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Chapter 6

The Regional and International Integration and Connectivity Vision of the Lao PDR

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Abstract:

In order to transform from a land-locked country into land-linked country, the Lao Government has embarked on the implementation of land transport infrastructure development under the guidance of the national strategy for international and regional economic integration and regional cooperation framework, such as the Greater Mekong Sub-region and the Belt and Road initiatives. For this purpose, construction of expressways, railways, and bridges as well as improvement of the regulatory framework and services to facilitate the integration have been planned. This includes the on-going construction of Lao-Chinese railway from Vientiane Capital to the Boten district at the Lao-Chinese border, the planned development of Vientiane-Hanoi Expressway, and upgrading of the ASEAN Highway section within Laos. Although there are still many things to be done, some implementation progress can be observed and, if fully realized, it will benefit Laos in terms of more investment opportunity, more trade, increasing numbers of tourists, and better transport service quality, and also benefit its neighboring countries in the region. To maximize the benefit of all these infrastructure plans and the institutional arrangements, the soft infrastructure improvements need to be further strengthened. Nevertheless, a pressing challenge for such realization is how to finance such development projects. This pointed out that assistance from development partners is still needed, and Laos should look into other means of financing after careful study. Moreover, well-coordinated urban planning in line with development of the railways/expressways is still needed to fully reap the benefit from transport infrastructure development.

Keywords: Land-link strategy; expressways, high-speed railway; urban planning; services.
JEL Classification:

1. Introduction

The Lao PDR adopted a market economy by launching the so called New Economic Mechanism (NEM) in 1986. After its adoption, the country has opened up more and made progress in terms of regional and international integration. For a small country like Laos, it is widely acknowledged that the geographical condition of being landlocked, formerly generally considered an impediment to economic development, should now be looked at

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from a different dimension. This produced the well known slogan of transforming "a land-locked" into a "land-linked" country. These terms are mostly used in parallel with the promotion of regional economic integration and connectivity. The launch of the integration scheme, called East-West Economic Corridor (EWEC), at the 8th GMS Ministerial Meeting in 1988, provided some momentum to this integration issue. Later, the widely disseminated propaganda about the "Belt and Road" initiative also pushed forward the geographical importance of Laos within the region as part of the trade and investment network. This provides opportunities for Laos to physically access regional markets and attract more investment from the neighboring countries. Therefore, Lao PDR has the potential to create a transportation hub for the region as it has borders all the Greater Mekong Sub-region countries (ERIA, 2016).

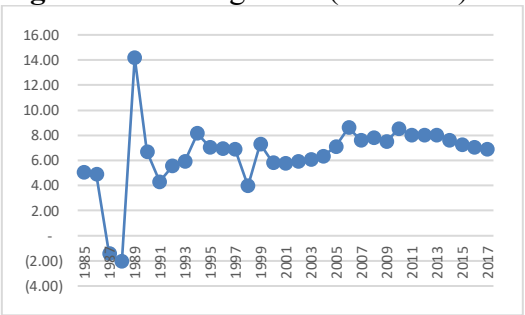
However, the lack of infrastructure is still an obstacle to the fulfilment of this potential. In this regard, the land-link transformation could only be achieved by development of the transport infrastructure, particularly for land transport. Therefore, this paper describes the strategy and development plan related to the land-link transformation. At the same time, the opportunities and challenges for Laos to apply such strategy and development in a coherent way with regional economic development is discussed.

The following section profiles Laos' economic development in the context of regional and international integration. The third section provides more details on the strategy and plans and development updates related the regional and international integration and connectivity, particularly the land-link transformation. The fourth section discusses the implications of such strategy regarding the future development of Laos. The last session concludes this chapter.

2. Laos in the context of regional and international integration

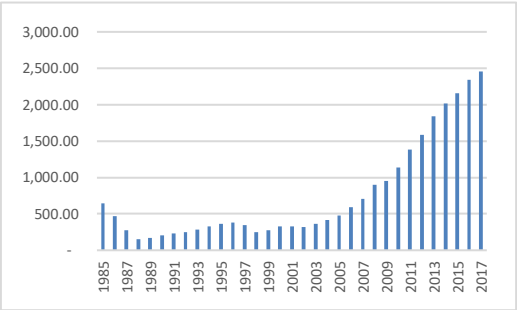
Since 1986, Lao PDR has continued to open up and participate in regional and inter-regional cooperation. It joined as a member of several trade and investment partnerships, such as ASEAN, WTO, and AEC, and participated in a number of initiatives, such as the Greater Mekong Sub-region (GMS), the Ayeyawady–Chao Phraya–Mekong Economic Cooperation Strategy (ACMECS), the three-triangle development framework of Cambodia, the Lao PDR, and Vietnam (CLV), the development framework of Cambodia, the Lao PDR, Myanmar, and Vietnam (CLMV), and so on. With such advancement in the integration strategy, the average GDP growth has achieved 6.5%, and GDP per capita has increased approximately 4 times from 1986 to 2017 (Figure 6-1 & 6-2). The volume of trade and investment have increased over the years, with an average annual growth of 17% and 15% respectively.

Figure 6-1. GDP growth (annual %)



Source: Data from the World Bank 2018.

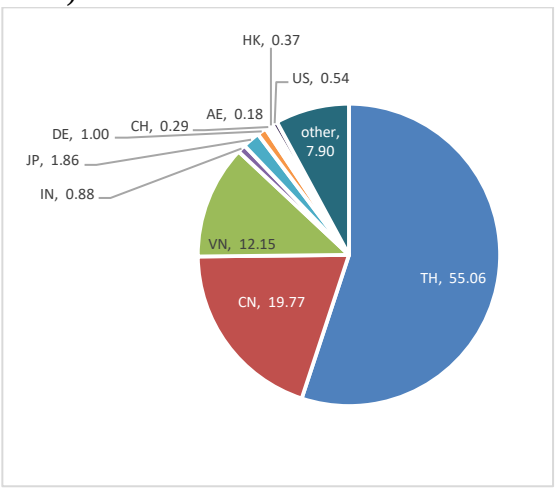
Figure 6-2. GDP per capita ($US)



Source: Data from the World Bank 2018.

