited by**

**Prof. (Dr.) A.K.A. Lawrence**  
*Pro-Vice-Chancellor (Academic Affairs) and*  
*Organizing Secretary*

**Dr. R.P. Singh**  
*Executive Secretary, IAUA-New Delhi*

**Published by** University Publications Division, Sam Higginbottom University of Agriculture,  
Technology and Sciences, Allahabad - 211007 (U.P.)









# 12<sup>th</sup> NATIONAL SYMPOSIUM

ON

## Convergence Building for Resource Sharing in Agriculture Research and Extension Sectors – Formation of State-Wise Agriculture Cabinet

27<sup>th</sup> - 28<sup>th</sup>, April 2017



(Sitting Left to Right)

**G. L. Keshwa**, Vice Chancellor, Agriculture University, Santhan, **Dr. K. M. L. Pathak**, Vice-Chancellor, Pt. Deen Dayal U P C V V evam Go-Anusandhan Sansthan, **Dr. Parvinder Kaushal**, Vice Chancellor, Birs Agricultural University, **Dr. K.M. Bujarbaruah**, Vice-Chancellor, Agriculture University & President, IAUA, **Most Rev. Prof. Rajendra B. Lal**, Vice Chancellor, SHUATS, **Dr. N. S. Rathore**, DDG (Edu.), ICAR, **Dr. (Col.) S. K. Patil**, Vice Chancellor, Indira Gandhi Krishi Vishwavidyalaya, Krishak Nagar, **Dr. A. R. Pathak**, Vice-Chancellor, Junagadh Agricultural University, **Dr. V. S. Tomar**, Vice Chancellor, Jawaharlal Nehru Krishi Vishwavidyalaya, **Dr. S. L. Goswami**, Vice Chancellor, Banda University of Agriculture and Technology, **Dr. Ashok Kumar Sarial**, Vice-Chancellor, CSK HP Krishi Vishwavidyalaya, **Dr. P. Rajendran**, Vice-Chancellor, Kerala Agricultural University

(Standing Left to Right)

**Prof. (Dr.) Robin L. Prasad**, Registrar, SHUATS, **Dr. Gaya Prasad**, Vice Chancellor, Sardar Vallabh Bhai Patel University of Agricultural and Technology, **Dr. Arvind Kumar**, Vice Chancellor, Rani Lakshmi Bai Cental Agricultural University, **Dr. R. P. Singh**, Sr. Scientist, JNKVV, **Prof. U. S. Sharma**, Vice-Chancellor, Maharana Pratap University of Agriculture And Technology, **Dr. Pradeep Kumar Sharma**, Vice Chancellor, Sher-e-Kashmir University of Agricultural Sciences and Technology, **Dr. K. Rathnakumar**, Registrar & Acting Vice-Chancellor, Tamil Nadu Fisheries University, **Dr. Purnendu Biswas**, Vice Chancellor, West Bengal University of Animal and Fishery Sciences, **Dr. D. D. Patra**, Vice-Chancellor, Bidhan Chandra Krishi Vishwavidyalaya, **Dr. S. Thilagar**, Vice-Chancellor, Tamil Nadu Veterinary and Animal Sciences University, **Dr. N. C. Gautam**, Vice Chancellor, Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, **Dr. N. C. Patel**, Vice-Chancellor, Anand Agricultural University, **Dr. R. P. Singh**, Executive Secretary, IAUA, **Dr. Neelam Grewal**, Dean, P.G. Studies, Punjab Agricultural University, **Dr. Praveen Singh Rathore**, Vice Chancellor, Sri Karan Narendra Agriculture University, **Dr. Jayaprakash Mohan Nidagundi**, Cotton Breeder and Head of the IPR Cell, **Prof. (Dr.) A. K. A. Lawrence**, Pro Vice Chancellor (Academic Affairs), SHUATS





## **CONTENTS**

Acknowledgment	1
General Recommendations	2
Executive Summary	3
Inaugural Session	4-6
Technical Session I	7-9
Technical Session II	10-11
Technical Session III	12
Technical Session IV	13-14
Technical Session V	15-16
Plenary Session and Valedictory Program	17

### **Appendices**

Annexure I - List of Delegates	18-23
Annexure II - Executive Committee of IAUA	24
Annexure III - Technical Program of 12th National Symposium of IAUA	25-26
Annexure IV - Technical Committees for organization of 12th National Symposium of IAUA	27-30







## Acknowledgment

The university was privileged to host a National Symposium sponsored by Indian Agricultural University Association (IAUA) at its premises. The success of the National Symposium on 'Convergence Building for Resource Sharing in Agriculture Research and Extension Sector - Formation of State-wise Agriculture Cabinet' can be gauged from the participation of a large number of Vice-Chancellors and their representatives, who enthusiastically contributed through deliberation and discussion during the various sessions. The university is extremely grateful to Dr. K. M. Bujarbaruah, President, IAUA and Vice-Chancellor Assam Agricultural University, Jorhat Assam, and Dr. R.P. Singh, Executive Secretary, IAUA and members of executive committee, IAUA for their willingness to host the conference at SHUATS, Allahabad.

It was a privilege to have Dr. N.S. Rathore, DDG, (Education), ICAR, New Delhi who gave his consent to be the chief guest for the symposium, his active participation and acute insight in to the main topic of discussion added immense value to the deliberation and recommendations.

The presence of Dr. N. C. Patel, VC, AAU, Anand; Dr. V.S. Tomar, VC, JNKV, Jabalpur; Dr. A. R. Pathak, VC, JAU, Junagadh; Dr. Arvind Kumar, VC, RLBCAU, Jhansi; Dr K.M.L. Pathak, VC, UP Pt. DDUPCVV, Mathura; Dr. S.K. Patil, VC, IGKV, Raipur; Dr. A.K. Singh, VC, RVSKVV, Gwalior; Dr. P. Rajendran, VC, KAU, Thrissur; Prof. P.K. Sharma, VC, SKUAST(J), Jammu; Dr. S. Thilagar, VC, TNV&ASU, Chennai; Dr. S.L. Goswami, VC, BUAT, Banda; Prof. Purnendu Biswas, VC, WBUAF&S, Kolkata; Dr. Gaya Prasad, VC, SVBPUAT, Meerut; Dr. Uma Shankar Sharma, VC, MPUAT, Udaipur; Dr. Praveen Singh Rathor, VC, SKNAU, Jobner; Dr. D.D. Patra, VC, BCKVV, Mohanpur; Dr. K.P. Singh, VC, CCSHAU, Hisar; Dr. Ashok Kumar Sarial, VC, CSKHPKV, Palampur; Dr. S. Solomon, VC, CSAUA&T, Kanpur; Dr. K. Rathnakumar, Registrar and Acting VC, TNFU, Nagapattinam; Dr. Parvinder Kaushal, VC, BAU, Kanke, Ranchi; Dr. G. L. Keshwa, VC, AU, Kota; Dr. N. C. Gautam VC, MGCGV, Chitrakoot; Dr. Neelam Grewal, Dean, P.G. Studies, PAU, Ludhiana; Dr. Jayaprakash Mohan Nidagundi, Cotton Breeder and Head of the IPR Cell, UAS, Raichur; Dr. (Mrs.) G. Taru Sharma, Head, Division of Physiology and Climatology, Nominee of VC Dr. R. K. Singh, IVRI, Izatnagar; Dr. R. P. Joshi, SS, JNKVV, Rewa is deeply acknowledged.

We extend our sincere thanks to all Chairmen, Co-Chairmen, Panelists, Speakers and Rapporteurs, members of core and working committees, whose contribution in organizing the National Symposium cannot be ignored. We would fail in our duty if we do not acknowledge the support and blessings given to the organizing committee by the Most Rev. Prof. Rajendra B. Lal, Vice-Chancellor, SHUATS, Allahabad.

**Prof. (Dr.) A.K.A. Lawrence**

Pro-Vice-Chancellor (Academic Affairs) and  
Organizing Secretary

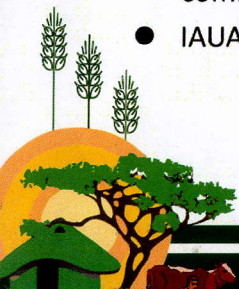






## General Recommendations

- All the states of the country should initiate efforts to develop 'State Agriculture Cabinet', with active participation of Agricultural Universities.
- Introduction of Agriculture as a subject in course curriculum in primary/secondary education.
- Government of India should formulate incentive schemes for farming community to increase the "Carbon" content of soil and also to increase the production and productivity of major crops. This scheme should be implemented through state government by involvement of SAUs / KVKs, etc.
- Carbon sequestration reduces the gap between soil scientists, microbiologists, plant breeders and agricultural engineers, thus interdisciplinary research should be promoted.
- Waste recycling resource systems need to be introduced at village level with active involvement of KVKs/NGOs/SAUs/DUs, etc.
- To impart, innovate and establish methods to transfer knowledge directly to the farmers.
- Interaction of plant microbes on climate change scenario needs to be restudied / restructured.
- Use of ICT in farm delivery system needs to be strengthened in the similar manner as PAU Doot, developed by PAU, Ludhiana.
- Need to establish 'Center of Excellence' in Farm Machinery at SAUs for development of small farm implements to reduce the drudgery especially among the farm women.
- New cropping patterns need to be introduced in addition to farm mechanization and integrated farming systems.
- Adoption of 'Marker-Assisted Breeding' for innovations in agricultural research in order to improve the specific trait of economic importance in crop plants.
- Establishment of seed bank, and feed and fodder bank at the panchayat level.
- SAUs should also be included in price-fixing policies for food items at state level along with state govt. officials and ICAR representation.
- Precision agricultural farming, tractor-mounted computer innovations like drone technology need to be introduced for various agriculture operations.
- Animal health should be taken care of through the establishment of climate-smart livestock clusters/villages.
- Development of strategies for housing and management of animals to mitigate the climate changes.
- Research to develop nutri-rich fodder varieties.
- Use of bio-pesticides/bio-fertilizers should be encouraged.
- Awareness should be created among farm women for livestock farming in order to increase farm income.
- Use animals as bioreactors for future research subject to approval of animal ethical committee.
- IAUA should take lead in formation of disaster-management strategies







## Executive Summary

### Introductory Remark

Indian agriculture has witnessed tremendous growth and development of research by harnessing the benefits of green revolution to gene revolution. However, innovation in crop production, development of climate-smart crop varieties, agricultural-system management, forestry for biomass sustainability, challenges in smart agriculture, big data, registration of crop/farmers varieties and IPR issues, women empowerment, green and renewable energy, farm mechanization and stress management strategies to improve livestock productivity, etc., are some of the key issues that need to be discussed elaborately to converge research output with the extension services and to formulate a National Policy. In light of the above, IAUA had taken timely decision to sponsor a two-day National Symposium at Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad.

