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Xiong'an: Future City for High-quality Development

Edited by WANG Xiaoxia

Within only six years, a new city broke ground, sprouted and grew in northern China. Xiong'an New Area has gone from blueprint to reality and is an example of what the modern urban future could look like.

In line with China's high- quality development path, Xiong'an has been committed to innovation- driven growth, and played an important role in coordinated development of the Beijing- Tianjin- Hebei region with growing connectivity and advanced infrastructure.

Over the past six years, Xiong'an has completed a total investment of over 540 billion RMB (about 78.1 billion USD), incorporating a developed area of approximate 120 square km and over 3,500 buildings constructed, including the headquarters of big SOEs like Sinochem Holdings, China Satellite Network Group and China Huaneng Group. Over 3,000 enterprises registered in Xiong'an have a background of investment from Beijing, signaling that Xiong'an is taking over Beijing's non- capital functions and providing a Chinese solution to "big city malaise," such as overcrowding, pollution and traffic congestion.

Apart from SOEs, research institutes and many innovative and vibrant high- tech enterprises have settled in Xiong'an, said Feng Jianping, director of comprehensive planning of Hebei Science and Technology Department. Focusing on intelligent equipment, new- generation information technology, aerospace, medical health and new materials, Xiong'an is promoting the forming of advanced industrial clusters.

To draw more high- level talent and startups, the area will continue to deepen the reform of the administrative approval system to provide service with simpler procedure, higher efficiency, lower cost and welcoming attitude, said Wang Yanwei, head of the reform and development bureau of the Xiong'an New Area Administrative Committee.

A sound ecological environment is an important embodiment of Xiong'an's high- quality development. In the past six years, Baiyangdian Lake, the largest wetland ecosystem in northern China, has carried out the largest systematic ecological management in its history. The water quality in Baiyangdian has been raised from poor Class V (the lowest of China's five-tier water assessment system) to Class III. The number of wild bird species in the wetland has reached 252, 46 more than before the establishment of the new area. In addition, over 31,000 hectares of land have been afforested since the launch of a massive afforestation project in 2017, and the forest coverage rate in Xiong'an has increased from 11 percent to 34 percent.

Local people have also benefitted from the construction of Xiong'an New Area. In the completed residential areas, about 120,000 people have moved into new homes. To assist the new residents with work and skills, training programs are being launched to help the relocated people catch up with rapid development and find new jobs.

The audience watch a robot football game during the seventh World Intelligence Congress in north China's Tianjin, May 20, 2023. (PHOTO: XINHUA)

Editor's Pick

Saline-Alkali Land to Yield More Crops

By Staff Reporters

On May 5, the National Technology Innovation Center for Comprehensive Utilization of Saline Alkali Land was officially inaugurated.

It is jointly built by the Chinese Academy of Agricultural Sciences and 18 saline land research institutions and enterprises, focusing on saline- alkali land biological breeding, capacity enhancement and ecological utilization.

According to a joint plan, it will take about 3 years to cultivate more than 80 new varieties of grain, oil, forage and special economic crops that are resistant to moderate salinity, and to increase the comprehensive capacity per unit area by more than 25 percent.

Saline- alkali land results from salt accumulation in soil and the increase of salt content in the soil will affect crop growth. According to statistics of the UNESCO and FAO, saline- alkali land in the world is around 954 million hectares, of which 99.13 million hectares are based in China. The formation of alkaline and alkaline soil in China is mostly related to the accumulation of carbonates, causing the alkalinity to be generally high, and plants struggle to survive in areas with severe saline soil.

China has been gathering advantageous resources for efficient management of saline- alkali land. Its efforts have witnessed progress in terms of the comprehensive utilization of saline-alkali land nationwide.

Creating a new ecological cycle

Dongying city in Shandong province has been taking a balanced model to utilize saline-alkali land. Considering local weather patterns, several salt- tolerant forage grass species were first selected specifically for crop rotation. Researchers then worked to construct low- salt habitats in the forage grass root zone, causing soil salinity to decrease from the previous 11 percent to 2.6 percent.

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International Cooperation

STB Project: Replicable Model for Agricultural Cooperation

By LU Zijian

Science and Technology Backyard (STB) was originally put forward by China Agricultural University (CAU) in 2009 as a new model for nurturing post-graduate students who study agriculture within the country. One of the criteria was that students had to stay in rural areas for two years to deal with grass roots situations farmers face daily.

STB has now evolved into a successful international cooperation model. More than 60 students from 12 African countries have been admitted to the Sino-Africa STB Project, and two STBs have been established in Malawi.

"The knowledge is pragmatically useful as the theories can be tightly integrated with practices in agricultural production. The farmers can acquire skills. More social benefits are brought about to both China and African countries," Jiao Xiaoqiang, project leader and associate professor at CAU, told *Science and Technology Daily*.

According to Jiao, the African students will study theoretical knowledge on campus for half a year, then go to the STB experimental station in Quzhou county, Hebei province and stay there for an entire growing and harvest season. After that, they are expected to go back to their home countries to practice and popularize what they have learned, before coming back to China for their graduation thesis.

