

Considering ways to improve the management of natural resources

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ABSTRACT

A history of low-level to advanced growth may be seen in the evolution of human society over the past tens of thousands of years, from the earliest forms of civilization to the agricultural, industrial, and ecological ones. "Respecting nature, conforming with nature, and protecting nature" is the cornerstone of the ecological civilization and

is crucial to the peaceful coexistence of man and nature. To achieve the win-win of resource development and environmental protection, this peaceful coexistence necessitates continually improving systems and mechanisms for the development of national space, the conservation and utilization of natural resources, and the protection of the ecological environment.

Key Words: *Natural resource; Earth critical zone; International social science Counsel*

INTRODUCTION

Human society has evolved over the past tens of thousands of years from a prehistoric society to an agricultural civilization, an industrial civilization, and finally, an ecological civilization, which represents a progression from primitive to advanced development. For man and nature to coexist peacefully, "respecting nature, complying with nature, and protecting nature" is at the core of ecological civilization. To achieve a win-win of resource development and environmental protection, this peaceful coexistence necessitates continually improving systems and mechanisms for national space development, resource conservation, and use, and ecological environment protection. It is a millennia-long strategy to build an ecological society based on coordinated control of the environment. In terms of fully enacting the concepts of "Big Resources" and "Big Science," the establishment of the Ministry of Natural Resources in April 2018 is a turning point for China's management of its natural resources. This is also a significant step toward advancing the development of an ecological civilization. We must create a strong technical support system, assemble a highly skilled and competent geologic survey team, and follow the direction of Earth System Science to substantially strengthen the unified management system and scientific restoration capability of natural resources.

Earth System Science (ESS) is the core theoretical foundation of the unified management and systemic restoration of natural resources

The earth is a vast, intricate system that can be visualized in space as having several layers and processes occurring on various spatial and temporal scales. According to Earth system science, the atmosphere, biosphere, lithosphere, and mantle/core are all part of a single, cohesive system. It seeks to construct the earth's evolutionary framework through long-span multidisciplinary research, comprehend current earth processes and mechanisms, and forecast potential future changes. In terms of geographical scale, the research topic of Earth System Science ranges from molecular structure to the global scale, and in terms of temporal scale, from the evolution over a hundred million years to brief rupture and deformation.

Since the 1980s, Earth System Science has advanced and changed continuously. One may say that if the theory of evolution was the biggest advancement in earth science in the 19th century, the theory of plate tectonics was the breakthrough in the 20th century, and the theory of Earth System Science is the advancement in the 21st century. In order to address the unprecedented environmental and economic challenges, senior officials of the U.S. federal government strongly advocated in 2008 for the creation of an independent agency for Earth System Science by merging the National Oceanic and Atmospheric Administration (NOAA) and United States Geological Survey (USGS). This strongly suggests that Earth System Science is having a significant impact on the reformation and advancement of natural science institutions. In the future, Earth System Science, should pay special attention to the three key issues: the shallow crust

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well as establish response mechanisms for risk mitigation. A vital part of a technical system is investigation and assessment, probing and monitoring, and modeling and prediction. We made effective efforts in the past to investigate and assess the situation, and we gathered a ton of knowledge and data about numerous categories of natural resources. Probing and monitoring have gradually improved over the past few years, but simulation and prediction are just getting started and require quick reinforcement.

Create an integrated geological survey team system that is of the highest caliber, complete, capable, and robust in order to manage natural resources holistically and restore them systemically

We must set up an integrated geological system made up of highly skilled and specialized teams in order to achieve integrated management of natural resources. Since it was restructured in 1996, USGS, which is associated with the U.S. Interior Department, which is in charge of holistically overseeing natural resources, has evolved into a federal institution with responsibilities for natural resource inquiry and evaluation. An excellent example of a thorough natural resource survey is Geoscience Australia, which was established in 2001 as a result of the emergence of the Australian Surveying and Land Information Group (AUSLIG) and the Australian Geological Survey Organization (AGSO). Integrated management of natural resources urgently demands the establishment of a research institute for Earth System Science, whether based on global experiences or the growth of Earth System Science.

The research institution would have the function to thoroughly investigate and evaluate varieties of natural resources including land, mineral resources, marine resources, water, forests, and grass. It is expected that this institution can play a unique role in the production, integration, and release of authoritative data on natural resources, evaluation of environmental resource carrying capacity, homeland space suitability, and systematic simulation along with the prediction of natural resources development and exploitation.

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