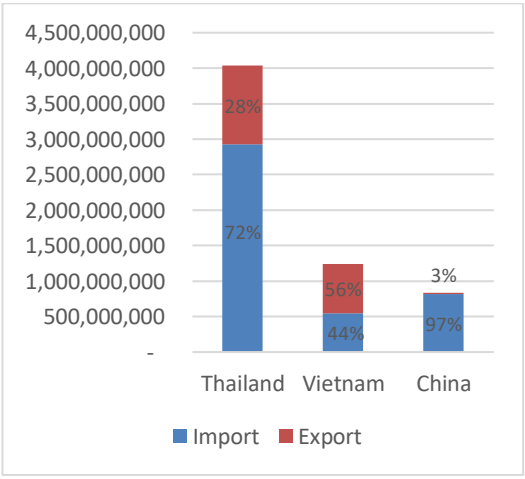
For trade, the country has trade relations with more than 70 countries (PCC, MOICT, MPI, 2015). Nevertheless, its main trading partners are Thailand, Vietnam, and China, and the trading volume with these countries accounts for almost 90% of the total trade (Figure 6-3), of which 55% is trade with Thailand, 20% with China, and 12% with Vietnam. About 90% of the total trade of goods with China is Laos importing from China. About 70% of the trade of goods with Thailand is in terms of imports, while about half of the trade with Vietnam is Laos importing from Vietnam (Figure 6-4). Moreover, almost all the trade of goods with Thailand, China, and Vietnam is conducted by inland transportation. Products exported are not very diversified. The export of electricity and mining products covers more than 50% of total exports, and the rest includes some agricultural and manufactured products. Most of the agricultural products are raw materials which contribute less to the total export volume.

Figure 6-3. Top 10 trade partners (%, 2013-2017)



Note: TH is Thailand, CN is China, VN is Vietnam, JP is Japan, DE is Denmark, AE is United Arab Emirates, CH is Switzerland, and HK is Hong Kong.
Source: Author, data from MOCI, Laos

Figure 6-4: Laos' trade with Thailand, China, and Vietnam



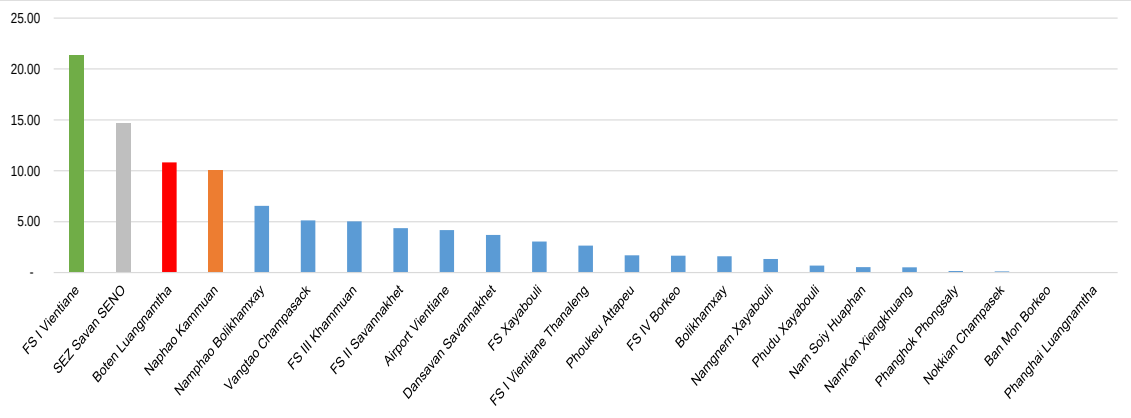
Note: Figures exclude the electricity trade
Source: Author, data from the Customs, MOF, 2017

At the provincial level, trade volume through Vientiane Capital is the highest among the other provinces, followed by Savannakhet, Luangnamtha, Khammuan, and Bolikhamxay (Figure 6-5). Laos mostly imports from Thailand through the First Friendship Bridge in Vientiane Capital, and the exports account for only 30% of the total trade through this

checkpoint. Goods exported at this checkpoint cover products such as drinks, copper, aluminum, furniture, etc. while the imports include vehicles, construction materials, medicines, etc. For the trade with China, most goods and products trade through the Boten checkpoint. At this checkpoint, the main export goods are agricultural products, such as banana, pumpkin, sugar cane, watermelon, green gram, crows, buffalos, and so on. While the main imports include machinery, electrical equipment, vehicles, food, soft drinks and so on. On the other hand, Laos mostly imports from Vietnam through the Naphao checkpoint in Khammuan Province and the Namphao checkpoint in Bolihamxay Province. At the Namphao checkpoint, the exports include white charcoal, wood products, rubber, coffee, non-timber forestry products, etc., while the imports are mostly motorbike parts, construction materials, fuel and so on.

Apart from international trade, transit trade is also important for Laos. Currently, there are ten international checkpoints[1] with Thailand, eight international checkpoints[2] with Vietnam, and two international checkpoints[3] with China. For goods re-exported from Thailand to Vietnam, more than 50% of the goods went through the Namphao checkpoint in Bolikhamxay Province utilizing National Road No. 8. Thai goods re-exported via this checkpoint are mostly consumption goods and some electrical products imported via the First and the Third Friendship Bridges in Vientiane Capital and Khammuan Province. Alternate routes for re-export of goods from Thailand to Vietnam are imported via the Second Friendship Bridge in Savannakhet and transported by Road No. 9 to the Laobao checkpoint of Savannakhet Province. About 90% of the goods to this checkpoint are consumption goods and the rest are live animals and electrical products. Thai goods are also re-exported along the Asian highway No.131 to Napao's traditional checkpoint in Khammuan Province. About 80% of the goods re-exported via this checkpoint are electrical products and the rest are live animals.

