

# United for Land: Our Legacy, Our Future

## Voice of the World

Edited by TANG Zhexiao

Themed "United for Land: Our Legacy, Our Future", this year's Desertification and Drought Day on June 17 focused on the future of land stewardship.

Every second, an area of healthy land equivalent to four football fields is degraded, according to the UN. Up to 40 percent of the world's land is degraded, affecting nearly half of humanity, said Ibrahim Thiaw, United Nations Convention to Combat Desertification (UNCCD) executive secretary.

After decades of efforts, China has embarked on a path of preventing and controlling desertification with Chinese characteristics and achieved the goal of zero land degradation growth by 2030 set by the UN ahead of schedule, winning praise from the global community.

**Building a green 'Great Wall'**  
National drive plays an important role in curbing desertification, and China's greening achievements are inspiring.

Data from the National Forestry and Grassland Administration show that China's desertified land and sandy land areas have decreased by 5 million hectares and 4.33 million hectares respectively.

Launched in 1978 and scheduled to be completed in 2050, the Three-North Shelterbelt Forest Program (TSFP), built to protect northwest, north and northeast of China from desert encroachment, is the world's largest afforestation project.

Earlier in June, the Ministry of Finance announced a special fund worth



Workers make straw checkerboards in the Tengger Desert in Zhongwei, northwestern China's Ningxia Hui autonomous region, on May 9, 2024. (PHOTO: VCG)

12 billion RMB from this year's central budget to provide financial support for the TSFP, the fully functional, unbreakable green "Great Wall" and ecological security barrier.

**Chinese solutions for a global problem**

Desertification is a global issue. The Chinese solutions for turning deserts into forests offer rich experience for other countries facing similar challenges.

The Ningxia Hui autonomous region in northwestern China, surrounded by three deserts, suffered desertification for more than six decades. Based on the site conditions, the local government is using straw checkerboards to

fix the sand and prevent it from moving and advancing. Planting is done in spring and autumn, supplemented by spot sowing, container seeding, and broadcast seeding in the rainy season. This has effectively stopped the sand dunes from shifting and helped the vegetation cover.

Now, people from different parts of the world are flocking to Ningxia to learn about this sand control approach. "We have received good information," said Bashir Daoud, founding CEO of Jordan National Tourism Council. He said what he learned can be used in his own country as Jordan too has a climate similar to Ningxia's.

Last year, China and Arab nations

signed an agreement to establish an international center to fight desertification. The initiatives include planting 10 billion trees, setting up a shrub nursery and building eco-solar desert control engineering projects in Saudi cities, according to Anadolu Agency reports.

China has established green belts around many cities and become a source of inspiration for African countries that are battling land degradation, according to Magdy Allam, advisor to the Global Environment Facility.

Allam said China's successful management of climate risks, such as drought and heatwaves, is a real contribution to global ecological conservation.

# More Chinese Reviewers Needed for Int'l Journals

## Opinion

By BI Weizi

With the rapid rise of international publication volume, more Chinese reviewers are needed to match China's increasingly important contributions to international publications.

"Inviting expert reviewers to participate in the peer review process is inevitable if journal editors want to make informed publishing decisions," Matteo Cavalleri, publisher, Strategy & Portfolio Development, AIP Publishing, told *Science and Technology Daily*.

**Rising as a major contributor**  
According to the 2023 Nature Index Annual Tables, which examined the institutions and countries that contributed most to high-quality research published in 2022, China surpassed the

United States to take the top spot in four science categories (physical sciences, chemistry, biological sciences, and earth and environmental sciences). With a 21.4 percent increase in adjusted share from 2021, China had the largest increase among the top 10 countries in the annual tables, emerging as a science and engineering research superpower.

Based on data from Clarivate, taking the three-year average through 2021, China produced 24.6 percent of all papers published worldwide and nearly 30 percent of the top 10 percent and one percent of most-cited publications.

Cavalleri attributes the rapid development of China's S&T publications to the country's ample funding and resources. "The Chinese government has prioritized scientific research and development as a cornerstone of national development," he

said, adding that a large pool of highly educated and skilled researchers has been fostered through initiatives such as the "Double First-Class" initiative, a higher education development program to forge a world-class higher education system.

**Young scientists welcomed**  
Cavalleri noted that the percentage of Chinese reviewers does not proportionately match their contributions to international publications.

According to AIP Publishing's database, about one-third of research articles in 2023 came from China, while only 17 percent of the review invitations were sent to Chinese researchers that year. Therefore, AIP Publishing encourages more Chinese scientists to join the reviewer community to bridge this gap since Chinese reviewers play an important and multifaceted role in international journal publishing.

"Chinese reviewers bring a wealth

of expertise and knowledge in various sci-tech fields. Their involvement adds a diversity of perspectives to the peer review process," Cavalleri said. Diversity is essential to ensure a comprehensive evaluation of manuscripts, taking into account different scientific traditions, methodologies, and cultural contexts.

To engage more Chinese reviewers in international journal publishing, AIP Publishing has launched a new peer review initiative that has added an "Engaged Reviewer" person tag to its manuscript submission and tracking website to better attract researchers who want to contribute to the peer review process, Cavalleri said. Relevant webinars were also held to support young scientists.

