Translation

The following document is China's updated plan to improve the "scientific literacy" of its population. The plan sets the themes and priorities of China's scientific literacy and science popularization efforts through 2035. The document focuses on increasing the scientific literacy of five populations in particular: youth, rural residents, industrial workers, the elderly, and officials.

Title
State Council Notice on the Publication of the Outline of the Nationwide Scientific Literacy Action Plan (2021-2035)
国务院关于印发全民科学素质行动计划纲要（2021-2035年）的通知

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State Council Notice on the Publication of the Outline of the Nationwide Scientific Literacy Action Plan (2021–2035)

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To the people's governments of all provinces, autonomous regions, and municipalities, and all ministries and commissions of the State Council and their subordinate agencies:

The *Outline of the Nationwide Scientific Literacy Action Plan (2021 - 2035)* is hereby issued to you. Please implement it conscientiously, taking into consideration the actual conditions of your region and department.

State Council
June 03, 2021

(This document is released publicly)

Outline of the Nationwide Scientific Literacy Action Plan

(2021–2035)

The *Outline of the Nationwide Scientific Literacy Action Plan (2021-2035)* (hereinafter referred to as *the Scientific Literacy Outline*) has been specially formulated in order to implement the important arrangements of the Party Central Committee and the State Council on science popularization and scientific literacy construction, in accordance with the *Scientific and Technological Progress Law of the People's Republic of China* and the *Law of the People's Republic of China on Popularization of Science and Technology* (hereinafter referred to as the S&T Popularization Law), and to implement relevant national S&T strategic plans.

I. Preface

General Secretary Xi Jinping has pointed out: "S&T innovation and science popularization are the two wings for achieving innovation and development, and we should attach equal importance to science popularization and S&T innovation. Without broad-based improvement of the scientific literacy (科学素质) of all the people, it would be difficult to establish a large high-quality and innovative workforce, and it would be difficult to achieve rapid conversion of S&T achievements into practical applications (科技成果快速转化)." The spirit of this important instruction is the fundamental compliance of science popularization and scientific literacy with the construction of high-quality development in the new stage of development (新发展阶段).

Scientific literacy is an important part of national quality (国民素质), and is the basis for the progress of society and civilization. Citizens having scientific literacy means they hold the scientific spirit in esteem, establish scientific thinking, master the basic scientific method, understand necessary S&T knowledge, and are able to apply their analysis and judgment of things and solve practical problems. Improving scientific literacy is of great importance for establishing a scientific worldview and methodology on the part of citizens, enhancing the country's independent innovation capability and cultural soft power, and building a socialist modernized world power (社会主义现代化强国).

Since the *Outline of the Nationwide Scientific Literacy Action Plan (2006-2010-2020)* was issued and implemented, especially since the 18th Party Congress, under the strong leadership of the Party Central Committee with Comrade Xi Jinping as the core, and under the State Council's coordinated deployments and the tireless efforts of all regions and departments, the Nationwide Scientific Literacy Action Plan has achieved remarkable results, with objectives and tasks accomplished according to schedule. The level of scientific literacy of citizens has increased significantly, with the proportion of those with scientific literacy reaching 10.56% in 2020; the science education and training system continues to improve, with science education incorporated in all levels of basic education[1]; mass media S&T communication capacity has increased significantly, with the informatization level of

[1] Translator's note: "Basic education" (基础教育) refers to primary and lower secondary (middle school or junior high school) general education, per the International Standard Classification of Education (ISCED).

science popularization having improved markedly; science popularization infrastructure has developed rapidly, with the initial completion of the modern S&T museum system; the science popularization talent team continues to grow; new breakthroughs have been made in scientific literacy international exchanges; a system of policies and regulations has been established, with the S&T Popularization Law as the core; a four-level organization and implementation system at the national, provincial, city, and county levels has been created, and a construction model of "Party leadership, government promotion, universal participation, social coordination, and open cooperation" has been explored. This has made positive contributions toward creating a good social atmosphere for innovation and development, ensuring that the battle against poverty will be won on schedule, and ensuring the establishment of a well-off society in an all-round way (全面建成小康社会) will be on schedule.

Remarkable achievements have been made in China's scientific literacy construction, but some problems and shortcomings exist as well. The latter are reflected mainly in: a low overall level of scientific literacy, and unbalanced urban-rural and regional development; inadequate promotion of the scientific spirit, and an insufficiently rich social atmosphere for scientific rationality; insufficient effective supply of science popularization, and a weak grassroots base; and the fact that institutional arrangements for implementing "science popularization and S&T innovation are equally important" have not yet formed, and organizational leadership, assurance of prerequisites, and so on still need to be strengthened.

