

Sponsored by
Central Government of PR China
(China)



Conducted by
Mekong Institute

Development Potential for International Shipping on the Lancang-Mekong River (China, Lao PDR, Myanmar and Thailand), 2016



Disclaimer

This research study was conducted with support from the central Government of China. The Trade and Investment Facilitation Department of Mekong Institute took the leading role in pursuing and accomplishing this research.

The findings, interpretations and conclusions expressed in this report are entirely those of the authors, and do not necessarily reflect the views of Mekong Institute or its donors and/or sponsors. Mekong Institute does not guarantee the accuracy of the data included in this publication and accepts no responsibility for any consequence resulting from their use.

For further information, please contact:

Trade and Investment Facilitation Department
Mekong Institute
Khon Kaen
Thailand
Telephone: +66 43 202411-2
Fax: +66 43 343131
Email: tif@mekonginstitute.org

STUDY TEAM

The study team comprised the following staff from the Trade and Investment Facilitation Department of Mekong Institute:

Mr. Madhurjya Kumar Dutta,
Program Director
Mr. Quan Anh Nguyen,
Program Specialist
Ms. Shan Ni,
Program Coordinator
Ms. Wen Hao,
Program Coordinator
Mr. Ronnarith Chaiyo-saeng,
Program Officer

Mekong Institute
Khon Kaen, Thailand.
Telephone: +66 43 202411-2
Fax: +66 43 343131
Email: tif@mekonginstitute.org

Executive Summary

The Greater Mekong Subregion (GMS) has seen rapid economic growth of its country members during the past two decades, especially the effectiveness of the ASEAN-China FTA. Together with a deeper and greater economic integration process in line with the ASEAN Economic Community (AEC) blueprint, the implementation of the Lancang-Mekong (LM) Cooperation Mechanism, China's "the Belt and the Road" initiative, and other regional and subregional cooperation frameworks, there is a greater demand for the development of transport and logistics infrastructure as well as services linkages where the logistics and transport multimodal have been applied and developed in the region.

In the new development context, Lancang-Mekong (LM) River, as a key part of the GMS transport network, plays a crucial role in transport connectivity between the upper and lower riverine countries through the waterborne navigation system. This navigation system is now fronting both opportunities and challenges that have drawn greater attention from China, Lao People's Democratic Republic (Lao PDR), Myanmar, and Thailand (CLMT) through a due consideration of the potential development of the international shipping and transportation route from Simao District in Yunnan Province, China to Luang Prabang in the Lao PDR.

Based on the captioned background, and in the light of the development trends through regional cooperation and economic integration, Mekong Institute (MI) conducted this research study on international shipping on the LM River with the cooperation of the CLMT. The central Government of China funded this project through support from the Yunnan Department of Transport. The study adopted a qualitative method in combination with statistical data to capture the drivers that possibly influence the potential development of this international shipping route and associated industries.

Through the analysis, the research study has identified the potential for further development of: (a) international shipping and transportation on the LM River as part of an integration process through waterborne transport connectivity; (b) waterborne tourism subsector in the LM region; and (c) capacity development for the Joint Committee on Coordination of Commercial navigation (JCCCN) and stakeholders of the CLMT through regional capacity development programs proposed for the next development phases of the LM region.

This study also puts forward important suggestions for an upgraded institutional model for the JCCCN together with a new coordination mechanism for the development results towards the full success of the Quadripartite Agreement, which is backed up by a consensus of the CLMT on the development potential of LM River transport, and affirmation of the legitimacy of this Agreement on promoting freedom of commercial navigation in the LM region.

The study faced limitations in accessing the complete information needed for the quantitative method as initially designed.

Table of Contents

Executive Summary	iii
Table of Contents	iv
List of Boxes	
List of Tables	v
List of Figures	vi
Acronyms and Abbreviation	vii
ACKNOWLEDGEMENTS	ix
I. Introduction and Scope and Research Methodology	1
1.1. Introduction	1
1.2. Scope and Research Methodology	2
1.2.1. Collaboration and Communication	2
1.2.2. Consensus and Process Orientation	2
1.2.3. Methodological Approach	2
1.2.4. Research methodology	3
II. Overview of the Lancang-Mekong (LM) Basin Development	7
2.1. The Lancang-Mekong (LM) River	7
2.2. Regional Cooperation Initiatives and Frameworks	9
2.3. Economic and Trade Cooperation between China, the Lao PDR, Myanmar and Thailand	14
2.3.1. Brief Overview of Macroeconomic Performance	14
2.3.2. Economic and Trade Cooperation	16
III. Drivers of Potential Development of the International Shipping Transportation: An analysis	20
3.1. Mixed Modes of Transport and Traffic	20
3.1.1. Road system	21
3.1.2. Railways	24
3.1.3. Waterways and traffic	24
3.2. Port Infrastructure	30
3.3. Logistics	37
3.3.1. Logistics Performance Index (LPI)	37
3.3.2. Status of Logistics Operations of China, Lao PDR, Myanmar and Thailand under the Implementation of the Quadripartite Agreement	38
3.4. Trade Patterns	41
3.5. Tourism	49
3.6. Investment	61
3.7. Joint International Shipping Management	62
IV. Identified Development Potentials	65
4.1. Prospects for Roll-on and Roll-off Services	65
4.2. International Shipping	67
4.3. Agricultural Development	70
4.4. Tourism Development	70
4.5. Capacity Development Needs	72
4.6. Suggested Coordination Mechanism	81
4.7. Suggested Regional Capacity-Building Projects	82

V. Conclusion	84
Annexes	86
1. Suggested Multi-year Capacity-Building Projects	86
2. Participant list of Inception Workshop on February 26-27, 2015 at MI, Khon Kaen, Thailand	89
3. Field Survey	90
3.1. Interviewee list	90
3.2. Quantitative Questionnaire for Data Collection	97
3.3. Qualitative Questionnaire for Field Interview	115
4. Consultation Meeting	119
5. National and Cross National Transport Projects	123

List of boxes

- Box A. Case Study 1: Leading Mekong River Tourism Shipping Company in Xishuangbanna, China
- Box B. Case Study 2: Thailand Leading LM Tourism Shipping Company in Chiang Rai, Thailand

List of tables

1. Summary of Consultation Meetings in CLMT	5
2. LM Basin by Area and Country	8
3.1. Regional, Quadrilateral, Trilateral, and Bilateral Cooperation Initiatives and Frameworks in the GMS	9
3.2. Potential Impact of the Agreements on the international shipping on the LM River	13
4. Bilateral Trade Volume between China and Upper Mekong Countries from 1998 to 2013	16
5. Bilateral Trade between China and ASEAN and Breakdown by Country	17
6. FDI stock by China and Estimated Cumulative Utilized FDI to China by Lao PDR, Myanmar and Thailand	18
7. Physical Status of AH Routes in China through Guangxi and Yunnan Provinces	21
8. Physical Status of AH Routes in the Lao PDR	21
9. Physical Status of AH Routes in Myanmar	22
10. The Physical Status of AH Routes in Thailand	22
11. The LM River Sections and Improvement Status of the New Shipping Channel from Simao to Luang Prabang	25
12. Passenger Time via Mohan by R3A and by River at Guanlei Port in Yunnan Province	30
13. Passenger Time by Air, Road, and River at Jinghong Port	30
14. River ports, distance, and transport time in upstream and downstream navigation	31
15. Operational Performance of Chiang Khong Port, Thailand	34
16. Operational Performance of Chiang Saen Commercial Port, Thailand	35
17. LPI of China, Lao PDR, Myanmar and Thailand, 2014	37
18. Ease of Doing-Business Index of China, Lao PDR, Myanmar, and Thailand in 2014 and 2015...	38
19. Tariff Reduction Scheme under ASEAN and ACFTA Frameworks	41
20. Trade of Lao PDR, Myanmar, and Thailand with China: Import-Export Structure by Category and Share of Goods	44
21. Top 10 Products Traded through Chiang Khong Customs, Thailand, 2014	47
22. SWOT Analysis of Tourism Products and Market	52
23. Forecast of The Number of Tourists Traveling on the Mekong River between Houayxay and Luang Prabang, 2014-2040	71

List of figures

1. Study Framework.....	3
2. Map of the LM River Basin	8
3. Real GDP Growth during 2003-2013 and Estimates for 2014 and 2015	14
4. Regional Cooperation with Transport Connectivity	20
5. Numbers of Ship Arrivals at Chiang Saen Port, 2005-2010	26
6. Numbers of Ship Departures from Chiang Saen Port, 2005-2010	27
7. Number of People Disembarking via Chiang Saen Port 2005-2010.....	28
8. Number of People Embarking via Chiang Saen Port, 2005-2010.....	28
9. Tourist Arrivals via the Mekong River at Houayxay, Lao PDR.....	29
10. Map of Ports along the Lancang-Mekong River.....	33
11. River and Road Routes (R3A, R3B).....	36
12. Value of Bilateral Trade between China and Lao PDR (US\$ Million)	42
13. Value of Bilateral Trade between China and Myanmar (US\$ Million).....	43
14. Value of Bilateral trade between China and Thailand (US\$ Million).....	43
15. Export Value via Selected River Ports in China, the Lao PDR and Thailand, 2010-2014	45
16. Import Value via Selected River Ports in China, the Lao PDR and Thailand 2010-2014	45
17. Export Value between Thailand and China, the Lao PDR and Myanmar during 2001-2008 via Chiang Saen (old port), Thailand	46
18. Import Value between Thailand and China, the Lao PDR and Myanmar during 2001-2008 via Chiang Saen (old port), Thailand	47
19. Capacity Development Process.....	73
20. Human Resources Development as Part of the Institutional Framework for LM River Development.....	74
21. Suggested Institutional Structure of the JCCCN.....	79
22. Suggested Functional Roles and Operations	80

