ENVIRONMENT REGULATIONS FOR CONSTRUCTING INDUSTRIAL PARKS AND CLUSTERS VIA A CASE IN HANOI - AND ENVIRONMENT PROTECTION LAW

a Nguyen Trong Diep, b Nguyen Xuan Hai, c Le Ngoc Nuong, d Dinh Tran Ngoc Hien

ABSTRACT

Objective: The primary objective of this study is to examine the establishment of industrial parks and clusters, focusing on a case study in Hanoi, and its relationship with environment protection laws. The study aims to achieve this objective through the utilization of descriptive methods, qualitative analysis techniques including synthesis and inductive reasoning.

Method: In pursuit of the study’s objective, descriptive methods are employed to investigate the development of industrial parks and clusters in the context of environment protection regulations. Qualitative analysis techniques such as synthesis and inductive reasoning are applied to analyze the collected data and draw meaningful insights.

Result: The outcomes of the study reveal the formulation of an effective environment protection model suitable for the context of industrial park and cluster development. The study also highlights a crucial finding that investors engaged in constructing and operating technical infrastructure within these clusters bear significant responsibilities and obligations for ensuring environmental protection.

Conclusion: Based on the analysis conducted, the study concludes that the management and oversight of environmental matters by governmental authorities exhibit certain weaknesses. Specifically, inspections and evaluations related to environment protection are identified as areas needing improvement. Moreover, compliance with environmental protection regulations among industrial clusters (CCNs) is reported to be insufficient. Notably, a mere five out of the operational CCNs possess wastewater treatment facilities. Furthermore, many industrial zones lack comprehensive plans for centralized water supply systems and contravene regulations by undertaking secondary projects to extract underground water for production purposes. The study also underscores that a substantial portion of these secondary investment projects fail to adhere to stipulated criteria for tree coverage and other environmental protection regulations.

Keywords: revisions, regulations, consumer protection, environment law, clusters.

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REGULAMENTOS AMBIENTAIS PARA A CONSTRUÇÃO DE PARQUES INDUSTRIAIS E CLUSTERS ATRAVÉS DE UM CASO EM HANÓI - E LEI DE PROTEÇÃO AMBIENTAL

RESUMO

Objetivo: O objetivo principal deste estudo é examinar o estabelecimento de parques industriais e clusters, com foco em um estudo de caso em Hanoi, e sua relação com as leis de proteção ambiental. O estudo visa alcançar este objetivo através da utilização de métodos descritivos, técnicas de análise qualitativa, incluindo síntese e raciocínio indutivo.

Método: Na busca do objetivo do estudo, são empregados métodos descritivos para investigar o desenvolvimento de parques industriais e clusters no contexto da regulamentação de proteção ambiental. Técnicas de análise qualitativa, como síntese e raciocínio indutivo, são aplicadas para analisar os dados coletados e obter insights significativos.

Resultado: Os resultados do estudo revelam a formulação de um modelo eficaz de proteção ambiental adequado para o contexto do desenvolvimento de parques industriais e clusters. O estudo também destaca uma conclusão crucial de que os investidores envolvidos na construção e operação de infraestruturas técnicas dentro desses clusters assumem responsabilidades e obrigações significativas para garantir a proteção ambiental.

Conclusão: Com base na análise realizada, o estudo conclui que a gestão e a supervisão de questões ambientais por autoridades governamentais apresentam certas deficiências. Concretamente, as inspeções e avaliações relacionadas com a proteção do ambiente são identificadas como áreas que necessitam de melhorias. Além disso, o cumprimento das normas de proteção ambiental pelos agrupamentos industriais (NCN) é considerado insuficiente. Nomeadamente, apenas cinco dos NCN operacionais possuem instalações de tratamento de águas residuais. Além disso, muitas zonas industriais carecem de planos abrangentes para sistemas centralizados de abastecimento de água e violam a regulamentação ao empreender projetos secundários para extrair água subterrânea para fins de produção. O estudo também destaca que uma parte substancial desses projetos de investimento secundário não cumpre os critérios estipulados para a cobertura de árvores e outras normas de proteção ambiental.

Palavras-chave: revisões, regulamentos, proteção do consumidor, legislação ambiental, clusters.

1 INTRODUCTION

The topic focuses on studying Relevant Revisions of rules and regulations for building industrial parks and clusters via a case in Hanoi - And environment protection law.

• Question 1: Evaluation of situation of industrial clusters (infrastructures) with a case in Vietnam?
• Question 2: What are Relevant Revisions of rules and regulations for protecting consumers and workers in industrial parks and clusters?

