

Sustainability Shaping Great Collaboration

By LONG Yun

Dr. Narong Sirilertworakul is the President of Thailand's National Science and Technology Development Agency (NSTDA), an organization tasked with enhancing Thailand's global competitiveness in scientific research and technology, modernizing the country's industries, and enhancing Thais' quality of life.

"Thailand has maintained a positive relationship with China, both bilaterally and through multilateral frameworks such as China-ASEAN cooperation," he told *Science and Technology Daily* recently, believing that the two countries' relationships have grown steadily in a variety of areas, including corporate values, trade, culture, education, and innovation. Sirilertworakul received the 2021 Chinese Government Friendship Award in recognition of his significant contributions to China-Thailand cooperation, particularly in the field of sci-tech cooperation and people-to-people exchanges.



Dr. Narong Sirilertworakul. (COURTESY PHOTO)

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Cooperation generating benefits

Sirilertworakul was instrumental in establishing the "Thailand-China Technology Transfer Center Working Group" in collaboration with the China-ASEAN Technology Transfer Center (CATTTC). He considered himself fortunate to have led NSTDA in numerous initiatives to enhance Thailand-China cooperation under the CATTTC.

Various programs are established to promote knowledge and technology transfer, thereby accelerating scientific and commercial advancement in both countries, he said.

In 2015, the Thailand-China Technology Transfer Center, established at NSTDA, facilitated technology transfer and dialogue between Thai and Chinese businesses. The Center holds regular events to foster collaboration between Thai and Chinese businesses in diverse fields.

In the business sector, more opportunities were generated for Thai businesses to collaborate with their Chinese counterparts at Thailand-China technology matchmaking session in China Intelligent Equipment Industry Exposition during 2017-2019 organized by CATTTC. "The activities have expanded as more companies from both countries joined forces to facilitate technology transfer and equipment trading," said Sirilertworakul.

Additionally, he exemplified people-to-people exchanges by naming the China-ASEAN Technology Manager International Training and the Talent Young Scientist program. Both programs present professional training in a variety of sectors, providing excellent opportunities to gain knowledge and experience essential for common development.

In 2022, the Forum on China-ASEAN Technology Transfer and Collaborative Innovation will celebrate its tenth anniversary. The Forum's mission is to facilitate precise matchmaking in scientific information between China and ASEAN across various sectors and institutes.

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Sustainability shaping future cooperation

Sirilertworakul's extensive experience in his work has made him keen to pursue concerted efforts to address global issues. He emphasized the importance of "sustainability" in future international collaboration in scientific communities.

According to him, ASEAN members are now actively involved in achieving the UN's Sustainable Development Goals and mitigating environmental issues.

He provided a detailed overview of the various measures implemented by various ASEAN countries. Regarding his country, he said that Thailand is attaching great importance to the Bio-Circular-Green (BCG) economic model in pursuit of the circular economy, green economy, and ASEAN cooperation, noting that it also aligns with the national plans of some ASEAN members, such as Singapore and Malaysia.

He understands how critical it is to conduct international cooperation for sustainable development. In the face of potential threats, Sirilertworakul believes China could collaborate with Thailand and other ASEAN countries to combat climate change. "China is one of the leading countries addressing this issue, which is beneficial to all people on the planet," he said, as demonstrated by the concepts of the "Green Games" and "sustainability" integrated into all aspects of Beijing 2022.

Sirilertworakul suggested ways to strengthen collaboration, including technology and infrastructure support and joint capacity building programs, while emphasizing the importance of promoting BCG products and services.

Having traveled extensively across China, he quoted two lines from Chinese poetry praising the beauty of Guilin's Li River, his favorite part of China: "He who travels through the Guilin hills finds himself in a fairytale," and "He who sails along the Li River finds himself boating in a sweet dream."

Letter to the Editor

Two Sessions Boost Prospects for High-tech Industry

By Musundali Bhuiyan

Alongside increasing its global economic share, China continues to lead the world in many spheres, including science, technology and innovation. Through constructing the space station, supercomputer, and its unparalleled feats in artificial intelligence, new medicines, and low-carbon technologies, China has already ushered in a new era of these fields.

Against such a backdrop, the Two Sessions, the most important annual political meetings in China, once again attracted wide spread attention this year. Premier Li Keqiang delivered his government work report highlighting a slew of key economic targets including science, technology, and innovation.

In the report, Li reiterated his government's commitment to implement a 10-year action plan on basic research, to ensure stable support for scientific and technological innovation over the long term. China will continue its innovation-driven development strategy and strengthen the foundation of the real economy. The country plans to promote scientific and technological innovation to upgrade its industries, eliminate supply bottlenecks, and realize high-quality development through innovation.

This part of Li's report has widely been hailed by scientists, researchers, IT experts, and inventors across the world. Those working in the specific fields have seen the statements as a boost for the development of the industry. They think, as a result of initiatives and incentives to be offered by the Chinese government, that the industry will see a huge boom in the coming years.

Many are optimistic about getting new cutting-edge technologies, assisting with innovations in the field of science, which can make human life more convenient and less expensive. The world is looking forward to getting good news about new inventions and the development of state-of-the-art technologies, especially in the field of 5G and artificial intelligence.

Li also reaffirmed to the world that China will take well-ordered steps to achieve peak carbon emissions and carbon neutrality. Under this assurance, China will start reducing its carbon emissions in 2030 and will become a carbon-neutral nation by 2060. The country's action plan in this regard will be put into effect in the near future.

