

Changes in China's Resource and Environmental Audit System and Its Implications

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Abstract: As an important initiative of national environmental governance, resource and environmental auditing aims to monitor the behavior of local governments in the process of ecological and environmental governance, and plays an increasingly important role in the sustainable development of the country and society. Through the analysis of the changes in China's resource and environmental audit system, from the perspectives of policy and practice, it is found that China's resource and environmental audit has gone through four stages: exploration, start-up, development, and deepening. On this basis, a prospective analysis of resource and environmental auditing in China is presented, and thoughts are given on how to promote the modernization of the national ecological and environmental governance system and governance capacity and the development of resource and environmental auditing.

1. Introduction

Throughout the practice of eco-environmental governance, it has been found that there are serious “market failures” and “government failures” in the practice of public governance. Academics have elaborated on the phenomenon of the “tragedy of the commons” and the “prisoner's dilemma” in public governance, arguing that rational individuals maximize the use of public resources while avoiding obligations, and that individual “rational” behavior directly leads to the “tragedy” of the commons. The “tragedy” of the commons is a direct result of individual “rational” behavior. Buchanan directly points out that both “market failure” and “government failure” in the use of natural resources and ecological protection are inevitable outcomes, and that the key to solving the problem lies in the effectiveness of monitoring mechanisms. If the hardworking and free-riders are not effectively identified, there is no incentive for cooperative behavior through rewards and punishments, so only a sound monitoring mechanism can force decision-makers to take collective action. In China, resource and environmental audits play a supervisory role in three ways: to reveal, to punish and to counteract. The revealing function is to audit the auditees and publish the results and expose the problems to the public, so that local governments and authorities can improve their pollution prevention and control actions in consideration of the loss of reputation; the punishing function is to deal with the illegal and irregular problems identified by the audit and impose penalties or judicial referral, so that local governments and authorities are forced to stop their improper actions due to the economic loss or the loss of promotion capital; the defending function is to make recommendations on the general problems found by the audit, so that local governments and authorities can stop their improper actions. The defensive function is to make suggestions and recommendations on the widespread problems found by audits, so that local governments and functional departments can take the initiative to improve the institutional mechanism for pollution prevention and control and prevent possible problems in the future. In the context of ecological and environmental construction in the new era, it is of great practical significance to interpret the development of resource and environmental auditing in China from the perspective of institutional changes, which will provide guidance on how to deepen ecological and environmental governance.

2. Review of the Literature

2.1 Studies on Resource and Environmental Audits to Promote National Environmental Governance

Anna Ruban & Lars Rydén et al.'s empirical analysis based on empirical data from the US, Japan, the EU and others shows that environmental auditing is indeed an effective tool for environmental supervision and management. Yang Suchang, Ma Yahong and Lu Haiyan argue that environmental audits can continuously improve government public sector environmental governance policies in the process of risk prevention, revealing gaps, problem solving, evaluating effectiveness and policy restructuring. An empirical analysis by Zeng Changli and Li Jiangtao, using municipal-level panel data from 2005-2014 and a double-difference approach, showed that local government environmental audits significantly improved the domestic sewage treatment rate and the harmless waste treatment rate, with the former being more significantly affected by the special audit of the “three lakes and three rivers”. [1]Zhang Qi and Tan Zhidong's empirical results, based on firm-level data, show that pilot environmental audits, especially among state-owned enterprises, have stimulated local governments to grant environmental subsidies to enterprises and increase financial investment in environmental protection.[2] Based on provincial panel data, Yu Kaizhi, Wang Xiaojun and Zhang Nannan calculated the efficiency of air pollution control using PM2.5 removal and SO2 reduction as output indicators and found that national audits can largely improve the efficiency of air pollution control. [3]However, the results of an empirical study by Huang Rongbing, Zhao Qian and Wang Liyan on the impact of natural resource asset separation audits on air pollution prevention and control show that the pilot cities reduced PM2.5 emission concentrations and cut SO2 emission peaks, but did not improve the AQI (Air Quality Index) across the board, while providing an opportunity for local governments to take It also provides further empirical evidence for local governments to adopt “environmental qualification” measures in the air pollution control process.[4]

