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**ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT
IN THAI NGUYEN PROVINCE AT PRESENT**

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SUMMARY OF DOCTORAL DISSERTATION IN PHILOSOPHY

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INTRODUCTION

1. Rationale for the Study

In the context of globalization and profound economic, social, and environmental changes, sustainable development (SD) has become a strategic goal of many countries. The essence of SD is to ensure harmony among economic growth, social progress, and environmental protection, in which the environment serves as the foundation for stable and long-term development. However, current practice is posing many serious challenges, such as resource degradation, environmental pollution, climate change, and biodiversity loss. These issues require a deeper understanding of the relationship between human beings and nature from both theoretical and practical perspectives.

From a philosophical perspective, SD reflects the dialectical relationship among human beings, nature, and society. Properly understanding and harmoniously resolving this relationship is not only an objective requirement but also an important methodological basis for practical activities. Marxist philosophy's viewpoint on the relationship between human beings and nature provides a theoretical foundation for understanding and addressing environmental issues in the modern context. Nevertheless, the application of these principles to the formulation and implementation of SD policies, especially at the local level, still reveals many limitations.

In Viet Nam, SD has been identified by the Party and the State as a consistent orientation in the national development strategy. Although the system of guidelines and policies on environmental protection and SD has been increasingly improved, their implementation in practice still reveals a number of shortcomings, particularly in resolving the relationship between economic development and environmental protection. This situation requires in-depth studies that connect theory with local practice.

Thai Nguyen is a locality that typifies these issues. As an economic, industrial, and educational center of the northern midland and mountainous region, the province is undergoing rapid industrialization and urbanization while facing numerous environmental pressures, such as air pollution, water pollution, soil degradation, increasing waste, and the decline of ecological resources. This reality clearly reflects the contradiction between the requirements of economic development and nature's carrying capacity, thereby demanding systematic and scientific solutions.

In addition, although many studies have been conducted on SD and the environment, most of them approach the issue by sector or at a general level. A systematic and comprehensive study of environmentally sustainable development (ESD) in Thai Nguyen Province from a philosophical perspective remains a gap that needs to be further supplemented and clarified.

Based on the theoretical and practical foundations mentioned above, the author has chosen the topic "Environmentally Sustainable Development in Thai Nguyen Province at Present" for her doctoral dissertation in Philosophy.

2. Research Aim and Tasks

2.1. Research aim

The dissertation aims to clarify the theoretical and practical foundations of environmentally sustainable development in Thai Nguyen Province from a philosophical perspective. On that basis, it evaluates the current situation, identifies the issues and their causes, and proposes major viewpoints and solutions to enhance the implementation of environmentally sustainable development in the locality in the coming period.

2.2. Research tasks

- To review research works related to SD and ESD, thereby identifying the results achieved and the issues that require further study.
- To clarify the theoretical basis of ESD from a philosophical perspective, including its concept, contents, influencing factors, and the relationship among human beings, nature, and society; and to draw on international experience in order to derive reference values for Viet Nam and Thai Nguyen Province.
- To analyze the current situation of ESD in Thai Nguyen Province, assess its achievements, limitations, causes, and the issues arising in the development process.
- To propose viewpoints and solutions to enhance the implementation of ESD in Thai Nguyen Province in the coming period.

3. Object and Scope of the Study

3.1. Object of the study

The object of the dissertation is environmentally sustainable development in Thai Nguyen Province, with a focus on clarifying the dialectical relationship among human beings, nature, and society, as well as the issues arising in the local development process.

3.2. Scope of the study

In terms of content: The dissertation focuses on studying environmentally sustainable development in association with clarifying its theoretical basis, analyzing the current situation, and proposing solutions.

In terms of space: The study is conducted in Thai Nguyen Province, including the area after its merger with Bac Kan Province, and is considered in the overall natural, economic, and social conditions of the locality.

In terms of time: The dissertation focuses on the period from 2020 to 2025, in connection with the implementation of the 2020 Law on Environmental Protection and SD strategies, while also considering orientations toward 2030.

4. Theoretical and Practical Foundations and Research Methods

4.1. Theoretical foundation of the dissertation

The dissertation is conducted on the theoretical basis of Marxism-Leninism, Ho Chi Minh thought, and the viewpoints and guidelines of the Party as well as the policies and laws of the State on SD and environmentally sustainable development.

4.2. Practical foundation of the dissertation

The dissertation inherits relevant theoretical and practical research results from previous authors and uses summary reports of departments, sectors, and agencies on ESD in Thai Nguyen Province.

