



Science and Technology Daily

VOL.5-NO.187

APRIL 19-20, 2025

China Strengthens Bonds with Vietnam, Malaysia and Cambodia

By WANG Xiaoxia

Chinese President Xi Jinping paid a state visit to Vietnam, Malaysia and Cambodia from April 14 to 18, his first overseas trip of the year and of special significance for the overall development of China's relations with the three countries and ASEAN as a whole.

China and Vietnam, Malaysia and Cambodia have advanced their cooperation in green development, enhanced connectivity and ensured smooth trade. In the future, they will continue to work together closely under the framework of the Belt and Road Initiative to strengthen the bonds.

Green development

Recently, Power China has launched another renewable energy project in Vietnam. With a total installed capacity of 60 megawatts, it can deliver 165 gigawatt-hours of clean electricity to the Vietnamese national grid each year, meeting the needs of 48,000 local households and reducing about 132,000 tons of carbon emissions and other air pollutants.

Energy China, another Chinese energy giant, has signed a cooperation agreement with Vietnam Electricity to develop nuclear power and green hydrogen, as Vietnam places renewable and low-carbon technologies at the center of its long-term energy strategy.

China-Malaysia cooperation has achieved remarkable results in the field of new energy, including a 10 MW floating photovoltaic (PV) project in Selangor, and a 50 MW floating solar PV farm in Sarawak. Chinese companies such as Trina Solar and Jinko Solar have helped develop the local PV industry chain. Chinese new energy vehicle charging equipment manufacturers and operators such as TELD have built infrastructure networks with local partners.

Emerging fields such as green energy, electric vehicles and digital technologies provide new impetus for the expansion of cooperation between the two sides. These collaborations will help Malaysia achieve high-quality development, said Dato' Abdul Majid Ahmad Khan, president of the Malaysia-China Friendship Association.

In Cambodia, Chinese-invested mega-infrastructure projects such as the Phnom Penh-Sihanoukville Expressway and the Siem Reap-Angkor International Airport have laid a solid foundation for the development of domestic economy and tourism.

Trade facilitation

China is Vietnam's largest trading partner, largest import market and second largest export market. See page 2



The 5th China International Consumer Products Expo is held from April 13 to 18 in Haikou city, south China, presenting a vivid picture of a smarter, more interconnected future. (PHOTO: VCG)

Innovation Frontier

Sci-tech Innovation Powers Spring Plowing

By WANG Xiaoxia

China's first document for the year, the "No. 1 central document" issued in February, emphasizes the importance of developing new quality productive forces in agriculture in light of local conditions. The development of smart agriculture will be supported and the application scenarios of technologies such as AI, big data, and low-altitude systems will be expanded.

With the arrival of spring and farmers getting busy across the country, sci-tech innovation is boosting agricultural production, not only bringing tangible benefits to farmers, but also injecting new impetus into rural revitalization. *Science and Technology Daily* looks at the changed farming scenario across provinces.

Intelligent machines

Drone fertilization, remote controlled

drip irrigation, machine seedling transplantation... modern technologies and intelligent tools are transforming and upgrading traditional farming, facilitating farmers' work and reducing costs.

In an unmanned agricultural cooperative in Gaochun District in Nanjing, Jiangsu province in east China, a DJI T100 plant protection drone with a load of 150 kg of herbicide flies over a wheat field and sprays herbicide evenly.

The intelligent system installed on the machine can automatically scan the field and spray herbicide accurately, said Wei Qing, the head of the cooperative.

A smart platform records the plant varieties, agricultural machinery operations and other data in detail. All intelligent equipment can be controlled online, and the cost to fertilize fields is reduced by about 120 RMB per mu (one mu equals 666.67 square meters) compared with the

original manual fertilization method.

According to the Nanjing Municipal Bureau of Agriculture and Rural Affairs, the city has more than 1,000 agricultural plant protection drones, which can be used for fertilization, weeding, field patrol and other plant protection work.

Seed selection technology

In Changsha in central China, researchers at the germplasm resource bank of the Yuelu Mountain Laboratory are putting the seeds into an instrument that is a novel seed scanner. On the screen of the nearby computer, the scan result — the spectral curve of the seed — appears clearly.

The scanner, called the "rice seed vigor detection sorter," is used to do CT scans of the seeds to judge whether they are good or not, explained Yu Yinghong, president of the Hunan Academy of Agricultural Sciences. See page 3

AI Ripples

By Staff Reporters

QwQ-32B, a reasoning large language model (LLM) by Alibaba's Tongyi Qianwen (Qwen), has been integrated with the scientific research of several institutes of the Chinese Academy of Sciences (CAS), facilitating research on solar flare and water resources on the Qinghai-Xizang Plateau.

Solar flares are crucial for scientists to explore the mysteries of the sun. Since researchers need to deal with a huge amount of multi-modal data, there is a higher algorithm requirement. LLMs like QwQ-32B have brought new solutions.