"We welcome more young Chinese scholars to join the community of peer reviewers as this would indeed bring significant changes to the global academic ecosystem," Cavalleri said.

# Advanced Manufacturing Clusters Promote High-quality Growth

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A new generation of information and communication cluster has been formed in Shenzhen. As a hub of the global electronic information industry, Shenzhen's output value of the electron-

ic information manufacturing industry in 2022 was 2.48 trillion RMB, accounting for almost 17 percent of the country's total.

The agglomeration advantages of advanced manufacturing clusters not

only form a virtuous circle of their own development, but also attract a number of foreign enterprises to set up R&D centers in the cluster, gradually forming a high-quality development matrix.

it would invite 50,000 young Americans to China for exchange and study programs in the next five years to increase exchanges between the two peoples, especially between the youth.

"Exchanges can sow the seeds of

One such example is the Volkswagen China Technology Company, which began full operations in Hefei in January 2024, becoming the Volkswagen Group's largest R&D center outside Germany.

friendship among the youth of two nations," Yang said. "Educational cooperation programs will nurture more young individuals with a global perspective, creating a stable force to promote friendly exchanges between the two sides."

## Comment

# BRI Powers Connectivity Between China, Central Asia

By TANG Zhexiao

China, Kyrgyzstan and Uzbekistan have signed an intergovernmental agreement recently on building a new 523km railway connecting the three countries, as part of the Belt and Road Initiative (BRI).

The railway begins in Kashgar, northwest China's Xinjiang Uygur autonomous region, and enters the territory of Uzbekistan through Kyrgyzstan. The line could eventually extend to West Asia and South Asia.

Kyrgyz President Sadyr Japarov said in May that Kyrgyzstan is a dead-end state in terms of logistics, according to the magazine *The Diplomat*, "When the [China-Kyrgyzstan-Uzbekistan] railway is built, we will be able to go out into the world," he said.

From interconnection to capacity cooperation, and clean energy to infrastructure construction, China and Central Asian countries are promoting high-quality joint construction of the BRI.

A decade on, China and Kazakhstan have been engaged in production capacity and investment cooperation, forming 52 projects with a total value of more than 21.2 billion USD. This cooperative spirit continues expanding to green, digital, scientific and technological fields.

In Kyrgyzstan, the third phase of a new Chinese-built highway is under construction. After the completion, the highway will become the main transport artery connecting the north and the south of Kyrgyzstan.

Meanwhile, the first phase of a 400MV Chinese-financed solar power plant in the country's northern Issyk-Kul region has been completed with full operation expected by the

end of 2025.

In addition, the Syr Darya 1500MW gas turbine plant in Uzbekistan is an example of China's green infrastructure experience "going global." Using a gas turbine with the highest combustion temperature, the largest single source of power and the highest efficiency in the world, together with a zero wastewater discharge design scheme, the plant promotes Uzbekistan's green development.

Sheradil Baktygulov, director of the Institute for World Politics Study, noted that Central Asian countries and China are carrying out diverse beneficial cooperation under the framework of the BRI. It has further improved the sustainable development of Central Asian countries and effectively uplifted the well-being of local people's livelihoods, he added.

Relying on China-Europe freight trains, whose total trips has surpassed 90,000 on May 25, China and Central Asian countries have boosted closer cooperation.

Earlier this year, the joint-constructed freight terminal China-Kazakhstan (Xi'an) Trade Logistics was launched to further facilitate goods transportation between China and Kazakhstan, Central Asia and Europe. According to the railway company Kazakhstan Temir Zholy, the clearance process can be reduced to less than 15 minutes.

Running on the Eurasian continent, the China-Europe freight trains are improving the trade and transportation network between Central Asia and China, creating more favorable conditions to jointly build the BRI, according to Dildora Karimova, director at the Institute for Macroeconomic and Regional Studies.



A freight train loaded with goods departs from east China's Nanchang and heads for Kazakhstan and other Central Asian countries. (PHOTO: VCG)

# Sci-tech Strengthens Green Great Wall

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**Intelligent sand control and forest protection**

On the basis of protecting the existing forest grassland vegetation, the TSFP is being built with five goals: controlling the wind and sand, soil erosion control, forest protection in agricultural areas, developing forest resources, and economic development.

Science and technology plays a strong supporting role in the construction of the TSFP.

The intelligent water-saving supporting technology model developed by the Chinese Academy of Forestry (CAF) has introduced the "Internet of Water" theory and technology. The team developed an automatic soil moisture monitoring technology based on air (multi-

mode communication) and ground (field sensing) integration, forming a water-saving intelligent irrigation control system.

Intelligent sand control machinery is another project developed by the CAF. The research team integrated sensors, the BeiDou Navigation Satellite System, remote sensing technology and real-time data processing capabilities into the sand control operation, establishing a national mechanization operation service team for sand control.

These intelligent technologies support remote operation, greatly lessening human resources requirements while improving the safety and effectiveness of sand control. This is improving production efficiency and quality, reducing costs and saving labor.