4.3. Research methods

The dissertation is conducted on the methodological basis of dialectical materialism and historical materialism, especially the viewpoint on the dialectical relationship among human beings, nature, and society, in order to identify and explain issues of environmentally sustainable development. In addition, the dissertation uses the following specific research methods:

- *Method of analysis and synthesis of documents and secondary data:* This method is used to build the theoretical foundation, evaluate the current situation, and identify issues arising in environmentally sustainable development in Thai Nguyen Province. Data sources include Party documents; State policies and laws on SD and environmental protection; reports, statistical yearbooks, and data from departments, agencies, and sectors of Thai Nguyen Province for the 2020-2025 period. The data focus on socio-economic development, industrialization, urbanization, resource use, environmental pollution, waste treatment, climate change, and environmental management. The dissertation also inherits and analyzes domestic and international studies on SD, ESD, and the relationship among human beings, nature, and society in order to identify research gaps that require further clarification.

- *In-depth interview method:* This method is conducted with 10 subjects, including environmental management officials, local officials, enterprises, residents, and research experts (see Appendix 1). The interview contents focus on perceptions of ESD, the effectiveness of policy implementation, the impacts of industrial development on the environment, and practical difficulties and solutions (see Appendix 2).

- *Method of combining logic and history:* This method is used to clarify the formation and development of viewpoints on SD and to analyze the process of environmentally sustainable development under the specific conditions of Thai Nguyen Province.

- *Comparative method*: This method is used to compare the experience of several countries and compare different development stages in order to draw reference values for the locality.

- *Method of scientific generalization and abstraction*: This method is used to systematize assessments and conclusions and to propose viewpoints and solutions to improve the effectiveness of environmentally sustainable development in Thai Nguyen Province.

5. New Contributions of the Dissertation

The dissertation makes the following contributions:

- First, it clarifies the philosophical basis of environmentally sustainable development at the local level on the foundation of Marxism-Leninism, and supplements and clarifies the concept, contents, and modes of implementing ESD under the conditions of Thai Nguyen Province.

- Second, it analyzes the practice of environmentally sustainable development in Thai Nguyen Province during the 2020-2025 period; identifies the major contradictions between economic growth and environmental protection; and contributes to concretizing the dialectical materialist approach in the study of SD at the local level.

- Third, it proposes a system of major viewpoints and solutions to enhance the implementation of environmentally sustainable development in Thai Nguyen Province toward 2030, thereby providing scientific arguments for policymaking on green and sustainable development.

6. Theoretical and Practical Significance of the Dissertation

6.1. Theoretical significance

The dissertation contributes to supplementing and developing the theoretical basis of environmentally sustainable development from a philosophical perspective, clarifying the relationship among human beings, nature, and society, and providing scientific arguments for environmental studies at the local level.

6.2. Practical significance

The research results provide a scientific basis for the formulation and implementation of policies on SD and environmental protection in Thai Nguyen Province; they also serve as reference materials for research, teaching, and management practice in localities with similar conditions.

7. Structure of the Dissertation

In addition to the introduction, conclusion, and references, the dissertation consists of 4 chapters and 10 sections.

Chapter 1

OVERVIEW OF RESEARCH RELATED TO ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT IN THAI NGUYEN PROVINCE AT PRESENT

1.1. Overview of research related to the dissertation topic

1.1.1. Research works on development and sustainable development

The dissertation reviews 25 research works, including 7 books, 8 domestic and foreign scientific articles, and 10 doctoral dissertations. In general, domestic and foreign research works have achieved important results in forming and developing the theoretical system of SD; clarifying its connotations, principles, pillars, and the conditions that ensure the practical implementation of SD. At the same time, these studies also provide scientific arguments on the necessity of transforming the development model toward harmony among economic growth, social progress, and environmental protection.

1.1.2. Research works on environmentally sustainable development

The dissertation reviews 18 research works, including 10 books and textbooks, 5 scientific articles, and 3 doctoral dissertations. These studies have built a relatively rich theoretical and practical foundation for ESD, but there remains a lack of systematic studies from a philosophical perspective that clarify the role of subjects and the dialectical relationship among human beings, nature, and society in ESD at the local level, especially in Thai Nguyen Province.

1.1.3. Research works on environmentally sustainable development at the local level (related to Thai Nguyen Province)

The dissertation reviews 8 research works, including 5 scientific articles and 3 doctoral dissertations. These works still mainly examine individual sectors, fields, or particular aspects of SD; no work has systematically studied environmentally sustainable development in Thai Nguyen Province from a philosophical perspective on the basis of a comprehensive analysis of the relationship among human beings, society, and nature, as well as the role of subjects and modes of implementation in the process of sustainable development. This is the very research gap that the dissertation focuses on and supplements.

1.2. Values of the reviewed works and issues that the dissertation needs to continue studying

1.2.1. Values of the reviewed works for the dissertation

First, in theoretical terms, the works have contributed to building and clarifying the theoretical basis of SD and environmentally sustainable development. Many studies have explained the concepts, contents, principles, and criteria of SD, while affirming the environment as one of the basic pillars of SD. Research works from a philosophical

perspective have initially clarified the relationship among human beings, society, and nature; the role of the environment in the existence and development of society; and the requirement to adjust human activities toward harmony with nature. This is an important theoretical and methodological basis for the dissertation to approach the study of environmentally sustainable development.

