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硕 士 学 位 论 文

水环境保护投资优化研究

Study on the Optimization of Water Environmental
Investment

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摘要

20世纪70年代末期以来，随着中国经济持续快速发展，发达国家上百年工业化过程中分阶段出现的环境问题在中国集中出现，环境与发展的矛盾日益突出。为此，全国各地区、各部门不断加大环境保护工作力度，并取得了积极的进展。

以政府为主导的多元环保投资是环境保护的主要推动力，其大小和效果关系到污染控制、环境建设和生态保护，关系到生态环境质量的改善，最终关系到对经济发展的保证和支持程度。近二十年来，我国经济高速发展，综合国力明显增强，与此同时，环境保护投资也有较大的增长。

然而，环保投资领域还存在许多问题亟待解决，突出表现在：环境保护投入效益不高，缺乏规范化的投入效益评价体系；环境保护的投入结构和方向不尽合理，又缺乏有效的管理和政策机制引导。

本文在中国环境保护投资由分散治理向综合治理方向发展的大背景下，查阅了我国水环境演变状况和环保投资发展动态的相关文献，着重研究福建省九龙江流域的水环境保投资状况，旨在提高其投资效率。文章以九龙江流域水环境保护相关的大量基础数据为前提，运用费用—效益分析方法将环保投资的收益货币化，并分别以环保投资最小化、污染物削减量最大化和环境效益最大化为目标，对水环境保护投资进行整体优化。

文章统筹考虑了流域的污染源分布、比例、上下游区域的产业结构以及污染物的降解等问题，以九龙江环境容量为杠杆和环境目标，通过运用多目标决策相关理论与模型，最终实现环境保护投入资本在不同县区和不同污染源治理之间的统筹分配。

关键词：环保投资 优化 水环境

Abstract

Since 1970s, under the background of Chinese rapid and continuous economic development, the environmental problems which emerged at different stage in the developed countries during their hundreds-of-year industrialization have kept coming out intensively in China. The conflicts between environment and development grow more and more serious.

The multiplicity of environmental investment under the orientation of government is the main driving force behind environmental protection. The amount of environmental protection investment and its effect are in relation to pollution control, environmental construction and ecological protection; are in relation to the improvement of eco-environmental quality; finally are in relation to the degree that environment sustains and supports economic development. In the late twenty years, with high-speed economic development and enhancement of comprehensive national strength, environmental protection investment has grown at the same time.

However, there are still a lot of problems in the area of environmental investment, manifest in the following aspects: the efficiency using environmental investment is low, the lacking of standardized cost-benefit evaluating appraisal system, the unreasonableness concerning the structure and orientation of environmental investment and the lack of effective mechanism regarding to management and policy.

This thesis studies under the background that the direction of environmental investment in China is shifting from the decentralized governance to a centralized one. Referring to related literatures on how the water environment and the investment on it have changed in China, the focus was given to the environmental investment of Jiulong River watershed in Fujian province, aiming at enhance its efficiency. Using cost-benefit method to monetize profit of environmental investment, this paper optimizes environmental investment on the premise that substantive data can be obtained in the related area. The goal of practical study in Jiulong River watershed is to maximize the reduction rate of pollutants and the environmental benefit.

This paper takes into full consideration the distribution and ratio of pollution sources, industrial structure both upstream and downstream and retrogradation of pollutants in the study area. By utilizing environmental capacity as the lever and also environmental objects and multi-objective decision making theory as the method, this paper eventually optimizes the allocation of environmental investment to different districts and pollutant pollution sources.

Key Words: Environmental investment; optimization; water environment

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