China's development is still in an important period of strategic opportunity at present, and will be in the coming period, but there are new developments and changes in terms of both opportunities and challenges. Today, the world is undergoing great changes not seen in a century, development of a new round of S&T revolution and industrial transformation is deepening, and the concept of a community of common destiny for humanity (人类命运共同体) is deeply rooted in people's hearts. At the same time, the international environment is becoming ever more complex, instability and uncertainty have increased significantly, and the impact of the COVID-19 epidemic has been widespread and far-reaching, so the world has entered a period of turbulent change. China has shifted to the stage of high-quality development, and is accelerating the construction of a new development pattern (新发展格局) with domestic great circulation (大循环) as the mainstay and domestic and international dual circulation (双循环) reinforcing each other. There are deep synergies between S&T and economic, political, cultural, social, and ecological civilization, and S&T innovation is releasing tremendous energy, profoundly changing production and our way of life, and even modes of thinking. The important roles of talent as the number-one resource and innovation as the number-one driving force are increasingly prominent, and the overall improvement of national quality has become a prerequisite for economic and social development. The construction of scientific literacy stands at a new historical starting point, and a new journey to reach the forefront of innovation-oriented countries (创新型国家) has been launched.

Given the aim of building [China into] a world S&T powerhouse (科技强国) and a socialist modernized world power,[2] scientific literacy needs to take on more important missions. First, centered around meeting the people's new demands for the good life (美好生活) at a higher level, scientific literacy construction needs to highlight the leading role of value, improve the public's lifelong learning ability, and constantly enrich the people's spiritual home (人民精神家园), thereby serving people's overall development. Second, centered around constructing the new development pattern, scientific literacy construction needs to play an important role in serving economic and social development, using a high-quality and innovative workforce to support high-quality development. Third, centered around strengthening and innovating social governance (社会治理), scientific literacy construction needs to better promote the modernization of people, and create a scientifically rational, civilized and harmonious social atmosphere, thereby serving the modernization of the nation's governance system and governance capacity. Fourth, centered around forming a new pattern of opening up to the outside, it is necessary to have scientific literacy construction better play bridging and connecting roles, to deepen people-to-people and cultural exchanges in S&T, and promote mutual understanding between civilizations, in the service of building a community of common destiny for humanity.

II. Guiding Ideology, Principles, and Objectives

(i) Guiding ideology.

Taking Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era as our guide, we shall: thoroughly implement the spirit of the 19th Party Congress and the Second, Third, Fourth, and Fifth Plenums of the 19th Central Committee, persist in the overall leadership of the Party, persist in taking the people as the center (以人民为中心), and adhere to the new development concept; comprehensively promote the "five-in-one"[3] overall layout, coordinate promotion of the "four comprehensivelys"[4] strategic layout, and implement General Secretary Xi Jinping's important remarks on science popularization and scientific literacy construction; take improving the scientific literacy of the whole people and serving high-quality development as the goal, take practicing the socialist core values concept and promoting the scientific spirit as the main line, and take deepening the supply-side reform of science popularization as the focus; strive to build a scientific literacy construction ecosystem with socialized (社会化)

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[2] Translator's note: This translation renders the Chinese word 强国 *qiángguó*—which literally means "strong nation"—in English in two different ways, depending on context. When *qiángguó* is used in the general geopolitical sense, it is translated "world power," as in the phrase "socialist modernized world power" (社会主义现代化强国). When the Chinese text refers to a specific flavor of *qiángguó*, it is translated "powerhouse," as in the phrase "S&T powerhouse" (科技强国). For a more thorough discussion in English of the Chinese word *qiángguó*, see: https://www.newamerica.org/cybersecurity-initiative/digichina/blog/lexicon-wangluo-qiangguo/

[3] Translator's note: The "five in one" ("五位一体") refers to economic development, political development, cultural development, social development, and development of ecological civilization.

[4] Translator's note: The "four comprehensivelys" ("四个全面") are: comprehensively establish a well-off society in an all-round way, comprehensively deepen reform, comprehensively govern the country according to law, and comprehensively govern the party strictly.

collaboration, intelligent dissemination, standardized construction, and internationalized cooperation; create a social atmosphere of love for science and innovation, and boost the level of social civilization; provide foundational support for building a socialist modernized world power in an all-round way, and make positive contributions toward advancing the construction of a community of common destiny for humanity.

(ii) Principles.

- Highlight guidance by the scientific spirit. Practice the socialist core values concept, carry forward the spirit of science and of scientists, convey scientific ideas, concepts, and modes of behavior; strengthen the construction of an innovative culture of rational questioning, courageous innovation, seeking the truth and being pragmatic, and tolerance of failure; firmly establish innovation self-confidence, and form a social atmosphere that reveres innovation.
- Insist on coordinated advancement. Strengthen organizational leadership, policy support, and investment guarantees on the part of governments at all levels, stimulate the vitality of universities, scientific research academies and institutes, enterprises, grassroots organizations, scientific communities, social groups, and other diverse groups, arouse the enthusiasm of all people to participate, and build a socialized great pattern of science popularization that is promoted by government, society, and the market in a coordinated fashion.
- Deepen supply-side reform. Break down the institutional barriers constraining science popularization and high-quality development, give prominence to the value orientation (价值导向), innovate organizational mobilization mechanisms, strengthen policies and regulations, promote innovation and enhancement of the content, forms, and means of science popularization, raise the knowledge content of science popularization, and meet the requirements of the whole society for high-quality science popularization.
- Expand opening up and cooperation. Carry out international exchanges on scientific literacy on a greater scale, higher level, and closer basis, build dialogue platforms together, enhance openness and mutual trust, deepen cooperation on innovation, promote experience sharing and resource sharing, jointly address global challenges, and promote global sustainable development and the building of a community of common destiny for humanity.