Second, in practical terms, the works have reflected relatively comprehensively the current situation of environmentally sustainable development in Viet Nam, clarifying achievements in environmental protection, natural resource management, and climate change response; at the same time, they point out limitations and challenges such as environmental pollution, resource degradation, biodiversity loss, and shortcomings in policy implementation and environmental management. On that basis, many works have proposed systems of solutions to promote environmentally sustainable development. These are valuable theoretical and practical sources for the dissertation to inherit in evaluating the current situation and to refer to in formulating viewpoints and proposing solutions for environmentally sustainable development in Thai Nguyen Province at present.

Third, research on environmentally sustainable development at the local level has provided important practical arguments and experiences. Through the analysis of localities and several specific fields, especially studies related to Thai Nguyen Province, these works have clarified the impacts of industrialization, urbanization, and resource exploitation on the environment, while also reflecting environmental issues arising in the process of socio-economic development at the local level. This provides an important practical basis for the dissertation to study the case of Thai Nguyen Province.

1.2.2. Issues that need to be further studied in the dissertation

Although important results have been achieved, the existing research works still leave a number of gaps that need to be further clarified.

First, although studies have clarified many aspects of environmentally sustainable development, the philosophical approach remains incomplete, especially regarding the relationship among human beings, society, and nature, the worldview and methodological basis, and the role of subjects in implementing environmentally sustainable development.

Second, there is still a lack of in-depth studies on environmentally sustainable development in individual localities that are associated with specific socio-economic conditions and that explain the philosophical basis of viewpoints and solutions.

Third, with regard to Thai Nguyen Province, existing studies remain scattered across separate fields and have not systematically examined environmentally

sustainable development. Therefore, the dissertation focuses on studying environmentally sustainable development in Thai Nguyen Province from a philosophical perspective; clarifying the theoretical basis; evaluating the current situation; identifying the issues raised; and proposing viewpoints and solutions appropriate to the practical conditions of the locality.

Chapter 1 Conclusion

The overview of the research situation shows that sustainable development and environmentally sustainable development have been studied fairly comprehensively from various perspectives, contributing to clarifying the theoretical basis, reflecting the current situation, and proposing many viewpoints and solutions to promote environmentally sustainable development. These constitute important sources of materials and scientific arguments for the dissertation to inherit. However, there remain research gaps regarding environmentally sustainable development from a philosophical perspective and systematic research at the local level, especially in Thai Nguyen Province.

On that basis, the dissertation focuses on studying environmentally sustainable development in Thai Nguyen Province from a philosophical perspective, thereby contributing to supplementing scientific arguments for the implementation of the locality's sustainable development goals.

Chapter 2

ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT IN THAI NGUYEN PROVINCE - SOME THEORETICAL

2.1. Environmentally sustainable development: concept and theoretical basis

2.1.1. Concept of environmentally sustainable development

Environmentally sustainable development is an important component of SD, aiming to ensure harmony among economic growth, social progress, and environmental protection. From a philosophical perspective, it is the process of adjusting the relationship between human beings and nature on the basis of respecting the objective laws of nature, ensuring ecological balance, and maintaining living conditions for human beings. Environmentally sustainable development requires the rational, economical, and efficient use of resources; pollution control; ecosystem protection and restoration; and the enhancement of the responsibility of subjects toward the environment. This content is associated not only with the requirement of protecting the current environment but also with ensuring intergenerational equity in the exploitation and use of natural resources.

In the dissertation, environmentally sustainable development is understood as a development process that ensures harmonious unity among economic development, social progress, and environmental protection; in which the exploitation and use of natural resources are carried out within the carrying capacity limits of ecosystems and are associated with conserving, restoring, and improving environmental quality, in order to meet the needs of the present generation without reducing the ability of future generations to meet their own needs.

2.1.2. Theoretical basis of environmentally sustainable development

2.1.2.1. The viewpoint of Marxism-Leninism on the human-nature relationship and sustainable development

Although it did not use the term sustainable development, Marxism-Leninism laid the worldview and methodological foundation for understanding the relationship between human beings and nature in the direction of sustainable development. Accordingly, human beings are a part of nature and exist in a dialectical unity with nature; through labor and practical activities, human beings transform nature to serve social development but must respect the objective laws of nature. Marxism-Leninism affirms the unity between nature and society and, at the same time, points out that the irrational exploitation and use of resources will lead to ecological crisis and negatively affect human beings in return. These viewpoints constitute the worldview and

methodological basis for studying, evaluating, and proposing solutions for environmentally sustainable development.

