

HO CHI MINH NATIONAL ACADEMY OF POLITICS

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**DEVELOPMENT OF LOGISTICS INFRASTRUCTURE IN
THE CENTRAL PROVINCES OF VIETNAM**

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INTRODUCTION

1. The urgency of the dissertation topic

Logistics systems are considered one of the most crucial factors for the economic development and competitiveness of each country. Logistics infrastructure is the system of physical and technical facilities serving the transportation, storage, and distribution of goods within the supply chain, including transportation infrastructure, seaports, airports, warehouses, logistics centers, along with information systems and technologies supporting logistics management. The synchronized development of logistics infrastructure plays a vital role in ensuring the smooth flow of goods, reducing logistics costs, and improving the efficiency of the supply chain.

In Vietnam, the logistics industry has been developing strongly, contributing to economic growth and international integration. However, according to many studies and specialized reports, Vietnam's logistics costs currently account for about 16-17 % of GDP, significantly higher than the world average (around 8-10 %) (Ministry of Industry and Trade, 2025) . High logistics costs not only reduce the operational efficiency of businesses but also affect the competitiveness of the economy, while hindering the attraction of foreign investment and the effective exploitation of free trade agreements that Vietnam has joined.

In recent years, Vietnam has made certain improvements in national competitiveness; however, the quality of its logistics infrastructure remains a significant bottleneck, reflecting the uneven development of the logistics infrastructure system. This is also reflected in the World Bank's Logistics Performance Index ranking, where Vietnam dropped from 39th out of 160 countries in 2018 to 43rd out of 139 in 2023 (Ministry of Industry and Trade, 2025) . These results show that Vietnam's logistics infrastructure system still does not fully meet the development requirements of the economy in the context of increasingly deep international integration.

Central Vietnam, encompassing the North Central and South Central Coastal regions, holds a particularly important geoeconomic position in connecting the country's economic regions as well as the Greater Mekong Subregion. This area boasts several important seaports such as Da Nang, Chan May, and Quy Nhon, and is home to numerous large economic zones and industrial parks like Chu Lai and Dung Quat. Strategically located along important economic corridors, especially the East-West Economic Corridor, Central Vietnam has significant potential for developing logistics and

becoming a major transshipment hub for the region.

However, the logistics infrastructure system in the Central region has not yet developed in proportion to the region's potential and geoeconomic advantages. One of the major limitations currently is the imbalance in the allocation of investment capital for transportation infrastructure. In the period 2011–2021, approximately 75–80% of the transportation sector's investment capital was allocated to roads. Entering the period 2021–2025, although this proportion tends to decrease slightly, investment in roads, especially the expressway system, still dominates the transportation infrastructure investment structure, as evidenced by the concentration of significant resources on the North-South expressway projects and inter-regional arterial routes. In 2025, road transport accounted for approximately 75.2 % of the total volume of goods, while rail and inland waterway transport accounted for only about 0.18% and 19.75% respectively (Ministry of Industry and Trade , 2025) . Over-reliance on road transport not only increases logistics costs but also reduces the efficiency of low-cost, high - capacity transport modes such as rail and inland waterway.

Furthermore, although seaports play a crucial role in import and export and international transport connectivity, the seaport system in Central Vietnam has not yet been comprehensively invested in with post-port logistics services and domestic transport connections. This limits the ability of seaports to fully utilize their role in the logistics chain and increases transportation and logistics costs for businesses. Furthermore, the lack of large-scale and modern logistics centers in the central provinces is also a significant bottleneck in the development of the region's logistics system. The absence of logistics centers capable of storing, distributing, and adding value to goods not only reduces the efficiency of the supply chain but also increases logistics costs for the economy.

Although there have been many studies on logistics, transport infrastructure, seaports, and regional linkages, research approaching the development of logistics infrastructure in the central provinces from a political economy perspective is limited, especially studies that simultaneously consider institutions, resource allocation, infrastructure connectivity, and the relationship of interests between stakeholders. Stemming from the above issues, research on the development of logistics infrastructure in the central provinces of Vietnam is of significant importance both theoretically and practically. The research results not only contribute to clarifying the theoretical and practical basis for the development of logistics infrastructure in the

Vietnamese context but also provide scientific arguments for policy planning and the development of solutions to promote the development of logistics infrastructure in the central region in a synchronized, modern, and efficient manner. Therefore, the doctoral candidate chose the topic "*Development of logistics infrastructure in the central provinces of Vietnam*" as the research topic for their doctoral dissertation in Political Economy.

2. Research objectives and tasks of the thesis

2.1. Research Objectives

This dissertation aims to clarify the theoretical and practical basis of logistics infrastructure development from a political economy perspective, assess the current state of logistics infrastructure development in the central provinces of Vietnam during the period 2018–2024, and then propose viewpoints, objectives, and solutions for developing the region's logistics infrastructure in a synchronized, modern, and efficient manner by 2030, with a vision to 2045.

2.2. Research Objectives

To achieve the research objectives mentioned above, this thesis focuses on addressing the following main tasks:

- Analyze and evaluate the overall research situation related to the topic to identify research gaps;
- Clarifying the basic theoretical issues regarding the development of logistics infrastructure;
- Studying the experiences of several countries in developing logistics infrastructure, and drawing lessons for Vietnam;
- Analyze and evaluate the current state of logistics infrastructure development in the central provinces, 2018-2024; identify achievements, limitations, and the causes of those achievements and limitations;
- Proposing directions and solutions for the continued development of logistics infrastructure in the central provinces of Vietnam in a synchronized and modern manner by 2030, with a vision to 2045.