(iii) Objectives.

2025 objectives: The percentage of China's citizens with scientific literacy will surpass 15%, and imbalances in the scientific literacy of different regions and groups will be significantly improved. The supply-side reform of science popularization will have achieved significant results, the scientific literacy standards and assessment system will have improved continuously, new progress will have been made in

international cooperation in building scientific literacy, the institutional arrangements for "science popularization and S&T innovation are equally important" will have basically taken shape, the scientific spirit will have been widely promoted in the whole society, the social atmosphere championing innovation will be getting ever stronger, and new improvements will have been made in the level of social civilization.

2035 long-term objectives: The percentage of China's citizens with scientific literacy will have reached 25%, rural-urban and regional disparities in scientific literacy development will have been significantly reduced, and a solid social foundation will have been laid for entering the front ranks of innovation-oriented countries. Equitable distribution of public services for science popularization will have been basically achieved, the institutional mechanisms of social governance for science popularization services will have been basically perfected, our capability to participate in the global governance of science popularization will have been significantly improved, new developments will have been achieved in innovation ecosystem construction, scientific and cultural soft power will have been significantly increased, and the overall degree of comprehensive human development and social civilization development will have attained new heights, providing strong support for the basic realization of socialist modernization.

III. Improvement Actions

With the focus centered around practicing the socialist core values concept, we will vigorously promote the scientific spirit, instill rational thinking, develop civilized, healthy, green, and environmentally friendly scientific lifestyles, enhance skills for labor, production, innovation, and creation, and carry out five sets of improvement actions during the 14th Five-Year Plan period [2021-2025].

(i) Actions to improve the scientific literacy of youth.

Stimulate the curiosity and imagination of youths, strengthen creative consciousness, innovation ability, and interest in science, cultivate a large number of youths with scientist potential, and build up the talent base for accelerating the construction of an S&T powerhouse.

- Promote the scientific spirit throughout the whole education chain. Adhering to moral education (立德树人), carry out initiatives to instill the spirit of scientists in schools, incorporate the scientific spirit in classroom teaching and practical extracurricular activities, inspire youths to form the lofty ambition of devoting themselves to the construction of a world S&T powerhouse, and cultivate students' patriotism, social responsibility, innovative spirit, and practical skills.
- Improve science education at the basic education level. Lead changes in teaching methods, advocate inspiring, inquiry-based, and open teaching, preserve students' curiosity, and stimulate imagination and the thirst for knowledge. Improve the academic level examination (学业水平考试) and comprehensive literacy evaluation (综合素质评价) system for subjects in

junior and senior high schools, including science, mathematics, physics, chemistry, biology, general technology, and information technology, and guide the individualized development of students with innovation potential. Strengthen the construction and equipping of science education infrastructure in rural primary and secondary schools, and direct more science education activities and resources toward rural areas. Promote the in-depth integration of information technology and science education, and implement scenario-based, experiential, and immersive learning. Improve science education quality evaluation and the monitoring and assessment of youth scientific literacy.

- Promote science education and science popularization work at the higher education level. Deepen the reform of science education and teaching in colleges and universities, promote the construction of basic science courses, and strengthen the construction of online open courses for scientific literacy. Deepen the reform of innovation and entrepreneurship education in colleges and universities, deeply implement national innovation and entrepreneurship training programs for college students, support college students in engaging in innovative experiments, entrepreneurship training courses, and entrepreneurship practice projects, and vigorously carry out various kinds of S&T innovation practice activities.
- Implement programs to cultivate a talent reserve for S&T innovation. Establish scientific and diversified discovery and cultivation mechanisms, and provide individualized training for youths with scientist potential. Carry out the work of the Talents Program (英才计划), the Youth Academy of Sciences, and Youth Science Clubs, and explore the model of through-training S&T innovation reserve talents, from basic education to higher education. Deepen implementation of the Program for Cultivating Top-Notch Students in Basic Subjects 2.0 (基础学科拔尖学生培养计划2.0) and improve the system for cultivating top innovation talents.
- Establish effective linking mechanisms for science education resources within schools and outside of schools. Implement museum-school cooperation initiatives, guide primary and secondary schools in taking full advantage of S&T museums and other museums, science popularization education bases, and other science popularization venues to carry out a wide range of learning and practice activities; organize universities, scientific research institutions, medical and health institutions, enterprises, etc. to develop high-quality open science education activities and resources, and encourage scientists, engineers, medical and health personnel, and other S&T workers to come to campuses and carry out science education and physical hygiene, personal safety practices (自我保护能力), and other kinds of safety and health education activities. Widely carry out S&T festivals, science camps, S&T essays (on inventions, manufacturing, etc.) and other science education activities. Strengthen the guidance of family science education, and improve parents' science education awareness and

capability. Strengthen initial science education for preschool children. Promote school, society, and family collaborative education.

