

Ecological Protection Plan Launches All-round Restoration

Policy Express

By TANG Zhexiao

Six government authorities, including the Ministry of Ecology and Environment and the Ministry of Natural Resources, have jointly issued the 15th Five-Year Plan (2026-2030) for ecological protection to advance the integrated conservation of mountains, rivers, forests, farmlands, lakes, grasslands and deserts.

The document sets out that by 2030, China's ecological spatial framework will be optimized, ecological quality will see steady improvements, biodiversity loss will be effectively curbed, and more high-quality ecological products will be supplied. The supervision systems for ecological conservation and restoration will be further refined, and the national ecological security will be effectively safeguarded.

Specific goals have been put forward:

- ◆ Nature reserves on land should account for no less than 18 percent of the nation's terrestrial territory.



Lotus flowers bloom in Donghu Lake in Wuhan, central China's Hubei province. (PHOTO: XINHUA)

- ◆ The Ecological Quality Index should be raised to 86.5.
- ◆ Soil and water conservation rate should exceed 74 percent.
- ◆ Forest coverage rate should hit 25.8 percent.

Ecological conservation and restoration will target the "Three Zones and Four Belts," referring to the Qinghai-Tibet Plateau Ecological Barrier Area, the Yellow River Key Ecological Function Area, and the Yangtze River Key Ecological

Function Area, to build green barriers in the Three-North Shelterbelt Program.

For coordinated ecosystem conservation and restoration, the plan assigns three major tasks: enabling natural ecosystems to recuperate, carrying out ecosystem restoration projects, and boosting urban-rural ecological livability.

It sets out regulations for protection of grasslands, forests, rivers, lakes and wetlands, proposes to strengthen protection of original deserts, glaciers, snow-capped mountains, permafrost systems, and marine ecosystems, and strictly control sea reclamation.

China will upgrade urban green space systems, make park lands accessible to the public, rehabilitate urban wetlands and water environments, and manage small-scale water bodies in rural areas.

Full-scale biodiversity conservation will be incorporated into municipal statutes, plans and policy frameworks.

Other goals include strengthening ecological quality monitoring and assessment, and the construction of ecological civilization demonstration areas.



training, recruitment and development of innovative talent engaged in basic research, and encourage major science projects that spot and cultivate talent through hands-on practice at the research frontline.

To stimulate the creativity of researchers, MOF has expanded the scope of the lump-sum project-funding system, a no-line-item budgeting model that gives researchers greater flexibility in budget management, alongside competitive and stable funding streams.

MOF is also collaborating with other departments to reform the science evaluation system, establishing a classification-based assessment framework tailored to the distinct nature of basic research, according to Wang.

AI models to build a "smart brain" for customs supervision. The system will automatically detect risks, issue alerts, and enable rapid response, cracking down on smuggling and other illegal activities.

GACC will also adopt embedded and non-intrusive supervision models, connecting customs operations with enterprise production, warehousing and logistics systems, thereby achieving more precise oversight, higher efficiency and a better business environment. Companies will no longer need to repeatedly submit paper documents or halt operations for inspections.

More high-tech inspection equipment, including smart scanners, handheld terminals and inspection robots, will be deployed for rapid, non-invasive screening of containers.

When there is surplus electricity, PV power can be used to pump water into the reservoir for storage and release it when needed. This can significantly improve the utilization of PV power, Zhang said.

The key to realizing this vision is to optimize how PV power is connected to the hydropower plant. The project team conducted a detailed assessment of the conditions at each PV station and proposed an innovative hydro-solar interconnection model. A dedicated collection station was proposed to aggregate power from the dispersed PV resources for transmission, complemented by grid-forming synchronous condensers.

Following this model, the Xiaowan Hydropower Plant gathers 1.23 GW of clean energy from 16 PV stations in the region with a total installed capacity of 5.43 GW. The annual power generated can meet the need of about seven million households, and cut about 16 million tonnes of CO2 emissions per year.

Case Study

Xizang: Pioneering New Path for Green Development Through Tech

By TANG Zhexiao & YANG Yuhang

Nagqu city, situated at an altitude of 4,500 meters in Xizang autonomous region, was long plagued by tough natural conditions and a weak industrial base. Breaking away from traditional development models, Nagqu is leveraging technology to build deep processing as well as restore the ecological environment, forging a new path that prioritizes ecological conservation and green development in ultra-high-altitude regions.