2 THEORETICAL FRAMEWORK

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Content, results</th>
</tr>
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<tbody>
<tr>
<td>Adario and Blasio</td>
<td>2005</td>
<td>provides an empirical investigation of the advantages accruing to workers in industrial clusters. Using a unique data set based on the Cluster Mapping Project of the Italian National Statistical Institute, they examine whether industry agglomeration leads to wage and labor mobility differentials. Authors estimate complete Mincerian wage equations, investigating whether returns to seniority and education are a possible source of differentiation. And find that working in an industrial cluster reduces the returns to education, does not affect the returns to seniority, and does not provide average wage premia. On the other hand, industrial agglomeration positively affects the likelihood of being employed, of starting a business, and of making a transition from payroll employment to entrepreneurship; it also increases blue-collar worker mobility across jobs.</td>
</tr>
<tr>
<td>Porter</td>
<td>1985</td>
<td>Porter merely popularized the theoretical achievements of Marshall; nevertheless, Porter is seen as the precursor of the economic aspect of clusters. According to his definition a cluster is a geographically concentrated, competitive, cooperative group of interrelated companies, specialized suppliers, service providers, and finally, companies operating in related sectors and associated institutions.</td>
</tr>
<tr>
<td>Pelc et al</td>
<td>2022</td>
<td>The relationships between the Green Management Style (GMS) and Natural Environment Protection Strategies (NEPS) are rarely explored in scientific research. The nature of these relations is not fully explained in management sciences, and although these connections are important determinants for the choice between temporary and Sustainable Development (SD) in business organizations, they are accompanied by research gaps. The first research gap is recognized qualitatively in the literature review, which indicates the scarcity of theoretical research in the areas of NEPS and the GMS concerning Sustainable Development Goals (SGDs). The second quantitative research gap is dedicated to the rarity of empirical studies among business organizations engaged in NEPS and the GMS’s implementation. The third qualitative research gap lies in the difficulty of translating scientific assumptions from the theoretical background into business practice.</td>
</tr>
<tr>
<td>Ciot</td>
<td>2022</td>
<td>Environmental strategies are harbored in the European Union strategic documents dedicated to Sustainable Development (SD) and the realization of Sustainable Development Goals (SDGs)</td>
</tr>
<tr>
<td>Minglu et al</td>
<td>2023</td>
<td>investigates the role of the watercolour painting market environment in China as a moderating variable in the relationship between the current state of the watercolour painting market in China and its future development.</td>
</tr>
<tr>
<td>Sulaiman et al</td>
<td>2023</td>
<td>investigate the green entrepreneurial inclination of youth and sustainable development in Sultanate of Oman. It has a secondary objective of stimulating more research in areas identified as still being under-explored.</td>
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</table>

Source: author synthesis

Beside, Derlekuewicz et al(2020) stated that Sustainable development is one of the fundamental and most important objectives of the worldwide policy. The conducted research shows that sustainable development (SD) is increasingly important in the consciousness of the EU countries, which can be viewed through a prism of the
undertaken projects. This paper raises the issue of clusters and their significance in the development of a sustainable economy. The article explores trends in the European Union policy related to sustainable development and clusters. The purpose of this study is to find an answer to the following questions: How can clusters contribute to sustainable development and what are the key factors that ensure this process? To achieve the goal of the article a systematic study of the literature and reports was carried out. Moreover, the analysis of the activity of European clusters in the context of sustainable development was performed. Next, the examples of cluster projects focused on sustainable development were presented. It was shown that the clusters contribute a smarter and sustainable development by succeeding in technological and scientific results, developing new technologies for emerging industries, creating new business activities, enticing major technology companies, and connecting local firms into world-class value systems. Furthermore, the clusters participate actively in sustainable development as they promote knowledge creation, joint learning, technology transfer, as well as collaboration, and sustainable innovations. Finally, clusters facilitate the sustainable upgrading of small and medium enterprises and encourage the participation of stakeholders in the process of sustainable development.

An industrial cluster (CCN) is a territorial form of production organization, it is an inevitable result of the process of agglomeration and concentration of production, of the process of rearranging and reorganizing production and business establishments in order to overcome restore environmental pollution, create better infrastructure for production and improve the competitiveness of production and business establishments in the cluster. Cluster was formed and developed after the Decision No. 132/2000/QD - TTg dated 24/11/2000 on a number of policies to encourage the development of rural industries.

3 METHODOLOGY

Authors use both qualitative and historical research methods. On the basis of that authors use case study in Hanoi city Vietnam for analysis.