- Implement projects to improve the scientific literacy of teachers. Incorporate the scientific spirit in the teacher training process, treat science education and training of innovation talents as important content, and strengthen training of new S&T knowledge and skills. Promote the establishment of science education undergraduate programs at university-level teacher-training colleges and schools (高等师范院校), and expand the scale of enrollment. Increase training for teachers of science, mathematics, physics, chemistry, biology, general technology, information technology, and other disciplines. Implement rural teacher support programs. Increase efforts in online teacher training, extensively carry out "take training to the grassroots" activities, and train 100,000 S&T coaches (科技辅导员) each year.

(ii) Actions to improve the scientific literacy of peasants (农民).

Focusing on improving S&T and cultural literacy, we will improve peasants' capacity for civilized living, scientific production, and scientific management, create a host of high-quality peasants who can adapt to the requirements of agricultural modernization and rural development, and accelerate comprehensive rural revitalization.

- Foster a mindset of belief in science, harmony, and rationality. Carry out in-depth science popularization propaganda and education activities, focusing on environmental protection, energy and resource conservation, green production, disaster prevention and mitigation, health and hygiene, reforming old habits and customs, etc.
- Implement programs to cultivate high-quality peasants. Facing new requirements for ensuring national food security and the effective supply of important agricultural products and byproducts, building rural industrial systems, and developing rural social undertakings, we will rely on agricultural schools and other platforms to carry out peasant education and training, vigorously improve peasants' S&T and cultural literacy, and serve agricultural and rural modernization. Carry out peasant vocational skills appraisal and skill level recognition, and rural e-commerce skills training; organize skill competitions for peasants, peasants' scientific literacy network competitions, and innovation and entrepreneurship competitions for local talent; carry out peasant education and training for more than 10 million people, and cultivate more than one million rural entrepreneurship and innovation leaders. Implement programs to improve the quality of rural women and help rural women participate in agricultural and rural area modernization.
- Implement S&T support initiatives for rural revitalization. Encourage universities and scientific research institutes to carry out intellectual

services for rural revitalization, and promote socialized service models of agricultural S&T such as Science and Technology Backyard (科技小院), Expert Courtyard (专家大院), and joint construction by colleges (schools) and local governments. Deeply implement the S&T envoy (科技特派员) system, support new agricultural business entities and service entities such as family farms, farmers' cooperatives, and agricultural socialized service organizations in carrying out S&T demonstrations by establishing demonstration bases and field schools (田间学校), thereby leading the development of modern agriculture. Guide professional technical schools (associations) and other social organizations in delivering agricultural S&T services, introduce advanced and appropriate varieties and breeds, technologies, and equipment and facilities to small farmers, and achieve the organic linkage of small farmers with modern agriculture.

— Enhance the S&T and cultural literacy of peasants in old revolutionary base areas, ethnic minority areas, border regions, and previously poverty-stricken areas. Guide more of society's science popularization resources toward less-developed rural areas. Carry out initiatives to revitalize the border regions and enrich their people, activities to popularize science for border people and to popularize science in border regions, vigorously carry out S&T assistance to Xinjiang and Tibet, and improve the S&T and cultural literacy of peasants in remote areas. Enhance the vocational skills of low-income rural populations and strengthen their endogenous development capacity.

(iii) Actions to improve the scientific literacy of industrial workers.

Focusing on the quality of skills, we will improve the vocational skills and innovation ability of industrial workers, build a team of high-quality industrial workers who have ideals and conviction, understand technology and can innovate, and dare to take responsibility and voice their dedication, so as to better serve the construction of a manufacturing powerhouse (制造强国), a quality powerhouse (质量强国), and a modernized economic system.

- Carry out propaganda and education on ideals, beliefs, and professionalism. Carry out the "Chinese Dream - Beauty of Labor," the Most Beautiful Workers (最美职工), Accomplishments of Females (巾帼建功), and other activities, vigorously promote the spirit of model workers, the spirit of labor, and the spirit of workmanship, and create in society a prevailing tendency to take pride in labor, an ethos of dedication to excellence, and a cultural atmosphere of innovation with confidence.
- Implement the Skills China (技能中国) innovation initiative. Carry out multi-level, multi-industry, and multi-disciplinary labor and skills competitions, build innovation studios (创新工作室) for model workers and craftspeople, and make coordinated use of demonstration bases for training highly skilled personnel (示范性高技能人才培训基地) and national-level skill master studios (国家级技能大师工作室), so as to identify and train highly

skilled personnel. Organize the carrying out of the "five smalls"[5] and other mass innovation activities to promote popular entrepreneurship and mass innovation.