2.1.2.2. Ho Chi Minh thought and the viewpoint of the Communist Party of Viet Nam on environmentally sustainable development

Inheriting and creatively applying Marxism-Leninism, Ho Chi Minh emphasized the role of nature in national development and stressed the need to protect the environment, use resources rationally, and build a harmonious relationship between human beings and nature. On that basis, the Communist Party of Viet Nam has gradually improved its viewpoint on environmentally sustainable development, identifying environmental protection as both a goal, a content, and a condition of sustainable development; economic development must be associated with environmental protection, and the environment must not be traded off for economic growth; it promotes green growth, the circular economy, efficient resource use, proactive response to climate change, pollution control, and the implementation of emission reduction commitments. This is an important theoretical basis and methodological orientation for the dissertation to study and propose solutions for environmentally sustainable development in Thai Nguyen Province.

2.2. Elements of environmentally sustainable development in Thai Nguyen Province

2.2.1. Subjects implementing environmentally sustainable development in Thai Nguyen Province

2.2.1.1. The political system

The political system plays a central role in leading, managing, organizing the implementation of, and supervising environmentally sustainable development goals. In this system, the Provincial Party Committee provides strategic orientations; authorities at all levels perform state management of the environment; and the Viet Nam Fatherland Front and socio-political organizations conduct communication, mobilization, supervision, and social criticism.

2.2.1.2. Organizations outside the political system

Organizations outside the political system, including enterprises, cooperatives, research and training institutions, socio-professional organizations, and financial institutions, directly participate in exploiting and using resources, renewing technology, developing green production, transferring knowledge, and mobilizing resources for environmental protection.

2.2.1.3. The people

The people are both the direct subjects implementing environmental protection activities and the beneficiaries and forces of social supervision. Through their daily

production, consumption, resource protection, preservation of indigenous knowledge, and supervision of compliance with environmental law, the people make an important contribution to the implementation of environmentally sustainable development goals in Thai Nguyen Province.

2.2.2. Contents of environmentally sustainable development in Thai Nguyen Province

The contents of environmentally sustainable development in Thai Nguyen Province are determined on the basis of concretizing the National Strategy for Environmental Protection to 2030, with a Vision to 2050, and the National Action Plan for the Implementation of the 2030 Agenda for Sustainable Development. The dissertation identifies five basic contents of environmentally sustainable development in Thai Nguyen Province as follows:

First, promoting the development of the green economy, circular economy, and digital economy

This is a breakthrough content, reflecting a qualitative transformation in resolving the contradiction between the need for economic growth and the requirement of ecological conservation. It directly realizes Viet Nam's SDG 7 (affordable and clean energy), SDG 8 (decent work and economic growth), and SDG 12 (responsible consumption and production) in Thai Nguyen Province.

Second, reducing resource exploitation, strengthening waste management, and controlling pollution

This content directly reflects the capacity to resolve the relationship between human activities that transform nature and ecological safety limits, and is associated with SDG 6 (clean water and sanitation) and SDG 12 (responsible consumption and production).

Third, conserving nature and maintaining biodiversity

Nature conservation and biodiversity are contents that provide a stable biological foundation for the development process and respond to Viet Nam's SDG 15 (life on land).

Fourth, proactively responding to climate change

Responding to climate change is a content that demonstrates society's proactivity and ecological self-defense capacity in the face of extreme natural fluctuations, and directly realizes SDG 13 (climate action).

Fifth, enhancing resource management capacity, developing awareness, and changing community behavior

This is a decisive content, serving as the operating system and the spiritual driving force that governs all four action contents mentioned above, and is directly related to SDG 11 (sustainable cities and communities).

2.2.3. Modes of implementing environmentally sustainable development in Thai Nguyen Province

2.2.3.1. Institutional and policy mode and strict implementation of the legal system on environmental protection

The institutional and policy mode, together with the strict implementation of the legal system on environmental protection, plays a foundational role in implementing environmentally sustainable development. In essence, this is the process of institutionalizing the Party's viewpoints and guidelines, the State's policies, and the objective requirements of environmental protection into a system of legal norms, management mechanisms, and administrative tools to orient and regulate the behavior of subjects in society. Through the binding nature and effective strict enforcement of the law, this mode helps ensure harmony among economic development, social progress, and environmental protection goals.

2.2.3.2. Mode of applying science and technology

The application of science and technology is an important mode for improving the effectiveness of implementing environmentally sustainable development goals. From a theoretical perspective, science and technology reflect the development level of the productive forces and human cognitive capacity in resolving the relationship between economic development and environmental protection. Through research, technological innovation, and the application of scientific achievements, subjects can minimize negative impacts on the environment, use natural resources efficiently, and improve environmental management capacity.

2.2.3.3. Mode of education and communication combined with incentives and sanctions

Education and communication combined with incentives and sanctions is a mode that directly affects the awareness, attitudes, and behavior of subjects in society in order to form a sense of responsibility and a culture of environmental protection. From the perspective of social philosophy, this mode reflects the impact of social consciousness on practical activities, contributing to transforming the requirements of SD into voluntary actions by individuals, organizations, and communities.

