

献给国际减灾十年

保护地质环境和防治地质灾害文集

为了锦绣中华更美好

张以诚 主编



中国科学技术出版社

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内 容 提 要

这是中国地质灾害研究会、中国地质报等5家单位，为了配合自1990年开始的“国际减灾10年”活动而举办的“保护地质环境和防治地质灾害”有奖征文的文集。作者大多是身居第一线和具有高级职称的专业人员，所撰文章有较高的水平，不仅言之有物，而且有的放矢，是有关专业人员十分珍贵的参考资料。

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为了锦绣中华
更美好

田纪云

For a more beautiful China
—Tian Jiyun, Vice Premier of the State
Council and Chairman of China National
Committee for the International Decade
for Natural Disasters Reduction

团结合作为改善
生态环境而奋斗

曲格平题

Unite and coordinate for the improve-
ment of ecologic environment
—Qu Geping, Director of the State
Bureau of Environment protection

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 孙
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For the conservation and continuous improve-
 ment of the human survival environment
 —Sun Shu, Director, Bureau of Natural
 Resources and Environment Sciences,
 Academia Sinica

为了锦绣中华更美好

依靠科技减灾

李绪鄂

For a more beautiful China, mitigate disasters depending on science and technology
—Li Xu'e, Standing Vice Minister of the State Science and Technology Commission

依靠科学技术 發揮

政府功能 提高防災意識

減輕災害損失

方樟順

Rely on science and technology, bring the government functions into play, enhance the sense of disasters prevention and mitigate the losses from disasters

—Fang Zhangshun, Director of the State Seismological Bureau

序

地球在其长达46亿年的极其漫长而又复杂的演化发展过程中，不仅衍生了人类，而且为人类的生存与发展提供了优美的生存环境和丰富的自然物质资源。但同时，包括地质作用在内的各种自然作用，也给人类带来了许多灾害，加之日益扩大的人类生产活动的影响，又加剧了自然灾害的后果，使人类栖息的环境空间遭到越来越广泛的破坏，并且严重地威胁着人类自身的生存与发展。这就是说，自然界哺育了人类，自然灾害又制约着人类社会的发展。人类几千年的文明史，在某种意义上说，就是一部不断认识自然、适应自然、改造自然、与自然灾害进行顽强拚搏的可歌可泣的斗争史。

当今与未来时代，全球人类正面临着人口膨胀、资源短缺和环境恶化三大难题的严峻挑战，如何做好地质灾害的监测防治工作，以保护环境和减轻自然灾害，是全人类面临的重大课题。

我国地域辽阔，人口众多，地质地理条件复杂，水、旱、风、雹、地震、崩塌、滑坡、泥石流、地面沉降、海水倒灌、地裂缝、土壤盐渍化、沙漠化、水土流失等各种自然—地质灾害频繁发生，不仅给人民生命财产造成严重损失，也成为发展国民经济的一大制约因素。由此可见，地质环境保护和地质灾害评价、监测及防治工作，是我国地学界所面临的重大任务，它既是整个环境保护和防灾减灾的主要组成部分之一，也是地质工作的重要领域。大力加强并切实做好这方面的工作，是功在当代、利在千秋的伟大事业，不仅对于保障我国人民的生命财产、造福子孙后

代、促进我国社会主义现代化建设有重要意义，而且对全球环境的改善，造福整个人类，也是个重大贡献。

为了配合从1990年开始的“国际减灾10年”活动，推动我国地质环境保护和地质灾害防治工作的发展，中国地质灾害研究会、中国地质报社、中国水文地质工程地质勘察院、地矿部环境地质研究所和地矿部地质环境管理司等单位，共同举办了《地质环境保护和地质灾害防治》有奖征文活动。征文评委会由国务院9个部委和中央9家新闻单位领导同志及专家组成，征文活动历时半年之久，共收到应征文稿600多篇，涵盖了地质环境保护和地质灾害防治的主要领域，普及了知识，宣传了我国在这些领域所取得的成就，反映了我国环境地质和地质灾害研究及防治工作的历史和现状，总结了经验，揭示了存在的问题，同时也介绍了国外的情况和经验，对环境地质和地质灾害知识是一次集中的高强度的宣传普及，对于提高广大群众和保护地质环境和防治地质灾害意识大有裨益。在全国各界的广泛关注和支持下，征文活动取得了圆满成功。征文活动结束后，经几位同志努力，由征文已刊和未刊文稿中择优选编，又补充了少数其他文稿，辑成《为了锦绣中华更美好》一书。国务院副总理、中国国际减灾10年委员会主任田纪云同志为本书题写了书名，李绪鄂、曲格平、方樟顺、孙枢等有关部门领导同志为本书题了词，这是对地质环境保护和地质灾害防治工作的一个巨大鼓舞和支持。我相信，这本书的出版，一定会受到广大读者的欢迎，从而进一步促进地质环境保护和地质灾害防治知识的宣传普及，有助于推动我国这项事业的发展。