- Implement vocational skills upgrading initiatives. Give greater prominence to scientific literacy, production safety, and other relevant content in pre-vocational education and vocational training, and construct a lifelong skills formation system for industrial workers uniting vocational education, employment training, and skill upgrading. Improve workers' safety and health awareness and personal safety practices through education and training. Deeply implement the Migrant Worker Vocational Skills Upgrading Program (农民工职业技能提升计划), Study to Realize Dreams (求学圆梦), etc., so as to increase education and training opportunities for people who move to cities in search of work.
- Fully utilize the demonstration and leadership role of entrepreneurs to improve the scientific literacy of industrial workers. Champion the entrepreneurial spirit, improve the scientific literacy of entrepreneurs, and guide entrepreneurs in constantly improving such aspects as patriotism, innovation, integrity, social responsibility, and international vision, and in being explorers, organizers, and leaders of innovation and development, and promoters of scientific literacy improvement on the part of industrial workers. Encourage enterprises to actively train and use innovative skilled personnel, and train and use highly skilled personnel in key positions and key processes. Fully utilize the role of academic societies, associations, and research associations, and guide and support enterprises and social organizations in conducting evaluations of vocational ability levels. Fully utilize the role of the "Innovation China" ("科创中国") platform, and explore the establishment of dual promotion mechanisms for improving enterprise S&T innovation and the scientific literacy of industrial workers. Press relevant Internet companies to do a good job of improving the scientific literacy of couriers, Internet workers, Internet marketers, and other groups.

(iv) Actions to improve the scientific literacy of the elderly.

With the focus on improving information literacy and health literacy, we will improve the ability of the elderly to adapt to social development, and enhance their sense of access, happiness, and security, so as to achieve enjoyment, learning, and activity among the elderly.

- Implement smart [technology] initiatives to help the elderly. Focusing on the needs and difficulties of the elderly in using smart technology and integrating into a smart society, rely on senior citizen universities (schools, learning points), senior citizen S&T universities, community science

[5] Translator's note: The "five smalls" ("五小") refer to: small inventions, small innovations, small transformations, small designs, and small suggestions (小发明、小革新、小改造、小设计，小建议). These are measures designed to encourage rank-and-file company employees to participate more actively in technical innovation and production safety improvements.

popularization universities, elderly service institutions, etc., to popularize smart technology knowledge and skills, improve the ability of the elderly to obtain, identify, and use information, and effectively prevent and respond to Internet rumors and telecommunications fraud.

- Strengthen health science popularization services for the elderly. Relying on the health education system, promote health science popularization for the elderly in communities, villages, institutions, and families, carry out activities such as health lectures and Senior Health Propaganda Week, and use radio, television, newspapers and magazines, the Internet, and other types of media to popularize knowledge regarding reasonable diets, food safety, mental health, physical exercise, reasonable use of drugs, emergency response, etc., thereby improving the health literacy of the elderly. Make full use of community day care centers for the elderly, science popularization parks, Party building gardens (党建园地), and other locations to provide health science popularization services for the elderly.
- Implement senior years science popularization initiatives. Actively develop human resources for seniors, vigorously develop organizations such as senior citizens' associations and Associations of Senior Scientists and Technicians (老科协), and fully utilize the role of elder experts in consulting and think tanks. Develop and expand the ranks of elderly volunteers. Form elder experts' science popularization report groups to play an active role in community, rural, and youth science popularization.

(v) Actions to improve the scientific literacy of leading cadres and civil servants.

We will further strengthen the awareness of leading cadres and civil servants regarding strategies such as rejuvenating the nation through science and education, innovation-driven development, etc., improve their scientific decision-making ability, instill the concept of scientific governance, and enhance their ability to promote the modernization of the national governance system and governance capacity, so as to better serve the endeavors of the Party and the State.

- Deeply implement the new development concept (新发展理念). Effectively find points of introduction, combination, and emphasis for putting the new development concept into practice, improve the scientific performance levels of leading cadres and civil servants, and strengthen their understanding of the importance and urgency of building scientific literacy.
- Enhance scientific literacy education and training. Conscientiously implement the *Cadre Education and Training Regulations* and *Civil Servant Training Regulations*, strengthen the study of cutting-edge S&T knowledge and global trends in S&T, highlight cultivation of the scientific spirit and scientific thinking, and enhance the ability to grasp the principles of scientific development. Vigorously carry out scientific literacy training for grassroots leading cadres and civil servants, especially cadres in old

revolutionary base areas, ethnic minority areas, border regions, and previously poverty-stricken areas.

- Implement scientific literacy requirements in the recruitment of civil servants. Continuously improve cadre assessment and evaluation mechanisms, strengthen scientific literacy requirements in civil service recruitment examinations and job inspections, and implement them effectively.

IV. Key Projects

We will deepen the supply-side reform of science popularization, improve the effectiveness of supply, focus on solidifying the foundation, leveraging strengths, making up shortcomings and strengthening areas of weakness, build an all-domain, full-time scientific literacy construction system with a diversified array of entities and means, high-quality supply, and effective mechanisms, and implement five key projects in the 14th Five-Year Plan period.

(i) Project to boost the science popularization effect of S&T resources.

We must establish and improve mechanisms to boost the science popularization effect of S&T resources, constantly reinforce awareness of the responsibility of S&T innovation entities, give full play to the science popularization function of S&T facilities, and enhance the science popularization abilities of S&T workers.

