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[**inside**view]



中国农业科学院
CHINESE ACADEMY OF AGRICULTURAL SCIENCES

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PLANNING INNOVATION IN AGRICULTURAL RESEARCH

A conversation with **TANG HUAJUN**, Ph.D., President of the Chinese Academy of Agricultural Sciences and member of the Chinese Academy of Engineering



The Chinese Academy of Agricultural Sciences (CAAS) was founded in Beijing in 1957 as a national organization for integrative agricultural research. CAAS now encompasses 34 research institutes across China, along with one graduate school and one publishing house, employing 10,061 staff. Here, Tang Huajun, the president of CAAS and an expert in geoinformatics, discusses their plans.

What are the strengths of CAAS?

We are devoted to serving national agricultural technologies and focus on basic and applied research covering a wide range of sciences. Over the past 60 years, we have achieved many innovations, including theories on thermal and photo-response characteristics of crops, finding pest spread patterns, discovering genes that influence crop yields and creating core germplasm. The genetic resources repositories we created for domesticated animals and crops were among the world's largest. These discoveries are widely applied in the breeding of crops and domesticated animals, improving soil quality, efficient and intensive feeding, as well as development of vaccines for major epidemics, bringing economic benefits of nearly 50 billion RMB per year. We have won 310 national science and technology awards; around one third of first prizes in agricultural sciences were awarded to CAAS.

These achievements are thanks to our talented team, including 12 members of the Chinese Academy of Sciences and Chinese Academy of Engineering, and more than 300 national talent plan recruits.

What are the development objectives of CAAS?

We aim to become a world-class agricultural research institution by 2020. Our

development strategy is to 'reach the sky while staying down to earth'. That is, cutting-edge science oriented towards applications and real-world problems in agricultural production. We have established the Agricultural Science and Technology Innovation Programme (ASTIP), the National Agricultural Science and Technology Innovation Alliance and the Elite Youth Programme for talent recruitment.

To address food security and sustainable development of agricultural resources, our research will be geared towards: agricultural genomics and molecular breeding; application of big data; intelligent equipment and nanotechnology in agriculture; agricultural resources and the environment; the quality and safety of agricultural products; and agricultural processing.

Can you elaborate on the ASTIP?

In 2013, with central government approval, we started ASTIP, a comprehensive reform package to promote innovation by exploring new research systems. The core is a new model to organize research in support of long-term research and original innovation. CAAS researchers used to spend much time applying for grants to a lot of their research activities.

OUR DEVELOPMENT STRATEGY IS TO 'REACH THE SKY WHILE STAYING DOWN TO EARTH'

However, agricultural research is long term and requires stable grant support, and working across disciplines. The ASTIP reorganized our researchers into 332 teams, each comprising members from multidisciplinary backgrounds. With funding support, each team is free to choose their research topic.

Accordingly, the evaluation system was modified to assess research output every five years, rather than annually, and to focus on research applications and contributions. A monitoring system ensures quality performance. The programme has leveraged our existing resources and significantly motivated our scientists.

What is the National Agricultural Science and Technology Innovation Alliance?

Led by the Chinese Ministry of Agriculture and CAAS, the National Agricultural Science and Technology Innovation Alliance was established in 2014. The aim is to integrate available resources around the country to avoid repetitious research and to more efficiently tackle major agricultural issues

by coordinating forces. More than 1000 agricultural research institutes, universities and enterprises have joined the alliance, which have jointly developed a germplasm bank, an agricultural information database and several instrument platforms for shared use. The alliance has also organized comprehensive projects, including soil protection in Northeast China, water conservation, and prevention of heavy metal contamination in southern rice fields.

What is your plan for international collaboration?

Apart from learning from foreign experience, we also want to lead original innovation by initiating international projects. We have established cooperation with leading research institutions and universities, as well as international organizations and multinational companies across the globe. The Global Forum of Leaders for Agricultural Science and Technology was initiated by us and has become an international platform for exchange. We look forward to enhancing our international collaboration and welcome more talented researchers from abroad.

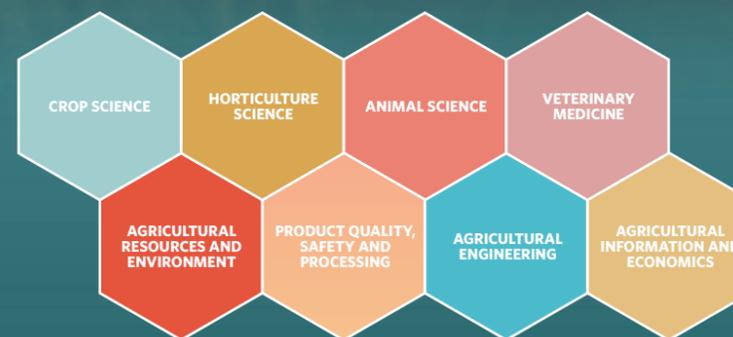


CHINESE ACADEMY OF AGRICULTURAL SCIENCES

A LEADER IN AGRICULTURAL SCIENCE AND TECHNOLOGY

WIDE COVERAGE OF AGRICULTURAL SCIENCE DISCIPLINES

CAAS research focuses on **8** major disciplines



STATE-OF-THE-ART FACILITIES



24% of China's state key laboratories in agricultural sciences are housed in CAAS

MAKING AN IMPACT IN AGRICULTURAL DEVELOPMENT

Since 2011, CAAS has promoted **1600+** new varieties of crops, **1000+** novel agricultural technologies, impacting **1.3 billion** mu farm land and **800 million** cattle and fowls

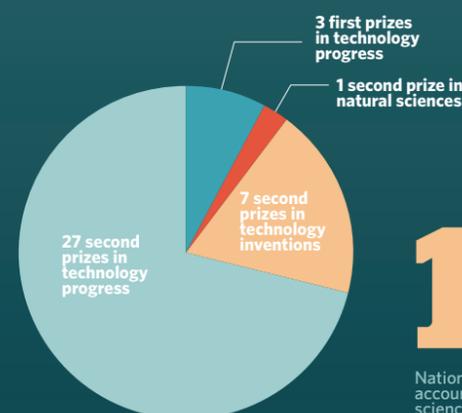
A TOP-NOTCHED TALENT TEAM



12 CAS and CAE members
More than **300** national talent plan recruits

TOPPING THE COUNTRY IN RESEARCH AWARDS

38 national science and technology awards 2011-2016



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