### Inaugural Session

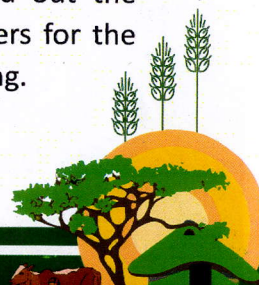
The inaugural session of the 12th National Symposium began with the lighting of lamps by Chief Guest Dr. N. S. Rathore, DDG Education, ICAR, New Delhi. Host Vice-Chancellor Most Rev. Prof. Rajendra B. Lal presided over the function. Other luminaries present on the dais were Dr. K. M. Bujarbaruah, President, IAUA; Dr. R.P. Singh, Executive Secretary; Dr. N. C. Patel, VC, AAU, Anand; Dr. A. R Pathak, VC, JAU, Junagadh; Dr. V.S. Tomar, VC, JNKV, Jabalpur and Dr. S.B. Lal, Pro-Vice-Chancellor (Administration), SHUATS. At the outset, Prof. (Dr.) A.K.A. Lawrence, Pro-Vice-Chancellor, Academic Affairs and Organizing Secretary, National Symposium, SHUATS welcomed and felicitated the dignitaries on the dais.

<b>Day 1:27.4.2017</b>	<b>Technical Session I:</b> Growth and Development of Agriculture Research in India: Prospects and Strategies <b>Technical Session II:</b> Big-Data – A Game Changer in Agricultural Research <b>Technical Session III:</b> Women Empowerment: Strategies for Development
<b>Day 2:28.4.2017</b>	<b>Technical Session IV:</b> Agriculture Mechanization <b>Technical Session V:</b> Agriculture Extension and Rural Development

The speakers during the technical sessions gave a lucid explanation of the topics, which was followed by a thought-provoking discussions and suggestions by the panelist and then an interactive session, where questions were answered. The technical sessions were very well conducted by the chairman/co-chairman and the rapporteurs meticulously noted the interaction discussion and remarks.

### Concluding Session

During the concluding session, the rapporteurs of various technical sessions read out the recommendations for implementation by policy makers, researchers and practitioners for the growth and development of Agriculture Research and Extension through resource sharing.





## Inaugural Session

The 12th National Symposium started with the lighting of lamps by Dr. N. S. Rathore, DDG Education, ICAR, New Delhi, who was the chief guest of the occasion. Prof. (Dr.) A.K.A. Lawrence, Pro-Vice-Chancellor, Academic Affairs and Organizing Secretary, National Symposium, SHUATS welcomed and felicitated the dignitaries on the dais.

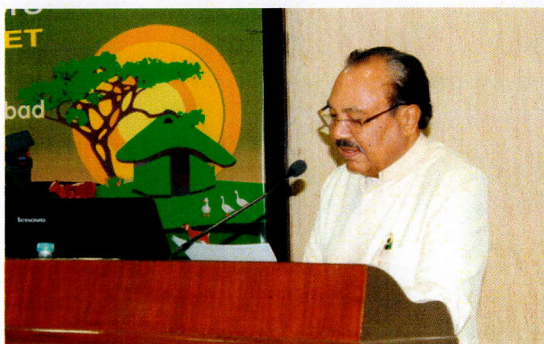
Dr. R.P. Singh, Executive Secretary, IAUA, in his introductory address stressed that agriculture should be taught as a subject education right from the primary level in all schools of the country.

- Villages should be empowered with solar power systems and farming-based small-scale industry in order to generate income and employment of the villagers.
- He also advocated the setting up of value-addition industries in urban areas and cold storages in hub of villages so as to facilitate direct procurement from farmers, thereby eliminating the role of middleman.
- Govt. should promote direct procurement of potato, tomato and onion, etc., from farmers.
- Some part of the mandis income should be given to neighboring universities for promotion of students teaching, research and extension facilities, so as to encourage quality students in the field of agriculture.
- Establishment of local rural market in villages should be promoted.
- Soil health needs to be monitored and the farm residues should be recycled for further use.
- Government should ensure timely supply of seeds and other farm inputs in areas prone to natural calamities.
- Farmers should be encouraged to adopt integrated farming systems including fisheries, livestock etc.

Dr. K. M. Bujarbaruah, President, IAUA in his presidential address stressed the need to formulate strategies to double the income of farmers. He added that the agricultural research and extension should be strengthened. Convergence of innovative technologies from production to consumption is the need of the hour to strengthen food value chain. He also emphasized the need to strengthen the collaboration from bankers, processors, private players (commercial institutions) with IAUA taking the lead.



*Lighting of lamp by the chief guest and other dignitaries*



*Dr. R.P. Singh, Executive Secretary, IAUA delivering welcome address*



*Dr. K. M. Bujarbaruah, President, IAUA, delivering presidential address*





Chief guest Dr. N.S. Rathore, DDG Education, ICAR, New Delhi, presented growth of Indian agriculture through vital statistics. He pointed that India has produced 272 MT of food grain production, 160 million liters of milk, 81 MT of fruits and 162 MT of vegetable production during 2016-17. India stands second largest producer of food grain production among 262 countries of the world. He informed that to compete at the international level, ICAR has also decided to start National Ranking of Agricultural Universities. He also emphasized upon the following issues:

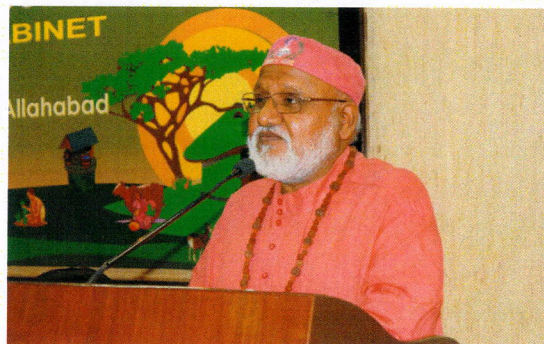
- Mitigation of faculty shortage in KVKs.
- Inspired teacher network to bring more transparency in our working system.
- Global collaboration through signing of MoUs with foreign universities.
- Universities should understand its social responsibilities in a better way and they should come forward with concrete plan of revenue generation through available resources.
- Introduction of Artificial Intelligence (AI) is the need of the hour.
- All SAUs, DUs should encourage Industry-University interaction.
- Convergence of education - knowledge, skill, ability and experience is required at all levels for development of agriculture education in our country.

As the vice-chancellor of the host university, Most Rev. Prof. Rajendra B. Lal, in his concluding remarks pointed out that the university ranking should be done among equals, as some universities are deficit in number of sanctioned and filled positions as per the recommendations of ICAR. He also advocated that appointment of faculty members in most universities should also be done through ICAR as it is being done successfully for admission of students at UG and PG level. This will bring the national culture in the university system and will facilitate the transfer of credits, academic linkages between different universities and lateral entry system of education. Agriculture universities should also start making strategies for revenue generation and avenues for spin-off industries.

Prof. (Dr.) S. B. Lal, Pro-Vice-Chancellor (Administration), SHUATS, Allahabad proposed vote of thanks, which was followed by the National Anthem



*Dr. N.S. Rathore, DDG Edu. ICAR,, delivering chief guest address*



*Most Rev. Prof. Rajendra B. Lal, VC, SHUATS, concluding the session*



*Singing of National Anthem by one and all*





Glimpses of the inaugural session of the 12th National Symposium





## Technical Session I

**Sub-Theme:** Growth and Development of Agricultural Research in India: Prospects and Strategies

Chairman	Dr. N.S. Rathore DDG (Education), ICAR
Co-Chairman	Dr. S. Thilagar Vice-Chancellor, TNVASU, Chennai
Rapporteurs	Prof. (Dr.) Shailesh Marker Director Research, SHUATS, Allahabad
	Prof. (Dr.) Arif A. Broadway Director, CPC and Professor, Dairy Technology, SHUATS, Allahabad
Panelists	Dr. Purnendu Biswas Vice-Chancellor, WBUAFS, Kolkata , WB
	Dr. Akhtar Haseeb Vice-Chancellor, NDUAT, Kumarganj, Faizabad, UP

Following speakers presented their views on the topics given below.