3. Research Subjects and Scope

3.1. Research Subjects

The subject of this thesis is the development of logistics infrastructure in the central provinces of Vietnam from a political economy perspective, focusing on the economic relationships between the State, businesses, localities, and communities. The analysis particularly examines the role of the State in guiding planning, allocating investment resources, and coordinating the stakeholders involved in the development of logistics infrastructure.

3.2. Scope of the study

- **Regarding content** : This dissertation studies the development of logistics infrastructure in the central provinces of Vietnam from a political economy perspective, focusing on three main areas: building, promulgating, and implementing institutions, policies, and development plans for logistics infrastructure; developing various types of logistics infrastructure, including multimodal transport infrastructure, seaports, airports, logistics centers, warehouses, information technology infrastructure, and supporting infrastructure; and mechanisms for mobilizing and allocating resources and resolving the relationship of interests between the State, businesses, localities, and the community in the process of developing logistics infrastructure.

- **In terms of geographical scope** : The thesis studies the provinces and cities in the Central region of Vietnam, including Thua Thien Hue, Da Nang city, Quang Nam, Quang Ngai, and Binh Dinh (now Hue city, Da Nang city, Quang Ngai province, and Gia Lai province) . This region holds a crucial position in connecting the economic space between the North and South, and between the Central coastal region and the Central Highlands, while also serving as a gateway to the sea for economic corridors in the region. Although, according to resolutions of the National Assembly, some localities in the study area will undergo changes in administrative boundaries due to the reorganization of provincial-level administrative units starting from July 1, 2025, the thesis still uses the scope and names of localities as they were before the reorganization. Defining the research scope in this way ensures consistency in data collection, processing, and comparison, and facilitates comparison with socio-economic development plans and logistics infrastructure strategies that have been issued and implemented during the research period .

- **Regarding timeframe** : This thesis studies the current state of logistics infrastructure development in the central provinces of Vietnam during the period 2018–2024, and proposes directions and solutions for developing logistics infrastructure in the region until 2030, with a vision to 2045.

4. Theoretical basis and research methods

4.1. Theoretical basis

- *The theoretical basis of the dissertation* : the viewpoints of Marxism-Leninism, Ho Chi Minh Thought; the viewpoints, policies, and guidelines of the Party and the policies and laws of the State on infrastructure development

in general and logistics infrastructure development in particular. In addition, the dissertation selectively inherits theories and research results from both domestic and international sources on logistics, logistics infrastructure, transportation infrastructure development, regional connectivity, resource allocation, and the role of the State in logistics infrastructure development.

- *Practical basis of the thesis* : This study draws on the experience of developing logistics infrastructure in several representative countries, particularly Singapore and the Federal Republic of Germany; and also on the practical experience of developing logistics infrastructure in the central provinces of Vietnam during the period 2018–2024.

4.2. Research Methodology

The thesis employs the following main research methods: analysis and synthesis, systematization, descriptive statistics, comparison, and logical inference. In addition to secondary data, the thesis also utilizes primary data collected through in-depth interviews and questionnaire surveys conducted between March and June 2025. After data verification and cleaning, 120 valid survey responses were used for descriptive statistical analysis.

5. Novel contributions of the thesis

- Theoretical contributions

This dissertation has systematized and clarified the theoretical basis of logistics infrastructure development from a political economy perspective, clarifying the content, scope of development, evaluation criteria, and factors influencing logistics infrastructure development. The dissertation contributes to supplementing the scientific basis for logistics infrastructure development at the regional level, especially in the context of strengthening regional linkages, international economic integration, and promoting the regulatory role of the State in logistics infrastructure development .

- Practical contributions

This thesis analyzes and evaluates the current state of logistics infrastructure development in the central provinces of Vietnam during the period 2018–2024, identifying achievements, limitations, and the causes of these limitations. Based on research into the experiences of Singapore and the Federal Republic of Germany, the thesis draws several valuable lessons for Vietnam. Simultaneously, the thesis proposes perspectives, objectives, and solutions for developing logistics infrastructure in the central provinces of Vietnam towards a synchronized, modern, efficient, and regionally interconnected approach by 2030, with a vision to 2045 .

6. Scientific significance of the thesis

6.1. Theoretical Significance

This dissertation contributes to systematizing and clarifying the theoretical basis of logistics infrastructure development from a political economy perspective; clarifying the role of logistics infrastructure in socio-economic development, enhancing competitiveness, and strengthening regional linkages. The research results of this dissertation can be used as reference material in research, teaching, and learning about political economy, logistics, and infrastructure development.

6.2. Practical Significance

Through an analysis of the current state of logistics infrastructure development in the central provinces of Vietnam, this thesis identifies limitations in the management, planning, mobilization, and allocation of investment resources for logistics infrastructure. The proposed solutions in this thesis can serve as a reference for state management agencies, ministries, and localities in policy planning, development of plans, and organization of logistics infrastructure development in the central provinces of Vietnam up to 2030, with a vision to 2045 .

7. Structure of the thesis

Besides the introduction, conclusion, and bibliography, the thesis consists of four chapters .

Chapter 1

OVERVIEW OF RESEARCH WORKS RELATED TO THE THESIS TOPIC

1.1. OVERVIEW OF RESEARCH ON THE DEVELOPMENT OF LOGISTICS INFRASTRUCTURE

Domestic and international research on logistics infrastructure development has approached the issue from various perspectives such as development economics, international trade, supply chain management, transport economics, public policy, and regional development management. Generally, these studies affirm that logistics infrastructure, including transportation infrastructure, seaports, airports, logistics centers, warehouses, information technology infrastructure, and supporting services, plays a crucial role in optimizing supply chains, reducing transportation and logistics costs, expanding market access, promoting economic growth, and enhancing competitiveness.