Figure 6-5: Trade volume by checkpoint, 2017



[1] There is the Lao-Thai Friendship Bridge No.1 in Vientiane, Lao-Thai Friendship Bridge No. 2 in Savannaket, Lao-Thai Friendship Bridge No. 3, Lao-Thai Friendship Bridge No. 4 in Bokeo, Vanhtao in Champasak, Parsan in Bolikhamsay, Numhueng in Xayyabury, Numgren in Xayyabury, Xamliumkham in Bokeo

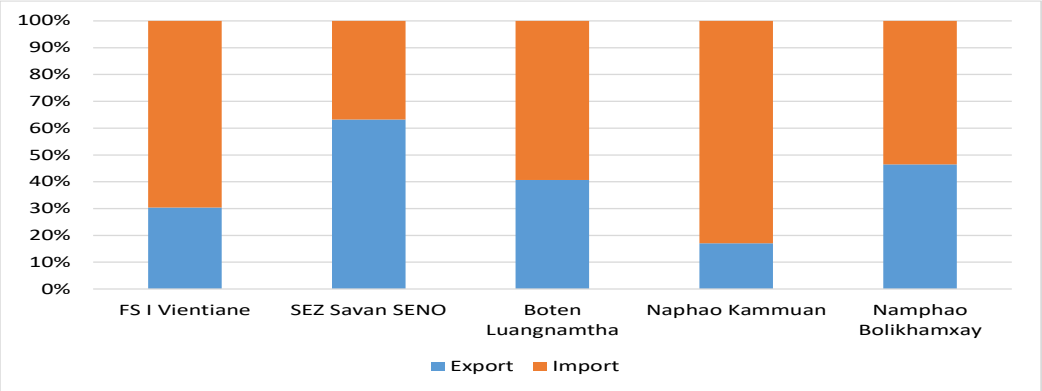
[2] There is Panghok in Phongsaly, Numsouy in Houyphan, Numkhan in Xiengkhouang, Namphao in Bolikhamxay, Naphao in khammoune, Deansavanh in Savannaket, Phoukeu in Attapeu, and Lalai in Saravanh

[3] There is Boten in Luangnumtha and Lantoy in Phongsaly

Source: Data from the Customs, MOF, 2017.

For goods re-exported from Thailand to China, most of the goods go through the fourth Mekong Bridge checkpoint in Borkeo Province utilizing Road No. 3. Thai goods re-exported via this checkpoint are mostly coal (85%), fishing bait (6%), and related agricultural products, and others (9%). For goods re-exported from China to Thailand, most of them go through the Boten checkpoint in Luangnumtha Province to the fourth Mekong Bridge checkpoint in Borkeo Province. Chinese goods re-exported via this checkpoint are mostly alive animals (50%), rubber (23%), crops (20%), and furniture and other (7%).

Figure 6-6: Trade through the major (top 5) checkpoints



Source: Data from the custom, MOF, 2017.

As the country becomes more integrated economically within the region and the world, more foreign investment has been observed. The first official registration of FDI was in 1988, with most of the investment in the hydropower sector. The volume of FDI projects has increased, reaching 30 billion USD from 2003-2017. Like major trading partners' composition, the FDI has been mostly from the neighboring countries, such as China, Thailand, and Vietnam, with the investment value accounting for 30%, 26% and 13% of total FDI respectively between 2003 to 2017 (Table 6-1). Outward investment by Lao firms to abroad is still very limited. Recently, this amounted to just USD 26.21 million during 2012-2017, at 0.01% of GDP.

Table 6-1: Main foreign investors during 1988-2002 and 2003-2017

During 1988-2002			
No	**Countries**	**Projects**	**Values (US $)**
1	France	99	1,143,424,255
2	Thailand	240	1,084,769,306
3	Vietnam	39	190,644,672
4	Malaysia	23	139,085,386
5	China	87	113,919,972
6	USA	41	82,630,570
7	Taiwan	34	49,601,550
8	South Korea	65	39,263,274
9	Australia	40	29,545,137
10	Hong Kong	20	29,306,075
Total		688	2,902,190,197

During 2003-2017			
No	**Countries**	**Projects**	**Value (US$)**
1	China	668	9,056,657,063
2	Thailand	400	8,151,185,492
3	Vietnam	367	4,065,923,680
4	Lao	1,486	2,947,677,452
5	Netherland	7	915,596,500
6	Korea	188	891,694,786
7	Norway	2	860,200,000
8	Hongkong	26	736,521,235
9	Malasia	56	720,954,476
10	India	10	374,365,740
11	Others	455	1,379,678,056
	Total	3,665	30,100,454,480

Source: Ministry of Planning and Investment (MPI), Lao PDR

Table 6-2 shows investment by sector. Before 2002, except for electricity, most of the investment was in the service sector (hotels, telecommunications, etc.). Wood industry is ranked 6th. However, from 2003 onwards, there was more investment in the mining, construction, and agricultural sectors. Investment in the resource sector (hydropower and mining) accounted for almost 60% of total FDI during 2003-2017.

Table 6-2: Investment by sector during 1988-2002 and 2003-2017

During 1988-2002			
No	**Sectors**	**Projects**	**Values (US $)**
1	Electricity Generation	3	1,252,000,000
2	Telecom	8	499,140,000
3	Hotel & Restaurant	67	303,862,707
4	Service	147	193,400,708
5	Industry & Handicraft	176	188,876,116
6	Wood Industry	43	170,181,029
7	Agriculture	106	112,122,127
8	Banking	11	81,800,000
9	Construction	49	80,237,516
10	Trading	134	76,410,772
11	Garment	70	61,190,898
12	Mining	3	22,184,400
13	Consultancies	48	8,530,872
14	Education	20	5,615,065
15	Public Health	2	840,000
Total		887	3,056,392,210

During 2003-2017			
No	Countries	Projects	Value (US$)
1	Electricity Generation	51	11,391,665,208
2	Mining	320	6,273,418,495
3	Construction	102	3,140,637,179
4	Agriculture	883	2,938,199,013
5	Service	530	2,488,431,572
6	Industry & Handicraft	756	1,908,466,625
7	Hotel & Restaurant	362	719,150,413
8	Banking	22	357,861,122
9	Trading	219	274,560,533
10	Wood Industry	168	240,060,347
11	Telecom	11	186,368,895
12	Public Health	12	63,382,736
13	Consultances	125	59,318,327
14	Garment	40	33,592,049
15	Education	64	25,341,965
	Total	3,665	30,100,454,480

Source: Ministry of Planning and Investment (MPI), Lao PDR

Economic integration also brings about development in the tourism sector. Presently, the number of tourists visiting Laos has increased every year, reaching about 4 million in

2017 (MOCIT, 2017). Most tourists to Laos are regional tourists, and Thailand is the largest source market, accounting for about 46% of international arrivals, followed by Vietnam (23%) and China (17%). The fastest-growing market, from a substantial base, is the Republic of Korea (Figure 6-8). Tourists from western regions such as the EU and US account for only 5% of total tourists. As a lagging industry compared to Thailand and Vietnam, about half of the international visitors combine their visit to Laos with a visit to Thailand.