2.3. Natural, economic, and social conditions in Thai Nguyen Province

2.3.1. Natural conditions and natural resources

Natural conditions and natural resources are important material premises and, at the same time, directly affect environmentally sustainable development in Thai

Nguyen Province. The province is characterized mainly by hilly and mountainous terrain, large forestry land areas, a rich network of rivers and streams, and diverse mineral resources, creating advantages for economic development, especially industry and mining. However, industrialization, resource exploitation, and the impacts of climate change also increase the risks of environmental pollution, resource degradation, landslides, and ecological imbalance.

2.3.2. Socio - economic conditions

Socio-economic conditions are an important factor affecting environmentally sustainable development in Thai Nguyen Province. With an economic structure in which industry and construction account for a high proportion, especially metallurgy, mining, and mineral processing, the province has many advantages for economic development but also faces great pressure from resource exploitation, waste generation, and environmental pollution. In addition, differences in development functions between industrial and urban areas and ecological and forestry areas, along with disparities in development levels and environmental awareness among regions, create different requirements for environmental management and protection.

2.3.3. Local culture, traditions, and community awareness

Local culture, traditions, and community awareness have an important influence on environmentally sustainable development in Thai Nguyen Province. As a locality where many ethnic groups live together, Thai Nguyen possesses rich cultural values and indigenous knowledge concerning forest protection, water resources, and the rational exploitation of resources, contributing to the formation of an awareness of living harmoniously with nature. However, industrialization, urbanization, and the development of the market economy also give rise to changes in awareness and behavior, thereby increasing pressure on the environment.

2.3.4. International experience and institutional renewal

In the context of globalization and international integration, commitments on environmental protection, climate change response, and sustainable development have increasingly strong impacts on the development process of Thai Nguyen Province. Viet Nam's participation in new-generation free trade agreements and its commitment to achieving net-zero emissions by 2050 create momentum for enterprises to renew technologies, apply environmental management standards, develop the circular economy, and access financial resources and green technologies.

The experiences of Japan, the Republic of Korea, and China show the decisive role of institutions, the enabling role of the State, the renewal of the growth model toward green development, efficient resource use, and stronger pollution control in implementing sustainable development. On that basis, the implementation of the 2020

Law on Environmental Protection, the integration of environmental protection goals into development planning, and the application of digital technology in management have contributed to improving the effectiveness of environmental governance in Thai Nguyen Province. However, this process still faces challenges related to institutional capacity, requirements to comply with increasingly high environmental standards, and the risk of receiving projects with outdated technologies. Therefore, continuing to improve institutions and proactively fulfilling international commitments are important conditions for promoting environmentally sustainable development in the province.

Chapter 2 Conclusion

Chapter 2 clarifies the theoretical basis of environmentally sustainable development on the foundation of Marxism-Leninism, Ho Chi Minh thought, and the viewpoint of the Communist Party of Viet Nam. At the same time, it develops the concept and identifies the subjects, contents, modes of implementation, and criteria for evaluating environmentally sustainable development.

The dissertation also analyzes the basic contents of environmentally sustainable development in Thai Nguyen Province, emphasizing the requirement to ensure harmony between economic development and environmental protection, to use natural resources rationally, and to improve the quality of the living environment of the people. In addition, the dissertation identifies the main factors affecting this process, including natural conditions and natural resources, socio-economic conditions, culture and community awareness, as well as international integration and institutional renewal.

The research results of Chapter 2 constitute an important theoretical and practical basis for analyzing the current situation and proposing viewpoints and solutions to promote environmentally sustainable development in Thai Nguyen Province in the following chapters.

Chapter 3

ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT IN THAI NGUYEN PROVINCE AT PRESENT - CURRENT SITUATION, CAUSES, AND ISSUES RAISED

3.1. Current situation of environmentally sustainable development in Thai Nguyen Province at present

3.1.1. Achievements in environmentally sustainable development in Thai Nguyen Province at present

3.1.1.1. Participation of the political system, organizations outside the political system, and the people of Thai Nguyen Province

3.1.1.2. Development of the green economy, circular economy, and digital economy

3.1.1.3. Resource exploitation, waste management, nature conservation, biodiversity maintenance, and proactive response to climate change

3.1.1.4. Mechanisms, policies, and capacity to apply science and technology

3.1.1.5. Education, communication, inspection, and supervision

3.1.2. Limitations in environmentally sustainable development in Thai Nguyen Province at present

3.1.2.1. Limitations in the participation of the political system, organizations outside the political system, and the people

3.1.2.2. Limitations in the development of the green economy, circular economy, and digital economy

3.1.2.3. Limitations in resource exploitation, waste management, nature conservation, biodiversity maintenance, and climate change response

3.1.2.4. Limitations in mechanisms, policies, and capacity to apply science and technology

3.1.2.5. Limitations in education, communication, inspection, and supervision

3.2.

3.2.1.

3.2.2.

