

Further Promoting the Commercialization of Sci-tech Achievements

By CHEN Chunyou

Since the 18th CPC National Congress, China has attached great importance to sci-tech innovation, and has introduced measures to promote the commercialization of sci-tech research findings countrywide.

According to Wang Zhigang, Chinese minister of science and technology, the reform of the mechanism for evaluating sci-tech achievements has progressed. The rights for use, disposal, and profit distribution of sci-tech achievements have been delegated to universities and research institutions at a quicker pace.

In order to perfect the innovation ecosystem, a guideline to improve the evaluation mechanism for sci-tech achievements was issued, in which the es-

tablishment of a diversified evaluation system involving the government, social organizations, enterprises, and investment and financing institutions was put forward to motivate researchers, said Wang in the preface of *Guide for the Commercialization of Sci-tech Achievements*.

In the preface, Wang said the sci-tech achievements have offered solid support for economic and social development. For example, the commercial use of 5G technology can be seen in smart manufacturing, healthcare, energy, agriculture, education and finance. In addition, the pollution control technologies in water pollution and air pollution have been upgraded, while R&D of treatments and vaccines for COVID-19 has effectively protected people's lives. The BeiDou Satellite global network has also played a bigger role in transporta-

tion and urban construction.

China will deepen the implementation of innovation-driven development strategy. The integration of basic research, applied research and technological innovation will be promoted to accelerate the development of strategic emerging industries, Wang said in the preface.

Moreover, the service system for commercialization of sci-tech achievements will be further improved, such as advancing the building of a technology exchange market, technology transfer institutes and new R&D institutes, as well as accelerating the building of national platforms for providing and sharing information on sci-tech achievements. The small and medium-sized enterprises will be encouraged to be active players in sci-tech innovation and commercialization of sci-tech achievements.

In addition, the financial institutions, such as banks, insurance and bonds, will be further encouraged to enhance the support of commercialization of sci-tech achievements, and social capital will also be pooled to invest in this action. Wang said that a strict intellectual property rights protection system has been implemented in China. Enterprises, universities and researchers are encouraged to produce high-quality and high-value outcomes, which will help improve the efficiency of commercialization of sci-tech achievements.

Facing the journey ahead, Wang stressed that it is required to speed up the pace of technological and institutional innovation, and provide a steady supply of innovative sci-tech achievements for high-quality economic and social development.



Visitors take a close look at the lunar samples at an exhibition highlighting China's sci-tech development during the 13th Five-Year Plan period. (PHOTO: VCG)

The Era of White-collar Farmer Coming

By LI Linxu

Imagine if planting crops was no different from working in an office. Well, thanks to the advancement of science and technology, the era of the white-collar farmer has indeed arrived.

From seed sowing, pesticide spraying to crop harvesting, all of these jobs can now be done by machines or drones, freeing farmers from their traditional labor-intensive work. Now, at the click of a mouse, farm work is done remotely from an air-conditioned control room, just like a white-collar office worker.

With the help of improved seeds, sowing machines, spraying drones, and cotton pickers, the cotton yield in a demonstration test field in Yuli County,

reached a record high of 9,306 kg per hectare.

Yuli County, a major production base of premium cotton in Xinjiang, is home to more than 66,000 hectares of cotton fields. The agricultural mechanization rate of the county has reached 96 percent, according to a local official.

The record cotton yield showcases the power of science and technology in agriculture. In recent years, a series of new technologies, new varieties, and new equipment have been used in major crop production bases, making significant achievements in agricultural modernization.

During the 13th Five-Year Plan period, the total research funds of China's agricultural institutes has reached to 61

billion RMB, up 51.23 percentage points from the 12th Five-Year plan period, according to a report released last month.

Driven by greater investment in agricultural science and technology, a batch of major accomplishments have been achieved, especially in the field of wheat and rice genetics and breeding.

In 2017, the number of new varieties of plants applied by China jumped to No. 1, and the number of patents applied by scientists in the field of agriculture in China continued to rank first in the world.

By 2020, the contribution rate of scientific and technological progress to China's agriculture has increased to 60 percent, according to the report, which summarized the scientific and techno-

logical achievements in China's agriculture and countryside.

Science and technology has become a most important driving force for the economic growth in agriculture and countryside, said Zhang Taolin, vice minister of the Ministry of Agriculture and Rural Affairs, calling for further pushing forward self-reliance and self-strengthening in agricultural science and technology.

By 2035, the agricultural mechanization rate is expected to reach 75 percent, according to the *Outline of the 14th Five-Year Plan for National Economic and Social Development and Vision 2035 of the PRC*. By then, there should be more white-collar farmers in the countryside.

China's Big Data Industry to Exceed 3 Trn RMB by 2025

By Staff Reporters

The scale of China's big data industry is estimated to surpass three trillion RMB by 2025, with a compound growth rate of about 25 percent, according to a development plan for the big data industry during the 14th Five-Year Plan period (2021-2025) released by the Ministry of Industry and Information Technology (MIIT) on November 30.

The plan also proposes to primarily establish an evaluation system for data element value, make the foundation of the big data industry more solid, create a stable and efficient industrial chain, and promote the positive development of the industrial ecology.

In order to achieve the goals, China will accelerate the cultivation of the data element market and transform the advantages unique to big data into important driving forces for the high-quality development of the industry.

The arrangement of telecommunications infrastructure is to be accelerated, including setting up an integrated national big data center and a big data center for industrial Internet. Technological

innovation and standardization will be strengthened as well.

Regarding building a stable and efficient industrial chain, the plan puts forward a value enhancement action of big data in raw materials, equipment manufacturing, consumer goods and electronic information.

There will be another action of big data development and application in nine fields, including telecommunications, finance and medical treatment.