Topic	Speaker
Soil, roots, microorganisms and everything in between	Dr. D. D. Patra Vice-Chancellor BCKVV, Mohanpur, Nadia, WB
Innovation in crop production and delivery to farmers	Dr. Neelam Grewal Dean, PG Studies (Nominee of Vice-Chancellor, PAU, Ludhiana)
Stress management strategies to improve livestock productivity	Dr. (Mrs.) G. Taru Sharma Head Division of Physiology & Climatology (Nominee of Vice-Chancellor, IVRI, Bareilly)

The first lecture was delivered by Dr. D.D. Patra VC, BCKVV, Mohanpur, W.B. and he spoke on the topic 'Soil, Roots, Microorganisms Everything in Between'. He discussed at length about rhizospheres, soil microsphere, carbon sequestration, phyto-hormones, symbiotic relationship of microbes, methods to increase soil fertility using phyto-hormones, effect of carbon dioxide level on growth and development of short, medium and long day plant, mechanism of celestial bodies, and strategy to enhance carbon efficiency in soil.



Dr. D.D. Patra VC, BCKVV, Mohanpur delivering lecture





*Dr. Neelam Grewal, Dean, PG Studies, PAU, delivering her lecture*

Second lecture was delivered by representative of VC PAU, Ludhiana, Dr. Neelam Grewal, Dean, PG Studies, PAU, Ludhiana, who laid stress on the need for innovations in crop production and delivery systems to farmers, to improve the quality of life and to reduce carbon footprints, with historical varieties of wheat, rice and sugarcane. She emphasized how landmark varieties of wheat and rice has revolutionized the entire agricultural innovations leading us to green revolution.

She also reported that innovations through radiation breeding in major cereal crops, processing technologies, molecular technologies, double haploid technologies can solve the problems related to biotic and abiotic stresses.

Technologies like direct-seeded rice, laser leveler, drip irrigation and protected cultivation, etc., have enhanced the crop production and productivity, which is a positive sign towards doubling the farmers' income.

Innovations in crop protection, bio agents, bio fertilizers, botanicals IPM and farm mechanization has also a high impact on farmers' livelihood securities.

The last lecture of the session was delivered by Dr. G. Taru Sharma, Head, Department of Physiology and Climatology, IVRI, Bareilly who as a representative of Vice-Chancellor, IVRI, discussed stress-management strategies to improve livestock productivity. She explained the effect of climate change on livestock health, production, feeding and productivity. She discussed global and Indian scenario and livestock effect of climate stress/global warming on growth and health of milch cattle.



*Dr. G. Taru Sharma, IVRI, making her presentation*

She said that temperature humidity index needs to be understood for production output and rural economy, and is depended upon crop livestock production. Moreover, the effect of methane emission needs to be restudied with production efficiency. She also laid stress on development of new livestock production, fodder quality and quantity, availability of nutrients, feeding management and shelter management strategies. These technologies need to be taken to the farmers by using the extension system available in the university.





## The Panelists

Dr. Purnendu Biswas, Vice-Chancellor, WBUAFS, Kolkata, raised the concern for genetic improvement of indigenous cattle breeds in India for enhancing milk yields.

Dr. Akhtar Haseeb, Vice-Chancellor, NDUAT, Faizabad, stressed on the need for more study on plant-pathogen-environment interaction of all the economically important crops and dissemination of this knowledge to the farmers through mobile applications.

## Concluding Remark

Co-chairman, Dr. S. Thilagar Vice-Chancellor, TNVASU, Chennai enlightened the audience on the effect of methane emission on global warming, which is a result of large-scale animal farming. He also discussed the ways to mitigate it. The holistic approach of animal raising, their nutrient and feed management and knowledge dissemination and management to and for the farming community being the need of the hour.

Chairman, Dr. N.S. Rathore, Deputy Director General, Education, ICAR, New Delhi lauded the speakers for their in-depth discussion on management of soil, root, microorganism for innovating and improvement of crop production systems and their ultimate knowledge delivery to the farmers. However, he cautioned that no agriculture system is complete without livestock and major constraint in it being stress management as is found in India. The coherent development of crop-livestock diversification will give impetus for doubling farmers' income by 2022, he added.



*Comment of the chairman and interaction among the participants in Technical Session I*





## Technical Session II

### Sub- Theme: Big Data - A Game Changer in Agricultural Research

Chairman	Dr. V.S. Tomar Vice-Chancellor, JNKV, Jabalpur
Co-Chairman	Dr. A.R. Pathak Vice-Chancellor, JAU, Junagadh
Rapporteurs	Prof. (Dr.) Joy Dawson, Professor, Agronomy, SHUATS
	Prof. (Dr.) Rajendra Issac, Professor, Agri. Engineering, SHUATS
Panelists	Dr. P. Rajendran Vice-Chancellor, KAU, Thrissur, Kerala
	Dr. S. Thilagar Vice-Chancellor, TNVASU, Chennai
	Dr. A. K. Sarial Vice-Chancellor, CSKHPKV, Palampur, H.P.

The Chairman Dr. V.S. Tomar, Vice-Chancellor, JNKV, Jabalpur welcomed the Co-Chairman, Speakers, Panelists, Rapporteurs and all the members of IAUA. Following speakers delivered their presentation on the topics given below.

Topic	Speaker
Processing foods towards securing future.	Dr. N.C. Patel Vice-Chancellor, AAU, Anand, Gujarat
Formulation of National Policies framework for Big Data.	Dr. S.K. Patil Vice-Chancellor, IGKV, Raipur, C.G.
Promotion and Registration of Crop/ Farmers varieties and IPR issues.	Dr. J.P.M. Nidagundi Cotton Breeder & Head, IPR cell and Nominee of Vice-Chancellor, UAS, Raichur, Karnataka



Dr. N. C. Patel, VC, AAU, Anand delivering his lecture

Dr. N. C. Patel, Vice-Chancellor, AAU, Anand, laid emphasis that food security can be well obtained by harnessing the benefits of food processing operations and improving the shelf life of food products. The food sector uses 30% of total global energy and accounts for 22% of greenhouse emission. Feeding the population of the country by 2050 will not be made possible by increasing food production alone, but at the same time reduction and recovery of food losses and IT application will also play a vital role. Therefore, value addition of fruits and vegetables needs special attentions and

the use/adoption of newly developed food processing techniques like Pulse Electric Feed, Cold Plasma, UV Radiation, Ultrasound, etc., are needed as they significantly reduce the losses.



Dr. S. K. Patil, Vice-Chancellor, IGKV, Raipur focused on Big Data, which refers to use of predictive analysis; it was presented in standard form and there is a need to generate knowledge to put it into use. The speaker discussed the formulation of national policies framework for Big Data. He also emphasized, how the knowledge can be transferred to farmers and discussed the use of mobile apps like 'Vegetable Doctor' and 'Crop Doctor' and the use of 'AgriNextEcoSystem', which will provide one platform to all the farmers.



*Dr. S. K. Patil, VC, IGKV, Raipur delivering his lecture*

Dr. J.P.M. Nidagundi, Cotton Breeder and Head, IPR cell and Nominee of Vice-Chancellor, UAS, Raichur, made a presentation about promotion of registration of farmers' varieties and informed that Govt. of India has initiated registration of farmers' varieties/notified varieties/extant notified varieties of crops/horticultural crops/forest trees through PPV and FRA. This authority grants protection and other benefits to both breeders and farmers. He discussed the DUS guidelines and IPR issues in detail and emphasized that IPR knowledge at farmer level is necessary.



*Dr. J.P.M. Nidagundi, UAS, Raichur delivering his lecture*

### **The Panelists**

Dr. P. Rajendran, Vice-Chancellor, KAU, Kerala, emphasized the need for food processing as there is an urgent need to reduce the post-harvest losses in vegetables, fruits and to develop strategies for value addition of the produce.

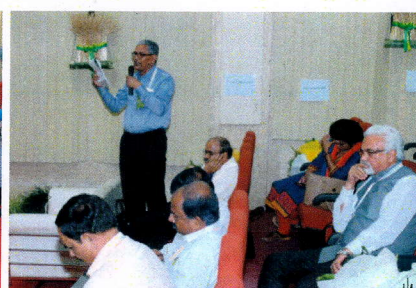
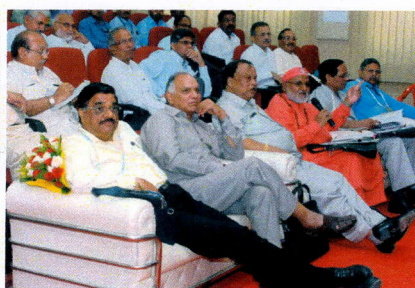
Dr. S. Thilagar, Vice-Chancellor, TNVASU, Chennai, informed the house about Intellectual Property Rights (IPR) issues and appreciated the efforts of ICAR for formulating policies. He also laid emphasis on the need for more studies on IPR and that its policies should be made flexible.

Dr. A. K. Sarial, Vice-Chancellor, CSKHPKV, Palampur, emphasized the transfer of technology from research institutes to farmer's field to realize the dream of low cost production and protection technologies show as to double farmer's income, especially in hilly regions.

### **Concluding Remark**

Dr. A. R. Pathak, Co-Chairman and Vice-Chancellor, JAU, Junagadh, laid emphasis on registration of extant notified varieties and facilitate IPR issues of the farmers through university mediation.

Dr. V.S. Tomar, Vice-Chancellor, JNKV, Jabalpur, concluded the session stressing on the need for harnessing the voluminous research data generated by NARS through big data, which is important for recommendations, policy formulation and its administration for new India.



*Comment of the chairman and interaction among the participants in Technical Session II*



### Technical Session III

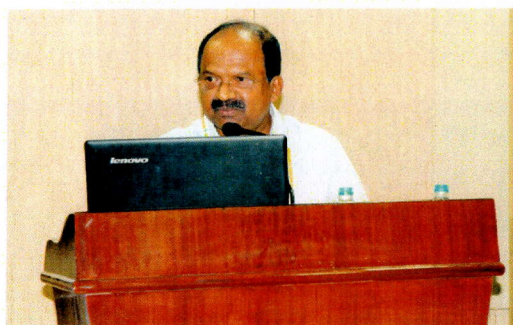
**Sub- Theme:** Women Empowerment: Strategies for Development.

