



Background

China has become an important market for the agricultural and agro-industrial exports of several Latin American countries, which reached US\$ 30 billion in 2015, while flows from China to LAC were only US\$ 3.024 million. The negative agriculture-related trade balance that China has with LAC contrasts with a global trade surplus, as total exports of China to Latin America reached US\$ 81.7 billion, while total imports were US\$ 172.4 billion, in 2015. The rise of the region's agricultural export to China is the result of the increase in food demand derived from a fast growing economy and rapidly urbanizing society, which cannot be met with local production. In 2015 China's agricultural trade deficit reached US\$ 27.1 billion.

The rise of the region's agricultural export to China is the result of the increase in food demand derived from a fast growing economy and rapidly urbanizing society, which cannot be met with local production. In 2011 China's agricultural trade deficit reached US\$ 44.1 billion, a figure that has been steadily growing despite China's success in its efforts to increase domestic food production.

That situation creates objective conditions for complementarities between China and LAC, establishing solid and stable strategic alliances for cooperation on agriculture that transcend pure commercial relationships, as it has been the case until now. Building those alliances requires a better mutual understanding between the two regions, as it was stressed during the Forum of Minister of Agriculture of Latin America and the People's Republic of China, celebrated in Beijing, on June 8-9, 2013. In the Declaration approved by acclamation in the Forum, the Ministers proclaimed:

"We believe that:

...

Agricultural science and technology provide ultimate resource to promote agricultural development. While cutting-edge high technologies develop by leaps and bounds, the post-Green Revolution era and sustainable agricultural production systems have carved out new way for the future agricultural development. Enhanced cooperation in technology innovation and extension will, in this context, elevate agricultural technology and agricultural development in both China and Latin America and the Caribbean. The advancement of biotechnology as well as biosafety concerns are integral part of this process and it should be applied fully in agricultural development observing existing multilateral agreement."

The Declaration states the intention to, among other:

"Jointly conduct agricultural technology programs, strengthen cooperation in agricultural science and technology research and development centers and conduct joint research on crop variety breeding and cultivation, agricultural biotechnology, animal farming, aquaculture, animal and plant disease prevention and control, agricultural mechanization, and agricultural product processing, etc. to jointly enhance scientific and technological innovation capacity;"

Furthermore, in the Summit of Heads of State of CELAC and the People's Republic of China, held in Brasilia, on July 17, 2014, President Xi Jinping outlined an integral proposal and the position of China with respect to Latin America. These can be summarized in what President Jinping termed as the "1+3+6 Cooperation Framework", meaning "1 Program of Cooperation, the "Chinese-Latin American and Caribbean Countries Cooperation Plan (2015-2019)", "trade, investment and financial cooperation as the 3 engines to promote cooperation" and "6 major field", one of which is agriculture.

Seminar

Development and foresight in China & Latin America agricultural science, technology and innovation



Food and Agriculture
Organization of the
United Nations



中华人民共和国科学技术部
Ministry of Science and Technology of the People's Republic of China

Santiago Chile, on 13 September 2017

Objectives

The main purpose of the seminar is to identify complementarities in agricultural sciences, technology and innovation among China and Latin America and the Caribbean with the purpose of strengthening cooperation initiatives.

Specific objectives include:

- Promote dialogue between agricultural scientists from China and Latin America and the Caribbean;
- Share advances in agricultural science, technology and innovations in primary agricultural production, food processing and the food industry, and processing of waste agricultural biomass.
- Identify strengths and weakness which can provide the basis for cooperation between China and Latin America and the Caribbean in primary agricultural production, food processing and the food industry, and processing of waste agricultural biomass;
- Identify opportunities and mechanism for strengthening cooperation between China and Latin America and the Caribbean, focusing on agricultural science, technology and innovations in low-carbon primary agricultural production, food processing and the food industry, and processing of waste agricultural biomass as a means to promote rural development and climate action in agriculture.