- Establish and improve mechanisms for S&T resources-based science popularization. Encourage organizations and personnel undertaking national S&T program projects (special projects, funds, etc.) to combine scientific research tasks and strengthening science popularization. Promote the inclusion of science popularization work indicators in assessments for relevant S&T awards. Promote making performance in science popularization work a criterion in the professional title evaluations of S&T personnel. Include science popularization work in reviews of relevant S&T innovation bases. Carry out evaluations of S&T innovation entities and S&T innovation results-based science popularization services, guide enterprises and social organizations in establishing effective mechanisms for S&T resources-based science popularization, support the development of Chinese public scientific literacy promotion consortia, etc., promote the development of science popularization undertakings and the science popularization industry, and explore the “industry + science popularization” model. Carry out a pilot science popularization course credit system.
- Implement special initiatives for S&T resources-based science popularization. Support and guide universities, research institutions, enterprises, scientific communities, and other scientific resources in carrying out science popularization work, developing science popularization resources, strengthening cooperation with the media and professional science popularization organizations, and popularizing major S&T

achievements in a timely manner. Construct studios for science communication experts, and develop category-based guidelines for science popularization work using S&T resources. Expand the science popularization function of S&T infrastructure, encourage development of the science popularization function of large scientific facilities (equipment), and exhort innovation bases such as state key laboratories to carry out various forms of popularization activities for society.

- Strengthen the social responsibility of S&T workers. Vigorously champion the spirit of scientists, carry out the Project to Document the Academic Careers of Senior Scientists (老科学家学术成长资料采集工作), and, relying on the China Communication Center for Science and Technology and other facilities and resources, create a museum of scientists and spirit of scientists education bases (科学家精神教育基地) to showcase their outstanding examples of S&T, lively practice, and achievements and experience, thereby stimulating the whole nation's innovation enthusiasm and creative vitality. Strengthen the building of scientific research integrity and S&T ethics, carry out in-depth activities to promote building of scientific ethics and [good] study styles, and guide the majority of S&T workers to adhere to their social responsibilities, stand on their own feet, build their careers, and become exemplary practitioners of the spirit of scientists. Through propaganda and education, training, role model demonstration, etc., enhance the ability of S&T personnel to popularize science and speak actively, promptly, and accurately on hot social topics and issues of focus.

(ii) Project to improve the informatization of science popularization.

We must enhance our ability to create and disseminate high-quality science popularization content and resources, promote the deep integration of traditional media and new media, and build a real-time, ubiquitous, and accurate informatized all-media communication network to serve the construction of a digital society.

- Implement a funding program for science popularization-related creation to flourish. Support excellent original science popularization works. Support the carrying out of science popularization creation directed at the world's S&T frontier, the main economic battlefields, the major needs of the nation, the people's life and health, and other significant subject matter. Vigorously develop animation, short videos, games, and other forms of science popularization works. Support the growth of creative talents in science popularization, and cultivate leading figures in science popularization creation.
- Implement a program to support development of the science fiction industry. Build a high-level science fiction creation exchange platform and a product development sharing platform, and establish a pool of science fiction film science advisors to provide professional consultation, technical support, and other services for science fiction films. Promote the integration of S&T communication and film, and strengthen the creation of science

fiction film and television. Form a national alliance for the showing of science fiction films. Encourage qualified localities to set up science fiction industry development funds, and create science fiction industry clusters and science fiction theme parks, etc.

- Implement a program to improve all-media science communication ability. Promote the deep integration of traditional media, such as books, newspapers, audiovisual materials, television and radio, with new media, encourage increasing the science communication content of public service announcements, and achieve dissemination of science popularization content through multiple channels across all media. Guide mainstream media in stepping up S&T propaganda efforts, increasing science popularization content and adding more science popularization columns. Vigorously develop new media science communication. Strengthen the training of media professionals in science communication ability. Promote communication and cooperation between the media and the scientific community, and enhance the professionalism and authoritativeness of science communication.
- Implement a project to construct intelligent science popularization. Promote the deep integration of science popularization with big data, cloud computing, artificial intelligence (AI), blockchain, and other technologies; reinforce the concepts of demand perception, user stratification and situational application; promote the innovation and upgrading of communication methods, organizational mobilization and operational services; strengthen the construction of [science popularization website] "China Science Communication" (“科普中国”) and fully utilize existing platforms to build a national science communication network platform and platforms for dispelling rumors with science. Strengthen the real-world application of science popularization information and its deep integration with smart education, smart cities, smart communities, etc., and promote more high-quality science popularization resources going to old revolutionary base areas, ethnic minority areas, border regions, and previously poverty-stricken areas.

(iii) Science popularization infrastructure project.

We must strengthen the construction of science popularization infrastructure, and establish a government-led, multi-channel investment mechanism to achieve rational resource allocation, balanced service, and broad coverage.