3.3. Issues raised in environmentally sustainable development in Thai Nguyen Province at present

3.3.1. The issue of harmonizing industrial development and investment attraction with ensuring the carrying capacity limits of the environment

3.3.2. The issue of transforming the growth model toward the green economy, circular economy, and digital economy

3.3.3. The issue of harmonizing the exploitation and use of resources with nature conservation and improving climate change adaptation capacity

3.3.4. The issue of narrowing the gap between the requirements of modern environmental governance and the implementation capacity of subjects in environmentally sustainable development

3.3.5. The issue of promoting the subject role of human beings in building an ecological culture and implementing environmentally sustainable development under limited resources

Chapter 3 Conclusion

On the basis of the theoretical framework of Chapter 2, the dissertation analyzes the current situation of environmentally sustainable development in Thai Nguyen Province in the following aspects: the participation of subjects; development of the green economy, circular economy, and digital economy; exploitation and use of resources in association with waste management, nature conservation, biodiversity, and climate change response; mechanisms, policies, and the application of science and technology; and education, communication, inspection, and supervision. The research results show that, besides the achievements obtained, environmentally sustainable development in the province still has limitations related to growth model transformation, efficiency in resource use, pollution control, environmental governance capacity, and the role of subjects. From this, the dissertation identifies five central issues that need to be resolved, providing a practical basis for proposing viewpoints and solutions to improve the effectiveness of environmentally sustainable development in Thai Nguyen Province in Chapter 4.

Chapter 4

SOME VIEWPOINTS AND SOLUTIONS FOR ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT IN THAI NGUYEN PROVINCE IN THE COMING PERIOD

4.1. Viewpoints on environmentally sustainable development in Thai Nguyen Province

4.1.1. Environmentally sustainable development must be placed under the leadership of the Party and the management of the State

For Thai Nguyen Province, a locality that is developing strongly toward industrialization and modernization, this viewpoint is particularly important in ensuring unity between economic development goals and the requirements of environmental protection, rational use of natural resources, and improvement of the quality of life of the people. This viewpoint continues to be affirmed in the Resolution of the 14th National Party Congress, which identifies a central task of the term as: "Effectively organizing the operation of the political system apparatus under the new model, ensuring synchronous and smooth operation and meeting the requirements and tasks of rapid and sustainable national development."

4.1.2. Environmentally sustainable development must harmonize economic growth, social progress, and environmental protection

For Thai Nguyen Province, thoroughly grasping this viewpoint is especially important in the context of the province continuing to promote industrialization, develop industrial parks, expand urban areas, and attract foreign direct investment. As one of the industrial centers of the northern midland and mountainous region, Thai Nguyen has many advantages in terms of geographical location, infrastructure, and human resources, while also facing increasing pressure from resource exploitation, industrial waste generation, water and air pollution, and biodiversity loss.

4.1.3. Environmentally sustainable development must take human beings as the center and the community as the subject

For Thai Nguyen Province, the viewpoint of taking human beings as the center and the community as the subject should be concretized in accordance with the characteristics of a locality with rapidly developing industry but also a large proportion of the population living in rural, mountainous, and ethnic minority areas.

4.1.4. Environmentally sustainable development must be based on science and technology, innovation, and digital transformation

For Thai Nguyen Province, environmentally sustainable development based on science and technology and digital transformation has many favorable conditions. As

a training and research center of the northern midland and mountainous region, with a system of universities and research institutes and a relatively large team of scientific personnel, the province has advantages in researching, transferring, and applying scientific achievements to natural resource and environmental management. This is an important condition for promoting innovation in environmental monitoring, the management of land, water, and mineral resources, smart agriculture, cleaner production, and the circular economy.

4.1.5. Environmentally sustainable development must be associated with promoting the advantages of the northern midland and mountainous region, and must be consistent with the natural and socio-economic conditions and development orientations of Thai Nguyen Province

For Thai Nguyen Province, environmentally sustainable development must be placed in close relationship with its role as an economic, industrial, educational, and training center of the northern midland and mountainous region. The province has a rapid pace of industrialization and, at the same time, possesses rich natural ecosystems, with large forest areas, many reservoirs, important river basins, and areas of high biodiversity value such as the Than Sa - Phuong Hoang Nature Reserve, Nui Coc Lake, the Dinh Hoa ATK area, and specialty tea-growing areas. These advantages both create favorable conditions for the development of the green economy, ecological agriculture, ecotourism, and the circular economy, and impose high requirements for environmental protection, nature conservation, and resource management.