Outcome

The main outcome of the seminar will be a report that will be presented by ECLAC and FAO/RLC as an input to the next CELAC – China meeting, which will take place in January 2018 in Santiago Chile.

The report will identify specific targets among the 17 SDGs of the Agenda 2030 which can be steered by strengthening cooperation among China and Latin America and the Caribbean countries on agricultural science, technology and innovation, especially in the areas of low-carbon primary agricultural production, food processing and food industry, and processing of waste agricultural biomass.

A working group integrated by LAC and Chinese scientists and facilitated by ECLAC and FAO will be integrated to draft the report.

Intended audience

The intended audience of the Seminar includes policymakers, academics and researchers, students, business persons and other stakeholders in the areas of agricultural sciences, technology and innovation.



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PROGRAMME

Raúl Prébisch Auditorium, CEPAL.
Av. Dag Hammarskjöld 3477,
Vitacura, Santiago- Chile

Wednesday September 13	
08.30 – 09.00	Registration
09.00 – 09.30	Inauguration
	<ul style="list-style-type: none"> • Mario Cimoli, Director, Division of Production, Productivity and Management, ECLAC • Julio Berdegue, Regional Representative FAO/RLC • Huang Shengbiao, Deputy Director-General, China Rural Technology Development Center, MOST.
09.30 – 10.00	Group picture Light coffee break
10.00 – 11.30	Session 1: Primary Production: Biotechnology in agriculture
	<p>Presentations</p> <p><u>RP China</u></p> <ul style="list-style-type: none"> • He Zhonghu, Research Professor, Institute of Crop Science, Chinese Academy of Agricultural Sciences (Application of biotechnology in crop breeding in China.) • Wang Tao, Vice Rector/Professor China Agricultural University (Agri-biotechnology development tendency in China). • Han Jianyong, Professor China Agricultural University (Animal embryonic biotechnology in China). <p><u>Latin America</u></p> <ul style="list-style-type: none"> • Randall Loaiza, Director, National Center for Biotechnology Innovations (CENIBiot), Costa Rica. • Abel Hernandez, Chief, Plant Biotechnology, Genetic Engineering and Biotechnology Center (CIGB), Cuba. • Iván Matus, Subdirector R&D INIA, Chile. <p>Discussion</p> <p>Moderator: <i>Adrián Rodríguez, Chief, Agricultural Development Unit, Division of Production, Productivity and Management, ECLAC.</i></p>
11.30 – 12.00	Coffee break
12:00 – 13:30	Session 2: Food processing and the food industry
	<p>Presentations</p> <p><u>RP China</u></p> <ul style="list-style-type: none"> • Fang Xianfa, Vice Director/Chief Engineer, Chinese Academy of Agricultural Mechanization Sciences (Postharvest Handling and Processing Technology in Cutting down Food Wastage and Spoilage). • Liu Donghong, Professor, Zhejiang University, P.R. China (Integrated processing and utilization of agricultural and aquatic products).

**Latin America**

- **Lourdes Maria Corrêa Cabral**, Chief, Embrapa Food's Agroindustry, Brasil.
- **Sergio Ramón Vaudagna**, Director, Food Technology Institute, Center for Agroindustry Research, INTA, Argentina.
- **María Teresa Pino**, Programme Director, INIA, Chile.

Discussion**Moderator:** Mehdi Drissi, Senior Programme Officer, FAO/RLC.**13:30 – 14:30****Lunch****14:30 – 16.30****Session 3: Perspectives for cooperation in agricultural science, technology and innovation between China and Latin America****Presentations****RP China**

- **Huang Shengbiao**, Deputy Director-General, China Rural Technology Development Center, MOST.
- **Wang Tao**, Vice Rector/Professor China Agricultural University
- **Fang Xianfa**, Vice Director/Chief Engineer, Chinese Academy of Agricultural Mechanization Sciences.

