

Revised Science Popularization Law for Innovation, Public Engagement

Policy

By LONG Yun

China's revised Science and Technology Popularization Law, which took effect immediately on December 25, 2024, marks a significant update after 22 years, reflecting the growing role of science communication in fostering innovation and improving public understanding of science.

Making science outreach popular

The revised law gives science popularization the same importance as technological innovation. It establishes a framework to integrate science communication with research advancements, ensuring scientific resources are transformed into public-friendly knowledge.

To enhance this effort, September has been designated as "national science popularization month," a time for intensive science outreach activities.

September, usually coinciding with the new school year, will provide opportunities to integrate science outreach into school curricula and nurture future talent in the sci-tech field.

With China's rapid progress in areas like artificial intelligence, gene editing and nuclear energy, targeted science communication in these fields is needed. The law encourages sharing knowledge about cutting-edge technologies while adhering to confidentiality rules.



Danish chemistry Professor Troels Skrydstrup talks about the environment with a Chinese student. (COURTESY PHOTO)

Building a higher-quality workforce

The revised law dedicates a chapter to "Science Popularization Personnel," emphasizing the importance of building a professional and well-supported workforce. It encourages scientists, teachers and elderly professionals to actively engage in science outreach.

To address the challenges faced by researchers in balancing science communication with career growth, it calls for improved evaluation and incentive systems. This includes encouraging the establishment of professional

assessments and performance evaluation systems fitting the characteristics of science popularization.

The law also outlines responsibilities for businesses, urging sci-tech enterprises to incorporate science communication into their social responsibility efforts. Companies are encouraged to open research facilities to the public and develop science outreach programs.

The revised law encourages the creation of high-quality science communication materials that are innovative, original, and scientifically rigorous. It places a strong emphasis on

protecting intellectual property rights for science communication achievements. This legal support will motivate creators to dedicate more efforts to producing high-quality science content.

Fighting misinformation

To address the growing problem of misinformation, particularly online misinformation, the law mandates stricter regulations for science communication content. It requires organizations and individuals to ensure accuracy and prohibits the spread of false or misleading information.

During public emergencies, misinformation often spreads rapidly, leading to confusion and panic. Currently, while science popularization information is widely available online, many high-quality resources remain underutilized due to challenges in ensuring public access.

The new law has a dedicated chapter on science popularization activities, emphasizing efforts to raise awareness and preparedness for natural disasters, accidents and public health crises. It mandates the establishment of platforms and resources for emergency popularization, and the improvement of response mechanism.

Additionally, it aims to enhance the public's capability of emergency response, and raise awareness for self-rescue.

Experts say these initiatives will provide individuals with the skills and knowledge to respond effectively during crises, saving lives and enhancing social resilience.

A Forward-thinking Vision for Science Communication

By Francesco Faiola

From my perspective, the role of scientists in public education is essential, particularly in fields like toxicology that directly impact public health, consumer safety, and environmental policies.

Recently, I initiated a website for toxicology education with my research team. A key driver for the platform was the widespread misconceptions about toxicology. Another equally important goal is public health awareness. Many people unknowingly encounter potential toxicological risks in their daily lives — through household chemicals, polluted environments, or even self-medication. Finally, the website aims to foster collaboration within the toxicology community.

As we consider the broader context, it becomes evident that effective science communication not only bridges the gap between researchers and the public but also shapes how society perceives and applies scientific knowledge. This interplay highlights the growing importance of integrating science education into various aspects of public policy and community engagement.

The recent revision of China's Science and Technology Popularization

Law marks a significant step forward in recognizing the importance of science communication as an integral part of societal progress. By giving science popularization the same weight as scientific innovation, the law acknowledges that advancements in research are meaningful only when they are understood and utilized by society.

One of the most impactful aspects of the law is its emphasis on combating misinformation. In an era of social media and rapid information dissemination, pseudoscience and false claims often overshadow credible scientific knowledge. The law's provisions to regulate misinformation, especially in digital spaces, create a stronger framework for ensuring that the public has access to accurate and evidence-based information. This directly benefits fields like toxicology, where misinformation about chemicals or health risks can lead to public panic or poor decision-making.

