Belt and Road Initiative: 10 Years' High-quality Cooperation

China-Europe Freight Trains Improve Connectivity

By Staff Reporters

Yiwu, a small city in east China's Zhejiang province, is home to the world's largest wholesale market for small commodities, which has seen robust growth over the years. On September 20, President Xi Jinping visited the Yiwu International Trade Market, where he learned about the operation of the market and the China-Europe freight trains.

A major China-Europe freight train route links Yiwu, aka "the world's supermarket," and Europe's largest small-commodity distribution center in Madrid, Spain. This year marks the 10th anniversary of both the launch of the first freight train via the Yiwu-Xinjiang-Europe freight train route, known as Yixin'ou route in Chinese, and the BRI.

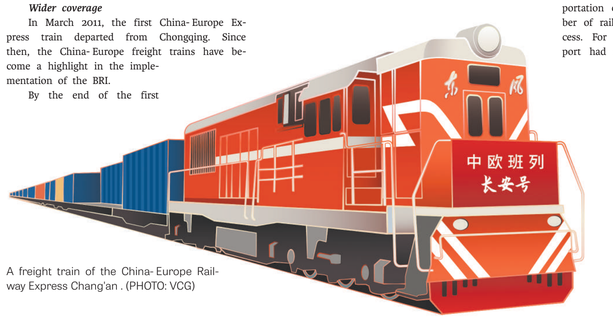
Wider coverage

In March 2011, the first China-Europe Express train departed from Chongqing. Since then, the China-Europe freight trains have become a highlight in the implementation of the BRI.

By the end of the first half of 2023, more than 73,000 China-Europe freight trains had made the trip, carrying 6.9 million TEUs of cargo. Departing from more than 100 Chinese cities to 216 cities in 25 European countries, the "iron camel caravans" have injected new vitality into world economic and trade exchanges.

On July 29, the Yixin'ou route saw the 10,000th trip by China-Europe freight trains this year. The 10,000th-trip was reached 22 days earlier than last year. At present, Yiwu has opened 18 international direct lines, reaching 101 overseas stations, and finding their way to more than 160 cities in more than 50 countries in Eurasia.

Meanwhile, China Railway has strengthened the construction of China-Europe railway hubs. For example, the number of cargo handling lines at Xi'an International Port has increased from 19 to 29. It is also actively developing China-Europe freight train lines across the Black Sea and the Caspian Sea.



A freight train of the China-Europe Railway Express Chang'an . (PHOTO: VCG)

More efficient

Compared with maritime transport, the efficiency of China-Europe freight trains has obvious advantages. China's railway authorities have optimized the working procedures, improved infrastructure, trained the staff and given priority to cargo transported by China-Europe freight trains.

For example, the two-way route between Chengdu in China and Lodz in Poland has reduced the transit time of cargo by more than five days. Today, it takes around two weeks between Europe and China by train and what would previously sound unbelievable is now the new normal.

China Railway continues to improve transportation capacity by completing a number of railway ports and rear railway access. For example, the Erenhot Railway port had its wide gauge train lines increased to 30, which when integrated with the new multiple function system, has improved operation efficiency.

To further improve the information management of China-Europe freight train services, the railway authority has strengthened the construction of the information integration platform, and realized functions such as automatic information collection, planning management, cargo trains tracking, and automatic detection of safe loading.

More diverse

In recent years, the goods category and value delivered by China-Europe freight trains have increased year-by-year, and high value-added and high-tech products have shown growth.

In the past, China-Europe freight trains from Yiwu were used to transporting mainly small commodities, hardware, electrical appliances and mechanical equipment, but now the export structure has changed. Auto parts, photovoltaic products, smart home appliances and new energy vehicles are more frequently seen on the delivery list.

According to data released by the General Administration of Customs, China's import and export volume rose 2.1 percent year-on-year to 20.1 trillion RMB in the first half of this year. Notably, export growth of electric vehicles, lithium batteries and solar cells reached 61.6 percent, driving China's overall export growth of 1.8 percentage points, and in the process becoming a new engine for trade.

To meet different needs of customers, China-Europe freight trains now provide cold chain transport, which can quickly ship fruits such as lychee, longan, banana, dragon fruit, and skin-care products such as facial masks from Guangdong to Europe.

