

China Expands Global Sci-tech Partnerships for Shared Future

Observer

By Staff Reporters

China is deepening its commitment to international scientific cooperation, guided by the principles of openness, mutual benefit, and shared progress. With science and technology playing a pivotal role in solving global challenges, China has sci-tech cooperation ties with over 160 countries and regions, has signed 119 intergovernmental sci-tech cooperation agreements, and participates in more than 200 international organizations and mechanisms.

It is also involved in over 60 international big science programs and projects, while academic and professional exchanges thrive at the grass-root level.

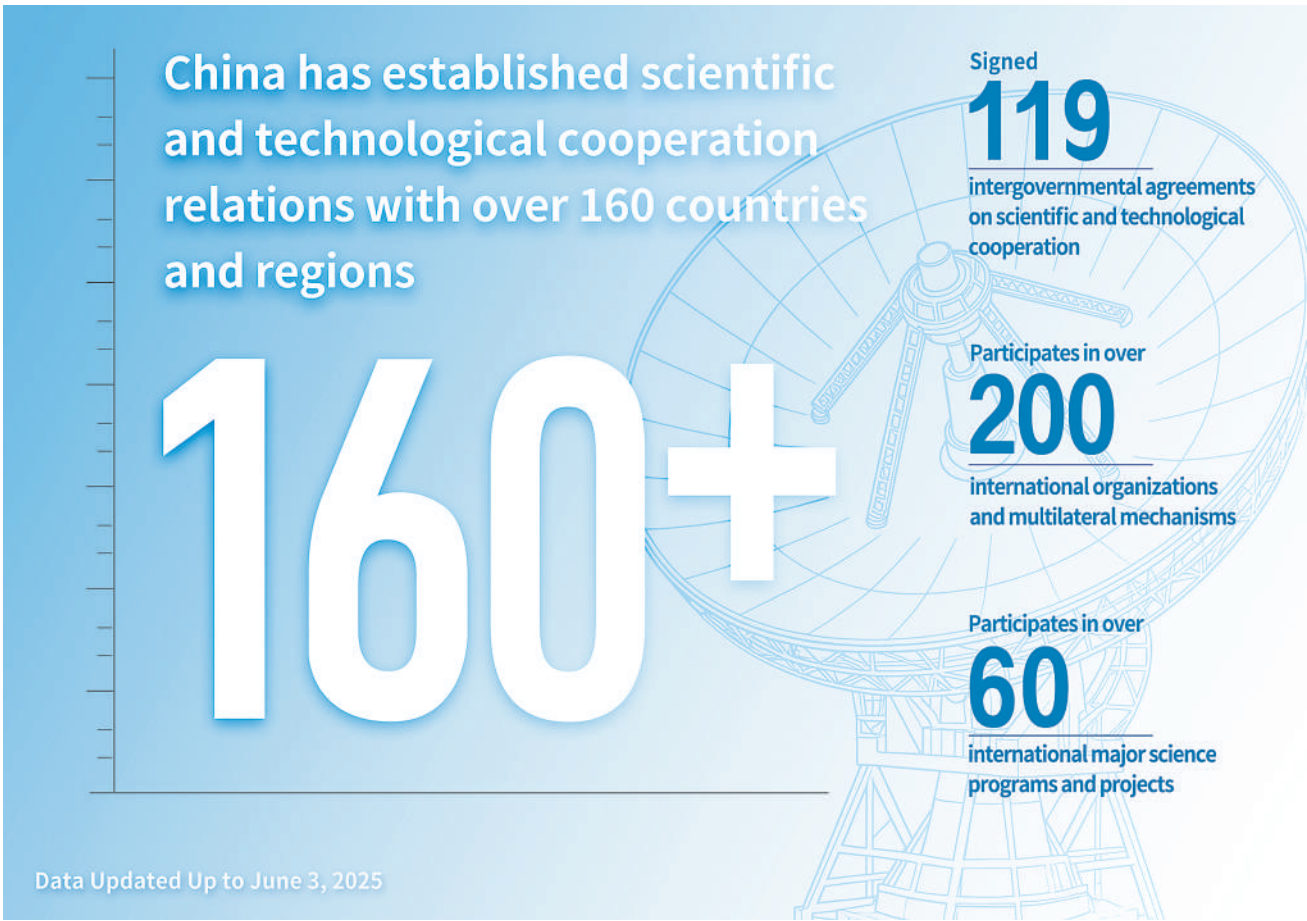
Building global platforms

In a physics lab at Stellenbosch University in South Africa, astrophysicist Ma Yinzhe and his Chinese collaborators are busy processing massive volumes of data from the Square Kilometre Array (SKA) telescope. Backed by more than 10 nations, including China and South Africa, the SKA — dubbed the "Giant Eye of Earth" — will be the world's largest radio telescope once it is completed, driving development in computing, energy, and telecommunications.

China's own scientific infrastructure is also a magnet for global collaboration. The Five-hundred-meter Aperture Spherical radio Telescope (FAST) features an open data-sharing platform that is accessed by researchers from dozens of countries. As former FAST chief scientist Li Di said, international cooperation has been embedded in FAST's DNA from the outset.

