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THE SITUATION OF FREIGHT TRANSPORT AND OTHER LOGISTICS TASKS IN LAOS

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ABSTRACT

This study aims to analyse the obstacles and constraints in the shipping and logistics in Laos, a landlocked nation in Southeast Asia. Transportation and logistics play a pivotal role in Laos' national economy, acting as the lifeblood for the movement of goods and materials within the country and linking it to the international trade system. This case study highlights the significance of a robust logistics structure for Laos and its essential role in fostering economic development, agricultural growth, and connectivity. It also underscores the challenges faced by the country's logistics sector, such as limited-service frequency and road safety concerns. The study examines Laos transportation infrastructure, encompassing road, rail, and air networks, and sheds light on the obstacles and disparities that hinder value chain development in the country. These issues include disconnected stakeholder participation, the aging vehicle fleet, and financial limitations. Furthermore, the essay emphasizes the need for improved interconnectivity and inter-mobility to enhance the national, regional, and international connectivity of Laos and similar landlocked developing countries in Asia.

Keywords: Laos, Logistics, Transportation Infrastructure, Landlocked Developing Countries

1. INTRODUCTION

Laos is a landlocked country located in Southeast Asia which transport and logistics play an important role in the national economy and in linking the international trade system including road, rail and air. Transportation and logistics are of course an important aspect of Laos economy. It is the lifeblood for the movement of goods and materials. In the context of Laos being situated within the context and surrounded by the country, an efficient logistics structure is necessary and efficient. The ability to move goods across borders without hindrance is essential to a national economy. The transportation and logistics networks in Laos serve as the conduits that bind the nation to the global stage. They are the vital arteries that keep the country integrated into the broader fabric of the world economy. Whether it's the smooth flow of goods across international borders, the seamless movement of people and commodities, or the efficient distribution of resources, the global connectivity fostered by Laos' transport and logistics infrastructure ensures that the country remains an indispensable component of international supply chains. This connectivity opens doors to vast marketplaces, fosters collaboration with international partners, and propels Laos towards a dynamic role in the ever-evolving landscape of global commerce. The exclusive domain in which the Laotian transportation sector fully caters to trucking capacity is the distribution of both domestically manufactured and imported goods. Among the notable distributors in this domain is Beer Lao, an industry giant, responsible for the annual distribution of approximately 200,000 tons of beverages and conducting approximately 15,000

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deliveries every year [1]. This significant undertaking injects an estimated 12 million EUR into the country's economy in terms of transportation expenses (Beer Lao Representative, 2013) (Fig. 1).

Figure1. Beer Lao company shipping products by truck on the road [1]

However, the shipping and logistic in Laos still have a limitation of the number-frequently services in a day, poor road construction cause an accident [2] (Fig. 2). This case study will provide an insight into the growing background of transport and logistics in Laos, and highlighting the importance of this part in the economic development in agriculture and challenge of Laos logistics.

Figure2. The Truck accident during shipping process in Laos [2]

2. TRANSPORTATION INFRASTRUCTURE IN LAOS

Due to its mountainous terrain and historical underdevelopment, Laos has struggled with a dearth of reliable transportation routes. This lack of accessibility has traditionally hindered governments from establishing a presence in remote areas far from national or provincial hubs and has constrained interaction and communication among various villages and ethnic groups

Laos has a rather limited road network, but it does feature some contemporary transportation systems, such as various highways and several airports. Due to its landlocked status, Laos does not have access to sea ports

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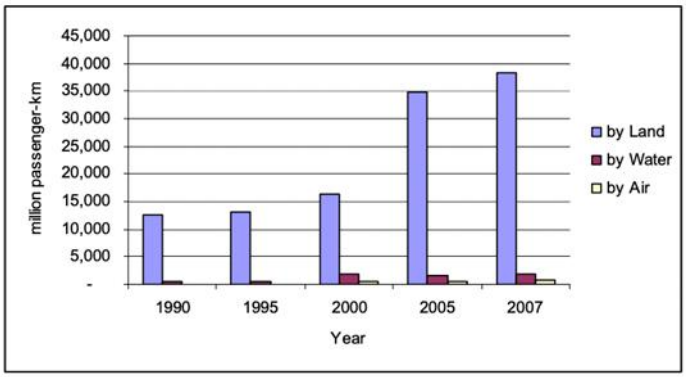
or harbours, and the navigational challenges presented by the Mekong River mean it is not a major transportation route either. Initially established during French colonial rule and expanded from the 1950s onwards, this network has played a crucial role in improving communication between villages, facilitating the movement of goods to markets, and encouraging the establishment of new settlements. Nevertheless, up until the mid-1990s, travel in many areas remained a challenging and costly endeavour, limiting the distance that most Laotians could cover.