Chairman	Dr. V.S. Tomar Vice-Chancellor, JNKV, Jabalpur
Co-Chairman	Dr. A.R. Pathak Vice-Chancellor, JAU, Junagadh.
Rapporteurs	Prof. (Dr.) Joy Dawson, Profes sor, Agronomy, SHUATS
	Prof. (Dr.) Rajendra Issac, Professor, Agri. Engineering, SHUATS
	Dr. S. Thilagar Vice-Chancellor, TNVASU, Chennai
	Dr. A.K. Sarial Vice-Chancellor, CSKHP KVV, Palampur, H.P

Dr. V.S. Tomar, Vice-Chancellor, JNKV, Jabalpur welcomed the Co-Chairman, Speakers, Panelists, Rapporteurs and member of IAUA. Following speakers gave their presentations on the topics given below.

Topic	Speaker
Empowerment of farm women towards livelihood security	Dr. P. Rajendran Vice-Chancellor, KAU, Thrissur, Kerala

**Topic: Empowerment of farm women towards livelihood security**



*Dr.P.Rajendran, VC, KAU, Kerala delivering his lecture*

Dr. P. Rajendran, Vice-Chancellor, KAU, Thrissur, Kerala, discussed the socio-economic transformation programs for women. He said that farm women are emerging as major stakeholders in farming sector. He added that socio-economic and gender issues do not affect the security of women. He also emphasized the role of SAUs to ensure sustainable livelihood for farm women. Education is the key for empowerment of farm women leading to better decision making and generating income for their livelihood.

#### **The Panelists**

Dr. S. Thilagar, Vice-Chancellor, TNVASU, Chennai stated that government should formulate specific policies to address the health issues of farm women and children. He also underlined the role of SAUs to ensure sustainable livelihood for farm women.

Dr. A. K. Sarial, Vice-Chancellor, CSKHPKVV, Palampur narrated the role of women in kitchen gardening, harvesting, threshing and storage of farm produce under hill farming.

#### **Concluding Remark**

Dr. A. R. Pathak, Co-Chairman and Vice-Chancellor, JAU, Junagadh educated the house about the role of State Agricultural Universities (SAUs) to empower women farmers through development of low-cost technologies for livelihood security.

Dr. V.S. Tomar, Vice-Chancellor, JNKV, Jabalpur, concluded the session with a note on socio-economic transformation programs for farm women stakeholders through active participation of government agencies, SAUs and NGOs to bring about holistic makeover of rural society.





## Technical Session IV

### Sub-Theme: Agriculture Mechanization.

Chairman	Dr. Arvind Kumar Vice-Chancellor, RLBCAU, Jhansi ,U.P.
Co-Chairman	Dr. S.L. Goswami Vice-Chancellor, BUAT, Banda, U.P.
Rapporteurs	Prof. (Dr.) D. M. Denis, Dean, VIAET, SHUATS
	Prof. (Dr.) A.K. Gupta, Head, Forensic Sciences, SHUATS
	Dr. D.K. Bose, Associate Professor, Dept. of Agriculture Extension and Communication
Panelists	Dr. S. Solomon, Vice-Chancellor, CSAUAT, Kanpur, U.P.
	Dr. K. Ratnakumar Vice-Chancellor, TNFU, Nagapattinam
	Dr.K.M.L. Pathak Vice-Chancellor, PDDUPCVVV evam Go-AS, Mathura

Dr. Arvind Kumar, Chairman and Vice-Chancellor, RLBCAU, Jhansi, UP welcomed the Co-Chairman, Speakers, Panelists, Rapporteurs and all the members of IAUA. Following speakers gave presentation on the topics listed below.

Topic	Speaker
Doubling farmers' income in hilly and mountainous situation of Himachal Pradesh	Dr. A. K. Sarial Vice-Chancellor, CSKHPKV, Palampur, HP



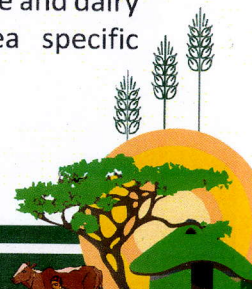
Dr. A. K. Sarial, VC, CSKHPKV, Palampur delivering his lecture

Speaker Dr. A. K. Sarial, Vice-Chancellor, CSKHPKV, Palampur, HP, highlighted the difficulties being faced by the farming community especially in hill zones of the country. He said that to double the farm income, it is essential to increase the production, and reduce the cost of cultivation.

A model of hill cultivation was presented to enhance the production and productivity and integrating with other entrepreneurship efforts like mushroom cultivation, honeybee rearing, vegetable cultivation, seed multiplication and poultry production, etc., suitable for different needs and requirements of various hill areas. Doubling the farm income includes whole farm approach, in which the farmers are engaged round the year and not only for a particular season.

### The Panelists

Dr. S. Solomon, Vice-Chancellor, CSAUATS, Kanpur, lauded the existing avenues, which are being used by SAUs for developing entrepreneurial skills like mushroom cultivation, apiculture and dairy production and oliculture, seed production and poultry production for area specific development of low-growth areas in agriculture throughout India.







Dr. K. Ratnakumar, Vice-Chancellor, TNFU, Nagapattinam, appreciated and supported the remarks made by Dr. S. Solomon and added that the model of hill cultivation, shall also be introduced to low growth areas in agriculture, this would enhance the production and productivity of the farms.

Dr. K. M. L. Pathak, Vice-Chancellor, PDDUPCVV, Mathura, acquainted the audience with the holistic approach towards farm development, which would engage the farmers and farm related labor activities throughout the year, irrespective of the seasonal fluctuations.

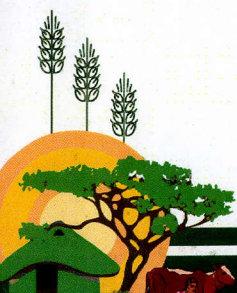
### **Concluding Remark**

Dr. S. L. Goswami, Co-Chairman and Vice-Chancellor, BUAT, Banda discussed the poor plight of the farmers and also highlighted the need to enhance the farm economy, growth in farmer's income, reduce cost of input and stabilize farm income.

Dr. Arvind Kumar, Chairman and Vice-Chancellor, RLBCAU, Jhansi, appreciated the speaker for his efforts in highlighting the programs being run by the Central and State Governments in light of the collective vision of doubling farmers' income by the year 2022.



*Comment of the chairman and panelists, and interaction among the participants in Technical Session IV*







### Technical Session V

#### Sub-Theme: Agriculture Extension and Rural Development

Chairman	Dr. Arvind Kumar Vice-Chancellor, RLBCAU, Jhansi ,U.P.
Co-Chairman	Dr. S.L. Goswami Vice-Chancellor, BUAT, Banda, U.P.
Rapporteurs	Prof. (Dr.) D. M. Denis, Dean, VIAET, SHUATS
	Prof. (Dr.) A.K. Gupta, Head, Forensic Sciences, SHUATS
	Dr. D.K. Bose, Associate Professor, Dept. of Agriculture Extension and Communication
Panelists	Dr. Parvinder Kaushal Vice-Chancellor, BAU, Kanke, Ranchi
	Dr. K.P. Singh Vice-Chancellor, CCSHAU, Hisar, Haryana
	Dr. U. S. Sharma Vice-Chancellor, MPUAT, Udaipur, Rajasthan
	Dr. Gaya Prasad Vice-Chancellor, SVBPUA&T, Meerut
	Dr. Praveen Singh Rathore Vice-Chancellor, SKNAU, Jobner, Jaipur

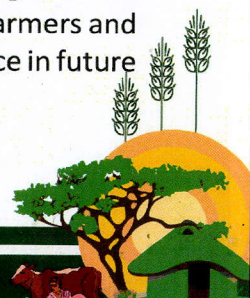
Dr. Arvind Kumar, Chairman and Vice-Chancellor, RLBCAU, Jhansi, welcomed the Co-Chairman, Speakers, Panelists, Rapporteurs and members of IAUA. Following speakers made their presentations on the topics given below.

Topic	Speaker
Integration of Extension Agencies for effective dissemination of technologies.	Dr. A. K. Singh, Vice-Chancellor, RVSKVV, Gwalior

Dr A. K. Singh, Vice-Chancellor, RVSKVV, Gwalior informed that the Krishi Vigyan Kendras (KVKs) are grass-root organizations, which are supposed to impart vocational-training programs to the farmers and village-level field/extension workers. Our KVK functionaries are doing a good job as far as dissemination of newly developed technologies is concerned. However, there is a need to integrate more of state govt. schemes with KVKs. The ICAR should give more emphasis on the development of programs that would empower the KVKs. He advocated the need for custom hiring of experts/personnel by universities and more coordination with line (state agricultural) departments. He also put forward the concept of 'Kisan Mobile Advisory Service' for helping the farmers for local specific situations.

#### The Panelists

Dr. Parvider Kaushal, Vice-Chancellor, BAU, Kanke, Ranchi put forth his view that as grass-root organizations KVKs have done a commendable job of imparting vocational training to farmers and village-level extension functionaries since its inception and will be of strategic importance in future for delivery of crucial technologies and in-farm training modules.







Dr. K.P. Singh, Vice-Chancellor, CCS HAU, Hisar, highlighted the schemes being run by central and state governments as well as NGOs for dissemination of improved agricultural technologies to farm-based rural population.