- Strengthen overall planning and macro-level guidance for the construction of science popularization infrastructure. Formulate a plan for the development of science popularization infrastructure, and incorporate the construction of science popularization infrastructure in the economic and social development plans for all regions. Improve norms and standards for managing the construction of science popularization infrastructure, and establish a sound grading and evaluation system. Improve preferential

policies and regulations for investing social funding[6] in the construction of science popularization infrastructure. Implement registration and annual reporting systems for S&T museums. For S&T museums that meet the conditions, promote opening on a free-of-charge basis.

- Innovate the modern S&T museum system. Promote integration and sharing among S&T museums and other museums, cultural centers, etc., and build a modern S&T museum system that serves scientific and cultural literacy improvement. Strengthen construction of physical S&T museums, carry out innovative R&D of science popularization exhibits and educational products, create scientist spirit education bases, cutting-edge S&T experience bases, public safety and health education bases, and a platform for pooling science education resources, and enhance the service function of S&T museums. Promote the construction of digital S&T museums, carry out overall planning for construction of mobile S&T museums, science popularization vans, and S&T museums in rural secondary schools, and explore operating mechanisms and models of multi-entity participation to improve service quality and capacity.
- Vigorously strengthen the construction of science popularization bases. Deepen national popular science education base creation activities, and build dynamic management and long-term incentive mechanisms. Encourage and support the establishment in various industries and sectors of educational, research, and other bases for science popularization, so as to improve science popularization service ability. Press libraries, cultural centers, museums, and other public facilities to carry out science popularization activities and expand their popular science popularization service function. Guide and encourage parks, nature reserves, scenic spots, airports, train and bus stations, movie theaters, and other public places to strengthen their science popularization service function. Develop the use of qualified industrial heritage sites and idled or phased-out production facilities for construction of S&T museums, industrial museums, safety experience venues, and science popularization creativity parks.

(iv) Project to improve grassroots science popularization capacity.

We must establish and improve coordination and linkage mechanisms for emergency science popularization, significantly improve grassroots science popularization ability, and basically finish building the peacetime-wartime integrated emergency preparedness science popularization (平战结合应急科普体系).

- Establish a mechanism for collaboration on emergency preparedness science popularization propaganda and education. Make use of existing

[6] Translator's note: The Chinese term 社会资金, translated literally as "social funding," and its synonyms "social capital" (社会资本), "social investment" (社会投资), and "social financing" (社会融资), refer to any source of funding outside of government budget outlays. These terms encompass investment by private individuals and private institutions. However, investment from state-funded entities such as state-owned enterprises (SOEs), including state-run banks, also falls under the umbrella of "social funding."

facilities to improve the national platform for emergency preparedness science popularization propaganda and education, and form an expert committee. Governments at all levels should establish mechanisms for collaboration by emergency preparedness science popularization departments, insist on the unification of daily propaganda and education and emergency preparedness propaganda, and incorporate them into the overall planning and coordination mechanism of emergency preparedness work at all levels. Build up and disseminate resources for high-quality emergency preparedness science popularization content, effectively carry out science popularization propaganda and education activities on topics such as infectious disease prevention and control, disaster prevention and mitigation, and emergency risk avoidance, and push emergency preparedness science popularization knowledge into enterprises, rural areas, communities, schools, and families in an all-round way. When sudden incidents (突发事件) break out, all departments shall work closely together and coordinate forces to carry out emergency preparedness science popularization directly at the grassroots level, and do a good and timely job of policy interpretation, knowledge dissemination, and public opinion channeling. Establish a team of experts in emergency preparedness science popularization and improve the emergency preparedness science popularization ability of emergency management and media personnel.

- Establish and perfect a grassroots science popularization service system. Build a grassroots science popularization service system with provincial-level overall planning of policies and mechanisms, municipal-level construction of resource collection and distribution centers, and county-level organization and implementation, featuring New Era Civilization Practice Centers (institutes, stations), Party and Masses Service Centers, community service centers (stations), and other locations, with volunteer service as an important component. Mobilize schools, hospitals, research institutes, enterprises, the scientific community, and social organizations to form S&T volunteer service teams, improve the management system for S&T volunteer services, promote the professionalization, standardization, and normalization of S&T volunteer services, and promote the order-claiming (订单认领) model in which orders are originated by the masses, dispatched by communities, claimed by departments, and accepted by S&T volunteer service teams. Establish and improve cross-regional science popularization cooperation and sharing mechanisms, and encourage areas with the right conditions to carry out all-domain science popularization initiatives featuring all-domain initiatives, territory-wide coverage, all-media dissemination, and participation and sharing among all.
- Implement grassroots science popularization service capacity enhancement projects. Deeply implement the grassroots science popularization action plan. Carry out launch activities for national science popularization

demonstration counties (or cities, or districts). Strengthen the construction of grassroots science popularization facilities, and expand the science popularization service functions of rural-urban integrated community service facilities, community libraries, community learning centers, community universities, and other platforms. Explore the establishment of mechanisms for sharing exhibition and display resources for grassroots science popularization. To enhance public understanding and support for the development of S&T, deepen activities such as the Patriotic Public Health Campaign, National Science Day (全国科普日), Science and Technology Week, Popular Entrepreneurship and Mass Innovation Week (双创活动周), Disaster Prevention and Mitigation Day, Food Safety Awareness Week, and Public Science Day.

