

DOCTORAL THESIS IN BRIEF**NGUYEN VAN DIEM. *Environmental protection policies from Hanoi's practical context****Major: Public Policy**Code: 9.34.04.02*

In recent years, Hanoi has experienced remarkable socio-economic growth and achieved significant accomplishments. However, the city is simultaneously confronting environmental pollution challenges, which are increasing in both scale and complexity, seriously affecting residents' living conditions and hindering socio-economic development. In response, numerous environmental protection policies have been introduced from multiple perspectives and across various areas. This dissertation contributes to clarifying both the theoretical and practical aspects of environmental issues and environmental protection policies in Hanoi during the 2010-2023 period.

Excluding the Introduction, Conclusion, and References, the dissertation is organized into four chapters: 1- Literature review. 2- Theoretical framework of environmental protection policies. 3- Current status of environmental protection policies in Hanoi City. 4- Solutions for improving environmental protection policies from Hanoi's practical context. The following highlights the key findings of the dissertation. Soil pollution primarily stems from domestic waste emissions, particularly solid waste, and the overuse of chemical fertilizers as well as pesticides in agricultural production. Soil samples collected from iron recycling areas demonstrate heavy metal concentrations exceeding the permissible limits by 1.2 to 1.4 times compared with the QCVN 03:2008/BTNMT standard. In several

intensive agricultural zones, the use of phosphate fertilizers for vegetables and flowers exceeds the recommended levels by 1.0 to 1.9 times. Only about 30% of the phosphorus applied is absorbed by crops, resulting in phosphorus accumulation in the soil and an adverse shift in soil pH.

Surface water pollution, the degradation and contamination of groundwater in Hanoi have shown a significant upward trend, particularly in densely populated areas and traditional craft villages. According to the dissertation, studies between 2016 and 2021 have indicated that Hanoi's groundwater is in general contaminated with ammonia (NH_4^+) with the permissible concentration below 1.5 mg/liter, while many areas such as Ha Dinh, Phap Van, and Dinh Cong exhibit contamination levels 20 to 30 times higher. In some locations, including Tuong Mai and Nhon, the NH_4^+ concentration exceeds the permissible limit by more than 10 times, with the affected groundwater area reaching nearly 10 km². When evaluating the quality of groundwater used for domestic purposes, several studies have found that it contains bacteria and is contaminated with *E. coli* and *Coliform*, especially in newly developed urban areas such as Trung Hoa - Nhan Chinh and Dai Kim.

Air pollution in Hanoi has become an extremely serious issue, primarily driven by fine particulate matter (PM_{2.5}) and toxic gases. The dissertation indicates that monitoring data from 2011 to 2015 revealed a rapid increase in PM_{2.5} concentrations, peaking in 2015 at 50 $\mu\text{g}/\text{m}^3$, five times higher than the World Health Organization's safety limit of 10 $\mu\text{g}/\text{m}^3$. During the 2016-2021 period, these concentrations persistently remained high. In 2019 alone, Hanoi recorded six episodes of air pollution caused

by particulate matter, five of which occurred during the winter season, when the 24-hour average PM_{2.5} concentration exceeded the permissible level by 2 to 3 times. Moreover, Hanoi's air quality is further degraded by emissions of gases such as SO₂, CO₂, CO, and NO_x, particularly in industrial zones and along major transportation routes. Statistics from the Hanoi Department of Natural Resources and Environment show that between 2011 and 2021, industrial activities in the city emitted approximately 120,000 tons of dust and smoke, 16,000 tons of SO₂, and 86,000 tons of CO₂. Transportation vehicles also represent a significant source of emissions. The dissertation points out that this situation primarily stems from the pressures of a densely populated and rapidly developing urban economy, compounded by limited resources for policy implementation, particularly financial constraints, and the generally low public and social awareness regarding environmental protection.

Regarding the environmental protection (EP) policy system in Hanoi, the author points out that statistical analysis and empirical assessment indicate the system is relatively comprehensive, encompassing the major components of environmental protection policies. Fundamentally, this policy framework centers on four main areas, namely soil protection, water protection, air protection, and biodiversity conservation. During the study period, these areas were addressed through detailed policies, legal normative documents, and administrative regulations promulgated by the city's authorities at various levels to regulate and guide implementation. However, the large number and complexity of these policies, characterized by multiple administrative levels, make them difficult to comprehend, monitor, and apply effectively. Moreover, the limited capacity of those involved in

policy formulation and implementation has resulted in many incomprehensive and imprecise policy adjustments, while the overall effectiveness of policy execution remains constrained.

The application of environmental protection policies in Hanoi indicates that local authorities have undertaken a range of measures aimed at preventing environmental pollution and protecting biodiversity, restoring contaminated areas, and applying new technologies to forecast and address environmental challenges. Nevertheless, despite these efforts, numerous issues within the EP policy framework remain either unresolved or ineffectively addressed. The implementation of EP policies has not yet kept pace with the rapid pollution. In addition, policy formulation remains incomprehensive and delayed. Moreover, policy execution is inconsistent and ineffective; and available resources are both limited and unevenly distributed. As a result, environmental pollution in Hanoi persists as an acute and pressing challenge that demands urgent and decisive policy responses.

The dissertation emphasizes that, given the current situation, it is essential to propose appropriate solutions to improve and strengthen the implementation of environmental protection (EP) policies in Hanoi, with the goal of enhancing local environmental conditions and fostering a clean and safe natural environment. The provided measures in the dissertation primarily focus on addressing the key obstacles hindering the effective implementation of EP policies.

The dissertation was successfully defended before the Doctoral Dissertation Evaluation Committee at the Graduate Academy of Social Sciences in 2024.

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