Latin America

- **Iván Matus**, Subdirector R&D INIA, Chile.
- **Sergio Ramón Vaudagna**, Director, Food Technology Institute, Center for Agroindustry Research, INTA, Argentina.
- **Rodrigo Figueroa**, , Dean, College of Agricultural and Forestry Sciences, Pontificia Universidad Católica de Chile; Vice- President of Deans of Agriculture, Council of Chilean Universities (CRUCH)
- **Lourdes Maria Corrêa Cabral**, Chief, Embrapa Food's Agroindustry, Brasil.
- **Randall Loiza**, Director, National Center for Biotechnology Innovations (CENIBiot), Costa Rica.
- **Abel Hernandez**, Chief, Plant Biotechnology, Genetic Engineering and Biotechnology Center (CIGB), Cuba.

16.30 – 17.00**Coffee break****17.00 – 18.00****Discussion****Moderator:** Adrián Rodríguez, Chief, Agricultural Development Unit, Division of Production, Productivity and Management, ECLAC.**18.00****Closure**



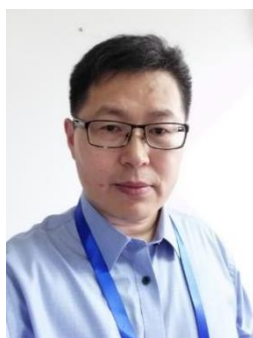
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Participants:



Dr. HUANG Shengbiao

Deputy Director, China Rural
Technology Development Center
(CRTDC)

Dr. HUANG Shengbiao, has doctorate in environmental science and engineering from the Chinese Academy of Sciences, and is engaged in for water pollution and its ecological risk research. He used to be the chief of Resources and Environment Division of Social Development Department of Ministry of Science and Technology, and engaged in the national S&T program management, and the researches of S&T development strategies and planning and design of the significant fields, such as ecological environment, mineral resources, disaster prevention and mitigation, marine science, climate change and so on. Now, he is the Deputy Director of China Rural Technology Development Center (CRTDC), in charge of the researches of China agricultural S&T development strategy and innovation policy, and leading agricultural high-tech innovation, agricultural S&T publicity and popularization work.



Dr. FANG Xianfa

Chief Engineer, Chief Expert and Vice
President
Chinese Academy of Agricultural
Mechanization Sciences (CAAMS)

Dr. FANG Xianfa, is the chief engineer, chief expert and vice president of Chinese Academy of Agricultural Mechanization Sciences (CAAMS). He is the expert in the field of agricultural products processing and precision agricultural engineering. In addition, he is the board member of International Commission of Agricultural Engineering (CIGR), vice president of Chinese Society of Agricultural Engineering (CSAE) and Chinese Society for Agricultural Machinery (CSAM), expert in modern agriculture field of the Expert Group of The National High Technology Program, the chief expert in agricultural machinery field of the Expert Group of the Ministry of Agriculture.

**Dr. WANG Tao**

Vice President, China Agricultural University
Professor, National key laboratory for Agri-biotechnology

Dr. WANG Tao, Vice President of China Agricultural University, and Professor in National key laboratory for Agri-biotechnology. He obtained his BSc in Pomology from Shandong Agricultural University in 1986, MSc in Pomology from Beijing Agricultural University in 1989, and Ph. D. in Pomology from China Agricultural University in 1999. He was previously the vice president of Xinjiang Agricultural University, and director of graduate school, China Agricultural University. His research interests are plant breeding and agriculture technological policy, and he participates in many research and development projects, including Plant Breeding and Technology Innovation, National Research and Development Project, High Quality Lawn-Grass Breeding Selection, National 863 project, Lucerne High Efficiency Research, National Natural Science Foundation, and Medicago and Ryegrass High Efficiency Research, National 863 Project.