Saturnin Zigani, a student from Burkina Faso, taught the skills and methods of planting millet he learned in China to his parents and neighbors. Millet serves as the staple food in Burkina Faso, but the production is generally low and after Zigani's intervention, millet yield doubled from only two tons per hectare to four tons.

Jiao said that the increase of millet yield means they don't have to change it for other high-yield varieties.

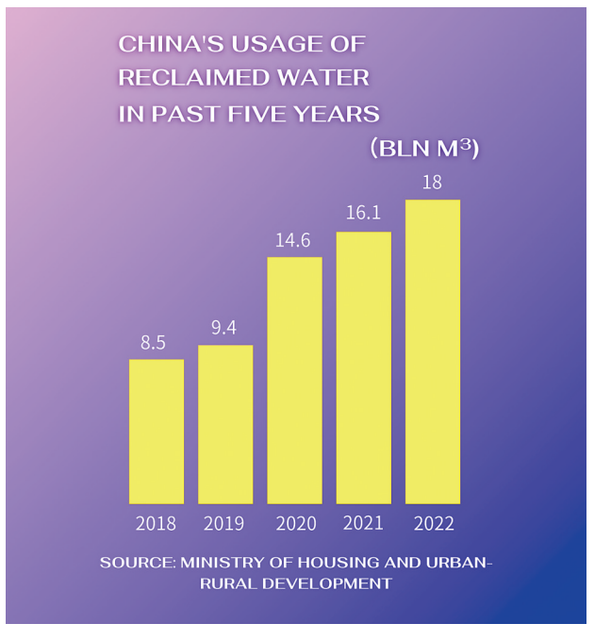
A Zambian student, Ngula David Muttendango, who worked in a large agricultural company before being admitted to the STB project, was aware that the crop yield of the company was much better than that of small farmers, and he wanted to change the situation.

Guided by Jiao, the student conducted experiments in the lab while sharing the agriculture technology with farmers at the same time. This knowledge exchange led to an improvement in the crop yield of the local farmers in Quzhou he worked with.

The Sino-Africa STB project was established in 2019. At that time, Zhang Fusuo, academician at the Chinese Academy of Engineering, who set up the first STB in Quzhou with his colleagues, began to think about whether the STB model could be applied to other countries, where small farmers play a key role in agricultural production.

Zhang's idea resonated with the Bill and Melinda Gates Foundation, who sent representatives to visit Quzhou to gain more insight into the agricultural growth model. The World Bank and the Food and Agriculture Organization of the United Nations are other interested parties who have also offered their support to this project.

New Graphic



Nature Index: China Ranks First

By LIN Yuchen

The latest Nature Index data show that Chinese authors made the greatest contribution to high-quality natural science research in 2022, ranking first for the first time in terms of share of publications in high-quality journals, surpassing the United States.

The Nature Index is produced and published regularly by Springer Nature Publishing Group, a leading international science and technology publisher. It tracks scientific papers published in 82 high-quality journals and reflects the global high quality research output and collaboration based on the number and proportion of papers published by the relevant institutions, countries or regions.

A paper published entirely by Chinese researchers will bring 1 "share" in the index to China. According to the Nature Index analysis, from January to December 2022, Chinese authors ranked first with 19,373 "shares" of contributions, compared to 17,610 for the United States.

Since the Nature Index was first introduced in 2014, China's "share" has increased rapidly. China has become the leading country in physical sciences and chemistry in 2021. The latest data from January to April 2023 show that China has also surpassed the U.S. in earth and environmental sciences for the first time. Currently, the U.S. ranks first only in the "share" of life sciences category.

In recent years, several measures of research performance have shown a shift in the share of global research contributions. For example, a 2018 National Science Foundation dataset shows that China published the most papers that year, and a 2022 report from Japan's National Institute for Science and Technology Policy says that between 2018 and 2020, China accounted for a more share of the top 1% of most-cited papers than the U.S.

The Nature Index also shows that the total number of scientific papers in 2022 was nearly 25,200 in the U.S. and more than 23,500 in China, based on the original sum of all articles with at least one author from a specific country/region.

WEEKLY REVIEW

Macao Science 1 Sent into Space

China successfully sent two satellites of Macao Science 1 on May 21 into space for space exploration. This is the first space science satellite program jointly developed by the Chinese mainland and Macao, and is also the first scientific exploration satellite placed in a near-equatorial orbit to monitor the geomagnetic field and the space environment.

Researchers Prove Presence of Ocean on Mars

A research team led by Xiao Long, professor from the China University of Geosciences, Wuhan, for the first time found petrological evidence of marine sedimentary rocks on the surface of Mars through the scientific data captured by Mars rover Zhurong. Relevant research has been published in the journal *National Science Review*.

Clawed Microrobot for Precision Medicine Developed

Scientists from the Harbin Institute of Technology have developed a swimming microrobot, inspired by tardigrades. It may significantly improve the efficiency of targeted drug delivery in blood vessels and bring a new insight into the precision medicine, such as treating malignant tumors.

National Science and Technology Week Begins

The 29th National Science and Technology Week themed "Love Science and Advocate Science" runs from May 20 to 31. It features China's major sci-tech achievements and includes a series of activites such as weather sci-tech knowledge contest.

WECHAT ACCOUNT

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