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Two Sessions 2025

DIALOGUE WITH FOREIGN EXPERTS



# Inclusive Hub of Global Agricultural Transformation

In recent years, China has become a global leader in agricultural research, playing an essential role in addressing worldwide challenges such as food security, climate change and sustainable farming.

This achievement is largely due to the country's open and inclusive approach to scientific research, where international collaboration is encouraged and deeply embedded in its culture. Through strategic partnerships and initiatives like the Belt and Road Initiative (BRI), China has created a cooperative research ecosystem that benefits local and international scholars.

**Learning, leading and bridging**

Dr. Hao Yuanfeng, a scientist from the Institute of Crop Sciences, Chinese Academy of Agricultural Sciences (CAAS), has witnessed firsthand how China's collaborations with global institutions and partners, such as the International Maize and Wheat Improvement Center (CIMMYT), have evolved over the years. As a former beneficiary of international collaborations during the early stages of his career, Hao now mentors a young generation of scientists who continue to benefit from these partnerships.

"For example, in our lab, we started working with CIMMYT in the 1980s. They shared germplasm and protocols for quality testing, which helped us develop our breeding pipeline for high-yielding and high-quality varieties," Hao explained. "This collaboration led to the release of varieties such as Zhongmai 578, a strong gluten wheat variety currently widely grown by farmers."

According to Hao, the calls for more international cooperation have become louder in the sci-tech community. He underscores China's role as a bridge between international organizations and developing countries, stating that China now shares its advancements with nations across the globe, helping them adopt modern breeding and production technologies.

**A culture of openness and growth**

One of the most significant aspects of China's research environment is its inclusivity. For Youshaa Danyal, a young researcher from Pakistan, China offers a dynamic and welcoming atmosphere that fosters both academic and personal growth.

His experience reflects the environment that China cultivates for international scholars, one that promotes collaboration, creativity and excellence. He noted the inspirational work of Chinese scientists, like Li Wenxue team's recent publication in *Science* magazine on the NAC gene

marks a significant advancement in maize biofortification.

The open and inclusive nature of China's research ecosystem is clear in Danyal's daily work, as he collaborates with colleagues from around the world. "We are working together to tackle pressing agricultural challenges such as micronutrient deficiency," he said.

Muhammad Adeel Qureshi, a senior researcher from Pakistan, speaks highly of the organization and systematic approach to China's agricultural programs. He noted that China is a leading producer of wheat worldwide. "This high yields resulted due to the continuous efforts by the breeders and scientists across China. I'm honored to be part of the CAAS, where the breeding work is systematic and well organized," said Qureshi, adding that the research team of his lab has developed many molecular markers for different quality traits in wheat.

For him, being part of such a well-organized environment has been both enriching and motivating. He noted that China focuses on international cooperation at both governmental and institutional levels, which is crucial for tackling global agricultural challenges. "China's policies on collaboration are reflected at both the governmental and individual levels, with a strong focus on international cooperation, especially in the scientific community," Qureshi said.

**Connecting continents, empowering research**

The BRI has proven to be a vital platform for expanding international collaboration in agriculture. Yirga Kindie Wasihun, a senior researcher from Ethiopia doing his PhD in wheat genetics and molecular breeding in CAAS, underscores the impact of this initiative on global agricultural cooperation. "The BRI has not only provided infrastructure but also opened doors for knowledge transfer, allowing us to bring back new technologies to our home countries," said Wasihun. Through the BRI, China is actively collaborating with partner countries, facilitating agricultural research and fostering capacity building. "China plays a leading role in uplifting the region's economies and ensuring sustainable development," said Wasihun.

Qureshi also recognizes the BRI's pivotal role in boosting agricultural collaboration. "The BRI has created numerous opportunities in infrastructure, science, technology and other fields," he said. "It has opened doors for international students and scientists, fostering collaboration and knowledge exchange."

## China's AI Rise Benefits the World

With its rapid advancements in AI, China is consistently capturing world headlines, not only for its technological progress but also for the profound impact these advancements are having on society and the world. Through the eyes of international experts and researchers, we gain a deeper understanding of China's AI journey, showing its forward-thinking policies, commitment to improving quality of life, and growing influence on the global stage.

**AI for common good**

China's strategic focus on AI as a key driver of economic and social progress has been a paradigm shifter. The country's policymakers have demonstrated remarkable foresight by identifying AI as a critical area for development and setting a goal to become a global leader in the field by 2030. This vision is backed by substantial investments in research, development, and implementation across various sectors.

Sergey V. Ablameyko, an academician of the National Academy of Sciences of Belarus and visiting professor at Northwestern Polytechnical University in Xi'an, said that, "China has made significant progress in the AI field, especially since 2017 when it adopted a national strategy for AI development. I have seen how China has grown in this area over the past 20 years, and it is now a leader in both practical applications and scientific research."