**Dr. HAN Jianyong**

Professor, China Agricultural University

Dr. HAN Jianyong, Professor, China Agricultural University. He received a PhD in Biochemistry and Molecular Biology from College of Biological Sciences, China Agricultural University, in 2006. In 2006-2011 he held postdoctoral, Research Associate and Research Scientist positions in Genome Institute of Singapore, Agency for Science, Technology and Research (A*STAR). In 2011, he was supported by "Program for New Century Excellent Talents in University (NCET)" after studying abroad. In 2012 he was offered a "national 1000 young talent" position in the State Key Laboratories for Agrobiotechnology, College of Biological Sciences, China Agricultural University, where he is currently a Professor of Stem Cell and Developmental Biology. His research focuses on the mechanisms of somatic cell reprogramming, differentiation and de-differentiation; pluripotent stem cells in large animals, with a goal of overcoming barriers to the generation of large animal pluripotent stem cells, as well as promoting the application of stem cells in regenerative medicine and animal breeding. Some of his research results have been published in international excellent journals such as Nature, Cell Stem Cell, Gene & Development, Cell Research etc.



Dr. HE Zhonghu
Research Professor

Institute of Crop Science,
Chinese Academy of
Agricultural Sciences (CAAS)

Dr. HE Zhonghu, is a research professor at the Chinese Academy of Agricultural Science (CAAS), the director of China's National Wheat Improvement Center, and distinguished scientist with the Global Wheat Program and Country Liaison Officer in China for the International Maize and Wheat Improvement Center (CIMMYT). He established and led the internationally recognized CIMMYT-CAAS wheat program. His major contributions to wheat improvement include the development and validation of more than 50 gene-specific markers and the release of 18 improved cultivars. He has authored or coauthored more than 300 papers in refereed journals, including 130 publications in international journals, and trained more than 70 postgraduates and visiting scientists. He received a CGIAR Regional Award in 2007, the First Class Award in Science and Technology from the Chinese State Council in 2008, was selected as fellow of the Crop Science Society of America in 2009 and Agronomy Society of America in 2013, and was awarded the China Agriculture Elite Award in 2012.



Dr. LIU Donghong
Professor, Director

Fuli Institute of Food Science,
Zhejiang University

Dr. LIU Donghong, Professor, the director of Fuli Institute of Food Science, Zhejiang University. She is also the director of Chinese research and development branch center for fruit and vegetable comprehensive utilization technology and National-local Jointed Engineering Center for intelligent food processing technology and equipment. In addition, she serves as vice president of Chinese Canned Food Industry Association (CCFIA), deputy director of the expert committee, associate editor-in-chief of CIGR Journal and International Agricultural Engineering Journal (IAEJ), editorial board member of International Journal of Agricultural and Biological Engineering (IJABE). Her research interests include fruit and vegetable comprehensive utilization, novel technology in food engineering, food quality and safety monitoring. In recent five years, she presides over 20 projects including National key research project, National Science Foundation project and international aid project hosted by MOST. She has been published more than 260 papers of which 101 were included in SCI, 50 were included in EI and obtained over 40 patents.

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Dr. Iván Matus Tejos

Subdirector Nacional de I+D
del Instituto de
Investigaciones
Agropecuarias (INIA)

Ingeniero Agrónomo de la Universidad de Concepción, con un Master of Science en Mejoramiento Genético y Genética del Colegio de Post-Graduados de Montecillo, México, y un PhD en Mejoramiento Genético y Biotecnología de Oregon State University, Estados Unidos. Durante los últimos 30 años, a ocupando un rol clave en la coordinación e investigación de proyectos de mejoramiento genético de trigo. Ha desarrollado más de doce variedades de trigos harineros, trigos candeales y triticales, las cuales se siembran en una gran superficie en Chile. Es autor y coautor de más de 140, artículos científicos, artículos de divulgación y capítulos de libros, aparecidos en diversas revistas y publicaciones especializadas. Ha desarrollado trabajos colaborativos con varias universidades e institutos de investigación nacional e internacional. Ha mantenido una estrecha colaboración con centros internacionales de investigación. Desde marzo de 2014 desempeña el cargo de Sub Director Nacional de Investigación y Desarrollo del Instituto de Investigaciones Agropecuarias (INIA).



Dra. MARIA TERESA PINO

Instituto de Investigaciones
Agropecuarias INIA Chile

National food coordination INIA
Chile

PhD in Plant Physiology and
Genetic.