Studies also show that the development of logistics infrastructure is influenced by many groups of factors such as institutions, policies, planning, investment mechanisms, public-private partnerships, natural conditions, level of economic development, science and technology, state management capacity, and the degree of regional linkages. Many studies emphasize the role of the State in guiding planning, mobilizing and allocating resources, coordinating participating entities, and ensuring the synchronicity, modernity, and sustainability of the logistics infrastructure system.

For Vietnam, domestic studies have initially clarified the role of logistics and logistics infrastructure in economic growth, reducing logistics costs, promoting exports, enhancing competitiveness, and strengthening regional linkages. Some studies have addressed bottlenecks in Vietnam's logistics development, such as inconsistent transportation infrastructure, a lack of modern logistics centers, limited multimodal connectivity, high logistics costs, low technology adoption rates, and ineffective coordination mechanisms between localities.

1.2. EVALUATION OF DOMESTIC AND INTERNATIONAL STUDIES RELATED TO THE DISSERTATION TOPIC

1.2.1. Scientific and practical values

Previous studies have systematized the theoretical basis of logistics infrastructure and clarified the role of logistics infrastructure development in economic growth, supply chain optimization, logistics cost reduction, and competitiveness enhancement. Many studies have shown a strong correlation between the quality of logistics infrastructure and the efficiency of transportation, trade, and regional development, using indicators such as the Logistics Performance Index (LPI) to quantify the impact of logistics on economic development. These studies also emphasize the role of state management, institutions, policies, planning, and public-private partnerships in investing in, operating, and improving the efficiency of logistics infrastructure projects.

1.2.2. Limitations of published studies

1.2.2.1. Limitations regarding research content

Many studies primarily approach logistics infrastructure development from an economic-technical or logistics management perspective, while the political economy perspective, especially the relationship between institutions, resource allocation, and the interests of stakeholders involved in logistics infrastructure development, has not been fully studied. Domestic research on logistics infrastructure development at

the regional level, particularly in the central provinces of Vietnam, is still relatively limited.

1.2.2.2. Limitations of the research methodology

Many studies use quantitative methods and focus primarily on indicators such as the Logistics Performance Index (LPI), providing a general overview but lacking depth in the institutional context, policies, planning, regional governance, and coordination mechanisms among stakeholders. Qualitative studies, on the other hand, have not fully integrated practical evidence and survey data at the regional level.

1.2.2.3. Limitations regarding the research subjects

Many studies often focus on the economic efficiency of logistics infrastructure for businesses or the national economy, while the development of logistics infrastructure at the regional level, especially the roles and relationships of interests between the State, businesses, localities, and the social community, have not been comprehensively analyzed.

1.2.2.4. Limitations regarding the scope of the study

In previous studies, several key issues such as resource allocation, the role of the private sector, regional linkages, economic corridor connectivity, logistics center networks, multimodal connectivity, and coordination mechanisms among localities have not been fully integrated into a unified analytical framework.

1.2.2.5. Time constraints for the study

Many studies focus on the short term and do not fully reflect the long-term impacts and new developments in the logistics system in the context of globalization, digital transformation, green logistics, smart logistics, and the changing global supply chain.

1.3. RESEARCH GAPS AND RESEARCH ISSUES OF THE THESIS

1.3.1. Research Gap

There is a lack of in-depth research on the development of logistics infrastructure in the central provinces of Vietnam from a political economy perspective. In particular, issues concerning the role of the State in planning, mobilizing and allocating resources, coordinating the interests of stakeholders, regional linkages, connecting economic corridors, logistics center networks, financial mechanisms, and public-private partnerships in the specific context of the central region have not been fully clarified.

1.3.2. Research Problem of the Thesis

This dissertation inherits the theoretical basis of logistics, logistics infrastructure, its role, development content, influencing factors, and

evaluation criteria; while also referencing international experience in logistics infrastructure development. The research focus of the dissertation is: systematizing the theoretical basis of logistics infrastructure development from a political economy perspective; assessing the current state of logistics infrastructure development in the central provinces of Vietnam during the period 2018–2024; identifying achievements, limitations, and causes; and subsequently proposing perspectives, objectives, and solutions for logistics infrastructure development in the region by 2030, with a vision to 2045.

Chapter 2

THEORETICAL FOUNDATIONS AND INTERNATIONAL EXPERIENCE IN LOGISTICS INFRASTRUCTURE DEVELOPMENT

2.1. CONCEPT AND ROLE OF LOGISTICS INFRASTRUCTURE

2.1.1. The concept of logistics

Logistics originated in the military field and later expanded into the economic and commercial sectors, becoming a core component of modern supply chain management. In a common understanding, logistics is the process of planning, organizing, implementing, and effectively controlling the flow and storage of goods, services, and related information from the point of origin to the point of consumption, in order to meet customer requirements at optimal cost. In the modern context, logistics is not limited to traditional transportation and warehousing activities, but also encompasses green logistics, humanitarian logistics, and smart logistics linked to the application of digital technology. This reflects the increasingly expanding role of logistics in economic development, environmental protection, and ensuring social welfare.