4.2. Solutions for environmentally sustainable development in Thai Nguyen Province in the coming period

4.2.1. Group of solutions to promote the role of subjects in environmentally sustainable development in Thai Nguyen Province

4.2.1.1. Promoting the leadership role of the Provincial Party Committee and improving the management effectiveness of authorities at all levels

First of all, the Thai Nguyen Provincial Party Committee needs to continue strengthening its comprehensive leadership role in environmentally sustainable development by promptly concretizing central-level guidelines into resolutions, action programs, and plans appropriate to the province's conditions. In addition, it is necessary to continue improving inter-sectoral coordination mechanisms in environmental management. In the context of intensified national digital transformation, Thai Nguyen Province should prioritize building a unified digital environmental governance system across the entire province. Finally, it is necessary to strengthen inspection and supervision by Party committees, People's Councils, the Viet Nam Fatherland Front, and the people over the implementation of guidelines and policies on ESD.

4.2.1.2. Promoting the role of the Viet Nam Fatherland Front, socio-political mass organizations, enterprises, training institutions, and social organizations

It is necessary to continue promoting the core role of the Viet Nam Fatherland Front Committee of Thai Nguyen Province in gathering, mobilizing, and socially supervising environmental protection work. Socio-political organizations such as the Women's Union, the Youth Union, the Farmers' Union, and the Veterans' Association need to strongly renew their contents and modes of operation by shifting from mere communication to organizing practical models of environmental protection. For the business community, it is necessary to move from a mindset of compliance with environmental regulations to creating SD value. In addition, favorable conditions should be created for professional associations, social organizations, cooperatives, and non-governmental organizations to participate more deeply in the process of environmentally sustainable development.

4.2.1.3. Promoting the subject role of the people in environmentally sustainable development

It is necessary to create conditions for people to fully exercise their right to mastery in natural resource management and environmental protection in the spirit of the 2022 Law on the Implementation of Grassroots Democracy. Together with expanding democracy, the capacity of people to participate in environmental supervision should be improved. For rural and mountainous areas, promoting the subject role of the people should be linked with the protection of forest resources, water resources, and biodiversity. Another important content is gradually forming a culture of environmentally friendly behavior in residential communities. To fully promote the subject role of the people, the province needs to build appropriate incentive mechanisms to motivate communities to participate actively in environmental protection activities.

4.2.2. Group of solutions to improve the contents of environmentally sustainable development in Thai Nguyen Province

4.2.2.1. Promoting the development of the green economy, circular economy, and digital economy

First, it is necessary to continue renewing the development thinking of the political system toward taking the green economy as the foundation for long-term growth, instead of continuing to rely heavily on resource exploitation or extensive production expansion. Second, the circular economy should be developed in accordance with the conditions of each sector and locality. Third, the province needs to form an innovation ecosystem for green development on the basis of promoting the

advantages of Thai Nguyen University, research institutes, innovation centers, and the business community.

4.2.2.2. Reducing resource exploitation, strengthening waste management, and controlling pollution

First of all, it is necessary to continue renewing resource management thinking by shifting from maximizing exploitation to rational, economical, and efficient exploitation and use. In addition, the province needs to promote resource-saving solutions and improve resource-use efficiency in production and daily life. Another key task is to improve the effectiveness of waste management toward a synchronous, modern, and circular approach. Along with waste management, pollution control should be strengthened in key areas. For air pollution, emissions from transport, construction, mineral exploitation, and industrial production must be strictly controlled.

4.2.2.3. Conserving nature and biodiversity

First, it is necessary to enhance the leadership role of the Provincial Party Committee and the management effectiveness of authorities at all levels in nature conservation. Second, nature conservation should be associated with developing sustainable livelihoods for residential communities, especially ethnic minorities living in buffer zones of protected areas. Third, the role of social subjects in nature conservation should be promoted. Fourth, control measures should be strengthened and violations of laws on forest protection, illegal mineral exploitation, and hunting and trading of wild animals must be strictly handled.

4.2.2.4. Proactively responding to climate change

First of all, it is necessary to enhance the leadership role of the Provincial Party Committee and the unified management effectiveness of authorities at all levels in climate change response. A breakthrough solution is to promote the application of science, technology, and digital transformation in disaster risk management and climate change adaptation. In parallel with technological solutions, ecosystem-based solutions should be strengthened in order to improve long-term adaptive capacity. The role of social subjects in building climate change-adaptive communities should also be promoted.

4.2.2.5. Enhancing resource management capacity, developing awareness, and changing community behavior

First, it is necessary to continue improving the effectiveness of state management of natural resources and the environment toward modernity, transparency, and a people-centered service approach. Second, environmental communication and education should be strongly renewed toward forming the voluntary consciousness and

social responsibility of every citizen. Third, the role of the Viet Nam Fatherland Front, the Women's Union, the Farmers' Union, the Youth Union, the Veterans' Association, and social organizations in building communities that participate in environmental protection should be strongly promoted. Fourth, the people's right to mastery in natural resource management and environmental protection should be promoted in the spirit of the 2022 Law on the Implementation of Grassroots Democracy, with the motto “people know, people discuss, people do, people inspect, people supervise, people benefit”.