朱训
一九九四年十月

PREFACE

In the extremely long and complicated process of evolution and development over 4.6 billion years, the earth has not only evolved mankind but also provided a beautiful environment and rich natural material resources for the existence and development of mankind. However, various natural processes including geological processes have, at the same time, brought a lot of disasters to mankind. In addition, the effects induced by increasingly expanded production activities by mankind, have intensified the consequences of natural disasters, which severely destroy the environmental space for human survival and threaten the existence and development of mankind. That is to say, it is the nature that fosters mankind, but natural disasters constrain the development of the human society at the same time. The civilization history of mankind over several thousand years is, in some sense, an epic one of continuously learning the nature, adapting itself to the nature, transforming the nature and indomitably fighting against natural disasters.

In modern and future times, the whole mankind is facing the severe challenges of three big difficult problems, i.e., population growth, resource shortage and environment deterioration. A major subject the whole mankind is facing is how to do a good job of monitoring and control of geological hazards so as to conserve the environment and mitigate the natural

disasters.

Our country has a broad territory, big population and complicated geological and geographical conditions. Different kinds of natural geological disasters, like flood, draught, wind, hail, earthquake, ground collapse, landslide, debris flow, ground subsidence, sea water intrusion, geofracture, soil salinization, desertification, water and soil loss and so on, occur frequently, which not only cause great losses to the people's life and properties but also become a major constraint factor for the development of national economy. It can be seen that the conservation of geological environment and evaluation, monitoring and control of geological hazards are great tasks of the geoscientific circles in our country which is not only a main component of the whole environment conservation and disasters mitigation work but also an important field of geological work. To greatly enhance and consciously conduct this aspect of work is a great activity which is creditable to the modern times and beneficial for centuries. It not only has a great significance for safeguarding the people's life and properties, benefiting future generations and promoting the socialist modernization construction in our country, but also is a major contribution to the improvement of the whole global environment and to the benefit of the whole mankind.

In collaboration with the activities of the International Decade for Natural Disasters Reduction star-

ting 1990, and promoting the development of the conservation of geological environment and control of geological hazards in our country, China Association of Geological Hazards Research, China Geological News Press, China Institute of Hydrogeological and Engineering Geological Exploration, Institute of Environmental Geology of the Ministry of Geology and Mineral Resources, Department of Geological Environment of the Ministry of Geology and Mineral Resources and other institutions jointly preside the rewardable solicitation activities of papers on "Conservation of Geological Environment and Control of Geological Hazards". The Evaluation Committee of Paper Solicitation was composed of leading comrades and experts from nine ministries and commissions under the State Council and nine central news agencies. The activities lasted for half a year. More than 600 papers were collected covering the main fields of the conservation of geological environment and the control of geological hazards, which has popularized knowledge, disseminated the achievements obtained in these fields of our country, reflected the research on environmental geology and geological hazards as well as the history and status of their control, summed up experiences, disclosed the existing problems and at the same time introduced the situation and experience abroad. It is a centralized and highly intensified popularization and dissemination of knowledge of environmental geology and geological hazards, which is greatly beneficial to

enhancing the sense of broad masses about the conservation of geological environment and control of geological hazards. Under the care and support of all walks of life in the whole country, the paper solicitation activities achieved complete success. After that some comrades endeavored to have edited a book "For a more beautiful China" on the basis of selection and compilation of the published and unpublished papers with addition of a few other manuscripts. The book was autographed by Comrade Tian Jiyun, Vice Premier of the State Council and Chairman of China National Committee for International Decade for Natural Disasters Reduction and also received inscriptions from leading comrades of related departments, Li Xu'e, Qu Geping, Fang Zhangshun and Sun Shu which acts as an encourage and support to the conservation of geological environment and control of geological hazards. I believe that the publication of the book will surely receive welcome from broad readers, thereby further promoting the popularization and dissemination of the knowledge of the conservation of geological environment and control of geological hazards and being helpful to the development of this activity in our country.

Zhu Xun

Minister of Geology and Mineral Resources and
President of China Association of Geological
Hazards Research

April 12, 1991

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