Figure 6-7: Trend of tourists to Laos

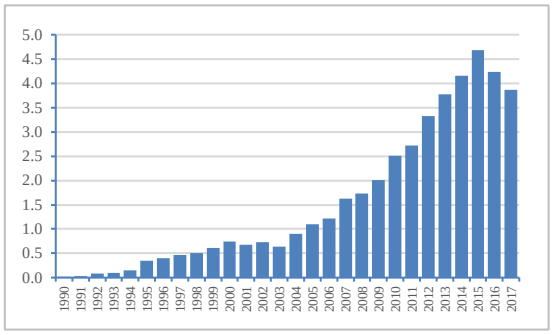
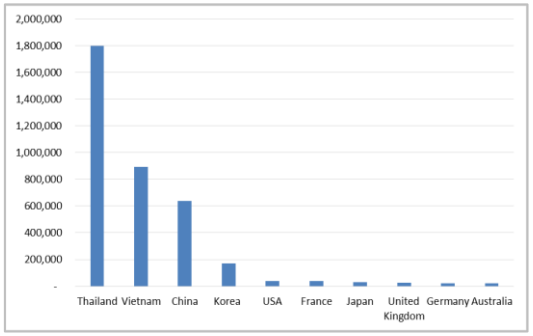


Figure 6-8: Top 10 tourist arrivals by country

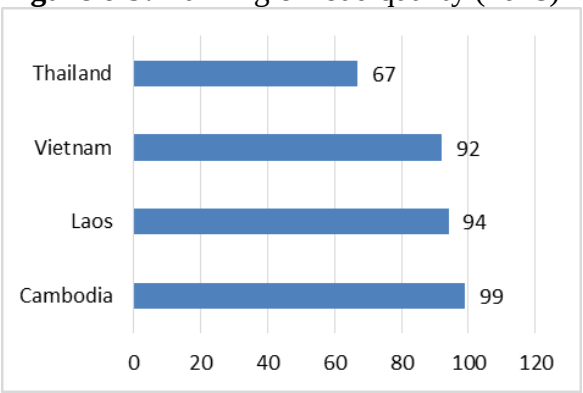


Source: The Author, data from the Ministry of Information, Culture and Tourism, Laos, 2017

Although economic integration has contributed much to Laos' economic development, the lack of infrastructure is still an obstacle to further development and fulfilment of its potential as the land-link hub of the region. Given the mountainous topography of the country, connectivity within the country and the region remains a big challenge.

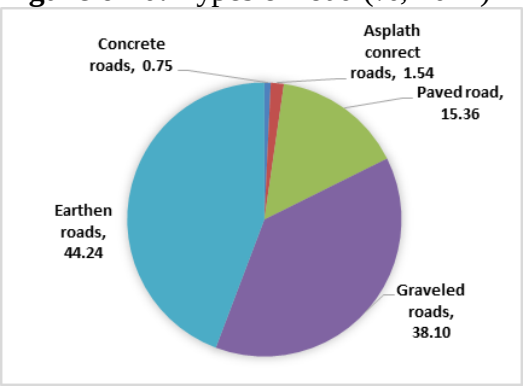
Compared with the neighboring countries, such as Vietnam and Thailand, the quality of the roads in Laos is poorer (Figure 6-9). The roads do not meet the weight standard of the roads of such neighbors. The highway security system is inadequate and the facilities at the borders do not comply with the international standard (MPWT, 2015a). Moreover, more than 80% of the roads are earth and gravel roads while concrete, asphalt concreted, and paved roads comprise less than 20% (Figure 6-10). Some sections of the roads, particularly those connecting the urban and rural areas are impossible to use during the rainy season.

Figure 6-9: Ranking of road quality (2018)



Note: Figures indicate the rank among 137 countries.
Source: The global comparativeness report, World Economic Forum

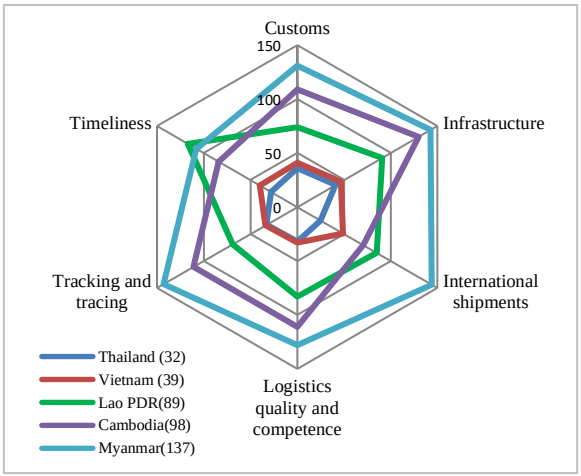
Figure 6-10: Types of road (%, 2017)



Source: Ministry of Public Works and Transport, Laos

For fields related to the road infrastructure, many other improvements are still needed. Although, there is some improvement in the logistics performance index, which presents the physical movement of goods within and across borders, it still ranks lower than Thailand and Vietnam in all areas (Figure 6-11). For timeliness, the measurement of shipments' times in reaching the destination within the scheduled or expected delivery time, it even ranks lower than other ASEAN countries such as Cambodia and Myanmar. In addition, the ease of arranging competitively priced shipments, represented by the international shipment index, Laos ranks lower than Cambodia.

Figure 6-11: Logistics Performance Index (2018)



Note: Figures indicate the rank among 160 countries.
Figure in parentheses beside the country name is the overall rank based on the six areas.
Source: Logistics Performance Index, World Bank

Provided with the aforementioned limitations, the Laos' government has clearly determined a broad strategy for regional and international economic integration and connectivity in the country's Vision 2030 and Ten-year Social-Economic Development Strategy 2015-2025. To pursue such strategy, the transport and logistics sectors shall be among the prioritized sectors to be supported and, in this regard, the Ministry of Public Works and Transportation, the most related stakeholder for this area, has formulated its ten-year strategy to develop the transport and logistics sector from 2016 to 2025. The following sections focus on these strategies and some more detailed development plans, and provide an update on current developments according to the various strategies.