The Commonwealth Scientific and Industrial Research Organisation in Australia helped develop its core components. Since its launch in 2021, scientists from across Europe have joined the platform, forming research networks in cutting-edge areas, such as pulsars and fast radio bursts.

In a recent milestone, a joint team led by Tsinghua University and scientists from Italy, Australia and Germany used data from both FAST and South Africa's MeerKAT array to conduct an advanced pulsar polarization survey of galactic globular clusters. This marks a significant step in international astronomical research.



From exporting BeiDou navigation products to over 140 countries to attracting global scientists to the China Space Station and the International Lunar Research Station, China is increasingly becoming a hub for international science collaboration. Chinese research vessels carry international scholars to explore ocean frontiers, and major global initiatives such as "Deep-time Digital Earth" and "Ocean Negative Carbon Emissions" reflect China's proactive approach to shared scientific advancement.

Broadening dialogue

In mid-May, a Chinese Academy of Sciences delegation visited Germany to prepare for a roundtable forum in Shanghai. Jointly hosted with the Max Planck Society, the event spotlighted breakthroughs in organoids, bioprinting and artificial tissues. Longstanding partnerships between the two countries have yielded new models of cooperation, such as youth scientist groups and co-funded research programs.

According to Chen Linhao, minister counselor for science and technology at the Chinese Embassy in Germany, such partnerships are built on reciprocity. "More foreign scholars will come to China because cooperation here is truly mutually beneficial," Chen said.

Across China, platforms such as the Tengchong Scientists Forum in Yunnan are fostering deeper dialogue. Renowned scientists like Professor Dennis Lo Yuk-ming have used the forum to call for integrated strategies against diseases like thalassemia. The forum now serves as a key exchange platform between China and Southeast Asian countries.

From the Zhongguancun Forum to the World Internet Conference, China offers rich ground for intellectual exchange. Multinational innovation alliances and university-led cooperation projects further demonstrate China's open and inclusive approach to scientific development.

Nurturing innovation networks

Professor Zhang Zhengmao of Northwest A&F University in Shaanxi, northwest China, led a delegation to Kazakhstan in May, where the team quickly launched a wheat and sunflower demonstration project using Chinese seeds. These high-yield varieties have improved food quality and productivity.

Under the Belt and Road Initiative framework, China has initiated the establishment of more than 70 joint labs in partner countries, advancing cooperation in agriculture, energy, and other fields. One flagship effort is the China-Uruguay Soybean Joint Laboratory,

launched in 2020. In April, scientists from both countries met in Uruguay to review field tests and genetic breeding efforts, with plans to establish an international platform for soybean research.

A thriving ecosystem

International scientists are increasingly choosing China as their base for long-term research. Spanish ecologist Ahimsa Campos-Arceiz has worked on Asian elephant protection for two decades and now conducts research in the Xishuangbanna Tropical Botanical Garden in Yunnan. On International Biodiversity Day, the botanical garden launched an open biodiversity platform, offering dynamic, traceable data to researchers and the public.

Italian scientist Francesco Faiola praises China's collaborative spirit: "China shares not only technology but also builds local talent. It's a more meaningful form of cooperation."

As China's Ministry of Science and Technology looks to broaden international access to its funding, data, and research infrastructure, it continues to create a fertile environment for global scientific exchange.

"The government's role in science is like spring rain — it nurtures innovation quietly but powerfully," Faiola said.

sources, talent, expertise and financial resources across the world have to be pooled, and people all around the world have to work together. IMCP is a perfect example of that. "We need big science and we need international cooperation," he added.

Felix Dapare Dakora, a member of the African Academy of Sciences, said China's big science programs will bring tangible benefits to the Belt and Road Initiative partner countries. "The visionary leadership shown by China in initiating mega science programs will fast track the development of humanity," he commented.

The DDE Governing Council and the municipal government of Kunshan in Suzhou, Jiangsu province, renewed their agreement to host the DDE Secretariat.

Harvey Thorleifson, president of the DDE Governing Council, said the DDE program, which focuses on building a team with contributions both from the East and the West, has made excellent progress in constructing Earth science databases, and in the way this science is being applied as the world goes through energy transition, and the progress is in part because of China's support.

Opinion

Strengthening International Innovation and Collaboration

By LIN Yuchen & HU Dingkun

The second Belt and Road Conference on Science and Technology Exchange was held from June 10 to 12 in Chengdu, Sichuan province. It aims to foster multi-level, multi-field sci-tech exchange and cooperation mechanisms.

It launched a series of "industry-university-research-application" cooperation platforms and unveiled several major achievements, injecting new momentum into global sci-tech collaboration.

In recent years, sci-tech cooperation under the Belt and Road Initiative (BRI) has been deepening, with substantial results. China has signed intergovernmental sci-tech cooperation agreements with over 80 BRI partner countries, and initiated the establishment of more than 70 Belt and Road joint laboratories.