Dr. U. S. Sharma, Vice-Chancellor, MPUAT, Udaipur, focused on empowerment of KVKs so that they may play a pivotal role in dissemination of government schemes, newly developed farm technologies and improved farming practices.

Dr. Gaya Prasad, Vice-Chancellor, SVBPUAT, Meerut, advocated the newly emerging trends of custom hiring of experts/resource personnel from universities and research institutions in conjunction and co-ordination with line departments.

Dr. P.S. Rathore, Vice-Chancellor, SKNAU, Jobner, put forward the concept of Kisan Mobile Advisory Service and mobile applications (apps) for helping the farmers in solving their local farm issues and advanced advisories (weather advisory, plant protection advisory, etc.)

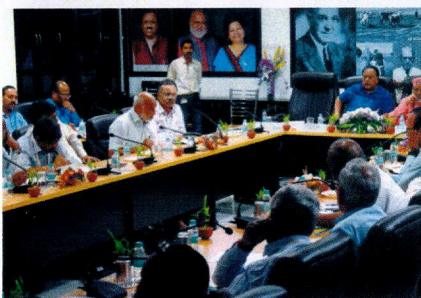
### **Concluding Remark**

Dr. S. L. Goswami, Co-Chairman and Vice-Chancellor, BUAT, Banda, focused on various Central schemes like Pradhan Mantri Fasal Bima Yojna, Soil health card and Agricultural Technology Management Agency (ATMA) programs for mitigating and managing soft and hard inputs for agricultural production systems.

Dr. Arvind Kumar, Chairman and Vice-Chancellor, RLBCAU, Jhansi concluded the session by highlighting the role played by SAUs, line departments and extension agencies for dissemination of agricultural technologies for enhancing the production and productivity of the farms. He also focused on Gram Uday se Bharat Uday Abhiyan (Village Self Governance Campaign) which aims to generate nationwide efforts to increase social harmony across villages, strengthen Panchayati Raj, promote rural development, and foster farmers' progress.



*Dr A K Singh, VC, RVSKVV, Gwalior delivering his lecture*



*Interaction among chairman, panelists, and participants in Technical Session V*







### Plenary Session and Valedictory Program

Chairman	Most Rev. Prof. Rajendra B. Lal, Vice-Chancellor, SHUATS
Co-Chairman	Dr. R. P. Singh, Executive Secretary, IAUA
Rapporteurs	Prof. (Dr.) D.M. Denis, Dean, Agriculture Engineering, SHUATS
	Prof. (Dr.) Gautam Ghosh, Dean, NAI, SHUATS
	Dr. D. K. Bose, Associate Professor, Dept. of Agriculture Extension and Communication

The plenary session was held under the chairmanship of Most Rev. Prof. Rajendra B. Lal, Vice-Chancellor, SHUATS, Allahabad and Co-Chairman Dr. R. P. Singh, Executive Secretary, IAUA, New Delhi.

The proceedings of various technical sessions of the 12th National Symposium were presented by the concerned rapporteurs. It was followed by appraisal of recommendations of different technical session that were summed up by Prof. (Dr.) Gautam Ghosh, Dean, Naini Agricultural Institute, SHUATS.

The co-chairman praised the efforts of all in organizing this symposium in a well-ordered and systematic manner. The chairman thanked the IAUA for sponsoring this event and complemented all delegates for their valuable suggestions and constructive interaction during the technical sessions and hoped that the recommendations brought out in this symposium would prove to be crucial in policy making in future.

Vote of thanks was given by Prof. (Dr.) A. K. A. Lawrence, Organizing Secretary 12th National Symposium and Pro-Vice-Chancellor, Academic Affairs, SHUATS, Allahabad.

The 12th National Symposium concluded with prayer and benediction by the Most Rev. Prof. Rajendra B. Lal, Vice-Chancellor, SHUATS, Allahabad.



*Interaction among chairman, panelists, and participants in Plenary Session*







## Annexure I

### List of Delegates

S. No	Name and Designation	University
1.	Dr. N. S. Rathore DDG (Edu.), ICAR, New Delhi	B-2 NASC Complex, DPS Marg, ND-12 Telephone :011-25841760 Email : <a href="mailto:ddgedn@gmail.com">ddgedn@gmail.com</a>
2.	Dr. R. P. Singh Executive Secretary	Indian Agricultural Universities Association, IG-2, CGIAR Block, NASC, Pusa Campus, Dev Prakash Shastri Marg, New Delhi-110012 Mobile: 9811930811 Fax : 011-25842422 Email : <a href="mailto:esiaua@yahoo.co.in">esiaua@yahoo.co.in</a> ; <a href="mailto:drsinghrp@rediffmail.com">drsinghrp@rediffmail.com</a>
3.	Most Rev. Prof. R.B.Lal Vice-Chancellor	Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad-211007 Uttar Pradesh Telephone : 0532-2684284 Email : <a href="mailto:vc@shuats.edu.in">vc@shuats.edu.in</a>
4.	Dr. K.M. Bujarbaruah Vice-Chancellor	Assam Agriculture University, Jorhat - 785013 (Assam) Mobile:09435050050 Fax:0376-2340001 Email : <a href="mailto:vc@aaau.ac.in">vc@aaau.ac.in</a> ; <a href="mailto:km_bujarbaruah@rediffmail.com">km_bujarbaruah@rediffmail.com</a>
5.	Dr. A. R. Pathak Vice-Chancellor	Junagadh Agricultural University, Junagadh -362001 Mobile:09879644344 Fax:0285-2672004 Email : <a href="mailto:vc@jau.in">vc@jau.in</a>
6.	Dr. N.C.Patel Vice- Chancellor	Anand Agricultural University, Anand-388110 (Gujarat) Mobile: 09998009960 Fax: 02692-261520 Email : <a href="mailto:vc@aaui.in">vc@aaui.in</a> ; <a href="mailto:ncpatel@aaui.in">ncpatel@aaui.in</a>
7.	Dr. Arvind Kumar Vice-Chancellor	Rani Lakshmi Bai Central Agricultural University, Gwalior Road, Near Pahuj Dam, Jhansi-284003 (U.P.) Mobile:09839818899 Email : <a href="mailto:registrar.rlbcau@gmail.com">registrar.rlbcau@gmail.com</a>
8.	Dr. V. S. Tomar Vice-Chancellor	Jawaharlal Nehru Krishi Vishwa Vidyalaya P.O.Adhartal, Krishinagar, Jabalpur -482004 (M.P.) Mobile-09425155585 Email : <a href="mailto:vst.vcjkvv@gmail.com">vst.vcjkvv@gmail.com</a>
9.	Dr. P. Rajendran Vice-Chancellor	Kerala Agricultural University Mobil:08547871928 Fax:0487-2370019 Email : <a href="mailto:vc@kau.in">vc@kau.in</a>
10.	Dr. S. Thilagar Vice-Chancellor	Tamil Nadu Veterinary and Animal Sciences University, Chennai- 600051 Mobile:09940533840 Fax:04425551576 Email : <a href="mailto:vc@tanuvas.org.in">vc@tanuvas.org.in</a>





10.	Dr. S. Thilagar Vice-Chancellor	Tamil Nadu Veterinary and Animal Sciences University, Chennai- 600051 Mobile:09940533840 Fax:04425551576 Email : <a href="mailto:vc@tanuvas.org.in">vc@tanuvas.org.in</a>
11.	Dr. S. K. Patil Vice-Chancellor	Indira Gandhi KrishiVishwaVidyalala, Krishak Nagar,Labhandi, Raipur, 492006, (CG) Mobile:09424283160 Fax:0771-2442302 Email : <a href="mailto:vcigkv@gmail.com">vcigkv@gmail.com</a>
12.	Dr. S. L. Goswami Vice-Chancellor	Banda University of Agriculture and Technology, Banda-210001,UttarPradesh Mobile:918004915503 Fax:05191-232305 Email : <a href="mailto:vc.buat@gmail.com">vc.buat@gmail.com</a>
13.	Dr. Gaya Prasad Vice-Chancellor	SardarVallabh Bhai Patel University of Agriculture and Technology, Meerut 250110 (U.P) Mobile:08008452626/7251000600/9582898968 Email : <a href="mailto:vc.svpuat@gmail.com">vc.svpuat@gmail.com</a> ; <a href="mailto:vc2016svpuat@gmail.com">vc2016svpuat@gmail.com</a>
14.	Dr. Akhtar Haseeb Vice-Chancellor	Narendra Deva University of Agriculture & Technology Kumarganj, Faizabad-224229(U.P.) Mobile:+91-74088366 Email: <a href="mailto:vcnduat@gmail.com">vcnduat@gmail.com</a>
15.	Dr. D. D. Patra Vice-Chancellor	Bidhan Chandra KrishiViswaVidyalaya, Mohanpur, Nadia - 741252 (W.B.) Mobile: 09830071278 Email : <a href="mailto:bckvvc@gmail.com">bckvvc@gmail.com</a>
16.	Dr. Purnendu Biswas Vice-Chancellor	West Bengal University of Animal and Fishery Sciences 68, Kshudiram Bose Sarni Belgachia, Kolkata -700037 Mobile:09433047745/ 09903362643 Fax: 033-25571986 Email : <a href="mailto:drpbiswas56@yahoo.com">drpbiswas56@yahoo.com</a>
17.	Dr. K. M .L. Pathak Vice- Chancellor	Pt.DeenDayalUpadhyayaPashuChikitsaVigyanVishwaVidyalay aevamGo-AnusandhanSansthan, Mathura-281001 Mobile: 07500177888 Fax:0565-2470819 Email : <a href="mailto:duvasuvc@gmail.com">duvasuvc@gmail.com</a> ; <a href="mailto:pathakkml@yahoo.co.in">pathakkml@yahoo.co.in</a>
18.	Dr. N. C. Gautam Vice-Chancellor	Mahatma Gandhi Chitrakoot Gramodaya Vishwa Vidyalaya, Chitrakoot, Dist. Satna (M.P.) Mobile:07581819600 Fax:07670-265340 Email : <a href="mailto:vc.gramodaya@gmail.com">vc.gramodaya@gmail.com</a> ; <a href="mailto:gautamnc@yahoo.co.in">gautamnc@yahoo.co.in</a>







