

中国科普报告

SCIENCE POPULARIZATION REPORT OF CHINA

2007

中国科普研究所

CHINA RESEARCH INSTITUTE
FOR SCIENCE POPULARIZATION



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>> 前言

《2007 中国科普报告》是中国科普研究所自 2002 年组织研究编撰的第六部年度科普报告。2006 年国务院颁布了《全民科学素质行动计划纲要(2006~2010~2020 年)》(以下简称《科学素质纲要》),这是继 1995 年国务院颁布《全民健身计划纲要》,2001 年中共中央颁布《公民道德建设实施纲要》后,我国历史上由国务院发布的专门针对提高全民科学素质的纲领性文件。《科学素质纲要》体现出了“以人为本”的科学发展观在我国得到进一步落实,体现了我国经济社会发展模式转向“两个依靠”,特别是依靠劳动者素质提高得到了高度重视。

《科学素质纲要》对公民科学素质的概念作了界定:“科学素质是公民素质的重要组成部分。公民具备基本科学素质,一般指了解必要的科学技术知识,掌握基本的科学方法,树立科学思想,崇尚科学精神,并具有一定的应用它们处理实际问题、参与公共事务的能力。”这种表述,突出“四科”和“两能力”。《科学素质纲要》首次提出了公民科学素质“建设”的理念。围绕《科学素质纲要》提出的目标和任务,科普工作的思路 and 重点实现了新的突破,形成了前所未有的新局面。

2006 年是《科学素质纲要》颁布实施的第一年,各项工作顺利启动,形成了“政府推动,全民参与,提升素质,促进和谐”的良好氛围。社会各界根据《全民科学素质行动纲要》的精神,大力宣传“节约能源资源、保护生态环境、保障安全健康”的科学发展观,针对四类重点人群开展不同内容的科普,加强科普基础设施建设,为公民科学素质建设提供更多的机会和渠道,科普聚焦全民科学素质成为 2006 年中国科普事业发展的显著特征。盘点 2006 年度科普工作的发展,参与《2007 中国科普报告》课题组的全体人员感受到科普领域呈现的新思路和新局面,我们欣喜地记载和分析了将在我国科普史上具有非凡意义的一年。为了突出《科学素质纲要》实施的状况,《2007 中国科普报告》对第三章的内容做了部分调整,以面向四个重点人群的科普工作作为反映科普工作的重点内容。

中国科普报告作为研究性文献,其价值在于客观地记载和分析我国科普领域年度发展状况,正确地提炼年度工作的特点。本书是中国科普所中国科普报告课题组第六本年度研究性工作报告。科普报告的编撰人来自不同部门、团体和机构,尊奉科学严谨、实事求是的精神是我们共同的原则。新时期科普工作的蓬勃发展,给科普报告的编撰工作提出了很高的要求,每年面对科普工作的丰富成果,如何取舍,才能呈现给读

者最能体现科普工作价值、最有创意、最鲜活的内容是我们工作的重点；科普涉及科技经济和社会生活的方方面面，量大面广，形式和内容丰富，但目前尚缺乏系统的统计数据和完善的评价方法是我们工作的难点。限于目前的情况，本报告反映工作的数据主要来源于统计工作相对完备的部门、团体和机构；反映能力建设的专题研究报告主要由专业协会、研究机构和相关学者撰写。经过几年的探索，中国科普报告形成了基本涵盖科普主要领域的框架，并逐年保持相对固定的框架结构，保持统计数据和分析方法的连续性，研究工作采取定量、定性分析和综合评价的方法。我们希望读者能从历年的报告中了解中国科普事业的历程和研究科普发展的趋势。

中国科普报告的编撰出版始终得到中国科协书记处的支持和关心，得到科技部、教育部、劳动与社会保障部、农业部、全国总工会、共青团中央、全国妇联、中国科学院、国家自然科学基金委、新闻机构等 20 多家单位的合作，还得到中国科协各有关部门和有关全国学会、协会、研究会，以及各省、自治区、直辖市科协的配合。本报告的顺利出版得到科学普及出版社的帮助。在此中国科普报告课题组向有关领导、单位、学者和工作人员表示诚挚的谢意。