2.2 Studies on the Development Path of Resource and Environmental Auditing

Wang Dannong, a domestic scholar, takes the definition of resource and environmental auditing as an entry point, explains the effectiveness and problems of resource and environmental auditing in promoting the economic development approach, and puts forward suggestions to strengthen audit supervision in resource development and utilization, environmental safety and protection, ecological construction, and climate change. Ma Zhijuan and Wei Xiaoquan elaborate on the theoretical framework of government environmental auditing based on the realistic foundation of ecological civilization construction, and propose to strengthen the link between environmental auditing and environmental accountability as well as three ways to achieve it. Xing Xiangjuan and Chen Xihui take the current situation of resource and environmental auditing in China as an entry point and introduce the risk-oriented audit model into it, trying to explore a new area of resource and environmental auditing - biodiversity auditing. Three scholars, including Cai Chun, Xie Liufang and Wang Biaohua, analyse the environmental pollution data of provincial local governments from 2012-2016, and empirically test that there is a positive relationship between economic responsibility audits of leading cadres and local government governance, i.e., that the audits of responsibility promote the improvement of local government governance efficiency and the demonstration of the effect. Guo Pengfei elaborates on the logical lineage, theoretical representations and practical difficulties faced in the development of resource and environmental auditing in China, and on this basis puts forward policy recommendations for deepening resource and environmental auditing in China.

3. History of Institutional Change

Looking at the institutional changes of resource and environmental auditing in China, analyzed from both its policy and practice aspects, it can be divided into the exploration stage (1973-1997), the initial stage (1998-2002), the development stage (2003-2012) and the deepening stage

(2013-present), with a view to discovering the patterns of changes in resource and environmental auditing in different periods.

3.1 Exploratory Phase (1973-1997)

At this stage, China was mainly in the exploratory stage, focusing only on theoretical and policy discussions and neglecting some issues such as the practice of resource and environmental auditing. However, it is undeniable that the research at this stage laid a solid foundation for the subsequent stages of theoretical depth and practical activities.

Between 1973 and 1997, although the term environmental auditing had not yet appeared in the public eye and institutions related to environmental protection had not yet been established, many relevant laws and regulations were already in place. 1973 saw the regulation of permissible emissions and emission concentrations of three wastes in industrial emissions, but the concept of “environmental auditing” was not explicitly introduced. “In 1979, the Environmental Protection Law was promulgated, which included five major areas: protection of the environment, prevention and control of pollution, responsibility of environmental protection agencies, publicity and education, as well as rewards and punishments, etc. In 1982, the Constitution of the People's Republic of China was amended for the fourth time, emphasizing the content of environmental protection. Subsequently, between 1982 and 1997, 19 laws on environmental protection were promulgated, which laid a certain theoretical and institutional foundation for the development of resource and environmental auditing in China.

3.2 Start-Up Phase (1998-2002)

3.2.1 History of Policy

In 1998, a new phase of environmental auditing in China began with the establishment of the Department of Agricultural and Resource and Environmental Auditing. After that, China gradually began to conduct special audit investigations and supervise the rectification of funds related to energy, resources and the environment. At the same time, during the initial phase from 1998 to 2002, China developed and issued new standards for environmental protection, covering six major areas such as air, water and land. In addition, in 2002, the State Environmental Protection Administration (SEPA) introduced a comprehensive reform of the sewage charging system with the aim of improving the overall quality of the environment.

3.2.2 Evolution of Practice

In terms of audit themes, the earliest resource and environmental auditing practices carried out in China all belonged to financial audits, such as the exploration of projects such as the audit of funds for returning farmland to forests and the audit of special funds for land. This period mainly focused on financial audits of environmental protection funds, with some practical experience, but did not yet cover audits of environmental performance compliance or environmental project performance audits. But the start of the funds audit project laid a good foundation for the extension and expansion of the audit work afterwards.

