Outline of the National Scheme for Scientific Literacy

全民科学素质行动计划纲要

(2006—2010—2020年)

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(2006 – 2010 – 2020)

The Outline of the National Scheme for Scientific Literacy (2006 – 2010 – 2020) is promulgated for implementation, in line with a range of initiatives produced at the 16th National Congress of Communist Party of China, and at the 3rd, 4th, and 5th plenary meetings of 16th CPC Central Committee. Both the Law of the People's Republic of China on Popularization of Science and Technology and the Outline of the National Program for Long and Medium Term Scientific and Technological Development (2006 – 2020) are the base documents for preparing this Outline (hereinafter referred to as the Outline).

1. Prelude

Scientific literacy makes an important part of a citizen's quality. The basic scientific literacy of citizens generally re-

fers to knowing some necessary knowledge of science and technology, mastering basic methods of science, building up science thoughts, advocating science ethos and having the ability to apply them to resolve practical problems and participate in public affairs. Raising citizens' scientific literacy is of great significance in strengthening their capability to acquire and apply knowledge of science and technology, improving their life quality, realizing the all-round development as well as enhancing China's capacity for independent innovation, making an innovative country, pursuing comprehensive, balanced and sustainable development of the economy and society, and building a socialist harmonious society.

Previous surveys show that China has a large gap with the developed countries, in the context of citizens' scientific literacy. In China, people's scientific literacy is distinctly differed between the urban and the rural. The majority of the labor force has not reached a high level of scientific literacy. Most of the citizens have a low level on understanding of basic scientific knowledge, and even lower on the scientific ethos, scientific thoughts and scientific methods. Some unscientific concepts and behaviors exist universally, ignorance, fatuity and superstition still prevail in some areas.

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Citizens' lower level of the scientific literacy has been one of the bottlenecks that have restrained the economic development and social progress of our country.

The capacity building of people's scientific literacy shall be a basic part of sticking to a road of independent innovation with Chinese characteristics and making an innovative country, and shall be a social action led by the government, with an extensive participation of all the people in this country. Since the adoption of reform and opening-up policy, especially since implementing the strategy of rejuvenating the country through science and education, China has enjoyed an enhanced capacity of people's scientific literacy. However, there are remaining numerous problems in the area. For example, China's per capita education attainment level is lower than the world average. Long under the influence of exam oriented education, students have shown apparent problems in scientific literacy. China has not yet established a well functioned system for public and adult education. Citizens are not guaranteed to have an education that runs through their entire life. China has not yet established a long term mechanism for popularization of science and technology (hereinafter referred to as PST), with insufficient facilities, personnel, and funds. PST activities have

not attracted great attention of China's media, with a poor quality of coverage. The public service that is established to build up people's scientific literacy remains far from meeting the social needs. Citizens' initiatives for enhancing their own scientific literacy have not been fully mobilized.

The National Scheme for Scientific Literacy for all Chinese citizens is designed to promote the capacity building of Chinese people's scientific literacy, through the development of science and technology education, communication and popularization. It strives to quickly and significantly raise people's scientific literacy, aiming at the long term goal of making adult Chinese citizens to possess basic scientific literacy in the mid century. In this Outline, major objectives, missions, and measures have been proposed to stage a scientific literacy scheme for everyone during the 11th Five-Year Plan period, in line with the phase targets throughout 2020.

2. Policies and Goals

Guiding policies:

Under the guidance of Deng Xiaoping Theory, the important thought of Three Represents, and the Scientific

Outlook on Development, efforts shall be made to enhance the capacity building of citizens' scientific literacy, taking advantage of the lead role played by the government, and mobilizing everyone to be part of PST activities, in an attempt to promote a full-fledged economic, social, human development, to improve China's independent innovation capacity and overall national strength, and to create a solid workforce foundation for building a moderately prosperous society in all respects, and for realizing the third strategic targets of the modernization drive.

In the coming 15 years, National Scheme for Scientific Literacy will work under the policy of "government boost , mass participation, raising scientific literacy, and promoting harmony".