中国科普报告课题组

2007 年 9 月 14 日



PREFACE

Science Popularization Report of China 2007 is the sixth annual report on science popularization of China compiled and produced by China Research Institution for Science Popularization, following its yearly versions since 2002. *Outline of National Action Program for Scientific Literacy of All Chinese Citizens (2006-2010-2020)* (cited as *The Outline for Scientific Literacy* below), which was promulgated by the State Council of PRC in 2006, is a guiding resolution focusing specially on the improvement of scientific literacy of all Chinese, following the promulgation of the *Outline for Body Health for All Chinese* by the State Council of PRC in 1995 and the Outline for the Morality Improvement for all Chinese by the Central Committee of CPC. The Outline for Scientific Literacy shows that the scientific development notion of “basing on human” has been further inspired, that the economic and social development model of our country has turned to the idea of “two dependences”, and especially that the dependence on the improvement of quality of workforce is emphasized highly.

According to the definition provided in *The Outline for Scientific Literacy*, scientific literacy is an important part of civil literacy, the possession of which by a citizen means the knowing of necessary knowledge of science and technology, the grasping of basic scientific methods, the forming of scientific thinking, the appreciating of science spirit, and being able to use the science and technology to deal with practical matters and participate in the public affairs. This definition highlights the “four scientific elements” and “two capacities”. *The Outline for Scientific Literacy* puts forward firstly the ideal of the “construction” of civil scientific literacy. Centering on the goals and tasks established by *The Outline for Scientific Literacy*, the weight and clue of science popularization in our country start a new breakthrough and step into an unprecedented new situation.

The year of 2006 is the first year of the promulgation of *The Outline for Scientific Literacy*, undertakings in various forms being carried out smoothly and then shaping the good environment of “government promoting, public participating, exalting the literacy, contributing to the harmony”. Based on the theme of *The Outline of Scientific Literacy*, each sector of the society tried their best to propaganda the scientific development ideas of “resource saving, environment protecting and health guaranteeing”, initiated different kinds of science popularization activities for four key groups of people, and enhanced the construction of infrastructure of science populari-

zation to provide more opportunities and ways for the construction of civil scientific literacy. Science popularization that focuses on the scientific literacy for all citizens thus marks the development of the enterprise of science popularization in China in the year of 2006. When reviewing the development of science popularization in that year, we can say that every member of the compiling panel of "Science Popularization Report of China 2007" has perceived the new thoughts and situations manifested in the field of science popularization, and delightedly made analysis and recording of the year which will have extraordinary significance in the science popularization history of China. In order to highlight the implementation of *The Outline for Scientific Literacy*, *Science Popularization Report of China 2007* makes a partial adjustment in chapter there, in which the science popularization work for the four key groups of people becomes the main contents to reflect the work of science popularization in the year of 2006.

As a research-oriented document, Science Popularization of China puts its value on recording and analyzing objectively the development situation of science popularization in our country, and featuring properly the characteristics of the science popularization works in each precedent year. This report is the sixth annual research-oriented work report of the compilation panel of "Science Popularization Report" provided by China Research Institute for Science Popularization. The contributors of this report who come from different departments, units and institutions all conform to the common rules of being precise and being practical and realistic. The boom of science popularization makes the compiling work more difficult. Facing the plentiful outcomes in the field of science popularization each year, we have to pay special attention to how to select and present to readers the works which embody the value of science popularization mostly and have the best innovative ideas and lively contents. Science popularization activities involve many aspects of the developments in economy, science and technology, and the social lives, having large quantity of works, extensive involvement, and various forms and contents. But we lack systematic statistical data and perfect evaluation methods for these activities at present, which becomes a challenge to us in our present work. Due to this reason, the statistical data in this report comes mainly from the departments, units and institutions, and the articles concerning ability construction are provided by professional associations, research institutes and relevant scholars. After our study for many years, science popularization report has established its basic structural frame of covering the main fields of science popularization, trying to sustain this frame in its evolution with continual statistical data and analyzing methods and keeping its research methods of quantity-analysis, quality-analy-

sis and comprehensive evaluation. We hope readers could see the process and development trend of the enterprise of science popularization in China from our annual reports.