Then this study also uses observations and dialectical methods.
4 RESULTS AND DISCUSSION

4.1 BACKGROUND INFORMATION - INFRASTRUCTURES OF CLUSTERS

Industrial clusters stimulate economic growth and have created many more jobs. However, environmental pollution is still a dilemma and has not been overcome in industrial parks.

The main reasons for the above situation are:

- The production and business establishments in the industrial zones are not aware of the dangerous level of environmental pollution caused by themselves to the community;
- Many industrial clusters were formed spontaneously, there was no planning to build environmental treatment infrastructure from the beginning. Many industrial clusters are located interspersed with households, so it is difficult to handle the environment;
- The technological level at CCN is still backward, mainly in the transition from manual to mechanized production;
- The management and protection of the environment have not been paid due attention. Most communes do not have staff with expertise in the environment, but only part-time. Financial resources for investment in environmental protection in localities are limited. The annual funding for this work is almost nonexistent;
- There is no mandatory sanctions of State management agencies;
- The production or import of equipment, machinery and technology for environmental treatment has not been researched, and suitable to the financial capacity of production and business establishments.

Building social infrastructure:

The activities of CCNs create a great demand for social facilities such as health (medical station), culture (culture house, club...), education (school, training institution), physical training, sports, commerce (markets, shops, banks), public services (post offices, libraries, etc.), trees, lakes, etc., to ensure employees feel secure working at the facilities business establishments and have conditions for physical and intellectual development to meet the immediate and long-term needs of production and business establishments. The author would like to state the reality of some major social infrastructures, which are:

- Vocational training for industrial clusters
Up to now, there are 4 million farmers in Hanoi, of which about 2 million are of working age and about 40,000 workers have lost their jobs due to land acquisition. Although Hanoi's labor force is relatively large and is one of the cities with the highest number of trained workers compared to other industrial centers in the country, the proportion of trained laborers has only reached 45% of which vocationally trained workers reached 23%. The quality of workers with professional and technical qualifications is unevenly distributed, concentrated in urban areas and inner city districts. Therefore, Hanoi has paid great attention to the training of human resources in the countryside to meet the needs of rural development in general and for industrial zones in particular. By April 2011, 100% of Hanoi's localities had established a Steering Committee and issued documents directing the implementation of the training scheme for rural workers. In 2010, the City supported 4,290 rural workers to learn vocational training, of which 60% were agricultural apprentices, 40% were non-agricultural workers; During the year, management training was also organized for 2,492 people who were presidents, vice presidents, commune-level officials and civil servants. In 2011, the city set the target of vocational training for 10,000 rural workers and professional training for 4,500 commune-level civil servants with a budget of up to 27.5 billion VND, of which vocational training funding for rural labor is VND 25 billion.

However, in reality, Hanoi does not have specific policies and solutions on training human resources for production and business establishments in industrial clusters, mainly in craft villages and formal industrial clusters. Training is still self-training or vocational training. This makes it difficult for enterprises in CCN to actively recruit workers. Through the actual survey of some industrial workers, the author found that vocational training in Hanoi has some limitations, which are: i) The percentage of rural laborers who have undergone vocational training is still low; ii) Workers in industrial zones are not interested in vocational training; The quality of vocational training is still low, not meeting the needs of industrial development.
Relevant regulations for protecting environment in industrial parks and clusters.

First according to CIRCULARS (DOCUMENT) No: 35/2015/TT-BTNMT

Hanoi, June 30, 2015: ON ENVIRONMENTAL PROTECTION OF ECONOMIC ZONE, INDUSTRIAL PARK, EXPORT PROCESSING ZONE, HI-TECH ZONE - ENVIRONMENTAL PROTECTION OF ECONOMIC ZONE

Article 3. Assessment of the ability to meet environmental protection conditions upon establishment and expansion of economic zones

1. The agency requesting the establishment or expansion of an economic zone is responsible for assessing the economic zone's ability to meet environmental protection conditions. The contents and results of the assessment must be fully shown in the dossier of establishment and expansion of the economic zone.

2. Contents of assessment of the ability to satisfy environmental protection conditions are specified in Appendix 1 issued together with this Circular.
Article 4. Verification of the ability to satisfy environmental protection conditions upon the establishment and expansion of economic zones

1. Within twenty (20) working days from the date of receipt of the written request for verification of dossiers of establishment and expansion of economic zones from the Ministry of Planning and Investment, the Ministry of Natural Resources and Environment shall organize the organization, verify the ability to meet environmental protection conditions, send a written notice of the verification results to the Ministry of Planning and Investment and relevant agencies for consideration and decision on the establishment and expansion of the economic zone.