Acronyms and abbreviations

ACMECS	Ayarwady-Chao Phraya-Mekong Economic Cooperation Strategy
ACTS	ASEAN Customs Transit System
ACFTA	ASEAN-China Free Trade Area
ADB	Asian Development Bank
AEC	ASEAN Economic Community
AFTA	ASEAN Free Trade Area
AIIB	Asian Infrastructure Investment Bank
AMBDC	ASEAN-Mekong Basin Development Cooperation
ASEAN	Association of South East Asian Nations
AH	Asian Highway
BSP	Buy, Ship and Payment
CBEZ	Cross-border Economic Zones
CCNR	Central Committee for the Navigation of the Rhine
CLMT	China, Lao PDR, Myanmar and Thailand
DWT	Deadweight Tonnage
GMS	Greater Mekong Subregion
ECAFE	Economic Commission for Asia and the Far East
EWEC	East-West Economic Corridor
ESCAP	Economic and Social Commission for Asia and the Pacific
FDI	Foreign Direct Investment
FS	Feasibility Study
FY	Fiscal Year
FTA	Free Trade Area
GMS	Greater Mekong Subregion
GPS	Global Positioning System
ICT	Information and Communication Technology
LM	Lancang-Mekong
LMC	Lancang–Mekong Cooperation
JCCCN	Joint Coordination Committee for Commercial Navigation
LSP	Logistics Service Provider
LPI	Logistics Performance Index
MI	Mekong Institute
MM	Ministerial Meeting
MOFCOM	Ministry of Commerce of China
MPWT	Ministry of Public Works and Transport of Lao PDR
MRC	Mekong River Commission
MTCO	Mekong Tourism Coordination Office
MWARP	Mekong Water Resources Partnership Program
NSEC	North-South Economic Corridor
NTO	National Tourism Organization
PAT	Port Authority of Thailand
PPP	Public Private Partnership
RVC	Regional Value Chain
RIF	Regional Investment Framework
SEC	South Economic Corridor
SOM	Senior Officials Meeting
TAT	Tourism Authority of Thailand
SEZ	Special Economic Zone
SPS	Sanitary and phyto-sanitary
SME	Small and medium-sized enterprise

TDW	Tons deadweight
TWG	Technical Working Group
UNDP	United Nations Development Programme
WB	World Bank
WEF	World Economic Forum

ACKNOWLEDGEMENTS

The research study on Development Potential for International Shipping on the Lancang-Mekong (LM) River covering China, Lao PDR, Myanmar, and Thailand has been conducted with support from the central Government of the People's Republic of China. Mekong Institute (MI) extends its sincere thanks to the Government of China for the financial assistance to the study.

In the course of the study, technical assistance was provided by the team of Trade and Investment Facilitation Department of Mekong Institute in cooperation with subject experts, namely Dr. Jittichai Rudjanakanoknad, Chulalongkorn University, Thailand, Dr. Suthep Nimsal and Dr. Phoommhiphat Mingmalairaks from Mae Fah Luang University, Chiang Rai, Thailand and Mr. Paul Ashcop from GMS FRETA.

Mr Madhurjya Kumar Dutta, Director, Trade and Investment Facilitation of Mekong Institute provided an advisory role throughout the implementation of the action research as well as substantive technical guidance. Mr. Quan Anh Nguyen, Program Specialist, provided a detailed analysis in compiling the report. Ms. Shan Ni, Program Coordinator, Ms. Wen Hao, Program Coordinator and Mr. Ronnarith Chaiyosaeng, Program Officer, conducted the field survey in China, the Lao PDR, Thailand, and Myanmar, and provided inputs in drafting the report. Mr. Nguyen Huu Quang assisted the team in the coordination with the stakeholders as well as field data collection. MI acknowledges the assistance and cooperation received from all the stakeholders in China, the Lao PDR, Myanmar and Thailand during the study.

Mekong Institute
Khon Kaen, Thailand
17 May 2016

I. Introduction and Scope, and Research Methodology

1.1. Introduction

1. With support from the central Government of China, Mekong Institute (MI) has conducted research on the Development Potential of the International Shipping on the Lancang-Mekong (LM) River for economic development with cooperation between China, the Lao PDR, Myanmar and Thailand (CLMT). The research study is based on review of the important functions of transport connectivity for regional integration in the context of an increasing participation of China in the Greater Mekong Subregion (GMS) and its cooperation with the countries of the Association of Southeast Asian Nations (ASEAN) through various development modalities, particularly the Agreement on the ASEAN-China Free Trade Area (ACFTA) whose framework has been established and steadily progressed towards reaching comprehensive cooperation.¹ The ACFTA is the largest free trade area in terms of population and third-largest in terms of nominal GDP. At the same time, negotiations for expanding the current ACFTA are in progress in order to allow more goods to be traded tariff-free and to normalize procedures for services, investment, and customs.
2. The Asian region is advancing rapidly in their economic integration efforts since the formation of the AEC at the end of 2015. Identification of potential international shipping routes for economic development and cooperation among the CLMT will create complementary and synergized effects on widening, diversifying and modernizing water transport, which will result in the creation and enhancement of investment, trade, transport trade facilitation, tourism and human resources development.
3. Significantly, the implementation of this research study is in line with China's initiative, "the Belt and the Road" (one belt, one road) founded with aim of building a new network of global partnerships, including both bilateral and multilateral cooperation in political, economic, cultural and other areas. The objective is to adapt development strategies of China and other participating nations in order to produce benefits that are shared by all in an economic "win-win" outcome. In addition, this initiative envisions the creation of multiple economic corridors encompassing more than 60 countries in East Asia, South-East Asia, Central Asia, South Asia, West Asia, North Africa and East Africa, linking the most dynamic East Asia Economic Zone with the advanced European Economic Zone.²
4. Indeed, the transport sector and its development are considered indispensable to regional cooperation and economic integration. To this end, the potential for developing international shipping transportation on the LM River, in addition to the other modes of transportation, has been identified through the analysis of drivers that have a relationship with the new international navigation route from Simao District in Yunnan province connecting with Luang Prabang in the Lao PDR. The analysis provides suggestions on the prerequisites for supporting the development of international shipping as part of the freedom of commercial navigation on the LM River under the Quadripartite Agreement of the CLMT. Simultaneously, a new model of institutional arrangements for the JCCCN as well as knowledge-capital preparation for the JCCCN and stakeholders of the CLMT has been proposed for facilitating the implementation of the said Agreement, and the development of related economic sectors – i.e., tourism, trade and trade facilitation, logistics and services,

¹ See <http://www.asean.org/communities/asean-economic-community/item/asean-china-free-trade-area-2>.

² "Connecting the world through belt and road", available at <http://www.chinausfocus.com/foreign-policy/the-belt-road-initiative-offers-new-model-of-cooperation-in-global-governance/>.

investment, private sector development – as incentives for greater regional cooperation and economic integration. The objective of this research is to provide policy options to enable the CLMT Governments to engage in decisions for promoting international shipping on the LM River.

1.2. Scope and Research Methodology

1.2.1. Collaboration and Communication

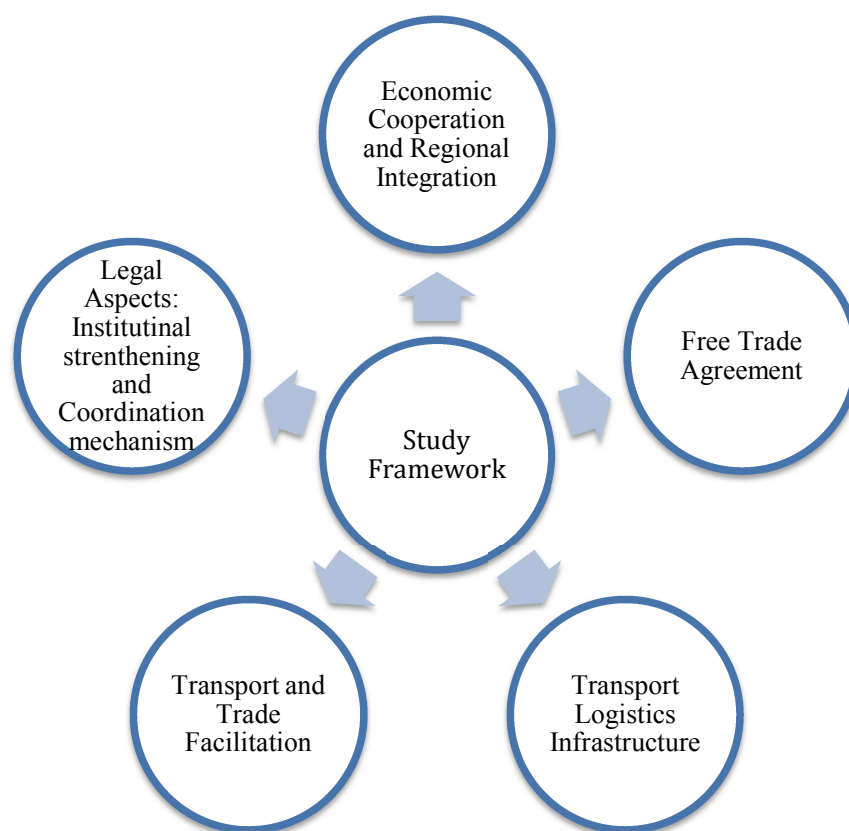
5. In conducting this research, MI collaborated with several public and private sector organizations in the CLMT, through face-to-face meetings, discussions and consultations. These communication mechanisms have enabled the stakeholders to stay in touch throughout the research study period.

1.2.2. Consensus and Process Orientation

6. Throughout the research implementation period, MI cooperated with the project stakeholders in adopting:
 - a. Consensus-building;
 - b. Consultation;
 - c. Transparency;
 - d. Participation and inclusion.
7. MI has worked with national public and private stakeholders and their local counterparts in all the four countries concerned through (a) site visits for data collection, (a) consultation meetings and (c) the organization of a dissemination workshop aimed at facilitating the consensus needed to achieve the desired results. MI adopted a participatory and inclusive process while working with stakeholders at different levels. However, some challenges inherent in working in the provinces were encountered in terms of obtaining quality data, time constraints and the varying levels of the capacity of stakeholder groups in the field.

1.2.3. Methodological Approach

8. MI adopted the concept and methodological approach for this research study as agreed with the stakeholders in the CLMT. This involved consultations with the project beneficiaries and concerned stakeholders, and the reflection of their interests, concerns and perspectives regarding the project.
9. To this end, the research employed a qualitative analysis by using in-depth interviews, focused group discussions, and participatory tools, including consultations with policymakers, technical experts and practitioners in the relevant sectors (e.g., maritime and land transport, logistics and tourism) in order to capture perceptions and judgments. Qualitative data were used to analyse: (a) the transport development policies and plans in the four countries; (b) regional and bilateral cooperation frameworks on trans-boundary transport; (c) the existing status quo of the international waterway routes and other transport modes; and (d) identify the potential and advantages of international shipping for a comprehensive development scheme. In addition, statistical data and the results of questionnaire surveys were used to support the qualitative analysis. As such, this allowed the identification of strengths, weaknesses, opportunities, risks and needs of all selected stakeholders and the factors involved, with the aim of helping to define possible levels of cooperation and synergies among the project stakeholders.
10. The study adopted the framework as described in figure 1.