The compilation and publication of *Science Popularization Report of China* gets its help continually from the Secretariat of the China Association for Science and Technology. It is the result through cooperation with the Ministry of Science and Technology, the Ministry of Education, the Ministry of Labor and Social Security, the Ministry of Agriculture, All China Federation of Trade Unions, Chinese Communist Youth League, All China Women's Federation, Chinese Academy of Sciences, National Natural Science Foundation of China, and many news agencies, and it testifies the direct support from the relevant departments, national societies, research institutes of CAST, and the associations of science and technology of each provinces, autonomous regions and municipalities. The successful publication of this report is also indebted to the Popular Science Press for its assistance. We are here extend our sincere thanks to relevant leaders, units, scholars and workers.

Science Popularization Report of China

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9-14-2007

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目 录

前言

综述 科普聚焦全民科学素质	1
---------------------	---

第一章 重大科普事件	19
------------------	----

全国科学技术大会在京召开	21
--------------------	----

《全民科学素质行动计划纲要》颁布实施	23
--------------------------	----

“科普惠农兴村计划”惠及广大农民	31
------------------------	----

我国首建数字科技馆	37
-----------------	----

第二章 重要科普活动	43
------------------	----

全国科技周:携手建设创新型国家	45
-----------------------	----

全国科普日:节约能源,你我共参与	47
------------------------	----

国务院表彰全国高技能人才	49
--------------------	----

全国总工会开展全国职工职业技能大赛	51
-------------------------	----

中国科学院公众科学日:科技促进创新型国家建设	53
------------------------------	----

第 21 届全国青少年科技创新大赛首次在澳门举办	55
--------------------------------	----

第五届亚太地区媒体与科技和社会发展研讨会在京召开	57
--------------------------------	----

首届海峡两岸科普论坛:弘扬华夏文化,促进科学普及	59
--------------------------------	----

13 个部门联合举办“建设节约型社会科普巡回展览”	61
---------------------------------	----

第三章 面向重点人群的科普	63
---------------------	----

面向未成年人的科普	65
-----------------	----

面向农民的科普	74
---------------	----

面向城镇劳动人口的科普	83
-------------------	----

面向领导干部和公务员的科普	89
---------------------	----

第四章 科普能力建设	95
------------------	----

科普政策	97
------------	----

科普经费	109
------------	-----

科普专项资助	115
--------------	-----

科普机构和人员	121
---------------	-----

大众传媒

科普图书	125
------------	-----

科普期刊	134
------------	-----

报纸科普	139
------------	-----

影视科普	147
网络科普	158
基础设施	
自然科学类博物馆	185
科普大篷车	193
科普画廊	207
第五章 科普研究	215
全国农民教育培训基本情况调研报告	217
科普资源建设的理论与实践研究报告	249
附录一 部分全国学会、地方科协科普记事	273
部分全国学会科普记事	275
地方科协科普记事	285

Contents

Preface

Summary	1
----------------------	---

Chapter 1 Highlights of Science Popularization Events	19
--	----

The National Conference of Science and Technology held in Beijing	21
---	----

Promulgation and Implementation of <i>Outline of National Action Program for Scientific Literacy of All Chinese Citizens</i>	23
--	----

“The Project of Benefiting Farmer and Developing Rural Areas by Science Popularization” benefits the farmer	31
---	----

First Digital Science and Technology Museum in China	37
--	----

Chapter 2 Major Science Popularization Engagements	43
---	----

National Science Week: Cooperating to Build an Innovation-oriented country	45
--	----

National Science Popularization Day: Resource-Saving Invites the Participation of You and Me	47
--	----

Awards of High-Tech Ability Talents by State Council of PRC	49
---	----

Work Skill Competition Held by All China Federation of Trade Unions ...	51
---	----

Science Day of Chinese Academy of Sciences; Science and Technology Contributes to the Building of Innovation-Oriented Country	53
---	----

The 21th Chinese Science and Technology Innovation Competition for Youth Held Firstly in Macao	55
--	----

The 5 th Symposium of Media and the Development of Science & Technology and Society in the Asia/Pacific Region	57
---	----

First Science Popularization Forum Across Taiwan Strait; Develop Chinese Culture, Promote Science Popularization	59
--	----

“The Circuit Science Popularization Exhibition on the Construction of Economical Society” by 13 Departments	61
---	----