The law also highlights inclusivity, with a focus on reaching underserved populations such as rural communities and the elderly. This aligns with the broader goal of ensuring equitable access to scientific knowledge.

For toxicology, this could mean tailored outreach programs that address local environmental issues, agri-

cultural practices, or common household exposures unique to these demographics.

Another noteworthy aspect is the professionalization of science communication. By offering resources, training and recognition for science communicators, the law builds the infrastructure needed to support effective outreach. This ensures that science is communicated not only accurately but also engagingly, with a focus on storytelling and audience engagement.

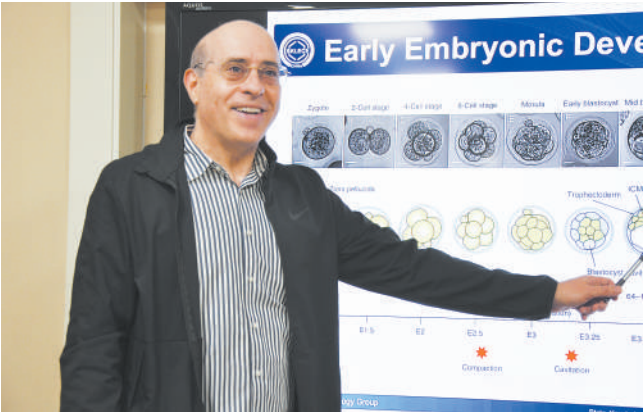
The revisions also encourage international exchange. Toxicology, like many scientific fields, benefits from diverse perspectives and global insights. For example, sharing case studies of toxicological crises or regulatory successes across borders can help

shape better policies and education strategies.

Overall, the revisions to the law create a supportive environment for researchers, educators and communicators, enabling them to reach wider audiences and make a meaningful impact on public understanding and decision-making.

The revised law provides a significant opportunity to expand and enhance my work in science education and communication, particularly through my toxicology education platform.

Francesco Faiola is an Italian professor at the Research Center for Environmental Sciences of the Chinese Academy of Sciences.



Francesco Faiola attends a science outreach activity. (COURTESY PHOTO)

Promoting Digital Transition of SMEs

By WANG Jing

China's Ministry of Industry and Information Technology (MIIT), along with three other departments, recently released an action plan to promote the digital transformation of small and medium-sized enterprises (SMEs).

The plan says that by 2027, one of the most important targets is for over 40 percent of SMEs nationwide to adopt cloud-based solutions.

Seven key tasks are emphasized by the plan, including deeply implementing

digital transformation in 100 piloting cities, digital transformation in different categories, promoting the integrated transformation of supply chain, industrial chain and industrial clusters, driving the innovative empowerment of artificial intelligence, greatly activating the value of SMEs' data elements, enhancing the supply quality and effect of digital transformation, and boosting the public service capability of digital transformation.

Central government funding will play a guiding role in supporting the digital transformation of over 40,000 SMEs

in 100 piloting cities nationwide, according to the plan.

"Little giant" firms, which refer to the novel elites of SMEs that are engaged in manufacturing, specialize in a niche market and boast cutting-edge technologies, will carry out systematic integration transformation under the guidance of the plan.

The plan also urged promotion of the cloud-based service for micro- and small enterprises, supporting local governments to explore preferential policies and measures, providing assistance for

SMEs to adopt cloud-based solutions.

Computing centers will be encouraged to provide "on-demand, pay-as-you-go" cloud computing services to reduce computing costs for SMEs.

China has continued to accelerate the digital transformation of SMEs through various measures. Among them, the MIIT and the Ministry of Finance have implemented digital transformation city pilot work, and have selected a total of 66 cities in two batches to support the digital transformation of more than 30,000 enterprises.

AI Ripples

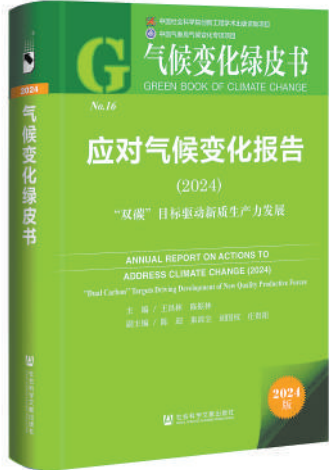
AI Offers Significant Potential for Climate Prediction

By ZHONG Jianli

AI has extensive potential in the climate sector, and China should proactively develop new AI technologies and models in this field. That's one of the suggestions in the 2024 *Green Book of Climate Change* released at a seminar in Beijing on December 27, 2024.

