Safeguarding Water Security

Policy

By CHEN Chunyou

China will make concerted efforts to improve aquatic environment, water resources and aquatic ecosystems, while strengthening ecological conservation of major rivers, lakes and reservoirs. That's according to the report given to the 20th CPC National Congress.

Water management is of great importance to China's ecological protection and socioeconomic development, and closely related to people's well-being.

China has a large population and large economy, which require high consumption of water resources. The fact that there is a water shortage in the country's north and abundant water in the south, along with uneven distribution of water resources determines the importance of ensuring national water security.

Nearly 70 percent of metropolitan areas and more than 60 percent of major grain-producing areas are located in water-scarce regions, according to Shen Fengshan, president of General Institute of Water Conservancy and Hydropower Planning and Design, under the Ministry of Water Resources.

There is an urgent need to improve the allocation capacity of water resources, so as to address its spatial imbalance.

Building a national water network and establishing a high-quality water conservancy infrastructure system in areas of hydropower, water transport, and ecological protection in both urban and rural areas, is an option, said Shen. This is of great practical and long-term significance to solving such problems as water resource shortage and water disasters.

The Danjiangkou Reservoir in central China's Hubei province is the starting point of the middle route of China's South-to-North Water Diversion Project. The route runs across two provinces of Henan and Hebei before reaching Beijing and Tianjin. (PHOTO: XINHUA)

One typical product of the national water network is the South-to-North Water Diversion Project, which transferred 56.5 billion cubic meters of water from the south to the arid north to date, benefiting 150 million people.

Kuang Shangfu, president of China Institute of Water Resources and Hydropower Research, stressed the necessity to improve water resource utilization, and suggested the exploration of water recycling should be strengthened in water-scarce areas, while the R&D of seawater desalination technologies should be carried out in coastal areas.

Currently, China is advancing the smart water conservancy action plan.

Water management should be the unit to implement unified planning and this is where digital technology can play a role, said Lu Jinyou, president of Changjiang River Scientific Research Institute.

In the past, the digitalization of watershed monitoring systems has facilitated the process of smart simulation and decision-making in flood- and drought-related disaster prevention and control.

BeiDou Navigation Satellite System, 5G technology and other technologies should be further employed to upgrade the ability of ground monitoring, remote sensing monitoring and emergency monitoring, said Lu.

Science Popularization of Natural Resources Gaining Momentum

By LI Linxu

By 2025, 100 national science popularization bases of natural resources are expected to be built, according to a work plan jointly released by the Ministry of Natural Resources (MNR) and the Ministry of Science and Technology (MOST).

This April, 11 national science popularization bases of natural resources were approved and currently, there are 43 such bases in the natural resources sector.

Science popularization is the activity of promoting public understanding of science. It is of great significance in engaging the public to learn and take part in the protection and conservation of natural resources, so as to achieve the harmonious coexistence of humans and nature, said Yao Huajun, an official from MNR.

The work plan has laid out a detailed roadmap for the science popularization of natural resources during 2021-2025 period.

It puts forward a series of measures, such as enriching science popularization activities, building science popularization bases, and advancing popularization of sci-tech resources.

Boosting informationization of science popularization, cultivating personnel to promote science popularization, and elevating its social service capabilities, are also highlighted in the work plan.

Natural resources, including land, minerals, forests, grassland, wetlands and oceans, are rich in science popularization elements, and can play a unique role in carrying out science popularization activities, said Yao.

The work plan also attaches great importance to the supply of high-quality works of science popularization, including books, animations, and short videos.

These are essential in science popularization, said Yao, adding that a lot can be done with modern technologies, such as VR, AR and 5G.

More efforts will be made in opening the sci-tech infrastructure to the public, according to the work plan, proposing to set up a regular open day in labs, engineering technological centers, and observation and research stations.

The work plan is a follow-up to the action plan to improve science literacy among the people (2021-2035), as well as the guidelines on further strengthening science popularization.

In recent years, China has made great progress in science popularization, uplifting the proportion of scientifically literate Chinese from 6.2 percent in 2015 to 10.56 percent in 2020.

In the report to the 20th CPC National Congress, China vowed to increase people's knowledge of science.

The work plan, released shortly after the conclusion of the 20th CPC National Congress, is one of the specialized policies to boost Chinese citizens' science literacy.

Digital Industrial Clusters Show Unlimited Potential

Case Study

By Staff Reporters

In recent years, China's digital industry clusters have developed rapidly, with many regions having explored this concept.

According to the 2022 China Digital Economy Development Research Report, released in November by the China Center for Information Industry Development, a path for many cities to develop digital economy is to combine core industries of digital economy with where it has a resource advantage, and then to expand its market and nurture an ecology around this industrial card.

An Internet of Things cluster has been formed in Wuxi, Jiangsu province where digital technologies are well received by the logistics industry. Factory technicians simply insert a code on a keyboard, activating driverless intelligent Internet-connected trucks that can automatically load and unload cargo between docks, distribution centers and enterprise warehouses. In addition, express packages can also be quickly scanned and sorted on a double-layer cross-belt sorting device.

In Hefei, Anhui province, the intelligent voice cluster, represented by iFlytek, generated revenue of 137.8 billion RMB in 2021, with a growth rate of output value exceeding 30 percent for five consecutive years.