2. Verification form:
   a) Verify and evaluate information, data, analysis and evaluation results;
   b) Survey the current environmental status of the area where the economic zone is expected to be established or expanded. In case of necessity, take measurements, take samples for analysis and verification;
   c) Consult with relevant organizations and individuals.

Article 5. Technical infrastructure works for environmental protection of economic zones

1. The agency requesting the establishment and expansion of an economic zone is responsible for planning, building and operating technical infrastructure for environmental protection of the economic zone as prescribed in Clause 2 of this Article and sending notify in writing the Ministry of Natural Resources and Environment for monitoring and inspection according to regulations.

2. Technical infrastructure works for environmental protection of economic zones include:
   a) Solid waste collection, storage and treatment system;
   b) Rainwater collection and drainage system; wastewater collection, drainage and treatment systems;
   c) The network of environmental quality monitoring points;
   d) Planning the area of green trees;
   e) Other environmental protection technical infrastructure works.

Article 6. Environmental protection when adjusting planning in economic zones

1. When there is an adjustment to the planning in an economic zone, when necessary, the competent agency shall consult the Ministry of Natural Resources
and Environment on the economic zone's ability to satisfy environmental protection conditions.

2. Contents of assessment of the ability to meet environmental protection conditions when adjusting the planning in economic zones is specified in Appendix 2 issued together with this Circular.

3. Within twenty (20) working days from the date of receipt of the written request, the Ministry of Natural Resources and Environment shall consider and give written opinions to the competent authority to decide on the regulation, planning adjustment in economic zones. Where necessary, the Ministry of Natural Resources and Environment shall organize the actual assessment and collect opinions from relevant organizations and individuals.

Building environmental treatment infrastructure:

Through the actual survey, the author found that currently, the issues of building environmental treatment infrastructure in industrial parks have not been paid due attention. Most of the investment projects in the industrial clusters (CCN) have had the "Registration table of environmental standards or environmental impact assessment report" approved, but most of the CCNs have not been built infrastructure in a synchronous manner. have a centralized waste treatment service facility; internal waste treatment systems have not been built or have not yet been completed.

Figure 3 – Planning clusters in Hanoi

Source: internet

On the other hand, In reality, Recently, in some industrial parks and export processing zones, cases of food poisoning still occur, causing dozens of people to get sick and hospitalized.

Most of the food poisoning cases are caused by microorganisms. At the same time, almost the majority of food poisoning cases in industrial parks and export processing zones
Poisoning because rice and food are contaminated with microorganisms:

After nearly 2 months of a food poisoning incident that caused 49 workers to be hospitalized after lunch, the Food Safety and Hygiene Sub-Department of Vinh Long province said that this unit had found the reason why 49 workers were hospitalized after lunch on September 16, 2017.

Environment protection and security model:

Firstly, according to Pourzandi et al (2005), we see below security model at node level to identify objects causing environment pollution in clusters, for instance

![Fig 4 - security in clusters at node level](source)

Secondly, according to Martusewicz et al (2022) we see below model:

![Fig 5 - Success factors applied for sustainability](source)
5 CONCLUSION

In above section we make:

• Evaluation of situation of industrial clusters (infrastructures) with a case in Hanoi Vietnam

• Discussion on Relevant Revisions of rules and regulations for building in industrial parks and clusters via a case in Hanoi - And environment protection law

Park et al (2019) showed that the resulting geo-industrial clusters exhibit a stronger association between the influx of educated workers and financial performance, compared to traditional aggregation units.

Furthermore, For the State management of the environment: The inspection and examination are still weak; industrial clusters (CCNs) have not properly and fully complied with regulations on environmental protection. Among the CCNs that have been put into operation, only 5 have wastewater treatment items; most industrial zones do not plan and build concentrated water supply items; secondary investment projects to drill underground water to serve production, violating regulations on protection of water resources; Most of the secondary investment projects do not meet the criteria for the percentage of trees and other regulations on environmental protection. Next, The investor in the construction and business of technical infrastructure of clusters (CCN) has responsibilities and obligations: To implement the investment project on construction of technical infrastructure of CCN according to the contents of the granted investment license; Organize the maintenance and repair of technical infrastructure works in the CCN to ensure normal, continuous and correct operation of the designed functions throughout the operation period; To perform obligations in accordance with the provisions of the law on finance, accounting, auditing, statistics, insurance, labor, regulations on labor safety, fire prevention and fighting, industrial hygiene and environment protection.

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