2.1. Road transportation

Road is the efficient transportation in Laos which play the important role of logistic. In Laos, there is an extensive road network covering a total of 21,716 kilometres. Of this, approximately 9,673.5 kilometres) are paved, while the remaining 12,042.5 kilometres remain unpaved. The country follows a right-hand traffic (RHT) system for road travel. The low traffic demand, combined with the need to provide access to remote areas, shows that the Lao PDR needs to develop basic two-lane roads at a low cost for the medium term until demand rises to levels requiring significant capacity expansion. Fig. 3 and Fig. 4 show the passenger-km for the Lao PDR and ratio among types of roads. (unfortunately, newer data is not found) [3, 4]



km = kilometer.
Source: Lao People's Democratic Republic National Statistical Center. http://www.nsc.gov.la/Statistics

Figure 3: Passenger-Kilometer Evolution in the Lao People's Democratic Republic [4]

A notable development in Laos' transportation infrastructure occurred in 2007 when a new highway was constructed, linking Savannakhet to the Lao Bao border in Vietnam, with financial support from the Japanese government.

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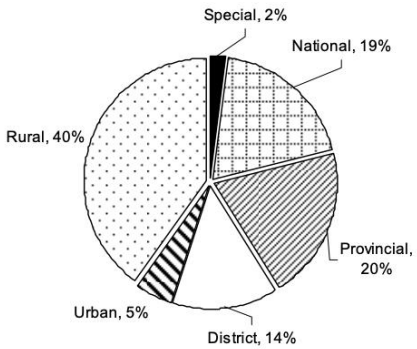

Source: Government of the Lao People's Democratic Republic, Ministry of Public Works and Transport. 2008. *Strategic Plan for Transport Sector Development: Guiding the Sector-Wide Approach*. Vientiane.

Figure 4: Classification of Roads (number of kilometers), 2008 [5]

This significant undertaking has led to a considerable enhancement in transportation within Laos. Previously, the journey from Savannakhet to the Vietnamese border took more than nine hours in 2002, whereas the new highway allows travellers to complete the same route in just a few hours.

2.2. Rail transportation

Laos has 422 km (262 mi) of 1,435 mm standard gauge railways, primarily consisting of the Boten–Vientiane railway, which opened in December 2021. It also has a 3 km (2 mi) metre gauge railway at Thanaleng terminus connected to Thailand's railway system.
In July 2022, the Lao government unveiled plans to conduct a feasibility study for the Laos-Vietnam Railway Project, which entails a two-phase rail line construction. The first phase seeks to link Thakhek with the Vung Ang seaport in Vietnam, spanning a distance of 139 kilometres. Subsequently, the second phase will focus on establishing a 312-kilometer rail connection between Thakhek and the capital city, Vientiane.
The railway was planned to link the capital Vientiane with the town of Boten at the border with China. Construction began at Luang Prabang on 25 December 2016,[16] and the line was officially opened on 3 December 2021. The railway is funded by 60% of debt financing ($3.6 billion) from the Export-Import Bank of China and the remaining 40% ($2.4 billion) is funded by a joint venture company between the two countries, in which China holds a 70% stake. [4]

2.3. Air transportation

Laos possesses 52 airports, of which nine have paved runways. Of the airports with paved runways, Wattay International Airport in Vientiane has a runway length of 3,000 metres. Of the remainder, four have runways 1,524 metres to 2,437 metres length, and a further four have lengths between 914 metres and 1,523 metres.
Of the airports without unpaved runways, one has a runway length of more than 1,524 metres, Seventeen have runway lengths between 914 metres and 1,523 metres, leaving 25 with a lengths below 914 metres. [4]

3. RESULTS AND DISCUSSION, CHALLENGES AND OBSTACLES FOR VALUE CHAIN DEVELOPMENT

The Lao transport and logistics sector faces a multitude of challenges and hindrances that hinder its development and engagement with international markets. One major issue lies in disconnect between the key players and stakeholders in the industry. The majority of major players, represented by LIFFA, predominantly function as freight forwarders and customs brokers, with limited involvement in asset-based

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truck ownership. The reluctance to invest in transport assets stems from the belief that they are of little use beyond Laos' borders, where demand is insufficient. Furthermore, there's a lack of awareness among transport operators regarding opportunities and international agreements, a shortage of trained drivers and mechanics, and an absence of qualified managers. Additionally, there's a limited ability to market services to international customers, a scarcity of suitable vehicles for international operations, and difficulties in securing vehicle financing. These barriers highlight the need for a comprehensive strategy to address these challenges, enhance the sector's capacity, and capitalize on the opportunities available for Laos in the rapidly evolving transport and logistics landscape. [6]

In terms of natural channels for significant boat transportation, the Mekong and Nam Ou rivers are the primary options. However, their use is often limited due to low water levels from December through May. For residents of lowland villages situated along smaller rivers, traditional modes of travel have involved using canoes for fishing, trading, and limited river journeys. Otherwise, transportation largely relies on ox-carts over level terrains or traveling by foot. The rugged mountainous landscape and the absence of roads have compelled upland ethnic communities to depend solely on pack baskets and horse packing for their transportation needs.