In addition, the China-Europe freight trains also provide customized services. The China-Europe train that runs from Shanxi transports special products such as medicines from Datong, flanges from Xinzhou, ceramics from Shuozhou, glassware from Jinzhong and walnuts from Lyuliang to the rest of the world.

Editor's Note:

This year marks the 10th anniversary of the Belt and Road Initiative (BRI). Since its launch in 2013, the BRI has been welcomed by the international community as both a public good and a cooperation platform. Over the last decade, the BRI has facilitated high-quality cooperation, and delivered real gains to its partner countries and people.

The BRI pursues development, promotes win-win outcomes, and inspires hope. China and BRI partners have been working hand in hand to carry out cooperation projects, contribute to global connectivity and create platforms for international economic cooperation.

Sci-tech Cooperation Key for BRI Partners

More than **80** BRI partner countries signed intergovernmental agreements on sci-tech cooperation.

More than **10,000** young scientists from partner countries have carried out short-term research and exchanges in China.

More than **16,000** technicians and management professionals have been trained from partner countries.

23 agricultural technology demonstration centers of **22** African countries have been built with the assistance from China.

50-plus BRI joint laboratories in areas such as agriculture, new energy, and health have been established.

Source: China's State Council Information Office

Growing Together with BRI

BY LIANG Yilian

The third Belt and Road Forum for International Cooperation was held in Beijing on October 17 and 18. In a recent program filmed by *Science and Technology Daily*, themed Youth on Tech, four distinguished young experts shared their BRI experiences and insights with audiences.

TCM thrives within BRI

The ancient Silk Road, the historically renowned global trade route, also served as a conduit for the dissemination of Chinese traditional medicine (TCM). Today, as global interest in holistic healthcare grows, TCM exchanges and collaboration have emerged as a cornerstone of the BRI.

Han Man, deputy chief physician of the Guang'anmen Hospital in Beijing, shared her experience as a lecturer in international exchange project launched by China's Ministry of Science and Technology. She introduced TCM and Tibetan medicine to international researchers involved.

Han called TCM, a traditional medicine with thousands of years of history, not only a medium of cultural exchange, but also a highly practical medical discipline.

She said the TCM exchanges and cooperation perfectly illustrate the meaning of the BRI that it brings mutual benefit among countries, mutual understanding among people, and mutual learning among civilizations. "The BRI provides us a fantastic exchange platform to deepen understanding among young scientists," she said.

Naser Golsanami, an Iranian professor at Shandong University of Science and Technology, showed keen interest when Han talked about Sanfutie, a kind of medicated patch. It showed that though TCM originated in China, its relevance extends far beyond, reflecting the cultural and ancestral wisdom of the country.

BRI catalyzes rice research innovation

Many BRI partner countries are developing countries with a large agricultural population and a high proportion of agricultural GDP. Therefore, they seek opportunities for agricultural development from the BRI.

Zhu Qian, an assistant researcher at the Rice Research Institute of Anhui Academy of Agricultural Sciences in east China, has been working on enhancing grain yield and cultivating rice strains tailored to diverse climates since graduation.

The challenge posed by global warming has made it necessary to take innovative approaches to rice cultivation. Since rice planting generally needs a lot of water, Zhu and her team bred a type of drought-tolerant rice that requires less water. It can be planted in tropical areas and also reduces greenhouse gas emissions.

Zhu, drawing on her experience of working with a Bangladeshi partner in BRI projects, underscored the importance of understanding the local preferences for rice: what kind of taste, aroma and texture they prefer, in addition to the environmental and labor factors. This kind of approach will ensure that the rice varieties grown are tailored to specific communities.

For example, Chinese people generally prefer soft rice but Bangladeshis prefer hard rice. "This tells me what kind of rice I can breed for them," she said.

BRI projects cover more than food security aspects. Mohamed Salem from Egypt, a visiting professor at Chongqing Technology and Business University, said "BRI offers us research projects, facilities, and cooperative opportunities with different countries. And through its projects, we can offer a good future to all connected people."

Cross-cultural cooperation provides new perspectives

Golsanami and Salem came to China from different countries. Through their BRI experiences, they recognize the unique perspectives of people from diverse backgrounds in solving scientific problems, which promotes scientific research.

Golsanami said working on BRI projects has transformed him and other researchers like him into contributors to international cooperation. "This is different from working alone with your team in a research organization or in a university," he added.