19.	Dr. P. K. Sharma Vice-Chancellor	Sher-e-Kashmir University of Agricultural Sciences and Technology, Jammu- 180009 (J & K) Mobile:09797388333 Phone:0191-2263714 Email : <a href="mailto:vc@skuast.org">vc@skuast.org</a>
20.	Dr. Ashok Kumar Sarial Vice-Chancellor	CSK HP KrishiVishvaVidyalayaPalampur– 176062 (HP) Mobile:09896313776 Fax:01894-230465 Email : <a href="mailto:vc@hillagric.ac.in">vc@hillagric.ac.in</a>
21.	Dr. A. K. Singh Vice-Chancellor	RajmataVijayaraje Scindia Krishi Vishwa Vidyalaya, Race Course Road, Gwalior, 474002 Mobile:09425702142 Fax:0751-2464141 Email : <a href="mailto:vcrvsaugwa@mp.gov.in">vcrvsaugwa@mp.gov.in</a>
22.	Dr. Parvinder Kaushal Vice-Chancellor	Birsa Agricultural University Kanke, Ranchi-834006 Phone:0651-2450500 Email : <a href="mailto:vc@bauranchi.org">vc@bauranchi.org</a>
23.	Dr. K.P. Singh Vice-Chancellor	CCS Haryana Agricultural University, Hissar – 125004 Mobile:08295782950 Fax:01662-234952 Email : <a href="mailto:vc@hau.ernet.in">vc@hau.ernet.in</a> ; <a href="mailto:vchauhisar@gmail.com">vchauhisar@gmail.com</a>
24.	Dr. S. Solomon Vice-Chancellor	C.S. Azad University of Agriculture and Technology Kanpur – 208002 (U.P.) Mobile- 09839040995 Fax- 0512-2533808 Email : <a href="mailto:vc@csauk.ac.in">vc@csauk.ac.in</a>
25.	Dr. U. S. Sharma Vice-Chancellor	MaharanaPratap University of Agriculture And Technology, Udaipur-313001 Mobile: 09414158224, 09414170239 Email : <a href="mailto:vcmpuat@yahoo.co.in">vcmpuat@yahoo.co.in</a> / <a href="mailto:vc@mpuat.ac.in">vc@mpuat.ac.in</a>
26.	Dr. Praveen Singh Rathore Vice-Chancellor	Sri Karan Narendra Agriculture University, Jobner, Jaipur (Rajasthan) – 303329 Mobile:09460657371 Fax:01425-254039 Email : <a href="mailto:vc@sknau.ac.in">vc@sknau.ac.in</a>
27.	Dr. G. L. Keshwa Vice-Chancellor	Agriculture University, Kota Borkhera, Baran Raod, Kota -324001 (Rajasthan) Tel: 0744- 2321204 Fax: 0744 – 2321203 Email : <a href="mailto:vcaukota@gmail.com">vcaukota@gmail.com</a>
28.	Dr. K. Rathnakumar Registrar and Acting Vice- Chancellor	Tamil Nadu Fisheries University, Nagapattinam - 611001 Mobile:09443032439 Fax:04365-240089 Email : <a href="mailto:vctnfu@gmail.com">vctnfu@gmail.com</a>





29.	Dr. Neelam Grewal, Dean, P.G.Studies, PAU	Punjab Agricultural University, Ludhiana, Punjab 141004 Phone :0161-2400008,Ext.316 Fax:0161-2402483 Email : <a href="mailto:vc@pau.edudeanpgs@pau.edu">vc@pau.edudeanpgs@pau.edu</a>
30.	Dr. Jayaprakash Mohan Nidagundi Cotton Breeder and Head IPR Cell (Nominee of Vice- Chancellor)	University of Agricultural Sciences, Lingasugur Road, Raichur- 584104, Karnataka Phone:08532-221444 Fax:08532-220444 Email : <a href="mailto:vcuasraichur10@rediffmail.com">vcuasraichur10@rediffmail.com</a>
31.	Dr. G. Taru Sharma Head, Division of Physiology and Climatology, (Nominee of Vice- Chancellor Dr. R. K. Singh)	Indian Veterinary Research Institute, Izatnagar, 243122 Bareilly Mobil:07534075345/09412603840 Fax:0581:2303284 Email : <a href="mailto:directorivri@gmail.com">directorivri@gmail.com</a> ; <a href="mailto:gts553@gmail.com">gts553@gmail.com</a>
	Dr. R. P. Joshi Senior Scientist	Jawaharlal Nehru Krishi Vishwa Vidyalaya College of Agriculture, Rewa– 486001 (M.P.) Mobile:09425110184 Email : <a href="mailto:rpjoshi_rewa@rediffmail.com">rpjoshi_rewa@rediffmail.com</a>

## **Annexure II**

### **Executive Committee of IAUA**

<b>President</b>	Dr. K.M. Bujarbaruah Vice-Chancellor, AAU, Jorhat
<b>Vice – President</b>	Dr. N. C. Patel Vice-Chancellor, AAU, Anand
<b>Secretary – General</b>	Dr. V.S. Tomar Vice-Chancellor, JNKV, Jabalpur
<b>Treasurer</b>	Dr. A. R. Pathak Vice-Chancellor, JAU, Junagadh
<b>Member</b>	Dr. A. K. Gahlot Vice-Chancellor, RUVAS, Bikaner
<b>Member</b>	Dr. B. S. Dhillon Vice-Chancellor, PAU, Ludhiana
<b>Member</b>	Dr. Mathew Prasad Vice-Chancellor, UUHF, Bharsar
<b>Member</b>	Dr. M. C. Varshneya Vice-Chancellor, KU, Gandhi nagar
<b>Executive Secretary</b>	Dr. R. P. Singh Indian Agricultural University Association (IAUA), New Delhi





### **Annexure III**

## **Inaugural and Technical Program**

### **12th NATIONAL SYMPOSIUM**

on

**Convergence Building for Resource Sharing in Agriculture Research and Extension**

**Sectors- Formation of State-wise Agriculture Cabinet**

*Sponsored by*

**Indian Agricultural Universities Association**

*Organized by*

**SAM HIGGINBOTTOM UNIVERSITY OF AGRICULTURE, TECHNOLOGY AND SCIENCES,  
ALLAHABAD - 211007**

**April 27 - 28, 2017**

**April 27, 2017**

**Registration: 09: 00 am**

**Venue: JIBB Auditorium**

**SHUATS, Allahabad**

**Inaugural Function: 9.30 am - 11.05 am**

<b>Time</b>	<b>Events</b>	<b>Speaker</b>
9.30 am	Arrival of the Chief Guest	
9.30 am to 9.35 am	Opening Prayer	Rev. Dr. Samuel Richmond Saxena, Chaplain, SHUATS, Allahabad.
9.35 am to 9.45 am	Lighting of Lamp	By the Chief Guest and other distinguished guests on the dais
9.45 am to 9.55 am	Welcome and felicitation of dignitaries	Prof. (Dr.) A.K.A. Lawrence, Pro-Vice-Chancellor, Academic Affairs and Organizing Secretary National Symposium
9.55 am to 10.05 am	Welcome Address	Dr. R.P. Singh, Executive Secretary, IAUA
10.05 am to 10.15 am	Presidential Address	Dr. K.M. Bujarbaruah, VC, AAU, Jorhat, Assam and President IAUA
10.15 am to 10.45 am	Inaugural Address by the Chief Guest	Dr. N.S. Rathore, Dy. Director General (Edn.), ICAR
10.45 am to 10.55 am	Concluding Remarks	The Most Rev. Rajendra B. Lal, VC, SHUATS, Allahabad. And Past President IAUA (2009)
10.55 am to 11.00 am	Vote of Thanks	Prof. (Dr.) S. B. Lal, Pro -VC (Admin), SHUATS
11.00 am to 11.05 am	National Anthem	University Staff and All
11.05 am	High Tea	





## Day 1: Technical Session I

Venue: Jacob Institute of Biotechnology and Bioengineering Auditorium, SHUATS

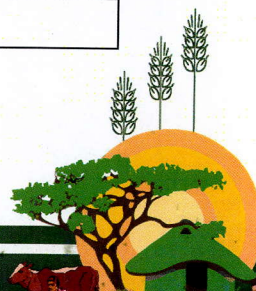
April 27, 2017

Sub Theme: Growth and development of Agricultural Research in India: Prospects and Strategies.

11.30 am to 01.00 pm

<b>Chairman</b>	Dr. N.S. Rathore, DDG (Education), ICAR
<b>Co-Chairman</b>	Dr. S. Thilagar Vice-Chancellor, TNVASU, Chennai
<b>Repporteurs</b>	Prof. (Dr.) Shailesh Marker, Director Research, SHUATS, Allahabad
	Prof. (Dr.) Arif A. Broadway, Director, CPC and Professor, Dairy Technology, SHUATS, Allahabad
<b>Panelists</b>	Dr. Purnendu Biswas, Vice-Chancellor, WBUAFS, Kolkata ,WB
	Dr. Akhtar Haseeb, Vice-Chancellor, NDUAT, Kumarganj, Faizabad, U.P.