Dr. María Teresa Pino, National food coordinator and researcher of Instituto de Investigaciones Agropecuarias INIA Chile. She received a PhD in Biotechnology and plant physiology in Horticulture in Oregon State University, in EE.UU., in 2006. She is working for new global challenges for agriculture, including raw materials for Food ingredients and their adaptation to climate change. Coordinator and research leader in over 20 projects and competitive national and international grants, and private sector. She has authored or coauthored more than 100 scientific, proceeding and extension publications. These publications have been cited in over 350 ISI journals. She received a IICA reward as leader women in agriculture science for Latin America in 2017. The FONTAGRO Award for Scientific Excellence 2014, as research leader project for international grant. Also, she received Outstanding Graduate Student Award for Horticulture and Crop Science Department. in Oregon State University USA in 2004.

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Dr. Sergio R. Vaudagna

Director Instituto Tecnología de Alimentos, Centro Nacional de Investigaciones Agropecuarias de INTA (INTA Castelar).

Ingeniero Químico- Facultad de Ingeniería Química – Universidad Nacional del Litoral. Doctor en Ingeniería Química - Facultad de Ingeniería Química – Universidad Nacional del Litoral. Profesional de Gestión Externa INTA.

Investigador Independiente CONICET.

Profesor Titular de Procesamiento de Alimentos, Ingeniería en Alimentos, Facultad de Ingeniería y Ciencias Exactas, UADE y Facultad de Agronomía y Cs. Agroalimentarias UM.

Áreas de expertise:

Tecnologías térmicas (esterilización, pasteurización, sistemas *cook-chill*) y no térmicas (altas presiones hidrostáticas, tecnologías de barrera) de procesamiento de alimentos.



Dra. Lourdes Cabral.

Head of Embrapa Food Technology.

PhD in Chemical Engineering. Senior researcher of Embrapa - Brazilian Agricultural Research Corporation. For 18 years working on Food Science and Technology focusing on membrane separation processes applied to food industries cases focusing on functional foods. Assistant professor at Federal University of Rio de Janeiro and at Rural University of Rio de Janeiro, with around 120 national/international papers, chapters or books. Currently, she is the head of Embrapa Food Technology.

**Dr. Randall Loiza**

Director, Costa Rican National Center for Biotechnological Innovation (CENIBiot).

Dr. Randall Loiza is a health care professional. He graduated from Pharmacy and cell physiology at the University of Costa Rica. Then he moved to the University of Wisconsin-Madison, USA where he obtained a master and a PhD degree in cell physiology and cardiac pathophysiology, unveiling the mechanisms of sudden cardiac death in apparently healthy people. Then he did postdoctoral studies at the University of Michigan, USA working on the influence of mitochondrial reactive oxygen species on severe cardiac arrhythmias and also, understanding the mechanisms of heart failure in sepsis. He is currently Faculty at the School of Pharmacy at the University of Costa Rica and director at the Costa Rican National Center for Biotechnological Innovation (CENIBiot), a center with a strong focus on agricultural biotechnological innovation. Dr. Loiza interest on agriculture comes not only from his current position at CENIBiot, but also from his family's farming background in Costa Rica.

**MSc Abel Hernández,**

Head of Plant Biotechnology Department in Center for Genetic Engineering and Biotechnology

MSc Abel Hernández, Head of Plant Biotechnology Department in Center for Genetic Engineering and Biotechnology. He obtained his BSc in Biochemistry from Havana University and his MSc in Biotechnology. He has worked in Plant biotechnology for 15 years where his first research interest was the use of plant as bioreactor to produce proteins as pharmaceuticals. From 2014, he is the head of plant biotechnology department where he manages several projects related with plant breeding, functional genomics and plant transformation. In the same time he has concluded all the essays to discuss his PhD next december. He has authored or coauthored 12 papers and 2 patents. He received in two times Award from Academy of Sciences of Cuba.