Salem emphasized the commonalities and distinctions in the histories and cultures of China and Egypt. He views the BRI as a way to build a global community of shared future, propelling research projects that transcend borders.

Living in China, Golsanami has deep insights into Chinese culture. He said an old Chinese saying has given him a deep understanding of how the Chinese nation thinks of the world, and what their values and beliefs are, namely, "Appreciate the culture/values of others as you do your own, and the world will become a harmonious whole." Everybody cherishes their own culture/values, and if we respect and treasure other's culture/values, the world will become harmonious, he said.

BRI Sci-tech Cooperation Shines

By ZHONG Jianli

Over the past decade, sci-tech innovation has served as a driving force for the implementation of the BRI. Through sci-tech cooperation, BRI partner countries have enhanced their innovation capacity, bridged digital gaps and achieved green development.

Thriving sci-tech exchanges

In May 2017, the Action Plan on Belt and Road Cooperation in Scientific and Technological Innovation was launched to advance the innovation capacity of BRI partner countries. It has achieved significant results in joint research, technology transfer, science and technology and cultural exchanges, and cooperation between high-tech industrial parks.

By the end of June 2023, China had signed intergovernmental agreements on sci-tech cooperation with more than 80 BRI partner countries, and established more than 50 joint laboratories in agriculture, new energy and healthcare. It has also established nine cross-border technology transfer platforms for ASEAN, South Asia, Arab states, Africa, Latin America and other regions.

Professionals exchanges are deepening. Since 2013, China has hosted more than 10,000 young scientists from BRI partner countries to carry out short-term research and exchanges in China. Trips have also been organized for experts and researchers from these countries to acquaint them with the latest sci-tech developments in China.

The Alliance of International Science Organizations, founded by the Chinese Academy of Sciences under the framework of the BRI, has 67 members from research institutions, universities and international organizations in 48 countries and regions in Europe, Asia, South America, Oceania and Africa.

The China-Belarus Great Stone Industrial Park in Belarus is a model of high-tech industrial park cooperation. It has attracted investment from 114 enterprises in 16 countries, mainly in machinery manufacturing, e-commerce, new materials, traditional Chinese medicine and artificial intelligence, according to Xie Xiaoyong, the Chinese ambassador to Belarus.

Building a digital Silk Road

With the global economy switching to the digital economy, digital cooperation under the framework of BRI has achieved remarkable progress.

To strengthen policy coordination, China has proposed the Global Initiative on Data Security and the Belt and Road Digital Economy International Cooperation Initiative. It also took the lead in formulating the Framework of Standards on Cross-border E-commerce.

The China-ASEAN cooperation on smart city development continues to deepen, and China-Arab cooperation on the online Silk Road proceeds steadily, according to Cong Liang, vice chairman of China's National Development and Reform Commission, during a press briefing.

Cooperation in digital infrastructure connectivity has also been strengthened. China has built 5G base stations, data centers, cloud computing centers and smart cities in BRI partner countries where previously there was no basic network infrastructure, and promoted digital upgrading and transformation of traditional infrastructure such as ports, railways and energy networks.

Cong said cross-border e-commerce has become a new engine to promote the growth of trade in goods in BRI partner countries. Cloud platforms and other services provided by Chinese enterprises are continuing to benefit the local people in these countries.

Besides, the Cloud Classroom program has provided live webcast training classes for more than 80 countries to reinforce their digital literacy.

Green technology for sustainable growth

Green and low-carbon development is one of the defining features of the BRI, which emphasizes harmonious development between humans and nature, and pursues sustainable and eco-friendly growth.

China has issued the Guidelines on Jointly Promoting Green Development of the Belt and Road, and launched the Initiative for Belt and Road Partnership on Green Development together with 31 countries.

China has pledged to stop building new coal-fired power stations overseas and is ready to deepen research cooperation with partner countries on biodiversity conservation, and build the Belt and Road Environmental Technology Exchange and Transfer Center.

Using advanced green, low-carbon technologies, Chinese companies have invested in a large number of eco-friendly projects in BRI partner countries, such as the Zhanatas wind power plant in Kazakhstan and the Hann Bay wastewater treatment project in Senegal.

While constructing the Mombasa-Nairobi Railway in Kenya, the Chinese builders created several passages through which the local wildlife like elephants and giraffes could move freely and safely to accommodate their living habits, thereby contributing to harmonious coexistence between man and nature.