Figure 1. Study Framework

Source: Compiled by Mekong Institute.

1.2.4. Research methodology

1.2.4.1. Desk review

11. The desk review of key documents on agreements, treaties, and statistical data and information issued by the Governments concerned and international organizations on selected topics was carried out prior to the fieldwork. This included:

- a. Regional agreements
 - i. GMS Economic Corporation Program
 - ii. Cross-border Transport Agreement (CBTA)
 - iii. Agreement on Commercial Navigation on the LM River 2000
 - iv. Agreement on Cooperation for the Sustainable Development of the Mekong River Basin 1995
 - v. Master Plan on ASEAN Connectivity 2011
 - vi. Joint Committee on Coordination of Commercial Navigation on the LM (JCCCN)
 - vii. Other relevant issues.
- b. National transport sector development plans of the four countries
 - i. China
 - ii. Lao PDR
 - iii. Myanmar
 - iv. Thailand

- c. Transportation conditions/status on the LM River
 - i. The course of the LM River
 - ii. Physical condition of the LM River for transportation
 - iii. Transported goods on the LM River
 - iv. Ships/vessels
 - v. Major ports
 - vi. Obstacles and challenges.
 - d. Stakeholder mapping in the LM region
 - i. China
 - ii. Lao PDR
 - iii. Myanmar
 - iv. Thailand
 - v. Other.
12. The result at that stage was a report on the preliminary analysis which was presented to all the stakeholders concerned at the Inception Workshop as part of the research framework.

1.2.4.2. Inception Workshop

13. Upon completion of the desk review activities, MI conducted an Inception Workshop on 26-27 February 2015 in Khon Kaen, Thailand with 20 representatives from the Mekong River Commission (MRC), the Customs Department of Thailand, Logistics company; the Chamber of Commerce and Industry of Myanmar and Myanmar International Freight Forwarders Association (MIFFA); Ministry of Foreign Affairs of the Lao PDR represented by the Department in Luang Namtha province, the Ministry of Public Works and Transport, Maritime Safety Administration of the LM River; and the Navigation Affairs Administration Bureau of Yunnan province, China. Of the total participants, there were 11 international and national experts and practitioners. A list of the participants is provided in Annex 2.
14. As an integral part of the research framework, the inception work provided a platform for the management and technical experts to evaluate the desk research results as well as discuss the international logistics on the LM River, the Regional Master Plan for Waterborne Transport, transport economy along the LM River, and the research methodology for the following stages of implementation.
15. Further to the Inception Workshop, MI finalized the questionnaire in preparation for gaining an in-depth understanding of the local contexts and development status in the past as well as the current status of the studied locations

1.2.4.3. Field Visits

16. Aligning with the methodological approach, MI employed in-depth interviews and questionnaire survey to explore perceptions of the key stakeholders on the development subjects and issues related to the international shipping/navigation on the LM River. To this end, the questionnaire was designed to target four key groups, (a) governmental departments; (b) ports and customs authorities; (c) the business sector; and (d) logistics service providers (LSPs). The objective was to highlight the various vital factors related both to the potential development of international shipping on the LM River and associated industries. The questionnaire results, together with review of project documents and statistical data, helped in completing the findings. The team developed qualitative guidelines for the interviews and questionnaires, conducted the fieldwork and analyzed data for report writing and information dissemination.

17. All questionnaire surveys and interviews were conducted in the selected locations of the CLMT, including Yunnan, Vientiane, Luang Namtha, Bokeo, Tachilek, Naypyidaw, Yangon, Bangkok and Chiang Rai during May-June 2015. The participants and concerned stakeholders in the fieldwork are given in Annex 3.
18. During the course of the research study, the team encountered some difficulties in reaching all informants through survey questionnaire as well as accessing adequate sources of information during in-depth interviews at each designated site. Therefore, additional resources were mobilized for data collection as well as the development of the research work after the consultation meetings.

1.2.4.4. Consultation meetings

19. Upon completion of the fieldwork, a series of consultation meetings were held in the respective countries to obtain the perspectives of the related stakeholders. These included updating the progress of the research work and reviews of the participating countries. The aforementioned consultation meetings are summarized in table 1 and list of participants is given in Annex 4.

Table 1. Summary of Consultation Meetings in CLMT

No	Summary of consultation	Date	Location
1	Thirty-seven representatives, including government officials of concerned line ministries, port authorities, chambers of commerce and industry, research institutes and representatives of local authorities joined the consultation meeting. In response to the preliminary analysis and field survey results, the representatives addressed (a) the risks and non-safety aspects in association with waterway navigation facing transporters, traders and the public in the Lao PDR; (d) technical and financial constraints on investment in transport infrastructure; and (c) the lack of awareness of laws and regulations. In addition, Laotian representatives expressed their interests in inland waterborne tourism, capacity development, and rail systems that are in need of further improvement for national economic development through the regional integration approach.	24 July 2015	Vientiane, Lao PDR
2	Twenty-two representatives including government officials of the Yunnan province in transport, navigation, foreign affairs, trade, customs and logistics. The representatives suggested placing focus on: (a) analysis of the development potentials of LM international shipping through forecasting development demand and trends of traded goods, and effectiveness of current and forecasted policies; (b) identification of opportunities for capacity development at the regional, national and local levels; (c) joint international shipping management; (d) investment opportunities; and (e) consideration of government perspectives on the potential of international shipping.	27 July, 2015	Yunnan, China
3	Eleven Thai representatives from the Maritime and Land Transport, Customs and Port authorities, Chamber of Commerce, the Committee for the Economic Quadripartite, and private companies in the areas of transport, logistics and tourism expressed their perspectives of: (a) LM tourism; (b) security for the LM River; (c) capacity-building for concerned stakeholders;; and (d) policy recommendations. In particular, the Thai stakeholders proposed: – Security issues with close collaboration and coordination among the four countries in realizing investment, especially in navigation facilities including containerized port construction, the establishment of a forum for the private sector, a council for international navigation on the LM River, and an information-sharing mechanism between China and the other three countries	31 July 2015	Chiang Rai, Thailand

	– Capacity development on law and regulations on waterway navigation, navigation licensing, capacity in areas of port operations and management, emergency management, trade and investment, and trade facilitation.		
4	Sixteen representatives from Myanmar, including government officials in trade, waterborne transport, navigation and tourism and the private sector including chambers of commerce and business associations, and private company owners in logistics and port development attended this consultation meeting. The meeting included discussions on trade development, tourism promotion, customs, and logistics in connection with waterways and other transport modes. The discussions also covered capacity-building issues at various levels, especially trucking companies and cross-border regulations. Myanmar confirmed Wan Pong port as its national port while its other port would be utilized for development under the agreement on commercial navigation on the LM River. Further, the joint Mekong River Navigation Improvement Project was seeking government approval for implementation during 2015-2025. In that regard, it was noted that Myanmar had projects on the development of two dry ports and the missing rail link connecting Muse and Racho, and the rehabilitation of railways and 13 bridges to ensure the access of containers from seaports to dry ports. There is potential for tourism development, but safety remained a critical issue. Myanmar was also trying to control informal cross-border trade in order to facilitate formal trade. Myanmar was also paying attention to human resources development in which capacity development in areas of trucking and cross-border regulations were emphasized.	4 August 2015	Yangon, Myanmar

Source: Inception Workshop Report, Mekong Institute 2015.

1.2.4.5. Dissemination workshop

20. In order to share the final results of the study, a dissemination workshop will be held in Kunming, Yunnan province once the final report is approved.

II. Overview of the Lancang-Mekong Basin Development

2.1. Lancang-Mekong (LM) River

21. The LM River originates in the Tanggula Mountain Range on the Qinghai-Tibet Plateau and runs approximately 4,880 kilometers (km) through Yunnan province of China southward through Myanmar, the Lao PDR, Thailand, Cambodia and Viet Nam. This is a transboundary waterway that is the seventh-longest river in Asia. The upstream section is called the LM River or upper Mekong, while the downstream section covers the Lao PDR, Thailand, Cambodia and Viet Nam is named as the lower Mekong³ International waterway transport/navigation links China (Yunnan province) with the four Greater Mekong Subregion (GMS) countries through the LM River, which involves a total length of 1,000 km with ports and terminals of 100,000 deadweight tonnage (DWT).^{4, 5} However, the cross-border water transport has been challenged by a lack of synchronization in investment, facilitation and coordination among the riparian countries. Since the 1990s, regional cooperation has steadily progressed and received increasing attention from the international community through regional cooperation initiatives and frameworks that are specified in subsection 3.2 of this report.
22. Indeed, the LM River is one of the most important rivers in the south-west China and South-East Asia. The total population residing within the river basin boundaries is about 70 million people across the six countries⁶ with various sources of livelihoods, e.g., agriculture-related activities, production and manufacturing. Importantly, the river serves as a crucial route for inland and international waterway transportation of goods and people. The riverine system is also rich in a flora and fauna ecosystem, enabling tourism development and cultural exchanges between people and between nations.
23. Development of the GMS region's share of the Mekong River, covering a total area of 795,000 km² in the six countries – southern China, Myanmar, the Lao PDR, Cambodia, Thailand and Viet Nam – involves various locations at different development levels. Among them, China is the furthest upstream, owning nearly half of the river's length. China has demonstrated a strong interest in the development of the GMS for the establishment of a stable basis for developing its southwestern provinces, such as Yunnan, and transportation links. China has made various efforts to widen international navigation along the river as well as improve investment and trade with the ASEAN members, with the aim of promoting economic cooperation and development in the region for mutual benefit and sustainability.
24. The LM basin by area and country is briefly described in table 2 and in figure 2.

³ Institute of Southeast Asian Studies, Yunnan Academy of Social Sciences, China, *Mekong Development and China's (Yunnan) Participation in the GMS Cooperation*.

⁴ *The Pan-Pearl River Delta: An Emerging Regional Economy in a Globalizing China*.