3. Strategy related to land-link transformation and the current status of the transport infrastructure's development

Although there is no official land-link transformation strategy, the term has been used as an important keyword in Laos' vision, strategy, and the national socio-economic development plans, determining it broadly as the strategy for regional and international integration and connectivity. For instance, Laos' socio-economic development vision 2030 lays out and figures the economy "…to be able to broadly and deeply integrate and connect within the region and the world" (MPI, 2016). According to this vision, the Ten-

year Socio-Economic Development Strategy 2015-2025 pointed out four main tasks to strategically improve regional and international integration and connectivity. These include:

- Implementing international cooperation commitment and mobilizing financial resources in terms of foreign direct investment and overseas development assistance (ODA).
- Participating in the regional and international integration process, particularly in the framework of the ASEAN Economic Community (AEC), ASEAN+6 (China, Korea, Japan, New Zealand, Australia, India), the Greater Mekong Sub-Region (GMS), and the World Trade Organization (WTO).
- Creating a favorable investment and business environment and mobilizing quality foreign direct investment with expertise, transferable technology, and export market focus.
- Developing local enterprises that can integrate into the regional and global supply chains.
- Upgrade and develop the road, railway, and aviation infrastructure and improve the logistics service to be convenient, safe and modern.

While all these tasks are equally important, the task that links directly and fundamentally to land-link transformation is to upgrade and develop the transport infrastructure (i.e. roads, railways, etc.) and improve logistics service. At Ministry level, the Ministry of Public Works and Transportation (MPWT) has also set its own strategy for regional and international integration, providing detailed focal tasks to realize the land-link transformation objective of the national strategy. All these tasks are cross-cutting in three main thematic areas, particularly to improve and develop: (1) The transport infrastructure, (2) The laws and regulations, and (3) Service quality to facilitate integration and connectivity.

3.1 Transport infrastructure develoment

Transport infrastructure development in the MPWT's strategy includes a wide range of transport modes, such as aviation, water transport, railways, and roads. As a land-locked country, land transportation is definitely the most important mode for Laos. In terms of cargo and passengers, land transport covers 82% of total transportation, river transport covers 15%, and air transport covers only 3% (MPWT, 2018a). Therefore, in this paper, only two modes of land transport infrastructure, roads/highways and railways, are discussed.

Roads and highways/expressways

According to the MPWT's strategy, the focus for roads and highways is on improving and expanding the existing roads and national avenues, the linking roads from the provinces to other districts and villages, and ASEAN highways. This includes a survey-design and construction of the shortest connecting expressway between Vientiane Capital and Hanoi, the study and construction of the 460km expressway from Vientiane Capital

to the Chinese border, and the 500km expressway between Vientiane to the Cambodian border.

Diagram 6-1: Planned expressways

Source: Original photo from Kimanivong.V, 2018, workshop on strengthening transport connectivity among the CLMVT, and modified by the Author

Currently, there are eight ASEAN highways, AH3, AH11, AH12, AH13, AH15, AH16, AH131 and AH132 with a total length of 2,835km that need to be upgraded to meet the ASEAN standard by 2025 to comply with the Strategy on ASEAN Connectivity 2025. The latest information on the upgrading shows that in 2015, 82.4% of the roads were classified as Class III by the ASEAN standard, 10.2% as Class II, and the remaining 7.4% below Class III.

For the expressways, so far, only the expressway from Vientiane Capital to the Chinese border[4] has already completed for the first phase of construction from Vientiane Capital to Vangvieng District in Vientiane Province. This phase is expected to be completed by 2020. The expressways from Vientiane Capital to the Cambodian border[5], and from

[4] The length of the expressway from Vientiane Capital to Chinese border is about 460 km. The construction period is divided into four phases. The first phase is from Vientiane Capital to Vangvieng District in Vientiane Province. The second phase, from Vangvieng to Luangprabang Province, will start from 2021 to 2024. The third phase, from Luangprabang Province to Oudomxay Province, will start from 2024 to 2027. The last phase, from Odomxay Province to Boten, Luangnumtha Province, will start from 2027 to 2030.

[5] The expressway from Vientiane Capital to the Cambodian border is more than 500km long and divided into several sections. The first sectios is Vientiane to Bolikhamxay Province. The second section is from

Vientiane Capital to Hanoi have just started the feasibility study process. JICA was asked to collect data and review the Vientiane-Hanoi expressway through a comprehensive analysis, and the result of the analysis is currently being considered by the Lao Government. According to the study, the first phase of the construction will be from Vientiane Capital to Ban Viengkham, and will start in 2021 to 2026, with the density of vehicles at more than 20,000 per day. The last phase will be from Ban Viengkham to the Vietnam border, starting from 2028 to 2040, with the density of vehicles of over than 10,000 a day.

Railways

According to MPWT's strategy, there are seven railways projects with a total length of about 1,590km in the plan by 2030 (Diagram 6-2). This includes development of railways (1) from Vientiane Capital to Nongkhai of Thailand (the extension of the existing 3.5 Km railway), (2) from the town of Boten (Chinese border) to Vientiane Capital (Lao-China Railway), (3) from Vientiane Capital to the town of Thakhaek to Mugla; (4) from Savannakhet to the town of Lao Bao on the Viet Nam border; (5) Thakhaek–Savannakhet–Pakse–Vangtao (on the Thai border); (6) from the city of Parse to Veunkham town on the Cambodian border, and (7) from Vientiane Capital, connecting the Lao PDR-China Railway, to the city of Nongkhai in Thailand.

So far, there is only one railway operating from Thanaleng, Vientiane Capital, to Nongkhai Province in Thailand, for a total length of 3.5km. There is a plan by the government to build another railway connecting the medium speed railway (Lao-china Railway) in Vientiane to the city of Nongkhai, which later will be named the Boten-Nongkhai railway, crossing the Mekong River.

Among the planned railways, only the railway project connecting Boten–Vientiane Capital, called the Lao-China railway, is currently under construction. This project is part of the Kunming-Singapore or Pan-Asian railway network concept, and, more broadly, part of China's Belt and Road Initiative, for which the railway network will connect Kunming and Singapore via various routes, passing through Myanmar, Laos, Vietnam, Cambodia, and Thailand. The Laos-China project is a joint investment by the Lao and Chinese Governments. The Chinese Government will invest 70% of the $6 billion required, with the Lao Government contributing the remaining 30%. Construction of the Laos-China railway kicked off in December 2016, with the boring of tunnels and construction of bridges at various points along the route. By the end of 2018, the project has completed about 55.69% of the total construction work. So far, 69 tunnels have been built with the total length of 126,544m and 143 bridges constructed (MPWT, 2018b).

Bolikhamxay Province to Thakek, Khammuan Province, with a total length of 164km. The third section is from Thakek to Savannaket Province, with a length of 117km. The fourth section is from Savannaket to Saravan Province, with a length of 128km. The last section is from Saravan to Champasak Province, with a length of 82km.