Chapter 3 Science Popularization for Key Groups of Citizens	63
--	----

Science Popularization for Youth	65
--	----

Science Popularization for Farmers	74
--	----

Science Popularization for Workforce in Urban Regions	83
---	----

Science Popularization for Officers and Civil Servants	89
--	----

Chapter 4 Science Popularization Capacity Construction	95
Science Popularization Policy	97
Science Popularization Funds	109
Grants for Science Popularization Programs	115
Science Popularization Organizations and Manpower	121
Mass Media	
Science Popularization Books	125
Science Popularization Journals	134
Science Popularization Newspapers	139
Science Popularization in Television and Movie	147
Internet Science Popularization	158
Elementary Facilities	
Museums on Natural Science	185
Science Popularization Caravans	193
Science Popularization Galleries	207
Chapter 5 Science Popularization Research	215
Research Report on the Education and Training of National	
Wide Peasants	217
Report on the Basic Theory and Practice Study of Science Popularization	
Resource Construction	249
Appendix I Chronicle of Science Popularization Events with Local Association for	
Science and Technology and Some National Societies	273
Events of Science and Technology with Some National Societies	275
Events of Science and Technology with Local Associations for Science	
and Technology	285
Appendix II Science Popularization Policies and Major Documents (in CD)	
<i>Outline of National Action Program for Scientific Literacy of All Chinese Citizens (2006-2010-2020).</i> State Council of PRC	
<i>Notice on Printing and Distributing "Work Regulations of the Leading Group on Scientific Literacy for All Chinese and Implementation Agenda for the 'Outline of National Action Program for Scientific Literacy of All Chinese Citizens'".</i> China Association for Science and Technology	
<i>Notice on Printing and Distributing "the Speech of the State Councillor CHEN Zhili at the First Meeting of the Leading Group on Scientific Literacy for All Chinese."</i> China Association for Science and Technology	

综 述

科普聚焦全民科学素质

2006年2月6日,国务院印发《全民科学素质行动计划纲要(2006~2010~2020年)》(以下简称《科学素质纲要》),并于3月20日向全社会正式颁布。这是贯彻落实《中华人民共和国科学技术普及法》和科学发展观的重要举措,是继1995年6月20日国务院颁布《全民健身计划纲要》,2001年9月20日中共中央颁布《公民道德建设实施纲要》后,国务院专门针对提高全民科学素质发布的纲领性文件。《科学素质纲要》指出了全民科学素质行动计划在“十一五”期间的目标、任务与措施和到2020年的阶段性目标。在这样的大背景下,科普工作的思路 and 重点实现了新的突破,形成了前所未有的新局面,科普聚焦全民科学素质成为2006年中国科普事业发展的显著特征。

一、《科学素质纲要》的颁布顺应世界科技进步和经济社会发展潮流,符合我国现阶段国情

现代科学技术的迅猛发展及其对经济社会的重大影响,使得公民具备基本科学素质的重要性日益显现,这表现为两个层面:一是从国家层面来讲,全民科学素质的整体水平直接影响到国家综合竞争力;二是从个体层面来讲,提高科学素质,对于增强公民获取和运用科技知识的能力、改善生活质量、实现全面发展、提高处理实际问题 and 参与公共事务的能力具有重要的影响。

(一) 提高公民科学素质已经成为世界各国提升综合国力的战略共识

联合国教科文组织指出:“缺乏技术知识,会使一个人在日常生活中越来越依赖他人,同时也限制了他的就业范围,增加了由于滥用技术而产生危害的可能性”,并提出“为生存而学习”的口号。美国科学促进会《面向全体美国人的科学》一书指出:“懂得科学、数学和技术基础知识的人是具有较强事业心和有自知之明的独立的人。”英国皇家学会《公众理解科学》报告中指出:“提高公众理解科学的水平是促进国家繁荣、提高公共决策和私人决策的质量、丰富个人生活的重要因素。”

当前,提高公民科学素质已经成为世界各国提升综合国力的战略共识,也已成为各国政府促进公众适应现代社会的重要措施。很多国家和地区都出台了相应的行动计划。联合国于1992年提出了2000⁺计划,该计划以建设“一个有科技素质公民的世界共同体”为重要起点,目的是唤起世界各国对全民科技脱盲的支持,推动有关国际合作。美国科学促进会1985年研究制定了一项致力于提高全体美国人科学素质的长远计划——“2061计划”,这一计划的提出对推动政府支持美国科学课程改革起到举足轻重的作用。欧盟在2003年实施了“科学与社会”战略计划,该计划是一项促进科技