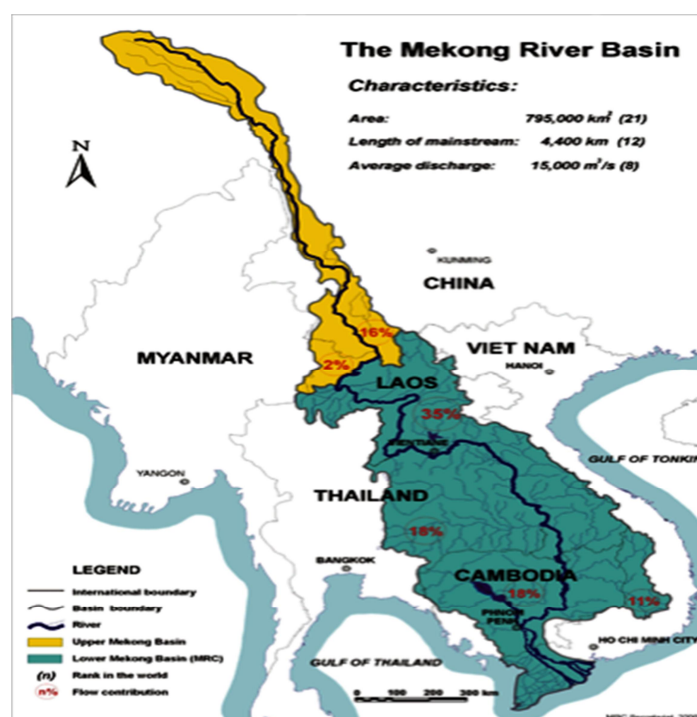
⁵ Deadweight tonnage (DWT) or tons deadweight (TDW) is a measure of how much mass a ship is carrying or can safely carry. It does not include the weight of the ship (Edward A. Turpin and William A. McEwen, 1980, *Merchant Marine Officers' Handbook*, fourth edition).

⁶ Cambodia's Development Policy Research Institute. 2008, "Framing research on water resources management and governance in Cambodia: A literature review", Working Paper No. 37,

Table 2. LM Basin by Area and Country

Mekong Basin	Total area (km ²)	Countries involved	Basin area (km ²)	Percentage of total area	Percentage of total area of the country
Mekong	795,000	China	165,000	21	2
		Myanmar	24,000	3	4
		Lao PDR	202,000	25	85
		Thailand	184,000	22	36
		Cambodia	155,000	20	86
		Viet Nam	65,000	8	20

Source: Food and Agriculture Organization of the United Nations, AQUASTAT 2011, Mekong River Basin.

Figure 2. Map of the LM River Basin

Source: Mekong River Commission (MRC)

25. Given the important role of the river, especially with regard to river traffic, a concept for improving waterway navigation, starting from the upstream portion of the river, was developed for opening the Lancang River as one of the prioritized investment projects in the GMS investment portfolio in 1993.⁷ This scheme aims to allow large ships to freely navigate from Simao of Yunnan province in China to Luang Prabang in the Lao PDR through joint cooperation of the CLMT towards a long-term vision of developing international cargo and passenger transportation on the LM River to promote and facilitate trade, investment, tourism as well as enhancing and synergizing their cooperation in commercial navigation. During the development period, further maintenance and improvement of the upper LM navigation channel from China, at landmark 243, and Myanmar to Luang Prabang in the Lao PDR (890 km) aimed at upgrading the shipping channel to help bigger ships operate all year round has been designed and listed in the GMS program for implementation.⁸

⁷ Asian Development Bank, 1994.

⁸ ADB, GMS Program.

26. By nature, the river starts in China and becomes navigable for short stretches in Yunnan province. It then defines the border between China and Myanmar, Myanmar and the Lao PDR, and then between Thailand and the Lao PDR. After a stretch to Luang Prabang and, wholly within the Lao PDR, it once again forms the border between Thailand and the Lao PDR. After the Khone Falls in southern Lao PDR it enters Cambodia and forms a confluence with the Tonle Sap River and the Bassac River near Phnom Penh. The LM River and Bassac River then both flow through southern Viet Nam before flowing into the sea. There is substantial traffic on these rivers. In fact, navigation on the Upper Mekong, i.e., from the Chinese border to the Cambodian border, is characterized by short-distance traffic subject to the season.
27. The recent developments pertaining to the river system have been factored into the regional development agenda where participating countries and international development partners have paid more attention to mutual advantages from promoting economic cooperation and regional integration, and to emerging concerns, if any. For this reason, the following section of this study briefly presents the regional cooperation initiatives and frameworks as of 1992.

2.2. Regional Cooperation Initiatives and Frameworks

28. In fact, regional cooperation for developing the LM River, which covers a number of development issues (e.g., hydropower, flood control, navigation and irrigation), began during 1947-1956.⁹ At that time, the former Economic Commission for Asia and the Far East (ECAFE) – now known as the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) – prepared an agenda for the Mekong River development in 1951; that led to the establishment of the Interim Mekong Committee in 1957. However, large-scale and region-wide schemes were revived in the early 1990s, through which the Asian Development Bank (ADB) proceeded with its initiative for the GMS countries, i.e., the GMS Economic Cooperation Program. The program has enabled economic growth, cooperation and integration to take place more readily; the other initiatives and frameworks related to the upper and lower river basin were developed afterwards. Table 3.1 briefly presents selected bilateral, trilateral, quadrilateral and regional initiatives and agreements, while table 3.2 details the potential impact of these Agreements on international shipping on the LM River, in association with the development of the Quadripartite Agreement between China, the Lao PDR, Myanmar and Thailand.

Table 3.1. Regional, Quadrilateral, Trilateral and Bilateral Cooperation Initiatives and Frameworks in the GMS

No	Agreement	Year	Signatory Countries	Remarks
1	ADB GMS economic cooperation program	1992	GMS member countries	
2	Free Navigation Agreement on official opening ports in each of the four countries	1994	China, Lao PDR, Myanmar, and Thailand	
3	Cooperation for the Sustainable Development of the Mekong River Basin, particularly Freedom of Navigation, MRC	1995	Cambodia, Lao PDR, Thailand, and Viet Nam	In Chiang Rai, Thailand
4	Freight and Passenger along the Lancang-Mekong River	1997	China and Myanmar	
5	ASEAN's Basic Framework of the ASEAN-Mekong Basin Development Cooperation (AMBDC).	1996	ASEAN countries	

⁹ ESCAP, Mekong Case Study

No	Agreement	Year	Signatory Countries	Remarks
6	ASEAN Framework Agreement on Facilitation of Goods in Transit	1998	ASEAN	
7	Facilitation of Cross-border Transport of Goods and People	1999	Lao PDR, Thailand, and Viet Nam	Signed in Vientiane, Lao PDR, and amended in Yangon, Myanmar
8	Commercial Navigation on the LM River	2000	China, Lao PDR, Myanmar and Thailand	Myanmar
9	The Joint Coordination Committee for Commercial Navigation (JCCCN)	2001	China, Lao PDR, Myanmar and Thailand	
10	Ayeyarwady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS) implementing the Plan of Action for cooperation in the areas of trade and investment facilitation, agriculture and industry, transport linkages, tourism and human resources development	2003	Cambodia, Lao PDR, Myanmar and Thailand	
11	Emerald Triangle Cooperation Framework on tourism development	2003	Cambodia, Lao PDR and Thailand	Signed in the Lao PDR
12	World Bank and ADB Mekong Water Resources Partnership Programme (MWARP)	2004		
13	ASEAN Framework Agreement on Multimodal Transport	2005	ASEAN	
14	ASEAN Framework Agreement on Facilitation of Interstate Transport	2009	ASEAN	
15	Waterway Transportation	2009	Cambodia and Viet Nam	Signed in Cambodia
16	ASEAN-China Free Trade Agreement (ACFTA)	2010	ASEAN	
17	Master Plan on ASEAN Connectivity Transport, Logistics and Infrastructures Plan and Projects; ASEAN Transport and Logistics Framework	2010	ASEAN	
18	Law Enforcement Cooperation under the Quadripartite Agreement	2011	China, Lao PDR, Myanmar and Thailand	Joint Statement
19	The ASEAN Customs Transit System (ACTS)	2015 *	ASEAN	

Source: Consolidated from different sources by Mekong Institute.

* (i) April 2016 for software to be developed; and (ii) Pilot test in Malaysia, Singapore, and Thailand

29. Aligning with the regional development trends, ADB launched the GMS economic cooperation scheme covering China (represented by Yunnan province and Guangxi Zhuang Autonomous Region), Cambodia, the Lao PDR, Myanmar, Thailand and Viet Nam in 1992. The total area and population of the GMS are 2,568,600 km² and 326 million, respectively. With the institutional support of ADB together with the United Nations Development Programme (UNDP), ESCAP, the Tourism Authority of Thailand (TAT), and the MRC, the GMS development initiatives have been strongly realized and successfully implemented. In this sense, ADB has created a platform for connecting the growth and development of the GMS countries through improving infrastructures and connectivity, widening the scope of trade and investment in the subregion, increasing investment in the energy, environment, telecommunications, agriculture, and tourism sectors, and human resources development.

Within the GMS region, there are five geographical triangle areas: (a) the southern part of the GMS, which covers two triangles, i.e., Cambodia-Lao PDR-Viet Nam, and the Emerald Triangle formed by Cambodia-Lao PDR-Thailand; (b) the northern section of the GMS which comprises the Golden Triangle formed by China-Lao PDR-Myanmar (another name for this area is the Green Triangle); (c) the triangle formed by China-Lao PDR-Viet Nam, which has yet to become a focus area; and (d) an area combining (a) and (c), which is known as Golden Quadrangle Area, which is part of the North-South Economic Corridor (NSEC).