Sci-tech innovation has become a critical component of BRI cooperation. From Central Asia to the Middle East, and from Southeast Asia to Africa, sci-tech cooperation has improved the well-being of people in BRI partner countries, achieving real win-win outcomes.

In Southeast Asia, a "solar-plus-energy storage" project built by Chinese enterprises in Laos has alleviated local electricity supply shortages. In the Middle East, oil and gas giant Saudi Aramco is using the technology of a Chinese AI company for the smart transformation of Saudi Arabia's energy industry. As of the end of 2023, China has established 24 agricultural technology demonstration centers and introduced over 300 advanced agricultural technologies.

BRI partner countries differ in terms of their cultures, geographies, de-

velopment levels and institutional systems. However, addressing development challenges through sci-tech innovation is a shared aspiration. Whether it is the threat of infectious diseases, food security gaps, or the challenge of energy transformation, sci-tech innovation provides the key to resolving these issues.

BRI sci-tech cooperation emphasizes the concept of a "global community" and has increasingly diversified its forms and channels. Cultural exchanges have grown closer, and innovation achievements continue to accumulate, helping restore confidence in international cooperation. Open cooperation is the right path for sci-tech development and will promote the smooth flow of innovation factors and accelerate global technological progress.

Developing countries must seize the opportunity to keep pace with the global technological revolution, becoming vital participants and beneficiaries. Sci-tech cooperation is crucial for promoting the dissemination of key emerging technologies, advancing industrial transformation and upgrading in various countries, ensuring fairness and accessibility in industrial changes, and safeguarding the development rights of developing countries.

Looking ahead, sci-tech cooperation under the BRI will continue to expand, with new platforms and models emerging to help participating countries enhance their innovation capabilities, driving high-quality development. Deeper cooperation will not only advance global science and technology governance, but also unleash the potential for innovation, benefiting people worldwide and helping build a global community with a shared future.

Photo News



▲ Representatives from the Scientific Committee on Solar-Terrestrial Physics International Science Council, National Space Science Center, Chinese Academy of Sciences, and other institutions, pose for pictures at the signing ceremony of the memorandum of understanding for the International Meridian Circle Program on June 12.



▲ Representatives from the Governing Council of the Deep-time Digital Earth Big Science Program and Kunshan, Suzhou Municipal People's Government, after the signing ceremony of the memorandum of understanding for the Deep-time Digital Earth International Big Science Program on June 12.

(Photos by the International Big Science Program Forum)

Big Science Programs Tackle Shared Challenges Together

By ZHONG Jianli, LONG Yun, LU Zijian, HE Liang & LIU Yin

The International Big Science Program Forum held during the 2nd Belt and Road Conference on Science and Technology Exchange on June 12 underscored the importance of global collaboration in tackling some of the world's most pressing scientific challenges.

International big science programs are pivotal in pushing the boundaries of knowledge, exploring scientific frontiers, and addressing complex global issues. Committed to upholding the principles of openness, fairness and non-discrimination, China plays an active role in major international initiatives such as the International Thermonuclear Experimental Reactor (ITER) and the Square Kilometre Array (SKA).

Chinese scientists have spearheaded several groundbreaking projects including the Deep-time Digital Earth (DDE), Ocean Negative Carbon Emissions (ONCE), the Proteomic Navigator of the Human Body (π -HuB), and the International Meridian Circle Program (IMCP).

Chen Jiachang, vice minister of science and technology of China, said the Chinese government issued a plan to organize international mega-science

programs and mega-engineering projects in March 2018. "The initiative aims to harness Chinese expertise in solving global scientific challenges and to provide sci-tech public goods that serve the entire world," he said.

He highlighted that the government supports DDE and ONCE in conducting scientific research and international cooperation in their respective fields. Additionally, the ministry backs the scientific community in initiating projects like π -HuB and IMCP, and is willing to support the launch of more international large-scale scientific programs in the future, foster extensive international collaboration to address shared global challenges, and build a global community of scientific cooperation.

Jing Guifei, a researcher at the School of Space and Earth Sciences of Beihang University, said with Chinese scientists taking the lead in initiating international big science projects, China is contributing its wisdom in science culture, such as mutually-beneficial cooperation for win-win results, to the global sci-tech governance system.

Representatives from various international big science programs expressed their willingness to collaborate with global scientists and institutions

to promote open science and contribute to sustainable human development.

"The SKA supports open science principles, similar to the long-standing 'open skies' tradition in radio astronomy," Philip Diamond, director general of the SKA Observatory, said, adding that this forward-looking approach aligns well with China's broader commitment to collaborative and open science.

"The ONCE program is a great international project with impressive vision and it has the potential to really contribute to address one major part of the global climate change challenge," said Spiros Agathos, a marine bioengineering expert and a member of the Academy of Europe. "The collaboration among scientists from many nations is very effective in achieving the goals."

At the forum, the National Space Science Center of the Chinese Academy of Sciences, the lead institution for IMCP, signed cooperation agreements with five new international institutions.

"Science is win-win cooperation, we always gain from each other," Michel Blanc, a researcher at the French Institute of Research in Astrophysics and Planetology, said. There are difficult scientific challenges where re-