Government boost —— Governments at all levels shall make the capacity building of citizens' scientific literacy an important part of building a moderately prosperous society in all respects, with an enhanced leadership. Governments at all levels shall incorporate the Outline into their planning activities, formulating relevant policies and directives, with an increased investment from government sources. Efforts shall be made to facilitate the implementation of the Outline. All quarters of society shall fulfill their respective obliga-

tions, with more collaboration.

Mass participation —— Citizens are both the participants and beneficiaries of the capacity building of citizens' scientific literacy. Efforts shall be made to mobilize the enthusiasm and initiative of all the Chinese citizens to engage them in the implementation of the Outline, creating an atmosphere of cherishing science, encouraging innovation, respecting knowledge, and respecting talented personnel.

Raising scientific literacy —— Raising citizens' scientific literacy is the aim and outcome of the Outline. The implementation of the Outline will build China into a society in which every citizen is committed to learning and lifelong learning, and promoted all-round development.

Promoting harmony —— Efforts shall also be made to implement the Scientific Outlook on Development, put people first, advocate fair-and-share of science and technology related education, communication, and popularization, promoting the all-round development of socialist material civilization, political civilization, and spiritual civilization, and building a harmonious society.

Goals:

By 2020, China will see an enhanced development of science and technology related education, communication,

and popularization. It will establish a well functioned system, infrastructures, and conditions for the purpose, and establish a system for evaluating the capacity building of citizens' scientific literacy. Citizens' scientific literacy shall see a large improvement, reaching the early 21st century level of major developed countries.

By 2010, science and technology related education, communication, and popularization shall see a large development, with noticeably raised citizens' scientific literacy, reaching the 1980s level of major developed countries. To address most important and fundamental issues concerning the capacity building of citizens' scientific literacy, efforts shall be made to realize the following goals:

—— Promote the establishment and implementation of the Scientific Outlook on Development. Efforts shall be made to raise the public awareness of a range of advanced concepts, including resources efficiency, ecological protection, environment improvement, work safety, emergency rescue, healthy lifestyle, rational consumption, and circular economy. Advocate the establishment of a resource-conserving and environment-friendly society, encouraging a life and work style that is scientific, civilized, and healthy.

—— Promote the enhancement of all Chinese citizens'

scientific literacy, led by the improvement of scientific literacy of selected populations in the first place. Raise minors' interests and enthusiasm in science, and enhance their innovation awareness and associated practice capability. Meanwhile, efforts shall be made to raise the scientific literacy of farmers and urban workforce in a noticeable manner, gradually narrowing down the gaps between the urban and rural residents in scientific literacy. Leading cadres and public servants shall have a top level of scientific literacy among professionals.

—— Strengthen the fundamental facets of scientific literacy capacity building, including science education and training, developing and sharing PST resources, mass media's science and technology communication capability, and PST related infrastructures. Citizens shall be given more opportunities and accessibilities to improve their scientific literacy.

3. Main Actions

During the 11th Five-year Plan period, China will mainly work on the following actions, in line with the guiding principle.

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(1) *Minors' scientific literacy action*

Missions:

—— Raise minors' awareness of the Scientific Outlook on Development, focusing on China's basic national situation, such as a large population, limited resources, and a per capita resources possession that is far lower than the world average, and making minors aware of the importance of harmonious coexistence of man and nature, and the sustainable development.

—— Improve science education at the primary education phase, raising the quality of science education at schools, making primary and middle school students familiar with needed basic scientific knowledge and skills, and allowing them to experience the process and method of scientific exploration activities. Efforts shall be made to foster a scientific attitude, passion, and sense of value among minors, developing their preliminary capability of scientific explorations, and enhancing their awareness of innovation and practice.

—— Popularize the compulsory education in the rural areas, raising the quality of science education at the rural primary and middle schools, providing more opportunity for the rural minors to be part of science outreach activity, and

enhancing their capability of improving life, raising the quality of life, and personal development.

——Initiate science outreach activities and social practice in diverse forms, enhancing minors' enthusiasm and interests in science and technology, allowing them to have some knowledge of the nature of science, and the relationship between science and technology and society. Enhance minors' sense of social obligation, and capability of communication and cooperation, and of solving problems in an integrated manner using learnt knowledge.