2.1.2. Classification of logistics

Logistics can be classified according to various criteria such as the flow of goods, its position in the supply chain, the mode of transport, and the level of service from 1PL to 5PL. Within the framework of this thesis, logistics is primarily approached in terms of transportation, storage, distribution, and logistics services associated with the development of logistics infrastructure.

2.1.3. The concept of logistics infrastructure

Logistics infrastructure is a system of physical and non-physical elements that support the transportation, storage, distribution, and

management of goods within a supply chain. Logistics infrastructure includes "hard" infrastructure (transportation, seaports, airports, logistics centers, warehouses) and "soft" infrastructure (institutions, policies, administrative procedures, information systems). The quality of logistics infrastructure directly impacts logistics costs, trade efficiency, and the competitiveness of the economy. Therefore, developing logistics infrastructure is considered a fundamental condition for promoting economic growth and international integration.

2.1.4. The role of logistics infrastructure

(i) Economic role: Developing logistics infrastructure helps reduce transportation costs, optimize supply chains, increase productivity, and boost GDP growth. Modern logistics infrastructure facilitates investment attraction, expands import and export activities, and creates large-scale production and service centers.

(ii) Social impact: Logistics infrastructure contributes to job creation, improved access to goods and services, and narrowing the development gap between regions. At the same time, logistics plays a crucial role in disaster response, ensuring the supply of essential goods, and enhancing social resilience.

(iii) Political significance: Logistics infrastructure is a crucial tool for the State to implement regional development strategies, strengthen economic spatial linkages, and enhance the nation's position in the global supply chain. Effective logistics infrastructure planning and investment helps consolidate socio-political stability and strengthen national soft power.

2.1.5. Political economy approach in logistics infrastructure research

A political economy approach reveals that logistics infrastructure is not merely a technical issue but also the result of the distribution of power, resources, and benefits among the State, businesses, and the community. In transitional economies like Vietnam, the coordinating role of the State, institutional capacity, and the participation of social actors have a decisive influence on the effectiveness of logistics infrastructure development, especially in disadvantaged areas like Central Vietnam.

2.2. DEVELOPMENT OF LOGISTICS INFRASTRUCTURE

2.2.1. The concept of logistics infrastructure development

The development of logistics infrastructure is a comprehensive process, reflecting the combination of economic, technical, and institutional factors, and is the result of coordination among many economic entities under the guidance of the State .

2.2.2. Content of logistics infrastructure development

a. Institutional development and planning

Institutions and planning play a guiding and regulating role in the development of logistics infrastructure. Effective institutions help reduce transaction costs, create a transparent investment environment, and mobilize social resources. Logistics planning is a strategic tool for organizing infrastructure space, ensuring linkages between transportation, industry, trade, and urban areas, while avoiding scattered and uncoordinated investments.

b. Developing various types of logistics infrastructure

Logistics infrastructure includes the following main infrastructure groups:

- (i) Multimodal transport infrastructure;
- (ii) Logistics centers and transit points;
- (iii) Warehousing and storage systems;
- (iv) Information and telecommunications infrastructure.

The synchronized development of these types of infrastructure is a prerequisite for improving the efficiency of supply chain operations and reducing logistics costs.

c. Resolving related conflicts of interest

The development of logistics infrastructure is always linked to the interests of the State, businesses, localities, and the community. Therefore, an effective coordination mechanism is needed to mobilize and allocate resources rationally, promote public-private partnerships, ensure a harmonious balance of interests among stakeholders, and enhance transparency and accountability in the investment, exploitation, and operation of logistics infrastructure systems.

2.3. CRITERIA FOR EVALUATING THE DEVELOPMENT OF LOGISTICS INFRASTRUCTURE

This thesis evaluates the development of logistics infrastructure based on three main groups of criteria: institutional and planning criteria, reflecting the degree of synchronization, scientific rigor, predictability, and spatial organization of logistics development; infrastructure development criteria, reflecting the degree of synchronization, modernity, multimodal connectivity, socio-economic efficiency, and completeness of hard and soft infrastructure; and criteria for resolving interest relations, reflecting the ability to mobilize and allocate resources, coordinate interests among

stakeholders, and ensure transparency, fairness, and sustainability in the development of logistics infrastructure.

2.4. FACTORS AFFECTING THE DEVELOPMENT OF LOGISTICS INFRASTRUCTURE

The development of logistics infrastructure is influenced by a combination of factors:

- (i) Natural conditions (geographical location, topography, climate);
- (ii) Economic factors (growth, public-private investment - FDI);
- (iii) Technological factors (automation, digitalization, smart logistics);
- (iv) Socio-cultural factors (behavior, social acceptance);
- (v) Political and state management factors (political stability, institutional capacity, development policies).

2.5. INTERNATIONAL EXPERIENCE IN DEVELOPING LOGISTICS INFRASTRUCTURE AND LESSONS FOR VIETNAM

Experience from Singapore and Germany shows that effective logistics infrastructure development needs to be based on: (i) integrated planning and multimodal infrastructure; (ii) application of digital technology and smart logistics; (iii) transparent PPP mechanisms; (iv) development of green logistics; and (v) strategic positioning in the global supply chain. For Vietnam, especially the central region, it is necessary to focus on regional linkages, developing strategic logistics centers, enhancing institutional capacity, and leveraging its geographical location to participate more deeply in regional and international logistics networks.