Beijing's Chaoyang district centered on building five featured industrial clusters, including artificial intelligence, integrated circuit, industrial Internet, network and information security, and spatial geographic information. Presently, the district has built 4,889 5G base stations, and established innovation platforms, like the national industrial Internet big data center.

Baiyun district in Guangzhou city has expedited the construction of Baiyun Lake Digital Sci-Tech City, inspired by the vision of integrating giant local enterprises with industrial ecology. The city has provided industries, such as new generation of information technology, artificial intelligence, e-sports, and business services, with total investment of more than 20 billion RMB. This has attracted many enterprises and startups.

The new generation of electronic information industry has become the engine supporting the development of Shenzhen's industrial economy, and plays a positive role in promoting investment, information consumption and the digital transformation of the manufacturing industry.

Experts say that the rapid development of China's digital economy has provided a good foundation for building digital industrial clusters. The clusters can maximize the synergy advantages of specialization and cooperation between industries.

This will effectively reduce innovation and transaction costs, promote the rational flow of production factors and advance the deep integration of both the digital and traditional economy.

Shanxi Museum of Geology. (PHOTO: VCG)

Developing Smart Logistics System

By Staff Reporters

China will promote digital transformation of its logistics industry and develop a modern logistics system during the 14th Five-Year Plan period (2021-2025), according to a plan recently approved by the State Council.

By 2025, China will basically establish a safe, efficient, smart and green modern logistics system featuring good balance between supply and demand, and connectivity between domestic and international logistics, said the plan.

An automatic system sorts parcels at the Shunfeng Huajun Distribution Center in Qingdao, east China's Shandong province. (PHOTO: VCG)

Meanwhile, innovation capacity on logistics and enterprises' competitiveness will be further strengthened, and a number of modern logistics sci-tech innovation centers and national engineering research centers will be established.

The plan includes new technologies, such as the mobile Internet, big data, cloud computing and the Internet of Things, which have been widely applied in the logistics sector. New and efficient logistics models, such as online freight transportation, digital warehouses, and contactless distribution, have also emerged in China.

To further improve the quality and efficiency of logistics services, the country will promote smart logistics with the application of technologies such as 5G, big data, AI and the BeiDou navigation system. The integration of logistics with the manufacturing sector will also be enhanced.

A total of 120 national logistics hubs and about 100 national major cold chain logistics bases will be built to form a backbone logistics infrastructure network with national logistics hubs at its core, according to the plan.

A modern logistics system should focus on accelerating the integration of logistics hub resources to make up the structural and functional weaknesses of inland hub facilities, and building channels connecting domestic and international logistics.

The plan also highlighted that logistics should better serve people's livelihood by extending delivery services to every village and establishing a dynamic logistics monitoring and tracing system.

The development of green logistics is an important part of the plan. The construction of supporting facilities such as charging piles for cargo vehicles, hydrogen refueling stations, shore power facilities for inland waterway vessels, and liquefied natural gas (LNG) refueling stations will be strengthened to push for energy conservation and emissions reduction in the logistics sector.

Building an international logistics network should be accelerated, with efforts to encourage large logistics enterprises to actively participate in building overseas ports, warehouses, and distribution networks.

Professional Services Help Enterprise Innovation in Xiamen

Hi-tech Zones

By ZHONG Jianli and FU Xiaobo

Xiamen Torch Development Zone for High Technology Industries (XTZ), in southeast China's Fujian province, recently launched a host of online and offline services covering enterprise management, brand promotion, and commercialization of sci-tech achievements, at the Science and Technology Service (STS) Week, which were well received by enterprises in the zone.

Emphasizing IPR protection

As one of the core competitive aspects of enterprises, intellectual property rights (IPR) protection became one of the highlights of the STS Week.

Chen Dan, head of the Secretary Office of the Science and Technology Service Alliance of XTZ, said, "During the STS Week, we arranged IPR experts to conduct a comprehensive diagnosis and analysis of the intellectual property work of enterprises, and put forward suggestions for early risk management. By doing so, enterprises can better carry out R&D activities, and stimulate innovation."

Meanwhile, Zhong Yuping, administrative manager of a financial service company in Xiamen said, "We attach great importance to software copyright applications and plan to apply for 10 software copyrights this year," adding that small and medium-sized technology enterprises can enjoy 50 percent subsidies when applying for software copyrights, which greatly saves the cost of IPR application and enables enterprises to apply for more IPRs.

Issuing "innovation vouchers"

An electronic payment voucher launched by XTZ to encourage enterprises to strengthen R&D aims to motivate enterprises to actively use various high-level services, and by doing so improve their innovation ability and operation levels. Qualified enterprises in XTZ can apply for a voucher of up to 200,000 RMB.

According to statistics, XTZ has organized and evaluated 210 such voucher service institutions, to provide 807 innovative services in seven categories, including legal advice, financial accounting, management consulting, technological innovation and quality services, for enterprises in the zone.

So far, XTZ has authorized more than 240 million RMB of innovation vouchers and served 6,188 enterprises in the zone.

In future, the zone will fully integrate resources and attract more top-flight service providers from all over the country, so as to help improve the independent innovation ability of enterprises by providing professional services for them, said Chen.