3.3 Development Phase (2003-2012)

3.3.1 History of Policy

This stage is a period of continuous maturation of resource and environmental auditing. In this period, China has introduced many rules and regulations related to resource and environmental auditing. In 2007, the Chinese CPA Auditing Standards required the assurance and evaluation of environmental accounting information of listed companies, which provided a certain basis for auditing work. In July 2008, the Audit Office issued a five-year audit plan, which further proposed a separate project on resource and environmental auditing, forming six major types of audit operations. In 2009, the Audit Office issued the Opinions on Strengthening Resource and Environmental Audits, which elaborated on the main tasks of resource and environmental audits, including the implementation of laws and regulations, the use of project funds and the supervision

of the construction of relevant projects, etc. At the same time, the Opinions required environmental audits to be carried out at least once a year in each of the provincial and planned municipal audit offices, clearly setting out in 2010, new regulations on the audit of the responsibilities of leading cadres were issued, providing an institutional basis for the audit of the environmental performance of leading cadres while deepening the audit of economic responsibilities. In the same year, the revised National Auditing Standards of the People's Republic of China provided the basis for enforcement of government environmental audits, with the new standards explaining the effectiveness of financial and fiscal revenues and expenditures, while explicitly including environmental benefits in the effectiveness. 2011 saw the Audit Commission clarify the requirements for audit authorities at all levels to conduct environmental legal compliance audits, financial audits of environmental funds and performance audits of environmental projects, in order to promote the implementation of basic national policies. The Audit Office has also clarified the requirements for auditors at all levels to conduct environmental legal compliance audits, financial audits of environmental funds and performance audits of environmental projects to promote the implementation of basic national policies. As a result, resource and environmental audits have become widespread across the country, entering a new phase of environmental audit development.

3.3.2 Evolution of Practice

The audit areas expanded during this period, gradually expanding to include water basin resources, engineering and construction environmental protection, natural forest resources and mineral resources. Particularly noteworthy are some of the highly representative and landmark resource and environmental auditing projects carried out during this period. In 2003, the Audit Office audited the Three Gorges reservoir area, finding problems such as false claims and unauthorized diversion of water pollution prevention funds to purchase fancy cars and making rectification requests; in 2004, it also audited four key basins, namely Taihu Lake, Huai River, Hai River and Liao River, finding a series of problems in funding and project management and making rectification requests; in 2005, it audited and investigated the situation related to the Qinghai-Tibet Railway, which had a significant impact on enhancing the relevant In 2006, it audited the funds for the natural forest resources protection project, assessed and investigated the effectiveness of the implementation of some of the projects, and made effective recommendations on the issues identified. In 2008, the Audit Office audited and investigated the energy consumption and other aspects of 41 central enterprises; in 2009, it audited and investigated energy conservation and emission reduction in nearly 20 provinces, municipalities and autonomous regions in the power and other industries. The audit field has continued to expand, theoretical and practical work has been strengthened, and the audit object has shifted from a single natural resource element to the whole element of the ecosystem.

In 2008, the Audit Office conducted a special audit of water pollution prevention and control in the Bohai Sea, pointing out that while municipalities had achieved good results in prevention and control, they still had not fully implemented water pollution prevention and control measures, and there was still incomplete supervision and management of the sea and irregular collection and use of funds. In 2010, the Audit Office conducted a special fund audit of the Yellow River Basin and found that the units concerned had failed to plan the construction progress of treatment projects rationally, used funds irregularly and occupied river channels, etc. In 2012, the Audit Office audited a total of 1,139 energy conservation and emission reduction projects. During this period, audit practice gradually transitioned to performance auditing, placing higher demands on resource and environmental audits in terms of ecological and environmental governance.

3.4 Deepening Phase (2013-Present)

3.4.1 History of Policy

During this period, the 18th National Congress wrote the construction of ecological civilization into the Party Charter and incorporated it into the overall layout of the socialist cause with Chinese characteristics, heralding a greater development pattern for resource and environmental auditing.