Chapter 3

CURRENT STATUS OF LOGISTICS INFRASTRUCTURE DEVELOPMENT IN THE CENTRAL PROVINCES OF VIETNAM

3.1. ANALYSIS OF FACTORS AFFECTING THE DEVELOPMENT OF LOGISTICS INFRASTRUCTURE IN THE CENTRAL PROVINCES.

The development of logistics infrastructure in the central provinces is influenced by a combination of natural, economic, technical-technological, and socio-cultural factors. From a political economy perspective, logistics infrastructure is not merely a purely technical issue but also reflects institutional capacity, the State's coordination capabilities, and the level of participation of socio-economic actors in the region.

3.1.1. Factors related to natural conditions

Central Vietnam has a strategic geographical location, situated between the two major economic centers of the country, and also serving as a gateway to the sea for the Central Highlands, Southern Laos, and Northeastern Thailand via the East-West Economic Corridor (EWEC). Its long coastline with numerous deep-water ports creates significant potential for maritime logistics and international transshipment. However, its narrow terrain, fragmented by mountain passes, and frequent natural disasters increase investment and maintenance costs for infrastructure and limit the potential for large-scale logistics expansion.

3.1.2. Economic factors

Economic growth and industry structure directly influence the demand and development direction of logistics. Localities with developed industries and import/export activities, such as Da Nang, Quang Ngai, and Binh Dinh, have higher logistics needs, while provinces still heavily reliant on agriculture and traditional services face difficulties in attracting investment in modern logistics infrastructure. A major limitation is the weak financial capacity of local authorities; infrastructure investment remains heavily dependent on the central government budget; and there is a lack of a sufficiently strong regional fiscal mechanism to allocate resources according to the advantages of their economic space.

3.1.3. Technical and technological factors

The application of technology and digital transformation in logistics in Central Vietnam has made its beginnings, but it remains slow and uneven. While some centers like Da Nang have pioneered digital logistics, the majority of businesses still operate using traditional models, lacking data integration, automation, and value-added logistics services.

3.1.4. Socio-cultural factors

The dispersed population structure, high proportion of agricultural labor, and limited logistics human resource skills have affected the efficiency of infrastructure utilization. In many localities, societal perceptions of logistics remain tied to traditional transportation, and logistics is not yet considered a fundamental service sector of the modern value chain.

3.2. DEVELOPMENT OF LOGISTICS INFRASTRUCTURE IN THE CENTRAL PROVINCES OF VIETNAM DURING THE PERIOD 2018 - 2024

3.2.1. Current status of the development, promulgation, and implementation of institutions, policies, and development plans for logistics infrastructure in the Central provinces of Vietnam.

At the national level, many important strategies and plans have identified Central Vietnam as a key logistics region, linked to the North-South axis and the East-West corridor. These orientations provide an important legal basis for the development of regional logistics infrastructure. At the local level, the central provinces have issued numerous programs and plans for logistics development and integrated logistics into provincial planning for the period 2021–2030. Da Nang is oriented to become a national-level logistics center; Quang Nam, Quang Ngai, Binh Dinh, and Thua Thien Hue are developing logistics associated with seaports and coastal economic zones. However, the planning remains fragmented according to administrative boundaries, lacking an effective regional coordination mechanism, leading to fragmentation, duplication, and unnecessary competition among localities.

logistics infrastructure

(i) Transportation infrastructure : The road system, especially the North-South Expressway in the East, has received significant investment, contributing to improved regional connectivity and reduced transportation costs. However, transportation remains unbalanced, with road transport dominating while rail, inland waterways, and multimodal logistics are developing slowly. Railway infrastructure is outdated and lacks connectivity with seaports; inland waterways are small-scale and have not yet played a role in reducing logistics costs.

(ii) Port and airport infrastructure : Central Vietnam possesses many important seaports such as Da Nang, Chan May, Dung Quat, and Quy Nhon, but their scale and operational capacity are still uneven, and there is a lack of a synchronized post-port logistics system. International airports such as Da Nang, Phu Bai, and Chu Lai contribute to promoting air logistics, but the connection between the airports and the ground logistics system is still limited.

(iii) Logistics centers, warehouses and storage : The number of modern logistics centers is still small, mainly concentrated in Da Nang. Other provinces lack inland container depots (ICDs) and integrated logistics centers, and their warehousing systems are fragmented and

technologically low, increasing logistics costs and limiting their ability to participate deeply in regional supply chains.

(iv) Logistics businesses, digital infrastructure and supporting infrastructure : Logistics businesses in Central Vietnam are mainly small-scale, providing individual services, and the proportion of integrated warehousing and logistics businesses is still low. The application of IT and digital transformation is still at a basic level; advanced technologies such as TMS, WMS, Big Data, and AI have not been widely deployed.

3.2.3. Current situation regarding resolving and ensuring harmonious relationships between interests.

The relationship between the State, businesses, localities , and communities in the development of logistics infrastructure has improved but remains unstable. Public-private partnership mechanisms are still limited; the level of social consensus on land acquisition and project implementation is not high in some localities; and regional benefits are not allocated effectively due to a lack of inter-provincial coordination mechanisms.

3.3. ASSESSMENT OF THE CURRENT STATE OF LOGISTICS INFRASTRUCTURE DEVELOPMENT IN THE CENTRAL PROVINCES OF VIETNAM

3.3.1. Successes and their causes

The central provinces have achieved positive results in the development of logistics infrastructure, as evidenced by: (i) increasingly improved institutions and policies; (ii) logistics planning being gradually integrated into socio-economic development planning; (iii) upgraded transportation infrastructure, seaports, and airports; (iv) improved awareness and organizational capacity in logistics; and (v) initial application of green technology and logistics. These successes stem from consistent guidance and attention from the central government, geographical advantages, increasingly proactive participation from businesses, and the ability to mobilize diverse investment resources.