30. In implementing this initiative for about two decades, the economies of GMS countries have made striking progress. A retrospective review of the first decade of GMS development demonstrates a weighted average economic growth rate for Cambodia, the Lao PDR, Myanmar, Thailand, and Viet Nam with 5.27% per annum during 1993-2010, while Yunnan province of China recorded an annual growth rate of 11.64% and Guangxi Zhuang Autonomous Region achieved 9.96%, respectively, during that period. The GDP per capita in 2009 was US\$ 677 in Cambodia, US\$ 3,744 in China, US\$ 944 in the Lao PDR, US\$ 571 in Myanmar, US\$ 3,940 in Thailand, and US\$ 1,052 in Viet Nam, according to the World Bank's World Development Indicators. As a matter of fact, the presence of GMS has harnessed the potential of the Mekong Basin in accelerating and achieving the development targets, including stream channelization for navigation purposes.
31. In 1995, the Interim Mekong Committee was transformed into the Mekong River Commission (MRC) with the agreement of the four lower Mekong countries of Cambodia, the Lao PDR, Thailand and Viet Nam on the Cooperation for the Sustainable Development of the Mekong River Basin, with its vision for "an economically prosperous, socially just and environmentally sound river basin". In fact, China and Myanmar, as the upper basin countries, were not parties to MRC as they may both have considered that there would not be much benefit from their involvement, and that their contribution might also not be considered significant from the MRC's viewpoint. However, attempts have been made to bring the China and Myanmar into the Agreement in recent years through implementation of selective joint cooperation agreement schemes. As such, with the participation of China and Myanmar as dialogue partners, the MRC has focused on discussions about ways and mechanisms for improving cooperation throughout the Mekong Basin, including hydropower development and safe international waterway navigation along the LM River, particularly between Houayxay and Luang Prabang in the Lao PDR.¹⁰
32. The ASEAN Mekong Basin Development Cooperation (AMBDC), which is a cooperative framework set up for participation by ASEAN and China, was established in 1996 with the objectives of: (a) the enhancement of economically sound and sustainable development of the Mekong Basin; (b) encouraging policy dialogue and common project identification targeting firm economic partnerships for mutual benefits; and (c) strengthening the interconnections and economic linkages between the ASEAN members and the Mekong riparian countries. As part of this framework, Mekong Basin development is one of the key areas under the proposed ACFTA, and the action plan on streamlining and enhancing the ASEAN-China strategic partnership.
33. As for upper Mekong basin cooperation and development aligned with the construction of roads and railway transportation networks financed by the central Government of China to link China with South-East Asian countries, Yunnan province has developed a water transport plan for constructing two waterways reaching other domestic provinces, i.e., the Jinsha River and You River leading to the Yangtze River delta and Pearl River delta, as well as waterways reaching foreign countries, including the LM River. As a result, China and Myanmar signed an Agreement on Passenger and Cargo Shipment on the LM River in 1997

¹⁰ See <http://www.mrcmekong.org/news-and-events/news/?start=90>.

with an aim of opening the ports at (a) Jinghong, Simao, Menghan and Guanlei in China, and (b) Wan Seng port and Wan Pong port in Myanmar.¹¹

34. In 2000, the CLMT signed the Quadripartite Agreement on Commercial Navigation on the LM River. This mutually agreed commercial navigation agreement, which came into effect in early 2001, was aimed at utilizing the waterway transportation of goods and people as well as trade facilitation and tourism development. The implementation of the Quadripartite Agreement by all the member countries has made good progress, especially which regard to e preparation for the development plan on international navigation along the LM River during 2015-2025. This is also in line with the Regional Economic Cooperation of the Golden Quadrangle between the four countries, which is aimed at building an overland passageway and economic corridor connecting southwest China with the Indo-China peninsula, thus achieving the convergence of the two major markets of China and ASEAN. In this connection, China and Thailand attach great importance to support economic cooperation in the Golden Quadrangle participating countries.
35. ACFTA aims at reducing and eliminating tariffs and other barriers in order to increase trade between China and the ASEAN members. To that end, an increase in trade volume will create increased demand for transport.
36. The Master Plan of ASEAN Connectivity 2011-2015 aims to connect ASEAN through a three-pronged approach: (a) physical infrastructure development; (b) effective institutions; and (c) mechanisms and processes, and empowerment of the population. The Master Plan is already under implementation.
37. In 2011, law enforcement cooperation along the Mekong River was initiated in the form of a joint statement in which the participating countries agreed to take responsibility for establishing effective measures for joint investigations to secure public order and combat transnational crimes as well as for dealing with emergency events in a cooperative and effective manner.
38. The ASEAN Customs Transit System (ACTS) is expected to facilitate customs transit among ASEAN members. Its main effect will be to reduce transport costs (by eliminating red tape and multiple transit fees). A pilot scheme is scheduled for 2016 among selected ASEAN members. However, full implementation and operation in the ASEAN-GMS area (mainly the GMS countries of ASEAN) may be delayed, depending on the development progress of the Lao PDR and Myanmar. Once fully implemented, the potential will exist for using ACTS to facilitate transport and trade among countries participating in LM River cooperation.
39. Most recently, an initiative of the Government of China, i.e., the Lancang-Mekong Cooperation (LMC) Framework, was proposed at the 17th China-ASEAN meeting in 2014, and launched in 2015. This is the first subregional cooperation project involving participation by China, Cambodia, the Lao PDR, Myanmar, Thailand and Viet Nam; it is seen as a new cooperation mechanism covering the Mekong River, with the key objectives of bringing more practical benefits to countries in the region. In fact, the member countries have agreed on the LMC framework for meeting development demands as well as the fundamental and long-term interests of the six countries. The five priority objectives comprise: (a) interconnection and communication; (b) energy cooperation; (c) cross-border cooperation; (d) water resources and agriculture; and (e) poverty reduction cooperation. The inception of this initiative, with its important objectives of creating an effective and sustainable mechanism for building mutual benefit and narrowing development gaps in the region, will

¹¹ “Look South: China-Myanmar Transport Corridor”, Institute of International Relations and Area Studies, Ritsumeikan University, China..

contribute to the strengthening of the ASEAN community as well as ASEAN-China cooperation in connection with other cooperation schemes.¹²

Table 3.2. Potential Impact of the Agreements on International Shipping on the LM River

Type of Agreement	Name of Agreement	Potential impact on the international shipping on the LM River
Trade Agreement	ASEAN-CHINA Free Trade Agreement (ACFTA)	Tariffs and other barriers reduces and / or eliminated will mean an increase in overall trade. This will also mean more transport demand and the LM River can take part of that increase.
Economic Cooperation Initiatives	China 'One Belt, One Road' Initiatives	While no direct impact is expected, the "one belt" policy would foresee an overall increase in trade to the region.
	GMS regional integration initiative	This is the primary framework agreement that has already seen a significant growth in regional trade. This can only improve as the GMS integration increases.
Customs and Transit Agreements	ASEAN Customs Transit System (ACTS)	ACTS should make the customs transit of GMS countries easier when fully implemented. This must make transport cheaper and thus increase the flow of cargo.
	China Customs Transit System	No specifically relevant to the LM River, but an issue to be dealt with and considered when making LM policy.
Transport, Logistics and Infrastructure Plan and Projects	Master Plan on ASEAN Connectivity	Roll-on and Roll-off (Ro-Ro) transport and waterborne connectivity are prominent in the ASEAN Connectivity policy. This can only help the LM.
	ASEAN Transport and Logistics Framework	The aim of ASEAN to develop other forms of freight transport, aside from road transportation, which hold benefits for LM River if it can ensure transit times.
	GMS Cross-Border Transport Agreement	This is a road transport agreement, but there is room to extend it to cover inland waterways as an intermodal routing
	Bilateral and trilateral agreements among GMS countries	No benefit to LM River as these agreements are for the benefit of road transport
	Quadripartite Agreement on Navigation along the LM River	This is the key agreement for LM navigation, providing potentials and impacts can be expanded to help in the overall development of the river and its surrounding areas.
	Regional Transport Infrastructure Projects	This highlights the need for the ports to be enhanced and the channel to be improved. They offer a blue print for development of the river and its support facilities.

40. In summary, the above-mentioned subregional and regional cooperation initiatives and frameworks have created a path for participating countries in the LM region to develop their national economies and integrate themselves into the regional platform despite the existing differences in development levels of the past two decades. The following discussion in this chapter presents the status quo of economic cooperation between the CLMT members, including key drivers of economic growth that are aimed at realizing the results of regional cooperation and economic integration.

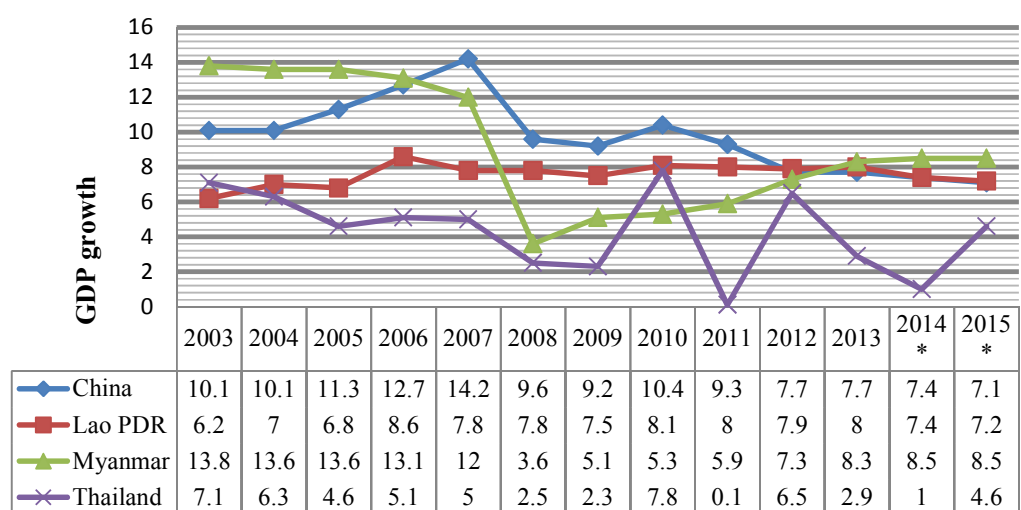
¹² See http://www.china.org.cn/world/2015-11/13/content_37051868.htm.

2.3. Economic and Trade Cooperation between China, Lao PDR, Myanmar and Thailand

2.3.1. Brief Overview of Macroeconomic Performance

41. Under the LM River cooperation through the Quadripartite Agreement, China is the largest economy. Thailand has achieved steady economic growth since the 1960s, while the Lao PDR has made significant progress since launching its economic reform programs in the late 1980s. Myanmar is still a poor country, although it has structurally adjusted its economy to attract and diversify foreign investment since 2011. Figure 3 illustrates the real GDP growth of CLMT during 2003-2013, and the estimates for 2014 and 2015.

Figure 3. Real GDP Growth during 2003-2013 and Estimates for 2014 and 2015



Source: International Monetary Fund, World Economic Outlook database, October 2014.

* Estimated.

