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China and US Renew Science and Technology Agreement

Amid escalating bilateral tensions between China and the United States (US), representatives from the Chinese and US governments on 13 December signed the "China-US Science and Technology Cooperation Agreement" for the next five years from August 27, 2024. Though the latest agreement is narrower in scope than its predecessor, it injects a much-needed ray of hope in bilateral relations between the two countries on science and technology.

In the latest agreement, collaboration on basic science projects such as weather, oceanography and geology between government departments and agencies is covered, but collaboration on critical and emerging technologies such as artificial intelligence and semiconductors has been excluded. Meanwhile, no information on continued collaboration among Chinese and U.S. universities and private companies was mentioned, unlike in the previous agreement.

The reason for the delay in renewing the agreement was cited to be the need to scrutinize "the challenges that are associated with [China's] national strategies related to science and technology, most notably the military-civilian fusion", a U.S. State Department official stated.

Aimed at facilitating cooperation in agriculture, energy, space, health, environment, engineering and academic exchange, the Science and Technology Agreement was first signed in 1970 by then Chinese leader Deng Xiaoping and US President Jimmy Carter. Since its inception, the agreement has been renewed every five years. In August 2023, it was granted a six-month extension and another in February 2024 to maintain the agreement while negotiations were carried out to amend the deal.

China National Science Popularization Report

The Chinese Ministry of Science and Technology on 30 December released a report on National Science Popularization for 2023. The report reveals that for the first time, funding for national sciences has exceeded 20 billion Yuan ($2.74 billion), an increase of 12.6 per cent from 2022.

The report specified that in 2023, over 3.1 billion Yuan was spent on science popularization venue construction and over 2.2 billion Yuan was spent on science popularization exhibits and facilities. The highest proportion of expenditure was on organizing science popularization activities, accounting for close to 40 per cent. Meanwhile, it also reveals that the construction of science popularization venues nationwide continued to make progress, where in 2023 a total of 1779 museums and science and technology museums were built, an increase of 96 from 2022.

In 2003, the China Association for Science and Technology adopted a law called China Science and Technology Popularization Law to promote scientific literacy and foster a favorable environment for technological innovation.

Scientific Collaboration Projects

At the 16th Session of the Conference of the Parties to the United Nations Convention to Combat Desertification (UNCCD) in Riyadh, Saudi Arabia from 2-3 December, a Memorandum of Understanding (MoU) was signed between the Xinjiang Institute of Ecology and Geography (XIEG) of the Chinese Academy of Sciences, the Ministry of Environment and Sustainable Development of Mauritania (MEDD), the National Agency for the Great Green Wall (NAGGW) and the Sinoway Forest Technology Co. Ltd. (Sinoway). The goal of the MoU is to provide technical

assistance for the establishment of a 10,000-hectare forest in the African country of Mauritania to prevent desertification and increase carbon sequestration using native plant species. The project will later integrate into the Great Green Wall (GGW) Initiative in Africa.

Due to climate change and land degradation, African countries, especially in the Sahara region, face severe desertification, with 84% of land covered by desert, impacting the livelihood of communities. Under the 'Three-North Shelterbelt Forest Program' initiated in the 1970s, the Taklimakan, the largest desert in China, is reported to have been completely encircled by a green belt stretching 3,046 km, which is now being projected as the world's largest afforestation program to tackle desertification.

The noteworthy success of China's desert control interventions is claimed to have inspired several African countries that are battling with land degradation and led to collaboration projects with China over the years.

Scientific Research Breakthroughs and Discoveries

A research team from the Institute of Oceanology, Chinese Academy of Sciences, based in Qingdao of Shandong province developed a state-of-art artificial intelligence model for high resolution global ocean prediction, named 'LangYa'. Wang Fan, Institute Director, stated that as it integrates advanced AI algorithms with specialized oceanographic knowledge, LangYa marks a significant advancement in forecasting extreme weather events and ocean-related disasters as it is able to deliver highly accurate short to medium-term forecasts from global ocean state variables.

Co-developed by the China Telecom Quantum Group, the Center for Excellence in Quantum Information and Quantum Physics of Chinese Academy of Sciences and QuantumCTek Co. Ltd. set a new domestic record with the launch of the 'Tianyan-504' superconducting quantum computer, which is equipped with the 504-qubit 'Xiaohong' chip.

China Science Diplomacy

The 8th meeting of the China-Germany Electric Vehicle Co-operation Steering Committee was held on 11 December. Dai Gang, Director of the International Cooperation Department of the Chinese Ministry of Science and Technology and Dr. Sven Halldorn, Director of the Policy Affairs Department of the German Federal Ministry of Digital and Transport co-chaired the meeting. In the meeting, both sides exchanged in-depth views on development strategies of new energy vehicles in China and Germany, developmental projects between China and Germany for EV innovation and joint research projects. Both sides also agreed to continue support and exchange research projects between the German National Hydrogen and Fuel Cell Technology Organisation and the China Automotive Technology Research Center.

The China Science and Technology Exchange Center and the Japan Science and Technology Agency's Sakura Science Exchange Program jointly organised a China-Japan High-level Scientist Exchange Seminar on 23 December. Scientists from prominent universities in China and Japan participated in the meeting, where views on promotion of green innovation and low-carbon transformation were exchanged by both sides. Yang Xuemei, Deputy Director of the China Center for Science and Technology Exchange and Shan Gu, Representative of the Sakura Science Exchange Program of Japan, expressed optimism that China and Japan would continue to strengthen scientific and technological exchanges in the fields of environment and sustainable development.