The green book, or the *Annual Report on Actions to Address Climate Change (2024): "Dual Carbon" Targets Driving Development of New Quality Productive Forces*, was published by the Climate Change Economic Simulation Joint Laboratory of the Chinese Academy of Social Sciences (CASS) and the China Meteorological Administration (CMA), as well as the Social Sciences Academic Press.

The report highlights that AI and traditional climate models are converging, resulting in rapid advancements in global AI-driven meteorological models, driven by an ever-increasing amount of observational data and research outputs.



The 2024 *Green Book of Climate Change* released at a seminar in Beijing on December 27, 2024. (COURTESY PHOTO)

According to it, AI has already demonstrated effective applications in the climate field and holds significant potential in combating climate change. The integration of AI with meteorological sciences is expected to provide robust technological support to enhance the accuracy of climate predictions and assessments.

Wang Changlin, vice president of CASS, called the global transition towards green and low-carbon development an irreversible trend. This green development philosophy, driven by the "carbon peaking and neutrality" targets, is continuously fueling the cultivation and growth of new quality productive forces.

He emphasized the need to establish comprehensive mechanisms for green low-carbon development, accelerate the green transformation of economic and social development, and promote innovative integration between natural and social sciences in response to national policy needs.

Chen Zhenlin, administrator of

CMA, pointed out that global climate change has led to a rise in extreme weather events, posing severe threats to economic and social development as well as public safety. In November 2024, the World Meteorological Organization released a provisional statement on global climate conditions, indicating that the average global surface temperature reached a historic high in the first nine months of 2024, exceeding pre-industrial levels by 1.54°C.

The 2024 *Green Book of Climate Change* offers a detailed analysis of the new international and domestic challenges in addressing climate change. It showcases China's commitment to accelerating a comprehensive green transformation in its economy and society, aligned with the implementation of the "dual carbon" goals.

As competition between major countries in the green and low-carbon development sector intensifies, fulfilling the objectives of the Paris Agreement remains a daunting endeavor. The book underscores the urgent need to strengthen international cooperation in the face of severe climate challenges.

Proactive Push for Open, Unified Transport Market

By ZHONG Jianli

An open and unified transportation market, expected to help transition the country towards a greener and more technologically advanced transportation network, is in the pipeline after China released a guideline recently.

The country will encourage and guide the participation of social capital in railway construction and operation, in accordance with laws and regulations. Eligible enterprises will be supported to manage intercity railways as well as urban and suburban railways.

The guideline emphasizes the green and intelligent transformation of transportation. It mandates environmental impact assessments for transportation infrastructure planning and construction projects, ensuring alignment between development plans and ecological protection standards. In addition, it seeks to enhance the sharing of data regarding energy consumption and carbon emissions in the transportation sector.

To push for cleaner energy solutions, the policy aims to improve regulations regarding energy substitutions in transportation equipment. It encourages the adoption of new and clean energy in medium- and heavy-duty trucks and vessels, while also continuing to implement pilot projects for autonomous driving and intelligent shipping technologies.

Enhancing the openness of the

transportation sector is another key focus. The government is set to establish a regulatory framework that aligns with international norms, gradually expanding institutional openness in rules, regulations and management. This includes proactive engagement with international high-standard trade rules and fostering institutional innovation in designated free trade zones and ports.

In addition, the country will strengthen transportation connectivity with countries involved in the Belt and Road Initiative, harnessing platforms like the Global Sustainable Transport Innovation and Knowledge Center to boost global transportation cooperation.

Efforts will be made to accelerate the establishment of an international logistics supply chain system, create a diverse international transport corridor, and improve the comprehensive global transport service network, thus enhancing the resilience and security of the logistics supply chain.

The guideline also underscores the importance of data and technology in transportation development.

By leveraging a national integrated big data center and promoting inter-regional and inter-departmental sharing of transportation data, the country will enhance data analysis application, and deepen the comprehensive development and intelligent application of data resources.