The work report maintained that China will continue to improve its ecological environment by promoting green and low-carbon development. The development and application of green and low-carbon technologies are to be promoted, and projects with high energy consumption, high emissions, and low quality will be curbed. The world has confidence in China, as its successive leaders have already proved their trustworthiness by fulfilling their promises to the world in the past.

President Xi Jinping has previously announced that China will not build new coal-fired power plants abroad. After his announcement, China has not made any new coal investment overseas. What it has done is launching the world's largest carbon market, to contribute half the emission reductions the country needs to meet its 2060 net-zero goal.

China aims to gradually increase the share of non-fossil energy consumption to around 20 percent by 2025, around 25 percent by 2030, and more than 80 percent by 2060. China is also playing a significant role in carbon emission reduction around the world. The country is responsible for about 30 to 50 percent of the global contribution to improving energy efficiency, optimizing the energy mix, developing renewable energy and forest carbon sequestration, and adjusting industrial structure.

China has ranked first in the world with its investment in renewable energy for many years. Accordingly, it has built a large number of solar and wind farms in Inner Mongolia, Xinjiang, and several other locations and is also busy turning its deserts into green zones in Kubuqi and Gobi.

Musundali Bhuiyan is a Bangladeshi journalist now based in Beijing.



A wind power plant in Dingxi, Gansu province. (PHOTO: XINHUA)

Traditional Eastern Wisdom

Huangfu Mi: Ancestor of Acupuncture

By BI Weizi

Huangfu Mi (215-282) was a Chinese physician, writer and historian during the Western Jin Dynasty of the Three Kingdoms. He occupies a high academic position in the history of acupuncture, which is an important invention of the Chinese nation.

As early as 2,000 years ago, the basic theories of acupuncture and moxibustion had already been established.

However, the earliest acupuncture books contained many errors, especially the locations and names of acupuncture points, which were not unified.

Built on earlier medical literature, Huangfu compiled *The Systematic Classic of Acupuncture and Moxibustion* in 256-260, which is the earliest systemized book on acupuncture and moxibustion.

The 12 volume book stands as a monument in the field of Chinese medicine, for its scientific categorization of acupuncture points based on many classical medical works such as *Huangdi Neijing*, *Su Wen*, and *Zhen Jing*. It includes a total of 349 acupuncture point names, 189 more than *Huangdi Neijing*.

The book laid a solid theoretical foundation for the discipline of acupuncture and moxibustion, accelerating the development of acupuncture and moxibustion in leaps and bounds. Thus, Huangfu was hailed as the ancestor of acupuncture and moxibustion in Chinese medicine.

For more than 1,700 years, Huangfu's book has provided acupuncturists with concrete guidance and theoretical basis for clinical treatment. It also spread worldwide and was valued by various countries, especially Japan and Korea.



Huangfu Mi. (PHOTO: VCG)

Service Info



The Spring Equinox (4th Solar Term)

During the Western Han Dynasty, 24 Solar Terms were formally identified and integrated into the Chinese lunar calendar. And it continues to be used today. They depict the relationship between the universe, seasons, climate, and agriculture, all of which were created by Chinese ancestors. The Twenty-four Solar Terms have served as a comprehensive collection of weather calendars in China, guiding agricultural productivity. This year's Spring Equinox will be on March 20. As the weather warms up after this solar term, the number of daylight hours increases progressively. The picture on the left shows that Hanfu lovers enjoy flowers at Huangjiawan Scenic Area in Xiangyang city, Hubei province.

(PHOTO: XINHUA)

Joint Efforts Support Africa's Green Development

From page 1

During the construction, ecological conservation and wildlife protection are of great importance. According to the CGGC, regulations were carried out on waste gas and wastewater discharge, waste recycle, noise control, use of environmentally friendly materials and biodiversity protection.

The project worked with the local authorities to guide the migration of hippopotamus, crocodile and other large animals within the project scope in advance, and put in place professionals for continuous monitoring.

"Our project does not affect the survival of wild animals, rather, creates better conditions for their reproduction," said a local environmental expert.

According to her, local communities still rely on rainfall from the short rainy season, river water and unstable solar power supply. "We are all looking forward to the completion of the dam, bringing us sufficient hydropower resources," she said.

Breakthrough achieved in green industry

Nigeria is the world's largest cassava producer, with Benue state producing the most. In 2020, a China-invested biotech company was established in this state to produce medical, industrial and

edible ethanol from cassava.

As the largest ethanol plant in Nigeria, it can produce 70,000 tons of ethanol per year and 140,000 tons per year in the second phase, which is expected to generate 10 million USD of annual tax revenue for the state.

In order to prevent environmental pollution from the plant's waste water, the Chinese enterprise invested 10 million USD to build a sewage treatment system. It was a breakthrough for Nigeria's pursuit of a green industry, said Dondo Ahire, Benue State Commissioner for Water Resources and Environment.

The waste from the ethanol plant can be processed into organic fertilizer or produce biogas, with an annual output of 23 million cubic meters, equivalent to more than 30,000 tons of high-quality raw coal.

"I could never imagine that even cassava residue can be processed into organic fertilizer!" said local farmer Joseph, who no longer worries about affording fertilizer.

The project has boosted the local economy by increasing farmers' incomes and promoting industrialization, said Benue Governor Samuel Ortom, and it offered 1,000 local jobs for its construction and trial operation alone.