To build a good industrial ecology, China plans to encourage the development of concerned enterprises, optimize the public service through big data and promote the clustering development of the big data industry.

Data security is also emphasized in the plan. The country aims to enhance its ability in data security management, reinforce the management of cross-border data security and set up a monitoring system for data security.

MIIT also simultaneously released a development plan for the software and information technology services sector, and one on integrating China's industrial sector with information technologies.

No County Left Behind on the Path to Common Prosperity

By ZHONG Jianli

As Zhejiang province aims for "significant progress" in building itself into a pilot zone for common prosperity by 2025, it is making efforts to bridge the gap between rural and urban areas. Recently, the province issued a plan to sup-

port its 26 mountainous counties in achieving leap-forward and high-quality development through science and technology.

The plan's goal is that by 2025, the annual growth rate of R&D expenditure in the 26 counties will be two percentage points higher than the provincial av-

erage. The number of high-tech enterprises is expected to increase by more than 12 percent each year.

Comparative advantages of mountainous area

Longyou County, is a typical mountainous area located in Zhejiang,

The county is known for its abundant bamboo resources. In the past, most of the bamboo processing plants were family workshops, which used antiquated machines and caused environmental pollution.

After a green recycling bamboo industrial park was established, the county has now developed an eco-friendly industrial cluster with integrated bamboo production, processing, sales, research and innovative service.

Promoting digital development

Suichang County uses leading enterprises as the "locomotive" to promote innovation. Focusing on the development of the digital economy, the county aims to build the "Digital Green Valley."

Since 2020, a group of leading companies such as Alibaba Cloud and NetEase, have established partnerships with Suichang. China's first county-level NetEase joint innovation center and the first county-level Alibaba Cloud innovation center have been set up and are op-

erational.

The "Digital Green Valley" project has brought about the digital transformation of the county's economy. In the first half of 2021, a number of Suichang's economic indicators, including its 18.9 percent of GDP growth rate, ranked first among the 26 counties of the province.

Industrial innovation service complexes

Building industrial innovation service complexes is a major measure for Zhejiang to deepen supply-side structural reform, promote high-quality economic development, and enhance industrial competitiveness.

Thanks to the province's support, Jinyun County has built 12 provincial or higher level innovation platforms, to provide all-around services for entrepreneurial incubation, innovation research and development, public services, and industry cultivation.

A total of nearly 150 million RMB has been invested in building the innovation service complex for the sawing machine and related machinery industry. In the complex, seven professional laboratories are operational, and technology transfer centers from seven universities have also begun functioning.



The Jiangxi Weir, an irrigation project honored as World Heritage Irrigation Structures (WHIS), is located at Longyou County, Zhejiang Province. (PHOTO: CFP)

Germplasm Bank: 'Noah's Ark' Guards Wild Species

From page 1

The alarming extinction rate of plants and other wildlife are crying out for conservation.

"There are many ways to protect plant diversity, but the seed bank has many unmatched advantages compared with in situ conservation and other methods," said Prof. Li Dezhu, director of the Germplasm Bank of Wild Species.

Building a germplasm bank

Initiated in 2004, GBOWS is a major national scientific and technological infrastructure built by the Kunming Institute of Botany, affiliated to the Chinese Academy of Sciences.

It is not easy to build such a germplasm bank. The procedure must follow the "3E" standard, namely Endangered, Endemic and Economic, and involve more than 70 steps.

In order to ensure genetic diversity, researchers must collect the same plant from different growing locations. Generally, 10,000 seeds of each plant are collected and stored, with a minimum of 2,500 seeds.

When collecting seeds, scientific researchers need to record the collection time, location, altitude, soil type, surrounding environment in detail, and use the leaf, flower, fruit and other information as the basis for future ecological restoration.

At room temperature, ordinary seeds can be stored for one to two years

at most. With storage methods using low temperatures and drying, the seeds can survive for decades or even thousands of years here.

Seed of hope to protect future biodiversity

Though the basic scientific and technological work of collecting and preserving species is a laborious process, it is very worthwhile and meaningful to save plants and animals before they disappear.

"The germplasm bank is home and the Noah's Ark for plant seeds. As long as it is safe and sound, the rare wild germplasm resources will be protected from extinction," said Li Dezhu, adding the goal is to conserve 19,000 species and 190,000 accessions.

GBOWS belongs to one of the important facilities for global biodiversity conservation. It exchanges seeds with other seed banks in the world on a regular basis, which is very necessary for global germplasm resources security.

The sharing service of wild biological germplasm resources is also an important direction for GBOWS. In recent years, GBOWS has cooperated on 161 scientific and technological projects and distributed 13179 plant seeds to 124 institutions.

Seeds are life and hope. We can better protect the future of humankind through protecting germplasm resources, said Li.

Understanding China Requires Understanding of CPC

From page 1

Not long ago, the sixth plenary session of the 19th CPC Central Committee was successfully concluded with the adoption of the resolution on the major achievements and historical experience of the party over the past century, he said, adding that going forward, the CPC will draw strength from history, forge

ahead for a better future, stay true to its founding mission, and rally and lead the Chinese people on a new journey toward building a modern socialist country.

The Party will always put the people first, commit to its fundamental purpose of wholeheartedly serving the people, follow a people-centered philosophy of development, promote well-rounded hu-

man development and common prosperity for all, and better meet the Chinese people's aspiration for a better life, Xi said, adding that the CPC will unwaveringly follow the path of peaceful development and opening-up to the world, work for a community with a shared future for mankind, and promote humanity's common values of peace, development, fair-

ness, justice, democracy and freedom.

"The CPC will always be a builder of world peace, a contributor to global development and a defender of the international order, and strive to make new and greater contributions to the progress of human civilization and to world peace and development," Xi said.

Source: XINHUA