However, what China has done goes far beyond this. According to Ashyana Jasmine Kachra from the London School of Economics and Political Science, "China is not just focused on the proliferation of AI and its innovative use cases; the country has also been silently leading the pack and making its mark on the AI regulatory landscape."

China has implemented strict laws and ethical guidelines for AI development, ensuring that technological advancements align with societal values.

In 2017, China released *the Next Generation Artificial Intelligence Development Plan* to encourage diverse AI methodologies, such as deep learning, knowledge-based reasoning and large-scale modeling. In May 2019, it was followed by the Beijing AI Principles,

which set out clear guidelines for AI research and development, advocating respect for privacy, human dignity and human rights. This underscores China's commitment to developing responsible AI and its philosophy of using technology for the greater good.

**Profound global influence**

China's AI advancements are not confined to within its borders; they are shaping the global landscape of technology and innovation.

Md Monjurul Karim, a young Bangladeshi researcher majoring in AI at the Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, emphasized how China's rapid progress in AI has influenced his career and research. He noted that China's AI ecosystem, with its high-performance computing infrastructure and top-tier research labs, provides an ideal environment for cutting-edge research.

Breakthroughs like DeepSeek, a large-scale AI model, have inspired new ways of thinking and accelerated innovation. For Karim, AI is not just a tool but a "research companion" that fosters creativity and exploration.

China's focus on innovation is also driving global advancements in AI and computer science. Karim pointed out that China's investments in large-scale AI models and high-performance computing contribute to the broader research community, enabling international collaboration and knowledge-sharing.

One of the most significant contributions of China's AI industry is its commitment to "democratizing access to AI technologies," said Md Altab Hossin, a Bangladeshi expert at the School of Innovation and Entrepreneurship, Chengdu University, adding that DeepSeek exemplifies this ethos. By developing easy-to-use models, tools and platforms, DeepSeek has made AI accessible to users without extensive technical expertise. Its open-source model allows anyone to use it for professional or personal purposes without restrictions.

Just as Ablameyko noted, China's progress is an opportunity for the world, and its development in science is a help, not a threat to the global community.

## Steering a Greener Future

On November 14, 2024, China achieved a historic milestone as its annual production of new energy vehicles (NEVs) surpassed 10 million units, consolidating its leading role in the transition to a greener future. This achievement shows not just China's technological progress but also its efforts to combat climate change and reduce carbon emissions.

**A benchmark for the world**

Nicholas Mulei Musyoka is an associate professor in renewable energy and energy storage at the Nottingham Ningbo China Beacons of Excellence Research and Innovation Institute, which is a part of University of Nottingham Ningbo China. He described China's NEV industry as "innovative, scalable and impactful" in a recent interview with *Science and Technology Daily*. Musyoka emphasized that the rapid adoption of NEVs in China is a clear indicator of the country's leadership in the sector.

"China is setting the trend and becoming a benchmark for other countries to follow," Musyoka said. But China's booming NEV industry is not just about numbers. According to Italian scientist Francesco Faiola, the rapid expansion of electric vehicles (EVs) has significantly improved people's quality of life.

"Chinese companies have made EVs more affordable and accessible, contributing to reduced air pollution and lower greenhouse gas emissions," Faiola said. Electric buses and taxis have become the norm, leading to cleaner air and improved public health.

This sentiment was echoed by Musyoka. "China does not live in a bubble. China's contribution to reductions in CO<sub>2</sub> emissions benefits the entire planet," he said.

Instead of viewing China's advancements in the NEV industry as competition, Musyoka urged for more international collaboration. "China's progress should be applauded, and we should learn from its technological and adoption strategies. The bigger picture is about solving the climate crisis together."

**A holistic approach to sustainability**

China's rapid NEV adoption is not an isolated phenomenon but part of a broad, integrated strategy for sustainable development. Beyond reducing emissions, it has triggered advancements in renewable energy, AI and smart city systems, transforming urban infrastructure.

However, NEVs are just one piece of the puzzle, as Musyoka pointed out. "To fully realize their potential, we need renewable energy installations to charge these vehicles, ensuring zero emissions throughout the lifecycle."

This holistic approach extends beyond land transportation. In sectors like maritime transport and aviation, China is exploring technologies such as power-to-methanol and sustainable aviation fuels to further cut carbon emissions.

Additionally, innovations in battery technology are enhancing the efficiency of unmanned aerial vehicles, contributing to greener logistics and transportation networks. "The integration of AI and smart systems ensures efficient monitoring and management, making cities cleaner and more sustainable," Musyoka added.



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