Diagram 6-2: Railway development plan from 2016-2030

Source: Original photo from Kimanivong.V, 2018, workshop on strengthening transport connectivity among the CLMVT, and modified by the Author

The other planned railways are still far from realization. The on-going Savan-Lao Bao railway project, a privately funded project by a Malaysian company and the Lao Government, for example, was approved in 2012, but the project has so far only reached the preliminary stage of installing corridor posts along the route. The other railway projects are still under the process of feasibility studies or the feasibility study has just been completed. For instance, KOICA has completed the feasibility study of the railway project connecting Vientiane-Thakek-Mugla, with total length of 452km, and this study has been presented to the Lao Government. The government has also asked KOICA to financially support the detailed feasibility study of the railway connecting Thakek-Savannaket-Pakse-Vangtau (Laos-Thailand border), with total length of 345km and Pakse-Veunkham (Laos-Cambodia border), with total length of 150km.

Bridges

In addition to roads and railways, the government also plans the construction of new bridges across Mekong River connecting Laos and Thailand's major provinces, such as Paksan-Buengkan, Paktaphan-Khemarath, Sanakham-Leuy Province and Vientiane Capital-Nongkhai (Railway Bridge). There is also a plan to construct the Selampao bridge between Laos and Cambodia. Up to 2018, some projects are still at the initial stage. The design and the determination of the location of the bridge between Paksan and Buengkan has been completed. The bridge between Paktaphan and Khemarath is under process of determining the location of the bridge.

3.2 Soft infrastructure development

Regulatory framework and service related cross-border services

As pointed out earlier, other cross-cutting areas to be improved under the MPWT's strategy include the laws and regulations and the service quality to facilitate integration and connectivity. This is not less important to the hard infrastructure development. Particularly, there is a need to improve the institutional and regulatory framework, and the procedures and logistical services to facilitate and boost the benefits of economic integration.

In this regard, some progress has been observed. For instance, the long-term strategy related to transportation has been drafted for the government's consideration. This includes an environmentally sustainable transport strategy and logistics strategy for Lao PDR. Since 2011, much legislation has been revised to be more in compliance with the regional and international agreements to which Laos is committed. These include revision of Road Transport Law, Road Traffic Law, Multi-Modal Transport Law, and the regulation for the maximum permissible gross weight for trucks (MPWT, 2015).

Since December 2015, a pilot project concerning the Laos-Vietnam Single-Stop inspection service has been implemented in the common control area at the Lao Bao-Densavanh international checkpoint in Savannakhet Province of Laos, and in Quant Tri Province of Vietnam. This project is under the framework of the GMS's Cross Border Transport Agreement, and it is equipped with the e-Customs system. The project aims to simplify the cross-border administrative procedure by reducing the number of documents to be filed and the offices to be visited and, consequently, reduces the cross-border time. A similar model will soon be applied at the Savannakhet-Mukdahan international checkpoint at the 2nd Lao-Thai Friendship Bridge at the other end of the AH16 expressway, and later to other important international border checkpoints. In addition, there are also plans to strengthen the public works and transport institute and training centers, in order to enhance heavy freight transport management, road safety management and promotion, and to improve legislation in the area of road traffic and modernize the information system to manage vehicles; registrations, and driving licenses.

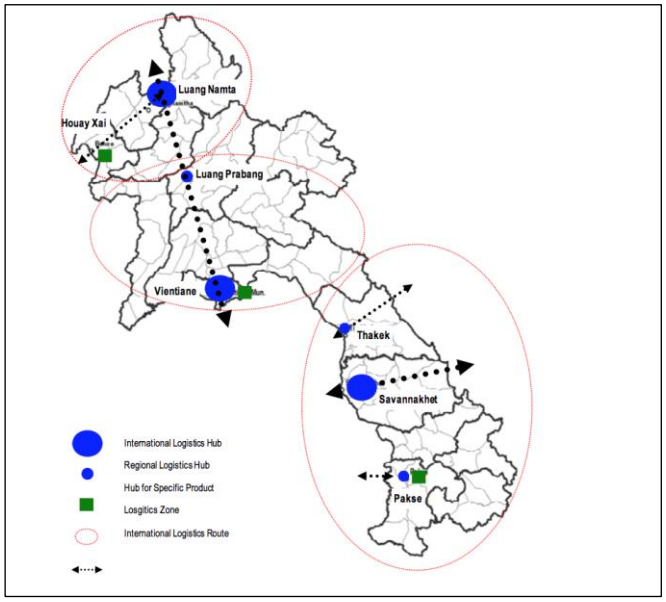
Logistics hubs

Logistical hub development is a crucial factor for land-link transformation. The government has targeted to develop the logistical sector by dividing logistic hubs into three types: an international hub, a regional hub, and a logistic hub for specific products. The international hub acts as the interface between the domestic transport and international transport service, and mainly handle cargo in transit, and import and export. The regional hub mainly handles trans-shipment of domestic cargo between trucks and the area transport. The logistic hubs for specific products deal with certain types of cargo.

In this regard, by 2025, the government plans to construct three international logistical hubs/parks in Vientiane Capital, Savannaket, and Luangnumtha Provinces; three regional logistical parks in Luangprabang, Khammuan (Thakek) and Champasack Provinces; and three specific logistical parks as energy storage and transfer stations in Hoixay, Borkeo Province, and petroleum storage in Vientiane Capital, and agro-products' cold storage at Pakse, in Champasack Province (MPWT, 2016). Details are shown in Diagram 6-3.

So far, there is only one operating logistical hub or dry-port in the Savan Park Zone C of the Savan-Seno Special Economic Zone. This dry-port has been fully operational since 2017. For Vientiane Capital, development of a dry port at Thanaleng, close to the First Friendship Bridge would be a further delay as there is a need to have an additional feasibility study (FS), after that completed by pre-FS by Nippon Express Logistics Co. supported by JICA. So far, the MOU to conduct additional FS is being drafted. Another dry-port under the process of investment approval is in Champasack Province, as part of the Vangtao Economic Zone. The feasibility study for this dry-port has been completed by JICA. From the current situation, it is clear that there is not enough dry-port capacity to support future development of the road transport infrastructure including VHE. However, at least there is a plan to develop projects close to the Lao border check points with Vietnam. Therefore, there is a need to push forward the development of dry-ports according to the plan. Other logistical parks in Luangnamtha, Luangprabang, Khammuan, Champasack and Borkeo, are under the process of investment approval.