42. China has shifted from a centrally planned to a market-based economy since its economic reform started in 1978. The country has experienced rapid economic and social development through sectoral shifts and productivity growth of the aggregate economy, and the agriculture and non-agriculture sectors. The annual average GDP growth is about 10%. In recent years, China has been ranked as the world's second largest economy and is playing an increasingly important and influential role in the global economy. However, China remains a developing country given the fact that the per capita income of its population of 1.3 billion is still a fraction of that in developed economies. In reality, rapid economic growth has also placed the country in a situation where it needs to cope with certain challenges, including high levels of inequality, rapid urbanization, environmental sustainability, external imbalances and demographic pressures.¹³
43. Within the GMS, China is one of the key investors in developing the transport infrastructure system linking all members in the subregions, especially those along the NSEC. Furthermore, the role of China in the GMS is highlighted through its financial contribution to the region's economic development and integration. In 2005, the Government of China provided US\$ 20 million for establishing a technical assistance fund administered by ADB. China, in association with ADB, has made an effort to provide support for the economic development of mainland South-East Asia, through the US\$ 10 billion China-ASEAN Fund

¹³ *China Economic Update*, World Bank, June 2015.

for Investment Cooperation to support regional infrastructure development.¹⁴ China is not only the key investor but also the most import aid provider to these countries, including Myanmar and the Lao PDR, in this cooperation framework.

44. Thailand has made remarkable progress, reaching the status of an upper-income country in 2011. Thailand had achieved a high annual economic growth at 8%-9 % during the late 1980s until the Asian financial crisis during 1997-1998. The country's economic growth rate in the post-financial crisis period was approximately 4%, reflecting the decline in its export competitiveness, the shortage of skilled labour and knowledge needed to meet the requirements of the modern economy, and the political changes and uncertainty that have affected public and private investment. The rate of recovery and re-ignition of economic growth will depend on the country's capability to overcome the factors constraining growth through (a) promoting a more inclusive growth model, (b) the expansion of trade, (c) enhancement of economic integration into the regional and global economies, and (d) the creation of more incentives for private investment.¹⁵
45. Thailand has gradually changed from a net recipient of foreign aid to become a donor country. Under the GMS framework, Thailand has made substantial progress in this regional economic program; it has been actively involved in several infrastructure development projects, such as NSEC, EWEC and the South Economic Corridor (SEC), for promoting the flow of trade, investment and people throughout the subregion. In addition, Thailand has been involved in a number of joint and bilateral projects with Cambodia, the Lao PDR and Myanmar under the strategic framework of ACMECS.
46. The Lao PDR's economy is growing fast but that growth is mainly driven by the hydropower and mining sectors, which implies that investment in the power sector remains strong. On the other hand, the occurrence of drought during the crop seasons may cause a reduction in agricultural rice production and output, which might be caused by greater use of water for hydropower generation. Moreover, the country is experiencing fiscal deficit, which has widened sharply from previous years probably due to the fall in government revenue caused by lower prices for mineral exports and oil imports. Currently, the shortage of skilled labor and the low rate of employment are weakening the economy.¹⁶
47. The Lao PDR continues to become more closely integrated into the rapidly growing regional economy through implementation of commitments within ASEAN, the maintenance of relatively low tariffs, and improved physical infrastructure and transport connectivity with neighboring countries. This has resulted in strong growth for the Lao PDR in cross-border flows of goods, services and investment.
48. In order to integrate into regional cooperation (e.g., GMS and AEC) and take advantage of such cooperation modalities, the policies of the Government of the Lao PDR supporting an enabling business environment together with an effective implementation of major structural adjustments must be widely realized and strengthened. In particular, AEC not only offers new opportunities for attracting foreign investment, higher production efficiency, free flows of goods and services, lower import costs, it also imposes more pressure on the competitiveness of the national economy during the integration process. These challenges are especially critical for both the Lao PDR and Myanmar.
49. Myanmar is one of the poorest members of ASEAN. Its economic growth has become fairly rapid since 1992. The country's economy continues to expand at a robust pace through

¹⁴ G. Wade, "Could ASEAN drift apart?" *Yale Global*, 25 February 2011, available at <http://yaleglobal.yale.edu/content/could-asean-drift-apart>.

¹⁵ World Bank, "Overview of the Thai economy", available at www.worldbank.org/en/country/thailand/overview.

¹⁶ World Bank, "Lao economic update", June 2015.

investment stimulated by structural reform and generally strong domestic demand. The ratio of services-to-GDP increased from 32% in 1990 to 35% in 2005 and 42% in 2011.¹⁷ Thanks to its market reform, the service sector has become the main driver of growth in line with expansion in telecommunications and transportation. In parallel, the share of sectoral output by industry and manufacturing has also increased while the share of agriculture has structurally decreased. However, this is a slow structural adjustment process. The country has also experienced a high inflation rate and exchange rate depreciation of local currency against a stronger United States dollar.

50. Myanmar is striving to achieve an inclusive economic growth model and poverty reduction, giving it strong potential for higher growth. The country is endowed with abundant natural resources, a strategic location at the crossroads of Asia and lower labor costs. Myanmar now is a sizable market with wide-ranging investment opportunities. To promote further economic development, reforms are required that result in improving the business environment, transforming industrial structure towards manufacturing, and upgrading infrastructure, particularly in the areas of electricity generation and transport.

2.3.2. Economic and Trade Cooperation

Table 4. Bilateral Trade Volume between China and Upper Mekong Countries from 1998 to 2013

		US\$ Million				Share of ASEAN (%)			
		1998	2003	2008	2013	1998	2003	2008	2013
ASEAN Total	Exports	10,919	30,935	114,139	244,133				
	Imports	12,589	47,350	117,012	199,402				
	Balance	(1,670)	(16,415)	(2,873)	44,731				
Lao PDR	Exports	n/a	98	268	1,721	n/a	0.3	0.2	0.7
	Imports	n/a	11	149	1,021	n/a	0.0	0.1	0.5
	Balance	n/a	87	119	701				
Myanmar	Exports	n/a	908	1,979	7,349	n/a	2.9	1.7	3.0
	Imports	n/a	170	645	2,810	n/a	0.4	0.6	1.4
	Balance	n/a	738	1,335	4,540				
Thailand	Exports	1,170	3,829	15,521	32,738	10.7	12.4	13.6	13.4
	Imports	2,423	8,829	25,636	38,518	19.2	18.6	21.9	19.3
	Balance	(1,253)	(5,000)	(10,116)	(5,780)				

Source: China Ministry of Commerce via United States-China Economic and Security Review Commission, May 2015.

51. China and Thailand have retained and developed trade and investment cooperation since the 1970s. In recent years, the two countries have enhanced cooperation and communications, and promote the facilitation and growth of bilateral trade and investment through mechanisms such as the China-Thailand Joint Committee on Trade, Investment and Economic Cooperation, with the expectation of achieving bilateral trade value of more than US\$ 100 billion in 2015.¹⁸ To that end, the bilateral trade and economic partnership will be continuously enhanced and guided through the Five-Year Development Plan on Trade and Economic Cooperation towards achieving sustainable economic development of various economic sectors and industries. To facilitate the Plan's implementation, prioritization is being given to: (a) improving the bilateral investment environment through an information

¹⁷ Myanmar Service Sector Analysis, available at www.intracen.org/uploadedFiles/intracenorg/Content/Exporters/Sectors/Service_exports/Trade_in_services/Myanmar_ServicesSectorBrief.pdf.

¹⁸ Joint press statement on the Long-Term Program on the Development of Thailand-China Relations.

exchange mechanism and favorable investment incentives; (b) closer investment cooperation in rubber, bio-plastics, and green industries; (c) joint exchange practices and experiences in environmental management, green supply chain and eco-town management; (d) cooperation in agriculture development through policy coordination, investment in agribusiness, development of agricultural cooperatives, agricultural processing products; and (e) cooperation in financing and banking.

52. Table 5 presents the bilateral trade between China and ASEAN from 1998 to 2013 at five-year intervals, while table 6 illustrates the stock of Chinese FDI in the Lao PDR, Myanmar and Thailand, and an estimated cumulative utilized FDI to China by the three countries. The cumulative data is the sum of annual data, and does not reflect disinvestment or current value.

Table 5. Bilateral Trade between China and ASEAN, and Breakdown by Country

		US\$ Million				Share of ASEAN (%)			
		1998	2003	2008	2013	1998	2003	2008	2013
ASEAN Total	Exports	10,919	30,935	114,139	244,133				
	Imports	12,589	47,350	117,012	199,402				
	Balance	(1,670)	(16,415)	(2,873)	44,731				
Lao PDR	Exports	n/a	98	268	1,721	n/a	0.3	0.2	0.7
	Imports	n/a	11	149	1,021	n/a	0.0	0.1	0.5
	Balance	n/a	87	119	701				
Myanmar	Exports	n/a	908	1,979	7,349	n/a	2.9	1.7	3.0
	Imports	n/a	170	645	2,810	n/a	0.4	0.6	1.4
	Balance	n/a	738	1,335	4,540				
Thailand	Exports	1,170	3,829	15,521	32,738	10.7	12.4	13.6	13.4
	Imports	2,423	8,829	25,636	38,518	19.2	18.6	21.9	19.3
	Balance	(1,253)	(5,000)	(10,116)	(5,780)				

Source: China Ministry of Commerce via United States-China Economic and Security Review Commission, May 2015

53. In particular, bilateral trade between China and Thailand reached US\$ 71 billion equivalent in 2013.¹⁹ In this connection, the key exports from China were electro-mechanical products, hi-tech products, textiles, and agricultural products and imports from Thailand included manufactured products, hi-tech products, agro-industrial products, e.g. natural rubber, and agricultural products. Besides, Thailand has invested approximately US\$ 3.29 billion in China, while China's foreign direct investment (FDI) in Thailand was US\$ 1.08 billion by the end of 2010.²⁰ For example, China's Holley Group and the Amata Corporation of Thailand jointly invested in the development of the Rayong Industrial Zone located on an area of 3.5 km². The zone is not only a manufacturing center, but also an integrated economic area complete with storage, logistics, commerce and residential areas. This zone is situated at Amata City, Rayong in proximity to transportation routes leading to the deep-seaport at Laem Chabang and other supporting infrastructure.

54. China has become the second biggest investor (Thailand is the biggest investor) in the Lao PDR in the form of FDI as of the 2000s. In 2010, Chinese FDI in the Lao PDR reached US\$ 850 million. Economic cooperation between the Lao PDR and China through Yunnan province gives priority to the tourism, trade, investment, transport, agriculture and hydropower sectors. The bilateral trade between the Lao PDR and Yunnan province has been

¹⁹ United States-China Economic and Security Review Commission, *China's Economic Ties with ASEAN: A Country-by-Country Analysis*.