Time	Topic	Speaker
11.30 am – 11.55 am	Soil, Roots, Microorganisms and Everything in between	Dr. D. D. Patra Vice-Chancellor Bidhan Chandra Krishi ViswaVidyalaya, Mohanpur, Nadia, W.B.
11.55 am – 12.20 pm	Innovation in Crop Production and Delivery to Farmer	Dr. Neelam Grewal Dean, PG Studies Nominee of Dr. B.S. Dhillon, VC,PAU, Ludhiana
12.20 pm – 12.45 pm	Stress Management strategies to improve livestock productivity	Dr.(Mrs.) G.Taru Sharma, Head Division of Physiology and Climatology (Nominee) Indian Veterinary Research Institute /
12.45 pm – 12.55 pm	Views of Panelists	Noted (Page 9 )
12.55 pm – 1.00 pm	Remarks of Chairman	Noted (Page 9)
1.00 – 2.00 pm	Lunch Break	







### Technical Session II

**Sub Theme: Big Data - A Game Changer in Agricultural Research.**

**02.00 pm - 5.00 pm**

Chairman	Dr. V. S. Tomar Vice-Chancellor, JNKV, Jabalpur
Co-Chairman	Dr. A.R. Pathak Vice-Chancellor, JAU, Junagadh
Rapporteurs	Prof. (Dr.) Joy Dawson, Professor, Agronomy, SHUATS Prof. (Dr.) Rajendra Issac, Professor, Agri. Engineering, SHUATS
Panelists	Dr. P. Rajendran, Vice-Chancellor, KAU, Thrissur, Kerala Dr. S. Thilagar, Vice-Chancellor, TNVASU, Chennai Dr. A. K. Sarial, Vice-Chancellor, CSKHPKV, Palampur, HP

Time	Topic	Speaker
2.00 pm – 2.30 pm	Processing foods towards securing future	Dr. N.C. Patel Vice-Chancellor, AAU, Anand, Gujarat
2.30 pm – 3.00 pm	Formulation of National Policies framework for Big Data	Dr. S.K. Patil Vice-Chancellor, IGKV, Raipur, CG
3.00 – 3.30 pm	Promotion and Registration of Crop/ Farmers varieties and IPR issues	Dr. J.P.M. Nidagundi, Cotton Breeder and Head, IPR cell and Nominee of Vice-Chancellor, UAS, Raichur, Karnataka
3.30 – 4.00 pm	Views of Panelists	Noted (Page 11)
4.00 – 4.30 pm	Remarks of Chairman	Noted (Page 12)
4.30 – 5.00 pm	Tea break	







### Technical Session III

**Sub Theme: Women Empowerment: Strategies for Development.**

**5.00 - 6.00 pm**

Chairman	Dr. V. S. Tomar Vice-Chancellor, JNKV, Jabalpur
Co-Chairman	Dr. A.R. Pathak Vice-Chancellor, JAU, Junagadh.
Rapporteurs	Prof. (Dr.) Joy Dawson, Professor, Agronomy, SHUATS
	Prof. (Dr.) Rajendra Issac, Professor, Agri. Engineering, SHUATS
Chairman	Dr. S. Thilagar, Vice-Chancellor, TNVASU, Chennai
	Dr. A. K. Sarial, Vice-Chancellor, CSKHP KVV, Palampur, HP
	Dr. A. K. Singh Vice-Chancellor, RVSKVV, Gwalior

Time	Topic	Speaker
5.00–5.30 pm	Empowerment of farm women to wards livelihood security	Dr. P. Rajendran, Vice-Chancellor, KAU, Thrissur, Kerala
5.30–5.45 pm	Views of Panelists	Noted (Page 13)
5.45–6.00 pm	Remarks of Chairman	Noted (Page 14)

### Day 2: Technical Session IV

**Venue: Shalom Guest House Conference Hall, SHUATS, Allahabad**

**April 28, 2017**

**Sub Theme: Agriculture Mechanization**

**11.30 - 12.30 pm**

Chairman	Dr. Arvind Kumar, Vice-Chancellor, RLBCAU, Jhansi ,U.P.
Co-Chairman	Dr. S.L. Goswami, Vice-Chancellor, BUAT, Banda, U .P.
Rapporteurs	Prof. (Dr.) D.M. Denis, Dean, VIAET, SHUATS
	Prof. (Dr.) A.K. Gupta, Head, Forensic Sciences, SHUATS
	Dr. D.K. Bose, Associate Professor, Dept. of Agriculture Extension and Communication
Panelists	Dr. S. Solomon, Vice-Chancellor, CSAUAT, Kanpur, U.P.
	Dr. K. Ratnakumar, Vice-Chancellor, TNFU, Nagapattinam
	Dr.K.M.L. Pathak, Vice-Chancellor, PDDUPCVVV evam Go-AS, Mathura





Time	Topic	Speaker
11.30 am -12.00 Pm	Doubling farmers' income in hilly and mountainous situation of Himachal Pradesh	Dr. A. K. Sarial, Vice-Chancellor, CSKHPKVV, Palampur, HP
12.00 – 12.15 pm	Views of Panelists	Noted (Page 16)
12.15 – 12.30 pm	Remarks of Chairman	Noted (Page 16)

**Technical Session -V**  
**Sub Theme: Agriculture Extension and Rural Development.**  
**12.30 pm - 1.30 pm**

Chairman	Dr. Arvind Kumar, Vice-Chancellor, RLBCAU, Jhansi ,U.P.
Co-Chairman	Dr. S.L. Goswami, Vice-Chancellor, BUAT, Banda, U.P.
Rapporteurs	Prof. (Dr.) D.M. Denis, Dean, VIAET, SHUATS
	Prof. (Dr.) A.K. Gupta, Head, Forensic Sciences, SHUATS
	Dr. D.K. Bose, Associate Professor, Dept. of Agriculture Extension and Communication
Panelists	Dr. Parvinder Kaushal, Vice-Chancellor, BAU, Kanke, Ranchi
	Dr. K.P. Singh, Vice-Chancellor, CCSHAU, Hisar, Haryana
	Dr. U. S. Sharma, Vice-Chancellor, MPUAT, Udaipur, Rajasthan

Time	Topic	Speaker
12.30 – 1.00 pm	Integration of Extension Agencies for effective dissemination of technologies.	Dr. A.K. Singh, Vice-Chancellor, RVSKVV, Gwalior
1.00 – 1.15 pm	Views of Panelists	Noted (Page 18)
1.15.130 pm	Remarks of Chairman	Noted (Page 18)

**Plenary Session and Valedictory Program**  
**2.30 pm - 3.30 pm**

Chairman	Most Rev. Prof. Rajendra B. Lal, Vice-Chancellor, SHUATS
Co-Chairman	Dr. R. P. Singh, Executive Secretary, IAUA
Rapporteurs	Prof. (Dr.) D.M. Denis, Dean, Agriculture Engineering, SHUATS
	Prof. (Dr.) Gautam Ghosh, Dean, NAI, SHUATS
	Dr. D. K. Bose, Associate Professor, Dept. of Agriculture Extension and Communication





#### Annexure IV

Committees for organization of 12th National Symposium of IAUA

##### **Core Committee**

Most Rev. Prof. Rajendra B. Lal <i>Hon'ble Vice-Chancellor, SHUATS</i>	Chairman
Prof. (Dr.) A.K.A. Lawrence <i>Pro-Vice-Chancellor (Academic Affairs), SHUATS</i>	Organizing Secretary
Prof. (Dr.) S. B. Lal <i>Pro-Vice-Chancellor (Administration), SHUATS</i>	Convener
Prof. (Dr.) Robin L Prasad <i>Registrar, SHUATS</i>	Member
Prof. (Dr.) Shailesh Marker <i>Director Research, SHUATS</i>	Member
Prof. (Dr.) Wilson Kispotta <i>Director Extension, SHUATS</i>	Member
Prof. (Dr.) C.K. Shukla <i>Director, P&amp;TE, SHUATS</i>	Member

##### **Working Committees**

- Technical Committee  
Prof. (Dr.) Gautam Ghosh, Convener
- Reception Committee  
Prof. (Dr.) Ranu Prasad, Convener
- Venue Arrangement Committee  
Dr. Razia Parvez, Convener
- Accommodation Committee  
Dr. Suchit A John, Convener
- Transportation Committee  
Dr. Tarence Thomas, Convener
- Memento and Awards Committee  
Prof. (Dr.) Rubina Lawrence, Convener
- Finance Committee  
Dr. A. K. Chaurasia, Convener
- Press and Media Committee  
Dr. Ashish Alexander, Convener
- Photography and Videography Committee  
Dr. Rahat Khan, Convener
- Food Committee  
Prof. (Dr.) Ramesh Chandra, Convener
- Chairman Special Event Committee  
Prof. (Dr.) Alok Milton Lal, Convener
- Printing and Invitation Committee  
Er. John C. Wesley, Convener







### I. Technical Committee

Sr. No.	Name of the staff	Designation	Position
1	Prof. (Dr.) Gautam Ghosh	Dean, NAI	Convener
2	Prof. (Dr.) Rubina Lawrence	Professor and Head	Member
3	Dr. Anshu	Associate Professor	Member
4	Dr. Sasya Nagar	Associate Professor	Member
5	Dr. Abhilasha A. Lal	Associate Professor	Member
6	Dr. Sunil Zachariah	Assistant Professor	Member
7	Dr. Devi Singh	Assistant Professor	Member
8	Dr. (Miss) Urfi Fatmi	Assistant Professor	Member
9	Mr. Deepanshu Masih	Assistant Professor	Member
10	Dr. Priyanka Singh	Research Assistant	Member
11	Miss P Sumriti Rao	Teaching Associate	Member