Nagqu, home to the Qiangtang Grassland, a vast alpine plateau, is among China's five major pastoral areas. It abounds in plateau-specific fauna and vegetation, including yaks, Tibetan sheep and caterpillar fungus. Nevertheless, its local industries remained stuck in the phase of selling raw materials, while the value-added deep processing was done outside the region.

But now, thanks to bio-extraction technologies at high altitudes, low-value by-products such as yak bones and hides are processed into high-value raw materials for functional food via extraction of collagen and active peptides.

Distinctive livestock breeds, such as the Jiali Niangya yak and the Duoma sheep, are gradually entering the national market, backed by organic certifications and geographical indications.

Currently, Nagqu is home to 22 leading agricultural and pastoral enterprises and 1,616 specialized cooperatives. These cooperatives distribute an average of about 700 million RMB in annual dividends, adding an average of 100,000 RMB to the annual incomes of family ranches and large-scale breeding households.

The per capita disposable income of farmers and herders grew from 15,792 RMB in 2021 to 21,586 RMB in 2025, an average annual growth rate of 8.2 percent.

While intensive processing has resolved industrial bottlenecks, ecological

restoration has also delivered remarkable results.

Located in the northwestern Xizang ecological conservation area, 96.64 percent of Nagqu's land area has been designated as a priority ecological protection zone. According to the Municipal Ecology and Environment Bureau, the region is advancing a model combining governance, scientific research, and public education, transforming abandoned mines into demonstration sites for plateau mine restoration.

Equipped with ecological monitoring stations and science exhibition spaces, restored mining areas are serving as open-air laboratories that can be observed, studied, and replicated.

The comprehensive vegetation coverage of Nagqu's grasslands has increased to 51.72 percent, with a cumulative restored area of 7.11 million mu. Nagqu city, as well as Jiali county and Nyainrong county, have been named national demonstration zones for ecological civilization development.

Nagqu's installed clean energy capacity has reached 1.37 million kilowatts, ushering in a new era of exporting Nagqu's green power. Its highway mileage exceeds 35,900 kilometers, and main power grids cover all counties and districts. Nearly 10,000 communication base stations connect the region to the outside world.

Behind these figures lies the deployment of key technologies, such as photovoltaics, energy storage, and grid integration. The extensive coverage of communication base stations has laid the foundation for the emergence of new business models including remote education, smart animal husbandry, and e-commerce live streaming across Nagqu.

From abandoned mines to scientific research bases, Nagqu is demonstrating that high-altitude regions can embark on an innovative path prioritizing ecological conservation and green development.



Tibetan antelopes migrate within the core area of the Qiangtang National Nature Reserve, Nyima county, Nagqu city, Xizang autonomous region. (PHOTO: XINHUA)

China's Basic Research Spending Sees Steady Rise

By CHEN Chunyou

China continues to prioritize basic research, with its 2026 central-level budget for core basic research rising by 16.3 percent year on year, said Wang Ye, deputy director-general of the department of science, education and culture of the Ministry of Finance (MOF), at a recent press conference.

In the first half of 2026, national general public budget revenue reached 12.1 trillion RMB, up 4.7 percent year on year, while expenditure stood at 14.33 trillion RMB, a 1.5 percent increase, according to MOF.

Wang said the central government has prioritized science and technology in its fiscal allocations, optimizing spending structures to boost investment in basic research.

Besides direct central funding, MOF has introduced fiscal transfer payments and tax incentives to encourage local governments, enterprises and private capital to beef up their R&D expenditure, fostering a diversified funding ecosystem.

This approach has delivered tangible results. China's total national expenditure on basic research grew from 55.5 billion RMB in 2013 to 277.8 billion RMB

in 2025, ranking second globally. The proportion of total national R&D expenditure climbed from 4.68 percent to 7.08 percent.

To build a solid foundation for basic research, MOF has coordinated resources across channels to support the construction and sharing of major national science and technology infrastructure and research platforms.