3.3.2. Limitations and Causes

Despite the achievements, the logistics infrastructure in Central Vietnam still faces many limitations: a lack of synchronization between different modes of transport; a shortage of integrated regional logistics centers; slow technological and digital transformation; a weak logistics workforce; and, in particular, a lack of an effective regional coordination mechanism. The main causes stem from inadequacies in inter-regional

planning, limitations in institutional frameworks and state management capacity, an irrational investment structure, harsh natural conditions, weak logistics enterprise capacity, and the lack of a sufficiently strong regional logistics development coordination mechanism.

Chapter 4

PERSPECTIVES, OBJECTIVES, AND SOLUTIONS FOR DEVELOPING LOGISTICS INFRASTRUCTURE IN THE CENTRAL PROVINCES OF VIETNAM UP TO 2030, WITH A VISION TO 2045

4.1. THE CONTEXT FOR THE DEVELOPMENT OF LOGISTICS INFRASTRUCTURE IN THE CENTRAL PROVINCES IN THE COMING PERIOD

4.1.1. International Context

In the context of globalization and deep international economic integration, the global logistics system and supply chain are undergoing significant transformation under the impact of supply chain shifts, digital transformation, and the demands of sustainable development. Trends in green logistics, smart logistics, international transport standardization, and the application of digital technology place increasingly high demands on the modernization of logistics infrastructure. Simultaneously, the trend of production relocation, new-generation trade agreements such as CPTPP and EVFTA, and the need for digital connectivity create both opportunities and challenges for Central Vietnam in upgrading its logistics infrastructure towards a modern, sustainable, and integrated direction.

4.1.2. Domestic Context

Domestically, the development of logistics infrastructure is identified as one of the key drivers for economic restructuring and enhancing national competitiveness. The Party and State have developed a relatively comprehensive system of major policies and guidelines, reflected in the strategies and plans for the development of transportation, seaports, airports, and logistics centers for the period 2021–2030, with a vision to 2050. The Central region is oriented to become a driving force for development, linked to the marine economy, coastal economic zones, and the East-West economic corridor. However, in practice, the region's logistics infrastructure still faces many limitations in terms of synchronization, inter-regional connectivity, and operational efficiency. The pressures of urbanization, the need to reduce

emissions, and the assurance of economic and national defense security further highlight the need for the development of a modern, integrated, and sustainable logistics system for this region.

4.1.3. Challenges facing the Central provinces

In the coming period, the development of logistics infrastructure in the central provinces faces many challenges, including: logistics planning lacking integration and regional linkages; limited investment resources, heavily dependent on the state budget; inconsistent logistics infrastructure across different modes of transport; weak regional management and coordination capacity; and the increasing impact of climate change, natural disasters, and the growing demand for green development. These challenges require a comprehensive system of solutions encompassing institutional frameworks, planning, resource mobilization, infrastructure development, digital transformation, and regional linkages .

4.2. PERSPECTIVES ON THE DEVELOPMENT OF LOGISTICS INFRASTRUCTURE IN THE CENTRAL PROVINCES IN THE COMING PERIOD

The development of logistics infrastructure in Central Vietnam needs to be approached from a political economy perspective, viewing logistics as a strategic infrastructure serving economic restructuring, regional linkages, and international integration. Based on this, the development of logistics infrastructure must be linked to the proactive role of the State, regional coordination mechanisms, effective mobilization of social resources, and the goal of sustainable development.

4.2.1. Ensuring overall coherence, regional linkages, and effective coordination mechanisms.

The development of logistics infrastructure needs to be based on comprehensive, integrated, and interconnected regional planning, effectively linking various modes of transport, production and consumption centers, import and export hubs, and growth poles. Simultaneously, a regional logistics coordination mechanism needs to be institutionalized to ensure rational resource allocation, limit local competition, and efficiently utilize shared infrastructure.

4.2.2. Leveraging resources based on institutional improvement and sustainable development.

Given limited budget resources, it is necessary to promote the socialization of investment, improve the PPP institutional framework and appropriate risk-sharing mechanisms. The development of logistics

infrastructure must be linked to greening goals, climate change adaptation, efficient use of land resources, and a harmonious balance of economic, social, and environmental interests.

4.2.3. Promoting the coordinating role of the State in relation to digital transformation and enhancing institutional capacity.

The State plays a crucial role in creating, coordinating, and building institutions to support the development of logistics infrastructure in the context of digital transformation. Developing data infrastructure, improving management capacity, and strengthening information interoperability among stakeholders are essential conditions for enhancing operational efficiency, reducing logistics costs, and integrating more deeply into the global supply chain.

4.3. OBJECTIVES FOR DEVELOPING LOGISTICS INFRASTRUCTURE IN THE CENTRAL PROVINCES BY 2030, WITH A VISION TO 2045

The overall objective is to build a synchronized, modern, and highly interconnected logistics infrastructure system in the central provinces, meeting the requirements of regional economic development, reducing logistics costs, enhancing competitiveness, and promoting sustainable regional linkages.

4.3.1. Objectives for developing transportation infrastructure

Developing integrated road, rail, air, inland waterway, and seaport infrastructure aims to enhance connectivity, reduce logistics costs, and create an efficient multimodal transport system.

4.3.2. Objectives for developing logistics centers in the Central provinces

Establish a network of regional and provincial logistics centers and specialized logistics hubs, distributed along economic corridors and strategic transportation hubs, operating in a green, smart, and multimodal manner.