Diagram 6-3: Logistical hubs in Lao PDR



Source: Original diagram from the final report on the National Logistical Strategy for Lao PDR, JICA's study team (2011).

4. Implication of the strategy related to land link transformation

Investment: A region's industrial and employment base is closely tied to the quality of the transportation system including the road infrastructure. For a land-linked country, good quality roads, or at least the roads connecting to other export means, i.e. airports or seaports, are not only necessary but they are crucial concerning foreign investment decisions for an industrial estate. In Laos, there are 12 established industrial estates called Special or Specific Economic Zones (SEZ). The first SEZ establishment, the Savan-Seno SEZ, was established in 2003 under the Decree No. 148/PM. Since 2017, the government has the direction to further develop the existing SEZ and suspend establishment of new SEZ locations. Since development of land transport is directly linked with the

special/specific economic zones' (SEZ) development, this will provide more chances for investors in these zones to access the regional markets via the connecting roads/railways to the checkpoints at the Lao-Thai, Lao-China, Lao-Vietnam and Lao-Cambodia borders. For instance, two zones, the Vientiane Industrial Trade Area (VITA Park)[6] and Saysettha Development Zone[7], would benefit from direct connection to the Thai road network along the Lao-Thai border checkpoints, particularly in Vientiane Capital, and then reach Bangkok's harbor by the existing Thai rail network from Vientiane Capital. These zones will also benefit from the connection to the freight train station of the Lao-Chinese medium-speed rail to be completed soon. This railway will provide a direct link to the railway system of China, and facilitate passenger and cargo transportation. Although investors in these zones are mostly from Thailand, Japan, China, Malaysia, Taipei and Denmark with their main target markets overseas, 60% of the export route is through Thailand, and the rest go through Vietnam's Vung Ang Seaport. In the Saysettha Development Zone, all exports target the Thai market, and through Thailand travel to destination markets such as Hongkong and China. For this zone, the Lao-Chinese medium-speed rail will provide the opportunity for investors interested in reaching the mainland China market in the future as an extension from the Hongkong market.

Moreover, the railways and expressways are planned to connect efficiently with the infrastructure development initiatives of the other countries in the region. For example, the potential high speed railway from Bangkok as an extension from the East Economic Corridor (EEC) initiative of the Thai Government would mean a lot for both Lao and Thai investors. It will coorsinate with the planned Nongkhai-Vientiane railway and connect with Lao-Chinese railway to the Chinese border, providing transport choices for Thai investors to access the Chinese market, and through Laos to the Thailand market.

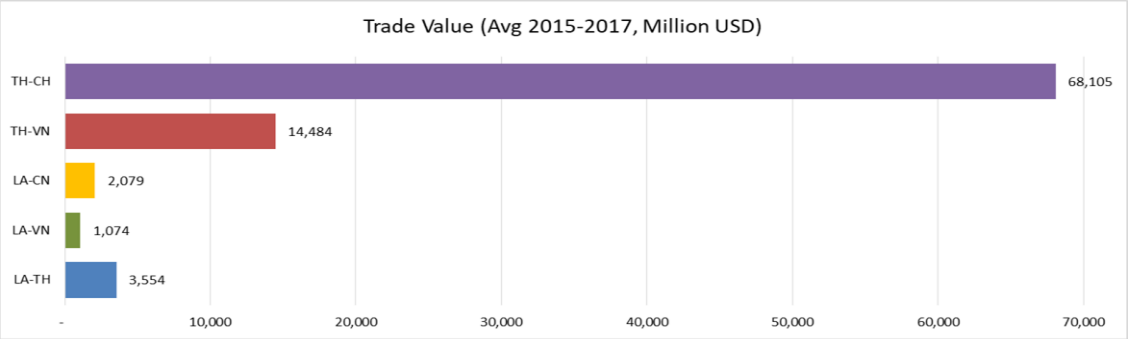
Trade: As mentioned earlier, Thailand, China and Vietnam are among the top trading partners of Laos. Almost all the trade of goods with Thailand, China, and Vietnam is conducted by in-land transportation. Therefore, there is no doubt that implementing the planned railways, expressways, and connecting roads in accordance with the strategy will facilitate and benefit not only Lao exports, but the exports of Thailand, China, and Vietnam to Laos in a greater volume. Moreover, it is also expected that transport infrastructure development will benefit the transit-trade between Thailand and Vietnam, and Thailand and China. For instance, the Lao-China railway will not only to provide a new route for the export and import of goods between Laos and China, but it will also provide a new route for trade between Yunnan, China and Nongkhai in Thailand. The Vientiane-Hanoi expressway will not only facilitate trade between Laos and Vietnam, but it will also provide an alternative route for Vietnamese goods being exported to Thailand in addition to Road No. 9. While the transit trade between Thailand and Vietnam is

[6] The VITA Park, known as free-trade industrial economic zone, was established on 30 October, 2009, covering 110 ha of land. It is a joint venture between the Lao Government, holding 30% ownership, and Nam Wei Development Co., Ltd., holding 70% ownership. So far there are about 35 companies from Japan, China, Laos, Malaysia, Taipei, Denmark and Thailand invested in the zone, with an aggregate investment of more than US$110 million.

[7] Saysettha Development Zone was established in 2010, covering 1,000 ha of land. It is a joint venture between the Lao Government and a Lao-Chinese private company. So far there are about 36 companies from China, Laos, Thailand and Malaysia invested in the zone, with an aggregate investment of more than US$1,683 million.

expected to increase, better roads would, however, increase both exports from and imports to Laos. Given that Laos will not be able to increase the variety and value of its exports in the near future, the latter seems to be out-weighed, as more than 70% of Laos' trade with Thailand is for imports.

Figure 6-12: Trade between Laos, Thailand, Vietnam, and China



Source: Authors, data from ASEAN Trade Statistics.