Looking into the future, China will continue to leverage its scientific and technological strength and other experiences acquired over the past decade to carry forward cooperation with BRI partner countries and build a global community of shared future.

China's Tech Empowers Kenyan Agriculture Development

At the Katumani Experimental Station in Kenya, each corn plant stands over two meters tall, and the corn cobs are large with a big yield. Comparatively, corn growing in nearby fields struggles to grow to about one meter in height.

The corn in the station has undergone mulching treatment by a Chinese agricultural team which comes from Lanzhou in Northwest China's Gansu province. After nearly 30 trips to Kenya, the team leader Professor Xiong Youcai brought China's ridge-furrow plastic film mulching technology to Kenya.

This year marks the 12th anniversary of the establishment of the cooperative relationship between the two sides. Apart from increasing corn plant height, the leaf area has also significantly increased, resulting in a yield increase of 99 percent to 240 percent. Additionally, water use efficiency has improved by 127 percent to 247 percent.

Kenya embraces new tech

Kenya is in East Africa, with the equator crossing through its central region. Over 80 percent of the country's land is in arid or semi-arid regions.

In August 2011, the Ministry of Science and Technology of China, in collaboration with the United Nations Environment Programme, officially launched a water resource technology cooperation project in Africa. Due to his technical expertise and rich experience, Xiong led a research team to conduct investigations in Kenya.

At that time, Kenya had just experienced a three-year-long drought, causing farmers to suffer from severe crop failure.

The challenges faced by Kenya have also plagued the people in China's northwest arid and semi-arid regions for a long time. It wasn't until the 1980s that the ridge-furrow plastic film mulching technology was widely promoted on the Loess Plateau, greatly improving water efficiency. The technology also has the advantages of low cost, easy operation and labor saving.

In simple terms, this technology involves creating ridges in the field, covering them entirely with plastic film, and sowing crops in the furrows.

"You see, the alternating ridges and furrows in the field have become a gathering place for rainwater, haven't they? The different-sized ridges can channel and seep the tiny rainfall to the roots of the crops," said Xiong.

Given the complexity of both natural and social conditions, drip irrigation technology from developed countries like Japan and Germany was also experimented with in Kenya. However, due to various reasons, including cost, it was not used by the country's poor.

"The initial investment is too high, and farmers will definitely not accept it. That's a given," said Kiprotich Wesly Cheruiyot, a Kenyan doctoral student at the College of Ecology of Lanzhou University, adding that "Only when the cost comes down and the technology is not too complex, will there be a possibility for widespread adoption."

New environment brings new challenges

While the ultraviolet radiation in Northwest China is already intense, in equatorial Kenya it is even more so. Under this dual onslaught of ultraviolet rays and ground temperatures, the plastic film showed signs of dissolution and damage in less than three days.

"People need time to adapt to a new environment, let alone a small piece of plastic film," said Mei Fujian, a team member and doctoral student at the College of Ecology of Lanzhou University. The team quickly came up with a solution through brainstorming, deciding to improve the material of the plastic film, including measures like adding carbon powder to enhance its resistance to ultraviolet radiation.

Due to its strong light-blocking properties, the improved black plastic film not only effectively suppresses weed growth but also lowers the field temperature. This means that the "greenhouse" environment where pests and diseases thrived was eliminated, and the farmland, which had long been plagued by pest infestations, is rejuvenated.

A green test field on the East African plateau

Up to now, Xiong's team has established eight technical demonstration sites across Kenya, covering an area of 3,000 acres.

"This is a very good opportunity for agricultural development in the arid and semi-arid regions of Kenya. I believe we can seize this opportunity and retain this practical dryland agricultural technology," said Dr. Patrick Gicheru, director of the Kenya Agricultural Research Institute.

In Xiong's point of view, this signifies a phased success in the promotion of this technology. What makes him happier is that more countries like Ethiopia and Pakistan have also adopted the ridge-furrow plastic film mulching technology.

"When I see the lush and thriving experimental fields on the East African plateau, I feel that all the hardships I've experienced were worth it," said Xiong.

This article is written by WANG Yingxia, XIE Manbin, LI Yuhan, ZHAO Yingshu, LIN Lijun, TENG Jipu & LIANG Yilian.

PHOTO: VCG