4.3.3. Objectives for developing warehouse infrastructure and storage systems

Develop a modern, specialized warehousing system linked to logistics centers, seaports, industrial zones, and key industries; strengthen the application of digital technology and enhance adaptability to climate change.

4.3.4. Objectives for developing information technology infrastructure and digital transformation in logistics.

Building a synchronized digital logistics infrastructure, a shared data platform, and a digital logistics ecosystem to support the management, coordination, and integration of regional supply chains.

4.4. SOME BASIC SOLUTIONS FOR DEVELOPING LOGISTICS INFRASTRUCTURE IN THE CENTRAL PROVINCES BY 2030, WITH A VISION TO 2045

4.4.1. Improving logistics infrastructure planning towards integration and regional linkages

Besides integrating logistics infrastructure development into provincial planning, there needs to be a strong shift from planning based on administrative boundaries to planning based on goods flow and logistics corridors. Logistics infrastructure planning must be closely linked to the production-consumption-import/export space, clearly defining the role of each locality in the regional logistics network in terms of hubs, satellites, and specialized areas. Simultaneously, digital tools such as GIS, big data, and logistics modeling should be applied to forecast transportation demand, optimize the location of logistics hubs, limit scattered investment, and improve the efficiency of logistics land use.

4.4.2. Diversifying and effectively utilizing investment resources for the development of logistics infrastructure

The key solution is to restructure the mechanism for mobilizing and utilizing capital by combining selective public investment with socialized investment and PPPs. The state budget should focus on essential infrastructure, connecting infrastructure, and projects with regional spillover effects, while the private sector should participate in investing in and operating cash-generating components such as logistics centers, inland ports, modern warehouses, and post-port logistics services. Simultaneously, it is necessary to improve the risk-sharing mechanism, increase transparency in the project selection process, and enhance accountability in capital utilization to increase investor confidence, especially for large-scale, inter-provincial logistics projects.

4.4.3. Developing multimodal logistics and strengthening regional supply chain connectivity

Developing multimodal logistics should be considered a core technical axis for reducing costs and improving regional transport efficiency. The focus should be on strengthening substantive connections between road, rail, seaports, air, and inland waterways through transshipment hubs, dry ports, cargo terminals, and multifunctional logistics centers. Simultaneously, it is necessary to promote supply chain connectivity between logistics businesses, manufacturing businesses, import/export businesses, and distribution systems, gradually forming

logistics chains based on key sectors such as agricultural products, seafood, processed goods, and import/export goods via seaports.

4.4.4. Developing inter-regional and local logistics centers according to the plan

Logistics centers should be developed according to a functionally hierarchical model, avoiding overlapping competition between localities. Regional centers should focus on transshipment, coordination, multimodal transport, and value-added logistics services; provincial centers should serve the production and consumption needs of local areas, economic zones, industrial parks, and concentrated production regions; and satellite logistics points should support consolidation, sorting, and distribution. The development of logistics centers needs to be linked to long-term land use planning, connecting infrastructure, a clear PPP mechanism, and a modern management model to ensure efficient operation.

4.4.5. Development of warehousing systems, distribution centers, and post-port logistics services

The key solution is to shift from traditional warehousing to specialized, modern, and smart warehousing facilities that serve specific product groups and value chains. The port logistics system needs to be expanded to integrate bonded warehouses, cold storage, container yards, inland ports, and post-port logistics services to extend the on-site logistics value chain. Simultaneously, priority should be given to developing port-side logistics spaces that are resilient to natural disasters, adaptable to climate change, and meet green operational standards.

4.4.6. Application of digital technology and building a smart logistics platform

The application of digital technology needs to be implemented synchronously, from data infrastructure and digital platforms to businesses. First, a regional shared logistics data platform needs to be built to support coordination, forecasting, and policy planning. Simultaneously, businesses should be encouraged to adopt systems for transport management, warehouse management, traceability, order tracking, electronic documentation, and operational automation. The government plays a key role in creating institutions, standardizing data, and supporting small and medium-sized enterprises (SMEs) in accessing technology to bridge the digital divide in the logistics industry.

4.4.7. Improving the institutional framework and coordination mechanisms for regional logistics management

A fundamental solution is to establish a regional logistics coordination mechanism in Central Vietnam with clearly defined functions in linking planning, building a list of priority projects, allocating resources, and monitoring inter-provincial projects. Simultaneously, it is necessary to review and standardize legal regulations related to logistics to reduce overlaps, increase predictability, and stabilize policies. The logistics system should aim to support efficient market operation, ensure healthy competition, fair access to shared infrastructure, and harmonize the interests of the State, localities, businesses, and the community.

4.4.8. Developing high-quality and innovative logistics human resources.

The development of logistics human resources needs to be linked to the practical needs of the region, the requirements of operating modern logistics infrastructure, and the digital transformation process. The focus should be on strengthening the links between training institutions, businesses, and management agencies in vocational training, retraining, and skills upgrading. Emphasis should be placed on human resource groups in logistics planning, seaport and inland port operations, warehousing, logistics centers, data management, infrastructure project management, and public-private partnerships. Simultaneously, the formation of logistics innovation centers, startup incubators, and international cooperation programs should be encouraged to enhance the professional capacity, management thinking, and integration capabilities of the logistics workforce in Central Vietnam.