Tourism: Improvement of roads' condition and development of railway transport could enhance growth of Laos' tourism industry. It is quite tiring and time consuming to travel by car for a long distance on normal roads. The expressways and railways would shorten the travel time and, therefore, have a substantial impact on the tourism industry. For instance, it is expected that completion of the Laos-China railway would reduce the journey time from Vientiane to Luangnumtha from almost one and half days to only 3.5-4 hours. This will definitely increase the number of tourists visiting the destinations along the railway's route. The planned transportation development projects will also increase access to major tourist destination sites. In fact, most tourist sites in Luangprabang, Luangnumtha, Vientiane Province, Vientiane Capital, Khammoune, and Champasak, are located along the planned railway and expressway development routes. Apart from international tourists, tourists from neighboring countries, including Thailand, Vietnam and China account for more than 80% of the total number of tourists visiting Laos. The tourists from these countries can easily access the aforementioned tourist sites via the border checkpoints. Thai tourists, for example, enter Laos at the Friendship (Mittha phab I, II, III) Bridges along the west part of Laos at the border with Thailand. For those entering by the First Friendship Bridge, the destinations are mostly Vientiane Capital, Vanvieng, and Luangprabang up to the northern part. At the same time, about 75% of Chinese tourists enters Laos at the Boten international checkpoint, Luangnamtha Province. In this regard, the Lao-China railway will facilitate access to the Luangprabang and Vanvieng tourist spots.

For Vietnamese tourists, most of the checkpoints along Laos' eastern border with Vietnam are utilized as entry points. Therefore, the Vientiane-Hanoi expressway will attract more tourists from the northern part of Vietnam, Hanoi, to visit Laos. Moreover, other planned railways/expressways, if implemented, will facilitate travel between the northern and southern tourist spots, the tourist will spend more time in Laos.

Foreseeing the future development of the railways and roads, the issue for the tourism

industry is its capacity to reap the benefit from the growing number of tourists. So far, Laos has 2,165 guesthouses and 569 hotels, with 50,600 rooms and 66,246 beds, of which less than 10% are five-star rated. Although the number of registered tour operators more than doubled to 336 between 2009 and 2015; however, the number of active licensed tour guides (604) is insufficient to meet demand. Moreover, the infrastructure and facilities to enhance access to the tourist sites also need to be further developed. Although the on-going Lao-Chinese railway passes through the main tourist spots in the northern part of Laos, the location of the planned stations are still far from the city centers or main tourist sites. This calls for a plan to develop connecting roads or efficient means of transportation to transfer the tourists from the stations to the tourist sites.

Service delivery and competitiveness: With better roads, travel time and cost are expected to be shorter and lower. This will allow companies to the lower transportation cost. It was expected that by 2025, the transportation cost in Lao PDR would be on average USD 1.7/km, reducing from around USD 1.9/km currently (MPWT, 2016). As trucks can reach destinations without major delays, existing firms can ship goods more cheaply and improve their service, as the delivery schedules can be more reliable. More timely and reliable deliveries would enable firms to lower their production costs and enhance productivity and profit. At the national level, the faster and cheaper movement of freight on the transportation network will assist Laos' businesses to be more competitive in the international market. Thus, this development would imply more profit for the existing traders and companies who can now do more shipping of goods within the same time frame.

5. Conclusion

Laos is in the third year of implementing the 2030 Vision, and 2025 Socio-Economic Development Strategy, and is at the initial stage of transforming from a land-locked to land-linked country. To support this transformation, Laos has developed a holistic plan fot its land transport infrastructure development, the the improvement of the existing ASEAN highway sections in Laos, construction of expressways, construction of major connecting bridges, construction of the Lao-Chinese (Boten-Vientiane) railway, initiation of the Savannkhet-Lao Bao railway, and other planned railways/expressways are under the feasibility process. Although there are still many things to be done, some progress in the implementation can be seen and, if fully realized, will benefit not only Laos in terms of more investment opportunity, more trade, increasing number of tourists, and better transport service quality, but it will also neighboring countries in the region. Moreover, to maximize the benefit of all these planned infrastructure projects, the institutional arrangements and the soft infrastructure improvement needs to be strengthened further. The benefits of the hard infrastructure implementation would be lost if the Customs clearance procedures or quarantine take too much time to process. Nevertheless, to realize all these strategic aims and plans, two main challenging issues are foreseen that need to be addressed in the near future.

First, all these infrastructure development projects need a huge amount of investment, and financing such projects is still a challenging issue for Laos. In addition to the planned new roads/expressways and railways, many existing roads also need a suitable budget for

upgrading in order to create synergy for the overall transportation system. The planned transport infrastructure from 2016-2020 will require almost 10 billion USD. This is almost 4 times higher than the amount that could be realistically mobilized by the government (MPWT, 2015). The significant share of the finance for these infrastructure projects will come from the development partners and bilateral assistance. Moreover, in the coming years, Laos will face several challenges from the increasing demand for maintenance of the existing road infrastructure and for the reconstruction and repair of roads damaged as a result of more frequent natural disasters. Maintenance, reconstruction, and repair the damaged roads will add to the pool of the limited budget for the overall infrastructure development. Currently, the road maintenance fund could only cover 1/3 of the budget required. This poses a big challenge to Laos, and calls for prioritization of all the infrastructure projects. Therefore, assistance from the development partners is needed. At the same time, Laos should prioritize best practice in road maintenance as well as look into other means of financing the constructing of new roads, such as public-private partnership (PPP) contract structures, as a way of inviting private sector investment into the sector. So far, Laos has only limited experience of implementing PPP in 16 energy projects[8]. To expand the positive experience with the PPP model to the road sector, careful study and support are still needed.

Secondly, to transform from a land-locked to a land-linked country, urban planning is also an important and crucial factor to maximize the benefits of the transportation system. Recently, the government has set criteria to upgrade some main cities in Laos to be "Nakone", which is a city with more economic activities and population. Examples are the upgrading of Luangprabang city in Luangprabang province, Kayson city (Savannaket Province), and Pakse city (Champasack province) to be Nakone. Based on the commitment as an ASEAN member of the ASEAN Smart city network, the Lao Government has proposed two cities, Luangprabang and Vientiane Capital, to be ASEAN Smart cities in Laos. This development initiative not only aims to attract more cooperation in terms of investment, trade, and tourism, but will also provide more opportunity for jobs and income creation for the Lao people. It means to provide demographic density for development in the future.

However, the infrastructure development and urban planning in Laos are not yet well coordinated. For instance, the urban development plan has not yet been included into the Laos-China medium speed railway development plan. There are 11 big stations along the railway. But these stations are a bit far from the city centers in the provinces and, so far, no clear development plan around the stations has been designed. Nevertheless, in November 2018, the government issued an agreement to establish a committee to draft a masterplan concerning development along Lao-China railway. There is no doubt that city and urban development, in line with the transport infrastructure development plan, will need to be discussed urgently in order to maximize the benefits from the current and future transport infrastructure implementation.

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