²⁰ See http://usa.chinadaily.com.cn/china/2011-12/16/content_14279772.htm.

growing year-on-year, to reached US\$ 1.37 billion in 2014, and it is expected to achieve a higher target in coming years.²¹ China's exports to the Lao PDR are mainly electro-mechanical products, textiles, garments, hi-tech products, automobiles and motorcycles, while Lao PDR exports comprise copper ore, rolled copper, agricultural products, sawn timber and natural rubber.

55. In addition, the Governments of China and the Lao PDR have agreed to establish the Cross-Border Boten-Mohan Economic Cooperation Zone (CBEZ) between Luang Namtha province and Yunnan province, for which the Joint General Scheme was signed in September 2015.²² To enhance their economic cooperation through the CBEZ model, both sides have taken action to support (a) international payment via banking systems, particularly the automated payment transacting through the Development Bank of China and the Bank of Lao PDR, (b) tourism development, and (c) agricultural production for export.
56. Economic cooperation between China and Myanmar grew strongly during the 1990s and 2000s. China has gained a dominant position in Myanmar's external trade. In 2013, bilateral trade between China and Myanmar reached approximately US\$ 10 billion, of which China's exports to, and imports from Myanmar totaled US\$ 7.3 billion and US\$ 2.8 billion, respectively. China's main exports to Myanmar are textiles, hi-tech products, rolled steel, motorcycles and automobiles, and its main imports from Myanmar are agricultural products and log-based products.
57. China's total investment in the form of FDI in Myanmar increased considerably during 2003-2012. However, since 2013, China's FDI flows and stocks have shown a decreasing trend that coincided with the announcement of the 2012 foreign investment law of Myanmar. It is understood that the Government of Myanmar has widened and diversified sources of FDI from all countries, given that Myanmar is deemed to be "low ground" into which investment flows. Myanmar is now in a development phase. Telecommunications and transport infrastructure, including railways and highways, have become the major markets in the country. In fact, China has strong investment advantages in these priority fields, which are identified by Myanmar's development policies. Therefore, the two countries have the potential for enhancing their partnership by focusing on their comparative advantages and the needs for further development.

Table 6. FDI stock by China, and Estimated Cumulative Utilized FDI in China by the Lao PDR, Myanmar and Thailand

(Unit: US\$ Million)

	Stock of Chinese FDI			Estimated cumulative utilized FDI to China
	2003	2008	2013	2002-2013
Lao PDR	9	305	2,771	39
Myanmar	10	500	3,570	74
Thailand	151	437	2,472	1,761

Source: China Ministry of Commerce via US-China Economic and Security Review Commission, May 2015.

58. Conforming to the regional cooperation initiatives and agreements, economic cooperation in the ASEAN, GMS and, in particular, the CLMT through the development of trade and investment has proven the success of economic integration as well as institutional integration with the commitment of all participating countries. In fact, the formulation and implementation of the mentioned-above agreements have had an impact on the development

²¹ *Vientiane Times*, "Laos, China enhance economic cooperation", <http://www.vientianetimes.org.la>.

²² Ministry of Commerce, China, available at

<http://english.mofcom.gov.cn/article/newsrelease/significantnews/201509/20150901109922.shtml>.

progress in the LM river basin, which can be seen in terms of waterborne transport connectivity via international and domestic navigation. By and large, waterborne transportation on the LM River has been identified for further improvement that will ensure that the waterway will play an active role in transport development as it can contribute to: (a) a reduction in freight transport costs; (b) the development of logistics and multimodal transport through enhanced utilization of the river system; and (c) promotion of local economic growth through the development of associated industries and sectors such as agriculture and tourism.

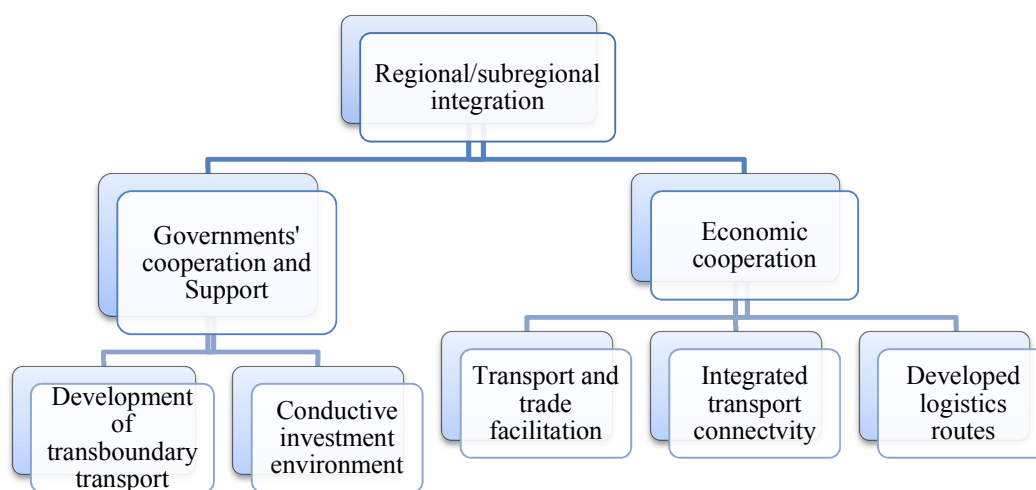
III. Drivers of Potential Development of the International Shipping Transportation: An analysis

59. This chapter provides the key drivers, including (a) modes of transport and traffic, (b) port infrastructure, (c) logistics development, (d) trade patterns, (e) the tourism industry, (f) investment, (g) joint international shipping management, and (h) institutional arrangements and capacity development that are structurally designed under the research framework. Technically, this analysis is based on the information generated from the in-depth interviews, survey and consultation processes in combination with available statistical data. In this nexus, the findings will be used selectively to address the correlated potential development of international shipping and transportation on the LM River. Based on this approach possible suggestions are made for consideration by the CLMT Governments for further development of international shipping and transportation together with the development of associated industries.

3.1. Mixed Modes of Transport and Traffic

60. The regional cooperation and integration of the GMS countries through the economic corridor approach has achieved collective and productive results in economic growth, with the support and joint commitments of the participating Governments to development policies and development strategies. In this regard, it can be seen that transport infrastructure and connectivity through cross-border transport links play a crucial role in serving economic development and regional cooperation. Indeed, expansion of the transport network at the regional, subregional and national levels is still needed as it will stimulate greater economic activities as well as create spillover effects in the development of related industries in various sectors such as power, telecommunications and logistics. Crucially, substantial institutional strengthening and human resource development to meet the development needs and trends are required. Figure 4 clearly depicts regional cooperation through transport connectivity.

Figure 4. Regional Cooperation with Transport Connectivity



61. The transport system in the region, e.g., in the GMS, has adopted multimodal transport as part of the trade and transport facilitation (TTF) strategy. In this sense, this subsection highlights the transport network and traffic development through major transport links and modes with a focus on the CLMT.

3.1.1. Road system

62. In the GMS, the regional road linkages have fallen within the scope of the Asian Highway (AH) network.²³ In this regard, road transport passing through the CLMT refers to the AH, which comprises 141,000 km of roads running through 32 member countries. The physical conditions of the AH systems are described with regard to (a) length, (b) paved and unpaved status, (c) missing links and (d) ferries in place of highways, if any. As part of the data on AH routes described in this subsection are drawn from the Asian Highway Handbook of ESCAP in 2003, it is possible that there have been changes..

63. Road systems in each country are as follows:²⁴

- a. **China.** The key routes AH1, AH3 and AH14 traverse Guangxi and Yunnan, and connect with the Lao PDR, Myanmar and Viet Nam (table 7).

Table 7. Physical Status of AH Routes in China through Guangxi and Yunnan Provinces

No.	Route	Length (km)
AH1	Suixi (Guangdong boundary)-Qinzhou-Nanning -Youyiguan-Viet Nam border	612
AH3	Qujing (Guizhou boundary)-Kunming-Yangwu -Puer-Jinghong-Mohan (Lao PDR border)/Daluo (Myanmar border)	1,289
AH14	Hekou (Viet Nam border)-Kaiyuan-Kunming -Chuxiong -Dali-Ruili (Myanmar border)	1,435
Total		3,336

- b. **Lao PDR.** Through the highway system, the Lao PDR now has connectivity with Cambodia, China, Thailand, and Viet Nam (table 8). In 2015, the Friendship Bridge linking northern Lao PDR with Myanmar across the Mekong River was officially opened. This bridge links National Road 17 in the Lao PDR to National Road 4 in Myanmar. However, the road infrastructure of the country has yet to be fully developed.

Table 8. Physical Status of AH Routes in the Lao PDR

No.	Route	Length (km)	Paved (km)	Unpaved (km)	Ferry (km)	Missing	Unknown
AH3	Boten (Yunnan, China border)-Nateuy-Houayxay (Thailand border)	244	65	178	1	0	0
AH11	Vientiane-Ban Lao-Thakhek-Seno-Pakse-Veunkham (Cambodia border)	823	777	46	0	0	0
AH12	Nateuy-Oudomxai-Pakmong-Louang Phrabang-Vientiane-Thanaleng (Thailand border)	684	659	25	0	0	0
AH13	Oudomxai-Muang Ngeun (Thailand border)	173	0	0	1	45	127
AH15	Keoneau (Viet Nam border)-Ban Lao-Thakhek	133	132	0	1	0	0

²³ ADB, November 2009, *Roads for Asian Integration: Measuring ADB's Contribution to the Asian Highway Network*.

²⁴ ADB, 2006, Technical Assistance RETA 6195, *GMS Transport Sector Strategy Study*.

No.	Route	Length (km)	Paved (km)	Unpaved (km)	Ferry (km)	Missing	Unknown
	(Thailand border)						
AH16	Dansavanh (Viet Nam border)-Seno-Savannakhet (Thailand border)	241	240	0	1	0	0
Total		2,298	1,873	249	3	45	127

- c. **Myanmar.** The AH routes connect the country with China, India and Thailand (table 9). Strategically, Myanmar is linked to South Asia in the west as well as China and South-East Asia. However, in the east the standard of highways in Myanmar is still inadequate. In fact, sections of the AH network in Myanmar have yet to be paved.