The degradation of rehabilitated paved roads in Laos is primarily attributed to the lack of consistent maintenance, including both routine and periodic upkeep. While the Road Maintenance Fund (RMF) has been established and operational for national roads and highways, its capacity to allocate just 10% of its revenues to provincial and rural roads has led to the neglect of maintenance in rural areas. This is further exacerbated by the insufficient funding provided by provincial governments.

Laos faces challenges in institutional capacity, with a shortage of technically trained personnel across the board, including within the Ministry of Public Works and Transport (MPWT). The nation lacks the necessary capacity to effectively plan, execute, monitor, and maintain transport projects, a concern that persists despite the implementation of capacity development programs. Gaps persist in various areas, such as project management, safeguard monitoring, rehabilitation and maintenance planning, and procurement. Tab. 1 shows the comparison between Laos and Thailand its Transit Neighbor by Overall Score LPI Components, based on LPI 2014 if Score 5= best [7]

LPI 2014 (Score 5= best): Comparison between Laos and its Transit Neighbor (Thailand) by Overall Score LPI Components

Country	Customs	Infrastructure	International shipments	Logistics quality and competence	Tracking and tracing	Timeliness
Thailand (Transit C.)	3.2	3.4	3.3	3.1	3.5	4.0
Lao PDR (LLDC.)	2.4	2.2	2.4	2.3	2.2	2.6

Table 1: Overall Score LPI Components, Source: sustainabledevelopment.un.org [7]

The improvement of roads, while beneficial, may inadvertently exacerbate economic disparities among ethnic groups, as the benefits are not always distributed evenly. Addressing these differential impacts requires a thorough assessment during the appraisal phase, accurate identification of proclivities for differential economic development, and the implementation of appropriate mitigation measures. In some instances, these assessments have been rudimentary.

Another challenge is road safety, with road improvements often linked to higher vehicle speeds, leading to an increase in road accidents, injuries, and fatalities. Over the period from 2002 to 2007, Laos experienced a 4% average annual growth in the number of accidents, with motorcycles having the highest accident rates,

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followed by cars and pickups. Road safety is further compromised by vehicle overloading, notably by logging trucks and international traffic on certain road sections, resulting in road damage and reduced road lifespan. Weigh stations on national roads struggle to effectively enforce vehicle axle controls, and provincial and rural roads lack such facilities. The hilly terrain and susceptibility to landslides pose additional challenges for road construction, with slope stabilization techniques often proving costly and impacting the economic viability of projects.

Transport services in Laos face various challenges, including empty return haulage, high logistics costs, limited transport volume, constrained business opportunities in a small market, financial limitations hindering reinvestment, an aging fleet, the absence of a transport hub, inadequate infrastructure investment, and a lack of institutional coordination; similar challenges are experienced by landlocked developing countries (LLDCs) in Africa and Asia, leading to lower economic performance due to their geographical distance from the coast, complicated transport services, insufficient infrastructure, and limited private sector involvement, emphasizing the need for improved interconnectivity and inter-mobility through the development of transport logistics facilities and ICT, supported by technical and financial assistance, and the provision of international road transport services in LLDCs to enhance their national, regional, and international connectivity.

4. CONCLUSIONS

In summary, Laos is a landlocked country in Southeast Asia, and its transportation and logistics sector plays a vital role in its economy. While the country has made progress in improving its transportation infrastructure, there are still challenges to overcome.

One major issue is the lack of coordination and investment in the sector. Most key players are focused on freight forwarding and customs, rather than owning and expanding transportation assets. This leads to a shortage of trained drivers and mechanics and makes it difficult to market services to international customers. Maintaining and upgrading roads is another challenge, with insufficient funding and a lack of technical expertise. This can lead to deteriorating road conditions and safety issues, including accidents.

To address these challenges and fully benefit from its strategic location, Laos needs a comprehensive strategy to enhance its transportation and logistics sector. This will ensure it remains a significant player in the global trade system and continues to grow economically.

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