4.5. SOME RECOMMENDATIONS

4.5.1. For the Government and central ministries and agencies

The government and central ministries and agencies need to continue improving the legal framework for the development of logistics infrastructure, prioritizing the allocation of resources to inter-regional projects, promoting digital transformation in logistics, and researching mechanisms for coordinating logistics in the Central region within the framework of existing regional coordination mechanisms. At the same time, it is necessary to issue or refine technical standards for logistics centers, inland ports, warehouses, multimodal transport, and logistics data platforms.

4.5.2. For the governments of provinces and cities in Central Vietnam

Local authorities need to proactively integrate logistics infrastructure development into provincial planning, build a list of priority projects, allocate suitable land, improve the investment environment, and enhance state management capacity in logistics. At the same time, inter-provincial coordination should be strengthened in developing logistics hubs, connecting infrastructure, data platforms, and inter-regional projects.

4.5.3. For businesses and investors

Businesses and investors need to proactively restructure their operating models towards professionalism, modernity, and integrated supply chains; enhance the application of digital technology; and participate in investing in and operating logistics infrastructure projects under appropriate market mechanisms and public-private partnerships. At the same time, they should focus on human resource training, adhering to technical standards, protecting the environment, and fulfilling social responsibility in the process of operating logistics infrastructure.

CONCLUDE

Developing logistics infrastructure in the central provinces is strategically important for enhancing national competitiveness, promoting sustainable growth, and integrating into the international economy. In the context of supply chain restructuring, digital economy development, green economy, and climate change adaptation, logistics not only supports production and trade but also becomes a driving force for economic development. For the central region, which connects the North and South, the coastal areas with the Central Highlands, and the East-West corridor, developing a synchronized, modern, efficient, and regionally interconnected logistics infrastructure is of particular importance.

From a political economy perspective, the thesis clarifies that logistics infrastructure encompasses not only transportation, seaports, airports, warehouses, logistics centers, and post-port logistics services, but also institutions, policies, planning, technology, human resources, mechanisms for mobilizing and allocating resources, and coordination among stakeholders. Therefore, the development of logistics infrastructure is linked to socio-economic development strategies, regional planning,

multimodal transport, digital transformation, green logistics, resource allocation, and the harmonization of interests among the State, businesses, localities, and communities.

The experiences of Singapore and Germany demonstrate the importance of integrated planning, multimodal transport infrastructure, modern logistics centers, digital technology, data platforms, and government coordination. These experiences serve as valuable references for refining policies and developing logistics infrastructure in Vietnam in general, and the Central region in particular.

Through an analysis of Thua Thien Hue, Da Nang, Quang Nam, Quang Ngai, and Binh Dinh provinces during the period 2018–2024, this thesis clarifies the results, limitations, and causes of these limitations in the development of logistics infrastructure. The system of seaports, airports, transportation, warehouses, and some logistics centers has initially been formed, contributing to improved transport capacity, goods circulation, and economic connectivity. However, logistics infrastructure still lacks synchronization, connectivity between modes of transport is limited, and the infrastructure for hubs, warehouses, distribution centers, and post-port logistics services is inadequate. IT infrastructure and logistics data are underdeveloped, the mechanism for mobilizing and allocating capital is inefficient, human resources are limited, while regional coordination and the resolution of conflicting interests among stakeholders remain inadequate. These limitations affect the efficiency of logistics, regional linkages, and the competitiveness of Central Vietnam.

Based on theoretical and practical analysis, the thesis proposes eight groups of solutions for developing logistics infrastructure by 2030, with a vision to 2045. These include perfecting integrated and interconnected regional logistics planning, diversifying investment resources, developing multimodal logistics, developing inter-regional and local logistics centers, developing warehouses, distribution centers and post-port logistics services, promoting digital technology and smart logistics platforms, perfecting regional coordination institutions and mechanisms, and developing high-quality human resources. The solutions aim towards a modern, green, and digital logistics ecosystem capable of connecting Central Vietnam with domestic economic centers, economic corridors, and international logistics networks.

The thesis also proposes recommendations to the Government, central ministries and agencies, local authorities, and the business

community to ensure the feasibility of the solutions. The State plays the role of institutional creator, strategic orienter, regional coordinator, and investor in foundational infrastructure. Local authorities organize implementation, allocate development space, create an investment environment, and coordinate inter-regional cooperation. Logistics businesses, port operators, transport companies, and private investors directly invest in, operate, and provide logistics services in a professional, modern, and sustainable manner.

In both theory and practice, this thesis contributes to clarifying the scientific basis of logistics infrastructure development from a political economy perspective in the context of international integration, digital transformation, green economy, and regional linkages. The research results provide arguments for policy planning and logistics development organization in Central Vietnam, contributing to enhancing regional competitiveness, strengthening economic linkages, improving resource allocation efficiency, and serving the country's industrialization and modernization.

**LIST OF RESEARCH WORKS
PUBLISHED BY THE AUTHOR RELATED TO THE THESIS**

1. Nguyen Van Thanh, Pham Quyet Chien (2024), “Some solutions for developing logistics infrastructure in the Central region until 2030”, *Journal of Economic Forecasting and Projects*, No. 13, July 2024, page 158.
2. Nguyen Van Thanh, Nguyen Van Tuan (2025), “Development of transport infrastructure in Vietnam: Current situation and solutions”, *Journal of Economics and Forecasting*, No. 05, March 2025, page 82.
3. Nguyen Van Thanh, Bui Van Vien, Tran The Tuan (2025), “Developing logistics infrastructure in Central Vietnam in the context of digital transformation”, *Journal of Financial Accounting Research*, issue 1 December 2025 (number 301), page 75.