Measures:

—— Promote the full-fledged implementation of new science course, through implementing the New Century Competence-oriented Education Project. More attention shall be paid to the integrity and consistence of courses, in line with the special needs of different age groups. Stage pre-school science enlightening education, and take effective measures to diffuse comprehensive science courses for the compulsory education. Gradually advance the reform of science courses at the senior high school. Deepen the reform of the teaching materials, contents, and teaching method of science courses at primary and middle schools. Reform the evaluation system of science education, and su-

pervise the quality of science education on a regular basis, taking full advantage of the role played by modern education technologies.

—— Raise the science education level and quality of minors in the rural areas. Strengthen the capacity building of science education resources employed in modern distance education at rural primary and middle schools, in line with the practical situation of rural areas. Develop non – formal education activities for the minors outside the formal rural education system, and initiate science outreach activity aiming at improving minors' living capability and working skills.

—— Organize extracurricular science and technology activities, and increase minors' innovation awareness and useful skills. Diffuse the knowledge in the area of ecological environment protection, resources and energy efficiency, psychological and physical well-being, and safety and risk avoidance. Strengthen the public awareness of "cherishing life, and keeping away from drugs", cherishing science and civilization, and opposing foolish superstitions. Take advantage of the unique roles played by minors in science outreach activities targeting at adult, through family and community.

—— Organize science outreach activities, allowing face-to-face opportunity between science and technology personnel and minors, through an array of initiatives, including Hand in Hand between Scientists and Adolescents and teenagers-science outreach actions for young people, science and technology experts being part of campus (communities. or PST centers), and middle school students visiting research institutes and labs.

—— Raise the scientific literacy of mothers, paying more attention to the important role played by parental education in raising minors' scientific literacy.

—— Institutions and organizations such as press, publication, radio and television and culture should strength their effort on communication and popularization of science and technology, attract minors with excellent, beneficial and vivid PST works and create a favorable public opinion environment for the healthy growth of the minors.

—— Consolidate the science education resources outside the school, and establish an effective mechanism linking outside-school science and technology activities with school science courses. Improve minors' scientific literacy, taking advantage of diverse education resources, including science and technology museums, research institutes, and

other science and technology education bases. Strengthen the PST function of such comprehensive outside-school activity sites for the minors as the youth and pioneers' palaces and children's centers. Establish exclusive science and technology activity centers for children and youth where conditions permit. Taking advantage of the role played by community education in minors' science education outside the school.

(2) *Farmers' scientific literacy action*

Missions:

—— Raise farmers' awareness of the Scientific Outlook on Development, focusing on ecological environment protection, water resources efficiency, cropland protection, disaster prevention and preparedness, healthy lifestyle, eliminating bad habits, and opposing foolish superstitions. Create a fine atmosphere of talking, loving, learning and applying science in the rural areas, building a new socialist countryside.

—— Lift up farmers' enthusiasm of being part of scientific literacy capacity building, focusing on scientific farming, efficiency improvement, and yield increase. Enhance farmers' awareness of science and technology, raising their capability of collecting scientific and technological know-

ledge, becoming rich by using such knowledge, developing production activities, and improving quality of life. These activities shall be combined with the communication of practical technologies and the enhancement of farmers' scientific literacy, in an attempt to foster up a new type of farmers who are educated and understand both agricultural techniques and business management.

—— Improve the employability of rural surplus labor transferring to non-agricultural sectors or cities and towns.

—— Raise women's scientific and cultural literacy in the rural areas, and farmers' scientific and cultural literacy in the less developed areas in the west, ethnic autonomous areas, poverty-stricken and old revolutionary base areas.

Measures:

—— Establish a science education, awareness raising, and training system in the rural area that is rich in content, diverse in form, and demand meeting. Prepare an Action Plan for Establishing Farmers' S&T Education and Training System, and The Outline for Chinese Farmers' Scientific Literacy Education Planning, providing guidance for farmers' science education activities.

—— Enhance farmers' science and technology training. Initiate farmers' science and technology training activi-

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