- Strengthen the building of full-time science popularization teams. Vigorously develop full-time science talent teams for science popularization venues and science popularization bases, in S&T publishing, new media science popularization, science popularization research, and other areas. Encourage universities, research institutions, and enterprises to set up science popularization job positions. Establish college and university alliances for S&T personnel training, increase the training of high-level S&T professionals, and promote the establishment of S&T academic majors.

(v) Project for international exchanges and cooperation in scientific literacy.

We will expand the channels for scientific literacy construction exchanges, build an open cooperation platform, enrich the content of exchange and cooperation, encourage mutual understanding between civilizations, promote value recognition, enhance the level of open exchanges, and participate in global governance.

- Expand channels for international people-to-people and cultural exchanges in S&T. Focusing on improving scientific literacy and promoting sustainable development, take full advantage of the scientific community's strengths and the role of various people-to-people and cultural exchange mechanisms. Carry out youth exchange cultivation programs, expand the fields of cooperation, and raise the level of cooperation.
- Enrich the content of international cooperation. Carry out in-depth bilateral and multilateral cooperation projects in science education, dissemination and popularization, and promote the exchange and trade of science popularization products. Focus on addressing common challenges to sustainable human development such as future development, food security, energy security, human health, disaster risks, and climate change, and strengthen people-to-people and cultural exchanges in S&T within the fields of youth and women, and in education, media, and culture.
- Actively participate in global governance. Promote international cooperation in building scientific literacy, explore the development of international standards, promote the establishment of a World Organization for Scientific

Literacy, participate in the initiation and setting of issues, and actively offer Chinese solutions and share Chinese wisdom in multilateral activities.

- Promote people-to-people and cultural exchanges in S&T for the “Belt and Road.”[7] Adhering to the principle of extensive consultations, joint contributions, and shared benefits, deepen cooperation in the fields of public health, green development, S&T education, etc. Promote the linking of strategies, plans, and mechanisms for building scientific literacy, strengthen the connections between policies, rules, and standards, and promote the high-quality development of the “Belt and Road.”

V. Organization and Implementation

(1) Organizational assurance.

We shall establish and improve mechanisms to coordinate implementation of the *Scientific Literacy Outline*, take responsibility for leading implementation of the *Scientific Literacy Outline*, include the goal of developing national scientific literacy in national economic and social development planning, and strengthen supervision and inspection of *Scientific Literacy Outline* implementation. All departments will include tasks related to the *Scientific Literacy Outline* in their relevant planning and programs, and fully perform their work responsibilities. The Chinese Association for Science and Technology (CAST) will play a comprehensive coordinating role, do communication and liaison work properly, and promote the construction of scientific literacy together with all relevant parties.

Local governments at all levels shall be responsible for leading the implementation of the *Scientific Literacy Outline*, and shall take the construction of scientific literacy as an important task in local economic and social development, incorporating it into the overall planning for their regions, including annual work plans, and include it in results-based management and assessment. Local science associations at all levels will lead the implementation of the *Scientific Literacy Outline*, improve scientific literacy construction work mechanisms, and promote the construction of scientific literacy in their regions in conjunction with all relevant departments.

(ii) Mechanism assurance.

Improve recognition and award mechanisms. In accordance with relevant national regulations, give recognition and awards to groups and individuals who have made outstanding contributions to the construction of scientific literacy.

Improve the examination and assessment system. Improve the science popularization assessment system, develop scientific literacy standards for citizens in the new era, and regularly carry out monitoring and assessment of the scientific literacy of citizens, and monitoring and assessment of scientific literacy construction ability.

(iii) Basic conditions assurance.

[7] Translator's note: The "Belt and Road" (“一带一路”) refers to the Silk Road Economic Belt (丝绸之路经济带) and the 21st Century Maritime Silk Road (21世纪海上丝绸之路).

Improve regulations and policies. Improve the system of laws and regulations on science popularization, encourage qualified localities to formulate and revise regulations on science popularization, develop methods for assessing professional and technical titles in science popularization, carry out assessment work, and include science popularization talents in all kinds of talent awards and funding plans at all levels.

Strengthen theoretical research. Focusing on aspects brought about by new technologies and new applications, such as S&T ethics, S&T safety, science-related rumors, etc., carry out theoretical and practical research on scientific literacy construction. Carry out in-depth research on the targets, means, and methods of science popularization, etc., and create high-end think tanks for scientific literacy construction.

Strengthen standards-setting. Develop hierarchical and categorized standards for science popularization products and services, implement a special project for the preparation of scientific literacy construction standards, and promote the construction of a multi-dimensional standards system with national standards, industry standards, local standards, group standards, and corporate standards.

Assurance of funding and investment. All relevant departments shall give overall consideration to, and implement, funding of science popularization. In accordance with regulations, governments at all levels will arrange funding to support development of science popularization undertakings. They should vigorously encourage individuals, enterprises, social organizations, and other social forces to use the establishment of science popularization funds, sponsorship of science popularization projects, and other methods to invest funds for scientific literacy construction.