

Summary of China Development Forum 2015 and the 2nd International Conference on Smart Agriculture Innovative Development

Liu Changran, Zhang Man, Wang Qing, Li Minzan, Gao Wanlin

(College of Information and Electrical Engineering, China Agricultural University, Beijing 100083, China)

China Development Forum 2015 and the 2nd International Conference on Smart Agriculture Innovative Development (ICSaid 2015) were held at China Agricultural University (CAU) on October 16-19, 2015. The conference was sponsored by CAU and Economic Affairs Committee of China Zhigong Party, and organized by College of Information and Electrical Engineering (CIEE) of CAU, Political Department of China Zhigong Party Central Committee, Office of Research and Development of CAU, and Key Laboratory on Modern Precision Agriculture System Integration Research of Ministry of Education, CAU.

ICSaid 2015 was aimed at innovative development, global strategy, collaborative innovation and key technology of smart agriculture, and production research and development and marketing about smart agriculture, giving sci-tech support for smart agriculture to lead modern agricultural development and promote agricultural modernization. Some world leading experts and well-known scholars were invited to give keynote speeches on frontier, development tendency, opportunity, strategy and countermeasures of smart agriculture, cloud computing, Internet of things, big data and modern agriculture, and exchange ideas around the theme.

The themes of ICSaid 2015 were intelligent agriculture technology and agricultural industrial transformation, which cover the following topics: Advanced science and technology, development tendency, opportunity, strategy and countermeasure of smart agriculture; cloud computing, the internet of things, big data and modern agriculture; equipment of intelligent agriculture and agricultural industrial transformation; personnel cultivation and innovative entrepreneurship of intelligent agriculture technology; precision agriculture; informatization of seed industry.

Prof. Wanlin Gao, the Executive Chairman of the ICSaid 2015 and the Dean of the CIEE of CAU presided

over the opening ceremony. Prof. Tao Wang, Vice President of CAU, Prof. Bangjie Yang, Vice President of China Zhigong Party, Mr. Ke Tang, Director of Science and Technology Education Department, Ministry of Agriculture, Prof. Jingdun Jia, Director of China Rural Technology Development Center, Ministry of Science and Technology, Prof. Ming Zhu, President of both Chinese Academy of Agricultural Engineering and Chinese Society of Agricultural Engineering, and other experts and leaders gave welcome and opening speeches.

Prof. Maohua Wang, Academician of Chinese Academy of Engineering, gave a keynote speech entitled "Strategic Thinking on Promotion of Precision Farming to Smart Agriculture". The speech pointed out that precision agriculture would develop into smart agriculture. The innovative research of its key scientific problems would lead modern agricultural technology innovation based on new generation information technology and smart decision, and accelerate the transformation of traditional agricultural production and management systems, to make contribution to smart agriculture which guarantee food security, increase agricultural production and efficiency, increase peasants' income sustainably, and develop agricultural and new rural service.

Prof. Raj Khosla from Colorado State University, Prof. Chunjiang Zhao, Director of National Engineering Research Center for Information Technology in Agriculture of China, Prof. Qin Zhang from Washington State University, Dr. Xiaolan Xu from China Information Technology Industry Federation all gave excellent presentations on research results of smart agriculture and modern agriculture.

On the second keynote report session of the conference, Prof. Nikolaos Sygrimis from Agricultural University of Athens of Greece, Prof. Yanbin Li from University of Arkansas of USA, Prof. Naiqian Zhang from Kansas State University of USA, Prof. Sakae

Shibusawa from Tokyo University of Agriculture and Technology of Japan, and other famous experts from at home and abroad gave very good presentations. They presented the forefront fruits of smart agriculture, drew the blueprint for smart agriculture in the respects of the combination of policy and science, analyzed the opportunities and challenges of the age of smart agriculture, and revealed the research progress of

intelligent agricultural equipment.

Through the discussion and reports, ICSaid 2015 achieved fruitful success in helping participants to know the status and experience of smart agriculture in developed countries, understand the advantages and disadvantages in China, laying a solid foundation for exploring developing path of smart agriculture in China.