4.2.3. Group of solutions to renew the modes of implementing environmentally sustainable development in Thai Nguyen Province

4.2.3.1. Improving institutions and policies and strengthening law enforcement on environmental protection

First of all, it is necessary to continue concretizing the Party's guidelines and the State's policies and laws on environmental protection into mechanisms and policies appropriate to the practical conditions of Thai Nguyen Province. Second, it is necessary to build and improve specific environmental management mechanisms for areas under great environmental pressure in the province. Third, the effectiveness of environmental law enforcement should be improved by strengthening the responsibility of state management agencies and heads of localities. Fourth, inspection and examination should be strengthened and violations of environmental laws should be strictly handled. Fifth, the supervisory role of the Viet Nam Fatherland Front, socio-political organizations, press agencies, and residential communities in implementing environmental law should be promoted.

4.2.3.2. Promoting the application of science and technology, digital transformation, and innovation

First, digital transformation in natural resource and environmental management should be promoted. In addition, technological renewal in industrial production toward green and low-emission development should be encouraged. Furthermore, the application of science and technology in ecological agriculture, circular agriculture, and climate change adaptation should be strengthened. Finally, the role of universities in Thai Nguyen Province, research institutes, enterprises, and science and technology organizations in researching, transferring, and applying technological solutions for environmental protection should be promoted.

4.2.3.3. Renewing communication and education work in combination with incentive mechanisms and sanctions

First, the contents and methods of communication should be renewed toward taking people as the center and behavior as the target of influence. Second,

environmental education should be promoted in the province's education and training system. Third, incentive mechanisms should be developed to encourage organizations, enterprises, and individuals to participate actively in environmental protection activities. Fourth, commendation and rewards should be strengthened for collectives and individuals with outstanding achievements in environmental protection. Fifth, sanctions for violations should be strengthened to create deterrence and ensure fairness in law enforcement.

Chapter 4 Conclusion

On the basis of the theoretical foundation in Chapter 2 and the results of the situation analysis in Chapter 3, Chapter 4 proposes a system of viewpoints and solutions to enhance environmentally sustainable development in Thai Nguyen Province. The viewpoints are built on the foundation of Marxism-Leninism and Ho Chi Minh thought; they also thoroughly grasp the Documents of the 14th National Party Congress, the National Strategy for Environmental Protection to 2030, with a Vision to 2050, and the National Action Plan for the Implementation of the 2030 Agenda for Sustainable Development. The dissertation proposes four key groups of solutions: promoting the role of subjects; improving the contents of environmentally sustainable development; renewing implementation modes; and promoting favorable factors while limiting adverse impacts on environmentally sustainable development. This system of solutions is developed in a synchronous manner and is appropriate to the conditions of Thai Nguyen Province, contributing to the realization of the goal of rapid, green, and sustainable development toward 2030, with a vision to 2050.

CONCLUSION

On that basis, the dissertation analyzes the current situation of environmentally sustainable development in Thai Nguyen Province. The research results show that the province has achieved many positive results in developing the green economy, circular economy, and digital economy; managing resources and waste and controlling pollution; conserving nature and biodiversity; responding to climate change; and gradually improving management capacity and community awareness. However, the development process still has limitations in growth model transformation, the effectiveness of resource exploitation and use, biodiversity conservation, climate change adaptation capacity, and the participation of subjects. On the basis of analyzing achievements, limitations, and causes, the dissertation identifies central issues that need to be resolved in order to enhance environmentally sustainable development in Thai Nguyen Province.

From the theoretical and practical research results, the dissertation proposes a system of viewpoints and four groups of solutions to enhance environmentally sustainable development in Thai Nguyen Province, including promoting the role of subjects; improving the contents of environmentally sustainable development; renewing implementation modes; and promoting favorable factors while limiting adverse impacts on environmentally sustainable development.

The research results of the dissertation contribute to supplementing the theoretical basis of environmentally sustainable development from a philosophical perspective, while providing scientific arguments for the formulation and organization of the implementation of guidelines and policies on sustainable development in Thai Nguyen Province. These research results can also be used as reference materials for research, teaching, and the practice of natural resource management, environmental protection, and sustainable development at the local level.

**LIST OF RESEARCH WORKS CONDUCTED
RELATED TO THE DISSERTATION**

1. Tran Thi Lam (April 2024), "Enhancing the role of the State in creating social consensus on combining economic growth with ecological environmental protection," *Journal of State Organization*, ISSN 2588-137X, April 2024 issue, pp. 67-70, print journal.
2. Tran Thi Lam (March 2025), "The viewpoint of Marxist-Leninist philosophy on the relationship between human beings and nature and sustainable development in Viet Nam today," *Journal of Theoretical Education*, ISSN 0868-3492, No. 385, pp. 39-43.
3. Tran Thi Lam (July 2025), "Environmentally sustainable development contributing to awakening and arousing resources," *Journal of State Management*, ISSN 2354-0761, No. 354, pp. 44-48.