At CAS's National Astronomical Observatories (NAOC) headquartered in Beijing, researchers are using JinWu, a solar physics LLM developed based on QwQ-32B, to predict solar flare activities precisely.

Li Yuyang, a member of NAOC's AI group, said the team trained the JinWu model to understand and answer solar physics questions, as well as recognize and analyze images of the sun through supervised learning and reinforcement learning on the basis of a series of Qwen LLMs.

JinWu's solar flare outbreak prediction accuracy has reached the frontier level within the field. The data source for training and testing the predictions are satellite public data from NASA's Solar Dynamics Observatory, data from

the 35-cm magnetic field telescope at the Huairou base in Beijing, and full-disk vector magnetograph data from Kuafu-1, China's solar probe satellite launched in 2022.

The astronomical LLM "Xingyu 3.0" is connected to the Mini-SiTian Array at NAOC's Xinglong Observatory in north China, which can autonomously control observations, analyze data and recommend follow-up plans, according to Li.

As scientific research requires very high data security, some research scenarios deploy LLMs locally. QwQ-32B can meet the requirements of research on LLM capabilities and costs relatively less.

Another notable example is exploring the "water code" of the Qinghai-Xizang Plateau. See page 4

Lancang-Mekong Cooperation Expands Regional Ties

International Cooperation

By LIANG Yilian

This year, the Lancang-Mekong Cooperation (LMC) celebrates its 10th anniversary. As the first regional cooperation mechanism jointly established by six nations to build a shared future, the LMC has made significant strides over the past decade, advancing to become a key platform for regional collaboration.

Last month, a spokesperson for China's Ministry of Foreign Affairs announced that the six LMC countries (China, Cambodia, Laos, Myanmar, Thailand and Vietnam) would enhance cooperation across various sectors, aiming to develop LMC 2.0.

Over the past 10 years, the LMC has focused on political and security cooperation, economic and sustainable development, and socio-cultural exchanges. Key priorities include connectivity, industrial capacity cooperation, cross-border economy, water resources, agriculture, and poverty alleviation. Institutional frameworks have been strengthened, and practical collaboration has delivered tangible results.

Infrastructure connectivity has improved significantly. The China-Laos Railway and Phnom Penh-Sihanoukville Expressway are operating smoothly, while projects like the China-Thailand high-speed railway and China-Vietnam railway connectivity continue progressing. A multi-modal transportation network linking Yunnan to Mekong countries has also expanded, covering rail, road, air and waterways. In addition, the China-Laos-Thailand international freight train has launched successfully, and the LMC Express+ service now runs regularly.

In the economic field, trade between China and the Mekong nations has surged to 437 billion USD, a 125 percent increase since the mechanism's inception. China's direct investment in the region continues to grow, spanning energy, electricity, and infrastructure sectors.

People-to-people exchanges have also flourished. China has been the top source of tourists for Vietnam and Thailand for three consecutive years. With the launch of the China-Cambodia Tourism Year 2025, Cambodia expects over one million Chinese tourists this year.

The cooperation mechanism has been further refined. The LMC holds a leaders' summit every two years and a foreign ministers' meeting annually, along with the operation of six ministerial-level priority working groups.

WEEKLY REVIEW

Chinese Researchers Complete 1st Wheat Genome Map

Chinese researchers have completed the world's first telomere-to-telomere genome assembly of hexaploid wheat. The breakthrough, led by the Peking University Institute of Advanced Agricultural Sciences, will help scientists identify key genes related to yield, quality, and disease resistance more precisely.

1st Cross-Region Hydrogen Truck Route Launched

China's Sinopec Group has launched the country's first cross-regional hydrogen-heavy-duty truck route, stretching 1,150 km from southwest China's Chongqing to the Qin Zhou Port in south China's Guangxi Zhuang autonomous region.

Global Clean Electricity Share Hits Record 40.9%

Global clean power reached 40.9 percent of electricity generation in 2024 — the highest since the 1940s — driven largely by solar energy. In Ember's Global Electricity Review 2025, analysts noted that China contributed 53 percent of the global solar power increase.

KATRIN Experiment Sets Tightest Limit on Neutrino Mass

Germany's KATRIN experiment team has narrowed the most stringent laboratory-based upper limit on effective electron neutrino mass, placing it at < 0.45 eV with a 90 percent confidence level. The findings were detailed in the journal *Science* and released by the Karlsruhe Institute of Technology.

Bilateral Trade Volume in 2024 (Billion USD)

China-Vietnam
260.65

13.5%
y/y

China-Malaysia
212.04

11.4%
y/y

China-Cambodia
17.83

20.7%
y/y

Source: Official Data
Designed by SONG Ziyuan / Science and Technology Daily

WECHAT ACCOUNT



E-PAPER