In November 2013, the Decision of the Central Committee of the Communist Party of China on Several Major Issues of Comprehensively Deepening Reform proposed the exploration of the compilation of a natural resources balance sheet, and in May 2015, the State Council put forward higher requirements for the performance appraisal system and the compilation of a natural resources balance sheet. In the same year, the General Programme for the Reform of the Ecological Civilization System issued by the Central Committee of the Communist Party of China and the State Council once again emphasized the importance of the out-of-office audit in the evaluation and assessment of ecological civilization performance, and promoted a lifelong accountability system for ecological and environmental damage. In 2016, it was made clear that the importance of the out-of-office audit of natural resources assets was becoming increasingly prominent, and that the audit of resources and the environment should be increased. In 2017, the “Leading Cadres' Natural Resources Assets Provisions on Exit Audit (for Trial Implementation)”, which required comprehensive audit results and objective evaluation of the performance of responsibilities, was promoted for full and universal implementation after three years of piloting, a milestone in the history of the development of resource and environmental auditing in China. At the same time, the regulations require that audit results be classified into five grades according to certain criteria and used as a basis for cadre promotion. In October 2019, the Fourth Plenary Session of the 19th CPC Central Committee clearly put forward that outgoing audits are of great significance in promoting the construction of ecological civilization. This series of institutional construction promotes the high-quality and standardized development of resource and environmental auditing in China.

3.4.2 Evolution of Practice

And a series of representative resource and environmental auditing practices have been carried out during this period. In the course of development, fruitful explorations were made in the identification of audit priorities, the measurement of audit evaluation criteria and the application of audit results. In 2015, the Audit Office audited and investigated 883 water pollution prevention and control projects in 18 provinces, municipalities and autonomous regions. In the following two years, the Audit Office audited key special funds for energy conservation and environmental protection and special funds for agriculture-related water conservancy in 18 provinces, cities and autonomous regions. In the same year, to implement the 13th Five-Year Plan, the Audit Office conducted an audit of ecological and environmental protection policies, identifying issues that had not been effectively implemented and weaknesses in pollution prevention and control and proposing rectification. 2019 saw the Audit Office audit the ecological and environmental management of the Bohai Sea region. The audit practice in this period was focused on major national strategies and took the opportunity of outgoing audits to promote the characteristics of environmental audits in terms of objectives, standards and application, in line with the development requirements of national ecological governance in the new era.

4. Conclusions and Insights

The institutional evolution of resource and environmental auditing shows that China's resource and environmental auditing has gone through four stages: exploration, start-up, development and deepening. The whole process largely started with pilot system innovation, with some successful experiences being achieved and then extended and replicated from point to point, and finally the state then co-ordinated and established it as a formal institutional arrangement from the top down. The different needs for environmental protection at different times have led to changes in the field, content and methodology of resource and environmental auditing.

Through the above experience reflection on how to deepen the development of resource and environmental auditing to get the following inspiration.

First, we must adhere to the use of integrated thinking. Integrated thinking promotes the development of audit scope from local to “full coverage”. On the one hand, we have used the integrated audit model to carry out multiple projects simultaneously to maximize coverage and improve the utilization of human and material resources; on the other hand, we have carried out

performance audits and integrated natural resource audits and economic responsibility audits of leading cadres, with several audit teams being both independent and integrated with each other in the implementation plan, working papers and audit reports of performance audits. On the other hand, while carrying out performance audits, the auditing teams are independent of each other and integrated with each other, so that the implementation plan, working papers and audit reports of performance audits fully integrate the contents of natural resources audits and economic responsibility audits to achieve “one fruit for many uses”.

Second, we should adhere to the government-led mandatory model. Increase the cost of violating laws and regulations, and give comprehensive play to the role of various reward and punishment mechanisms such as internal party sanctions, administrative treatment, legal penalties, as well as assessment constraints and promotion restrictions, to raise the cost of environmental pollution violations and change the utility of local governments and authorities so as to promote the smooth transformation and upgrading of their pollution prevention and control strategies. At the same time, auditors should choose appropriate audit evaluation standards for audit projects in the audit process, and when necessary, they can conduct joint audits with professionals, experts and scholars from higher education institutions to improve the credibility of audit results.

Third, we should adhere to the change to big data auditing. In response to the large volume of environmental resources, involving a wide range of characteristics, coupled with the limitations of audit resources, in a situation of excess demand and insufficient supply, in order to balance the demand for environmental protection and the supply of audit resources, and actively explore the use of big data technology in the audit process. Firstly, increase the collection of geographic information in the field of natural resource assets and ecological environment, such as the use of GPS, GIS, satellite remote sensing images, aerial mapping and other information processing technologies; secondly, deep excavation and analysis, financial structured data and spatial data analysis and collaborative processing to improve the comprehensive use of electronic data in environmental auditing.

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