(Edited by Dr. Wang Yingkuan)



General view of the ICSaid 2015



Prof. Maohua Wang delivered a keynote speech



Prof. Wanlin Gao, Chaired the ICSaid 2015

2015 Joint International Conferences on Intelligent Agriculture held in Beijing

Zhao Chunjiang¹, Li Daoliang²

(1. *National Engineering Research Center for Information Technology in Agriculture, Beijing 100097, China*; 2. *College of Information and Electrical Engineering, China Agricultural University, Beijing 100083, China*)

The Joint International Conferences on Intelligent Agriculture (ICIA), which include the 8th International Symposium on Intelligent Information Technology in Agriculture (ISIITA), the 9th International Conference on Computer and Computing Technologies in Agriculture (CCTA) and AgriFuture Days 2015 International Conference, were held in Beijing, China on September 27-30, 2015. The ICIA 2015 conferences were sponsored jointly by National Engineering Research Center for Information Technology in Agriculture (NERCITA), China Agricultural University (CAU) and National Research Center of Intelligent Equipment for Agriculture (NRCIEA). The co-sponsors and supporters of ICIA 2015 include Food and Agriculture Organization (FAO), the International Federation for Information Processing (IFIP), Ministry of Science and Technology (MOST), Ministry of Agriculture (MOA), Ministry of Industry and Information Technology (MIIT), National Natural Science Foundation of China (NSFC) and Beijing Municipal Government. Prof. Chunjiang Zhao from

NERCITA, Prof. Daoliang Li from CAU, Dr. Walter H. Mayer from PROGIS Software GmbH Villach and Dr. Ajit Maru from Global Forum on Agricultural Research were the Co-Chairs of the ICIA2015.

As a global trend of agricultural development, intelligent agriculture will promote new revolution in agricultural sciences and technologies, sharply enhance agricultural productivity, profoundly change management of agricultural production. The ICIA 2015 focused on intelligent agriculture and the goal of intelligent agriculture was to achieve highly efficient and sustainable development of agriculture. Through wide utilization of intelligent equipments, intelligent robotics, and information technologies such as internet, internet of things, big data and cloud computing, the latest pattern of modern agriculture will be formed with the basic characteristics of digitalization, automation, precision and intelligence. Well-known experts in this area were invited to give strategic, significant and impressive presentations during the conferences. The themes of the

ICIA 2015 include but are not limited to the followings:

1. Agricultural Big Data and Cloud Computing:

Data Processing, Model and Intelligent Decision Making, Intelligent Search

2. Information Acquisition of Animals and Plants Phenotyping: Sensors, High-throughput Measurement Technology, Analysis of Phenotypic Information

3. Precision Agriculture and Agricultural Aviation: Agricultural Remote Sensing, Advanced Sensing, Decision Making and Prescription, Precision Implementation, Navigation and Control, Agricultural Aerial Application, Automatic Control in Facility Agriculture, Agricultural Robots

4. Quality Control and Traceability of Agro-products: Collection and Management of Field Production Information, Input Supervision, Early warning of Plant Diseases and Insect Pests, Nondestructive Detection of Agricultural Products, Management and Control of Cold-chain Logistics, Traceability in the Whole Process

5. ICT Applications in Agriculture: ICT Application in Family Farms, Agricultural Resources and Environment and Geography Information System, Rural Cloud Services, Interactive Training, IOT Integration and Application, Rural E-commerce

During the conferences, 19 invited experts and 59 speakers delivered keynote speeches and presentations in the general conferences and parallel sessions. The highlights of the conferences are the most interesting and

exciting keynote speeches including “Advances of New Generation of ICT and Innovations on Smart Agriculture” delivered by Prof. Maohua Wang from China Agricultural University, “Engineering and Agronomy Aspects of a Long-term Precision Agriculture Field Experiment” delivered by Prof. Kenneth A. Sudduth, Chairman of the International Society of Precision Agriculture (ISPA), and “Present Advancement of Chinese Agricultural Aviation” delivered by Prof. Xiwen Luo from South China Agricultural University, etc.

More than 300 participants from 20 countries including China, USA, India, Spain, Italy, UK, Japan, Korea, Australia, Germany, Czech, Canada, Turkey, Hungary, Austria, Poland, Switzerland, Malaysia, Bulgaria and Latvia attended the conferences. On the last day of the ICIA2015, participants took a technical tour of the NERCITA and Xiaotangshan National Experiment Station for Precision Agriculture in Beijing.

The conferences were productive and an explicit direction and target of cooperation in intelligent agriculture was formed. It provided a platform for global scholars to exchange techniques, ideas and build friendship. The latest theories, viewpoints, technologies, products and applications were extensively shared. Practical experiences of innovation and applications in intelligent agriculture were also shared among experts from different countries.

(Edited by Dr. Wang Yingkuan)



General view of the ICIA 2015



Prof. Maohua Wang delivered a keynote speech



Prof. Kenneth A. Sudduth delivered a keynote speech



Prof. Xiwen Luo delivered a keynote speech