Talent development is equally important. To build a high-caliber research workforce, MOF supports initiatives that select and nurture top-tier students in basic disciplines, provide comprehensive support for the

Customs to Accelerate Smart Upgrades

By CHEN Chunyou & WU Yefan

By 2030, more than 90 percent of China's ports will be equipped with smart inspection devices, as the country accelerates "Smart Customs" upgrades during the 15th Five-Year Plan period (2026-2030), according to Sun Meijun, minister of the General Administration of Customs of China (GACC).

Speaking at a recent press conference, Sun said in the first half of 2026, China's foreign trade imports and exports grew by 16.9 percent year on year, with exports rising 13.4 percent and imports up 22.1 percent. Foreign trade

showed a development trend characterized by growth in both volume and quality, a shift toward green and innovation-driven growth, improved import and export structures, and an expanding network of trading partners.

Wang Jun, GACC vice minister and spokesperson, said during the 14th Five-Year Plan period (2021-2025), GACC leveraged digital and intelligent technologies to fundamentally reshape customs procedures. The Smart Customs framework has now reached a stage of integrated operation and initial maturity.

One notable example is the portable customs clearance system for in-

bound and outbound parcels, a public platform integrating online declaration, tax payment, tax refund, return processing, and shipment tracking.

Individuals can now complete all customs formalities for cross-border parcels without leaving their homes.

During the 15th Five-Year Plan period, GACC aims to build a systemic risk prevention system, deploy smart customs supervision, facilitate cross-border trade, and enhance collaborative governance mechanisms.

In the coming years, it will continue to develop Smart Customs further. It will leverage massive datasets and large

Green Power Hub in Canyon

From page 1
Developing a domestic control system
For a long time, the key hardware and software of the core control system and supporting system in large hydropower plants used imported equipment, which meant expensive purchases and maintenance, according to Wang Yuanhong, deputy director of the Xiaowan Hydropower Plant.

The computer-based supervisory and control system is like the nerve center of a hydropower plant. It is also one of the Xiaowan Hydropower Plant's key areas of focus. Two development paths lay ahead: the mature distributed control system used in thermal power plants and the centralized control architecture for hydropower plants that is safer and more reliable, but more challenging.

After repeated discussions, techni-

cal reviews and analyses, the project leader made the final decision: building a fast, efficient, compatible and open centralized control system that uses international communications standards for power system automation, supported by hardware terminals integrating automatic generation control and automatic voltage control functions.

The first communications test was unsuccessful, but the team did not give up. After countless rounds of testing, troubleshooting and optimization, indexes such as the timeliness, accuracy and speed of control and response of the system's data transmission all met the requirements of national and industrial regulations. Some of the indexes are even higher than current standards.

In September 2025, the Xiaowan Hydropower Plant became China's first

hydropower plant with generating units boasting an individual capacity of 700 MW and a 100-percent domestically managed control system.

A hydro-solar complementary model
There are several photovoltaic (PV) stations around Xiaowan. PV power generation, dependent on weather conditions, varies strongly and can be intermittent. Large-scale integration of solar power into the power grid can cause safety issues. Zhang Xiaodong, deputy director of the Xiaowan Hydropower Plant's new energy construction and management department, said they envisioned a hydro-solar complementary model that leverages the rapid startup and shutdown capabilities of hydropower to smooth out fluctuations in solar power output and ensure grid stability.

With a reservoir capacity of 15 billion cubic meters, the Xiaowan Hydropower Plant is essentially a giant "power bank" with excellent regulating capabilities.

Ecological and Environmental Code Comes into Force

From page 1
A core feature of this integrated approach is a separate book on green and low-carbon development. It establishes and improves incentives for green consumption, developing systems for recycling and reuse of waste, and promoting coordinated green transformation of upstream and downstream enterprises, thereby translating the principles of putting ecology first and pursuing green development into legal rules.

The Code also includes a dedicated chapter on responding to climate change, establishing a legal mechanism to mitigate climate change through the carbon peaking and carbon neutrality goals.

In addition, the Code has a dedicated section on international cooperation under the book on green and low-carbon development, providing for active participation and leadership in global climate governance, as well as bilateral and multilateral international exchanges and cooperation to address climate change.