### II. Printing and Invitation Committee

Sr. No.	Name of the staff	Designation	Position
1	Er. John C. Wesley	Assistant Professor	Convener

### III. Reception Committee

Sr. No.	Name of the staff	Designation	Position
1	Prof.(Dr.) Ranu Prasad	Dean, ECHS	Convener
2	Dr. Anjali Mathur	Assistant Professor	CO-Convener
3	Dr. Neeru Bala	Associate Professor	Member
4	Dr. Nisha Chacko	Assistant Professor	Member
5	Dr. Ekta Sharma	Assistant Professor	Member
6	Er. Jenitha	Associate Professor	Member
7	Er. Dorkus Masih	Assistant Professor	Member
8	Er. Stephen George	Assistant Professor	Member
9	Er. Abhishek Gaikwad	Assistant Professor	Member
10	Er. Nikhil Singh	Assistant Professor	Member
11	Dr. Jyoti Mani	Assistant Professor	Member
12	Dr. Poonam Prakash	Associate Professor	Member
13	Dr. Manisha Prasad	Assistant Professor	Member

### V. Venue Arrangement Committee

Sr. No.	Name of the staff	Designation	Position
1	Dr.(Ms.) Razia Parvez	Associate Professor	Convener
2	Dr.(Ms.) Priyanka Singh	Assistant Professor	Member
3	Er. R.E. Wilson	Landscape Engineer	Member
4	Dr. Sunita B. John	Assistant Professor	Member
5	Er. Mudita Srivastava	Assistant Professor	Member
6	Er. Tulika	Assistant Professor	Member





#### VI. Accommodation Committee

Sr. No.	Name of the staff	Designation	Position
1	Dr. Suchit A. John	Associate Professor	Convener
2	Dr. Rajesh Singh	Assistant Professor	Member
3	Dr. Pradeep Kumar Shukla	Assistant Professor	Member

#### VII. Transportation Committee

Sr. No.	Name of the staff	Designation	Position
1	Dr. T. Thomas	Head	Convener
2	Er. A. Ashok	Assistant Professor	Co - Convener
3	Er. Anupam Masih	Associate Professor	Co - Convener
4	Mr. Bala JeeVikram	Assistant Professor	Member
5	Mr. Prabhakar A Rao	Assistant Professor	Member
6	Mr. Mohit Paul	Associate Professor	Member
7	Mr. Abhishek Choudhary	Assistant Professor	Member
8	Mr. Abhishek Gaikward	Assistant Professor	Member
9	Mr. Manish Masih	Assistant Professor	Member
10	Mr. Nikhil Singh	Assistant Professor	Member
11	Mr. Vivek Stephen	Assistant Professor	Member
12	Mr. Ivan Wilson	Associate Professor	Member
13	Mr. Stephen George	Assistant Professor	Member
14	Mr. Ritesh Ranjan Singh	Assistant Professor	Member
15	Mr. Amol Kumar Agnihotri	Assistant Professor	Member
16	Mr. Roshan Nayak	Assistant Professor	Member
17	Mr. Prinu C. Phillip	Assistant Professor	Member
18	Mr. Ashish Das	Assistant Professor	Member
19	Mr. Sudhanshu Tripathi	Assistant Professor	Member

#### VIII. Photography and Videography Committee

Sr. No.	Name of the staff	Designation	Position
1	Dr. Rahat Khan	Head	Convener
2	Mr. Manzar Illyas	-	Member
3	Mr. Nikhil Singh	-	Member
4	Mr. Shueb Ansari	-	Member
5	Mr. Sandeep Soni	-	Member







#### XI. Memento and Awards Committee

Sr. No.	Name of the staff	Designation	Position
1	Prof. (Dr.) Rubina Lawrence	Head	Convener
2	Dr. Neelam Khare	Assistant Professor	Member
3	Dr. Richa Sharma	Associate Professor	Member
4	Dr. Ebenezer Jeyakumar	Assistant Professor	Member
5	Mr. Akhilesh Singh	Assistant Professor	Member

#### IX. Finance Committee

Sr. No.	Name of the staff	Designation	Position
1	Dr. A. K. Chaurasia	Associate Professor	Treasurer
2	Mr. Sanjeev Francis	Administrative Officer	Member

#### XII. Press and Media Committee

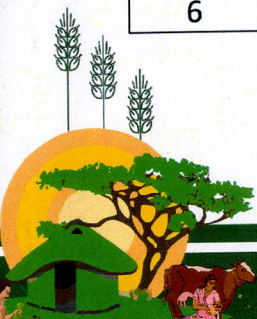
Sr. No.	Name of the staff	Designation	Position
1	Dr. Ashish Alexander	Associate Professor	Convener
2	Dr. Arun Yadav	Assistant Development Officer	Member
3	Mr. Kaushal Saxena	PS to Director Development	Member

#### XIII. Food Committee

Sr. No.	Name of the staff	Designation	Position
1	Prof.(Dr.) Ramesh Chandra	Dean, WCDT	Convener
2	Prof. Neeraj	Professor and Head	Member
3	Dr. Arun David	Associate Professor	Member
4	Dr. S. G. M. Prasad	Associate Professor	Member
5	Dr. Ramesh Pandey	Associate Professor	Member
6	Mr. Aslam	Assistant Professor	Member
7	Mr. Tejash Jacob	Assistant Professor	Member

#### XIV. Cultural Committee

Sr. No.	Name of the staff	Designation	Position
1	Prof.(Dr.) Alok M. Lal,	Professor and Head	Chairman
2	Er. Aditya Lal	Assistant Professor	Member
3	Ms. Niha Lois Kumar	Technical Officer	Member
4	Dr. Prashant D'Suza	Assistant Professor	Member
5	Dr. Priyanka Singh	Assistant Professor	Member
6	Mr. Mohd. Anwar	Assistant Professor	Member





# IAUA

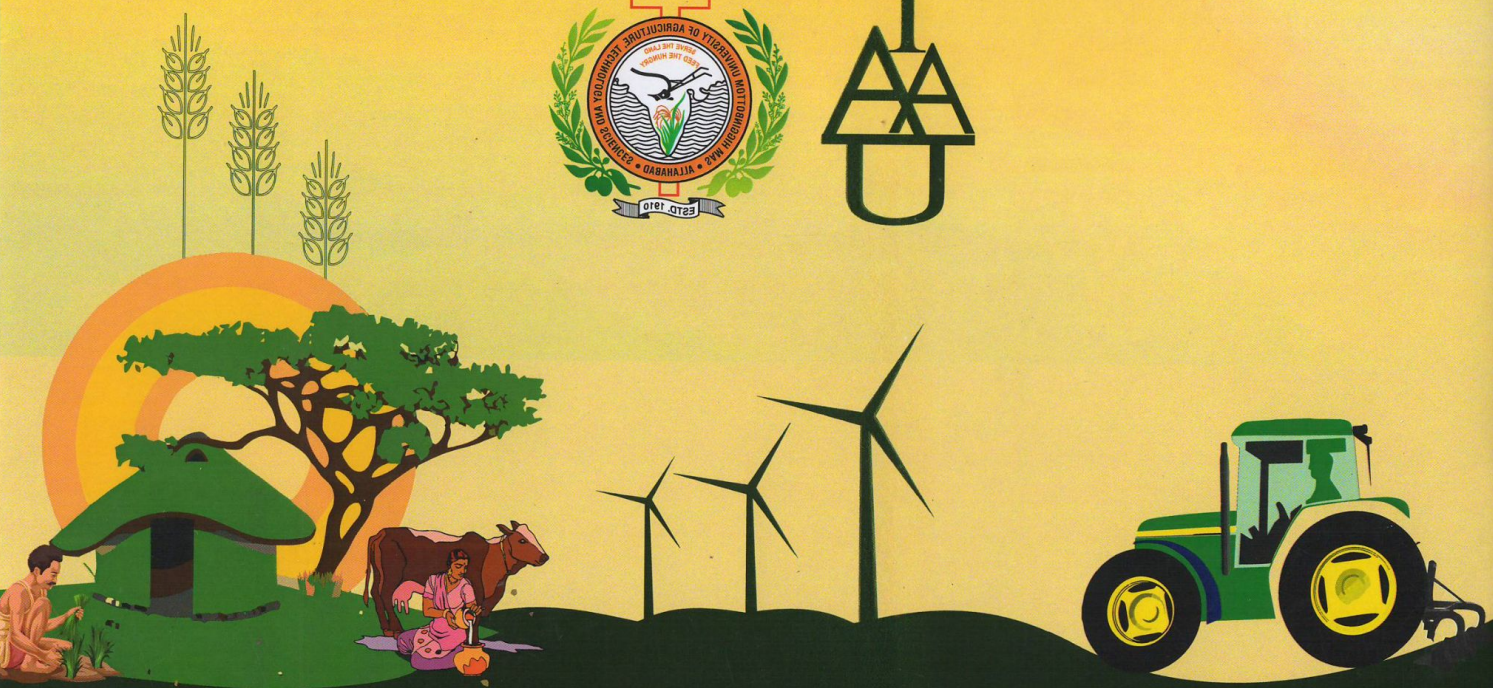
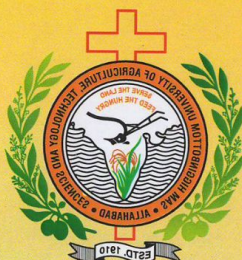
Sponsored by

Indian Agricultural  
Universities Association  
New Delhi, INDIA

Organized by

# SHUATS

Sam Higginbottom University of  
Agriculture, Technology  
And Sciences Allahabad - 211 007, U.P., INDIA



# PROCEEDINGS

## 12<sup>th</sup> NATIONAL SYMPOSIUM