Table 9. Physical Status of AH Routes in Myanmar

No.	Route	Length (km)	Paved (km)		Unpaved (km)
			2 + Lanes	1 Lane	
AH1	Myawaddy (Thailand border)-Payagyi-Yangon-Meiktila-Mandalay-Tamu (Indian border)	1,650	969	467	214
AH2	Tachilek (Thailand border)-Kyaning Tong-Meiktila-Mandalay-Tamu (Indian border)	807	50	541	216
AH3	Mongla (Yunnan, CHINA border)-Kyaning Tong	93	0	5	88
AH14	Muse (Yunnan, CHINA border)-Lashio-Mandalay	453	453	0	0
Total		3,003	1,472	1,013	518

- d. **Thailand.** Compared to the countries in the GMS, Thailand has invested enormously in its transport system and connectivity through the AH construction. The AH routes connecting the country to Cambodia, the Lao PDR, Malaysia and Myanmar (table 10) are of good standards.

Table 10. Physical Status of AH Routes in Thailand

No.	Route	Length (km)	Paved (km)		Unpaved (km)
			2 + Lanes	1 Lane	
AH1	Aranyaprathet (Cambodia border)-Kabin Buri-Hinkong-Bang Pa-in (- Bangkok)-Nakhon Sawan-Tak-Mae Sot (Myanmar border)	701	700		
AH2	Sa Dao (Malaysia border)-Hat Yai-Bangkok-Bang Pa-in-Nakhon Sawan-Tak-Chiang Rai-Mae Sai-Tachilek (Myanmar border)	1,549	1,549		
AH3	Chiang Khong (Lao PDR border)-Chiang Rai	117	116		1
AH12	Nong Khai (Lao PDR border)-Udon Thani-Khon Kaen-Nakhon Ratchasima-Hin Kong	511	510		
AH13	Huai Kon (Lao PDR border)-Nan-Uttaradit-Phitsanulok-Nakhon Sawan	557	557		
AH15	Nakhon Phanom (Lao PDR border)-Udon Thani	243	242		1
AH16	Mukdahan (Lao PDR border)-Khon Kaen-Phitsanulok-Tak	708	707		1
AH18	Hat Yai-Sungai Kolok (Malaysia border)	268	268		
AH19	Nakhon Ratchasima-Kabin Buri-Laem Chabang-Chonburi-Bangkok	458	458		
Total		5,113	5,113		3

64. The NSEC links northern Thailand and southern Yunnan province via Route 3A through the Lao PDR. The NSEC also includes an alternative route (Route 3B), through northeastern Myanmar to link up with China through Yunnan at the crossing point of Daluo, China and Mongla via Kengtong in Myanmar, to Thailand at crossing point of Tachilek, Myanmar - Mae Sai, Thailand. However, for political and security reasons, this route is not passable for transit traffic, and road improvement works could not be carried out, leaving the road through the Lao PDR as the only useable North-South route. The lack of a customs transit system in Myanmar would also prevent transit traffic from using the route.
65. From the opening and upgrading of the Houayxay-Boten road in 2003 and 2008, respectively, to December 2013 when the Fourth Friendship Bridge over the Mekong was opened to connect Chiang Khong in Thailand to Houayxay in the Lao PDR, the unavoidable trans-loading of all transit cargo between Chinese and Thai trucks in Boten by purely manual labor was a further disincentive to load valuable, perishable or fragile cargo along this route. The trans-loading operation in Boten operates well under the present conditions, and now offers a 45-ton top-lifter crane to enable lift-on/lift-off operations; however, the fact that no transit cargo can run between China and Thailand without transshipment is a constraint to increasing the level of high-value cargo on that route.
66. NSEC traffic as measured at Chiang Khong surged from 3,750 freight vehicles per year in 2005 to 36,000 freight vehicles in 2012. There was a slight flattening of the growth rate of Thai perishable exports to China in late 2013, according to anecdotal information from operators. However, it is expected that the increasing efficiency of the route will continue to expand with regard to both its catchment area, to include the Chengdu/Chongqing conurbation into Sichuan province, and its commodity mix, to include high-value ICT and automobile components.
67. Customs operations at the two border crossing points are good by local standards, and further improvements are planned. At the Thai-Laotian border, the facilities on both sides of the bridge are brand-new, as they were constructed together with the bridge. They are spacious and well-equipped, including a remote scanner on the Thai side that is used in cooperation with the Lao PDR border authorities.
68. Customs on both sides are open seven days a week for transit traffic with core operating hours (8 hours per day). Opening hours are coordinated between the two neighboring countries and overtime is available (with advance notice) between 6 a.m. and 10 p.m. Single Window and single-stop inspections are being introduced but have not yet fully implemented. However, customs procedures are regarded by the shipping community as reasonable and flexible, while inspections are risk-managed and cargo-friendly. In Boten, the Laotian customs officials have to cope with higher volumes of traffic and older, cramped facilities. Space for expansion is also limited due to the hilly terrain; however, as in Houayxay, operational hours are flexible.
69. Road conditions on the Bangkok-Kunming route are of international standard. The road within the Lao PDR from Houayxay to Boten on the Chinese border is relatively new, having been constructed during 1998-2003 and upgraded in 2008. According to the Ministry of Public Works and Transport (MPWT) of the Lao PDR, the entire section has also been built up to the 11-tonne axle standard,²⁵ but it is only two-lane and runs through hilly, if not mountainous terrain. At some points, care must be exercised. Speed limits down to 30 km per hour (kmh) for heavy goods vehicles are in place locally, but are often disregarded. The road is, however, operating well below its nominal capacity, weakening the case for widening.

²⁵ The national standard of the Lao PDR is 9-tonne axle.

3.1.2. Railways

70. In the absence of a railway system, the Lao PDR mainly relies on other transport modes. During the research study implementation, it was pointed out by the representatives of the Lao PDR that the country expected to develop railway projects in the next few years. Although the railway network of Thailand is linked with Malaysia, there are no cross-border rail services with other GMS countries. As for railway development, China has financed the construction of a pan-Asian, high-speed railway system to link the country with Cambodia, Malaysia, Myanmar, Singapore, Thailand and Viet Nam. Construction of the section connecting China with the Lao PDR, Myanmar and Viet Nam are in progress despite some temporary delays during the implementation process.²⁶ In addition, Myanmar has its own domestic railway network; however, the overall condition is relatively poor and in need financing for renovation plus the fact that the network does not link up with any other country. On the positive side, the railway network is extensive, connecting with Yunnan and Guangxi provinces in China.
71. In fact, railway speeds are relatively slower than those of road transport, while in most cases the lines are single-track.
- a. **China.** The national railway system uses 1,435-mm track gauge. However, part of the system, e.g., the 468-km section from Kunming to Hekou, uses 1,000 mm track gauge and mainly serves freight transport. It is connected to the railway system in Viet Nam via Lao Cai province.
 - b. **Lao PDR.** It is expected that the country will have a railway system connecting Thannaleng across the Friendship Bridge to Nong Khai, Thailand. There will be a line in a few years' time from Vientiane, the capital city, running to the Chinese border, which is being invested in through the Public Private Partnership (PPP) modality.²⁷
 - c. **Myanmar.** An extensive railway network with a total route of 4,785 km, a total track length of 6,210 km and 739 stations. Similar to Viet Nam, the railway operates a track gauge of 1,000 mm and is predominantly single-track.
 - d. **Thailand.**
 - A single-track railway network that extends for more than 4,000 km. The country operates 1,000-mm track gauge. The average operating speed of Thailand's railways is 27 kph for freight trains.
 - In the case of for Chiang Rai, the newly planned rail route will be from Denchai district in Phrae province-Payao-Chiang Rai-Chiang Khong-Chiang Saen according to the State Railway of Thailand.
 - Thailand has two cross-border railways: (a) Thailand-Malaysia along which shipments are delivered at the Inland Container Depot (ICD) in Laem Chabang; and (b) Thailand through Nong Kai-Lao PDR through Vientiane. This route is now serving passenger transport (tourists) as the ICD in Vientiane is not yet in operation.

3.1.3. Waterways and traffic

72. Waterborne transport may offer cheaper transportation options for people and goods along the river systems. However, given the characteristics of the waterways and the geographical conditions, the river routes are divided into separate systems. The following are typical river systems in the subregion of China, the Lao PDR, Myanmar and Thailand:
- a. LM River;

²⁶ See <http://www.globaltimes.cn/content/859360.shtml>

²⁷ *Vientiane Times*, available at http://www.vientianetimes.org.la/FreeContent/FreeContent_Govt_to.htm.

- b. Ayeyarwady and Lower Chindwin River systems;
- c. Chao Phraya and Tachin River systems;
- d. River systems in Guangxi and Yunnan provinces of China.

73. The LM River is potentially the river course for inland and cross-border (international) water transport. The upstream section of the LM River is suitable for inland navigation from river ports in Yunnan, running to the Lao PDR and then reaching Kompong Channang in Cambodia, while the downstream section of the LM River is navigable by both inland and maritime transport, e.g., from the downstream stretch to the sea. To improve the navigation from Yunnan to the Lao PDR, the Government of China has implemented a dredging program as well as the installation of navigation aids and facilities for the first 331 km along the river. The objective is to guarantee 100-150 DWT vessels navigational passage for at least 95% of the year. From the navigation perspective, these actions may also help to open up more opportunities for cross-border water transport, trade facilitation and safety improvement. This will also help to promote the six major tourism zones on the Mekong River identified by the GMS Tourism Sector Strategy Study.²⁸
74. The current physical status of the navigation channel on the LM River, starting from Simao, China to Luang Prabang, Lao PDR, as summarized in table 11, reflects the ongoing improvement efforts.

Table 11. LM River Sections and Improvement Status of the New Shipping Channel from Simao to Luang Prabang

River Section	Length (km)	Grade	DWT of Vessel/Ship	Navigable Channel Dimension
Nandeba area of Simao, Yunnan	74	IV	500 DWT year-round navigation	1.2 x 30 x 180
Nuozhadu Hub to China-Myanmar Boundary Marker 243	185	V	300 DWT	2.0 x 40 x 300
China-Myanmar Boundary Marker 243 to (China-Lao PRD-Myanmar) Boundary Marker 244	31	VI	(i) 150 DWT year-around; (ii) 200-300 DWT seasonal navigation	1.2 x 30 x 180
China-Lao PDR-Myanmar Boundary Marker 244 to Houayxay, Lao PDR	300	VI	(i) 150 DWT year-around; (ii) 200-300 DWT seasonal navigation	1.2 x 30 x 180
Houayxay to Luang Prabang, Lao PDR	300	This segment has not yet been improved. Navigation aids have been provided to guide 60-DWT ships in the dry season		

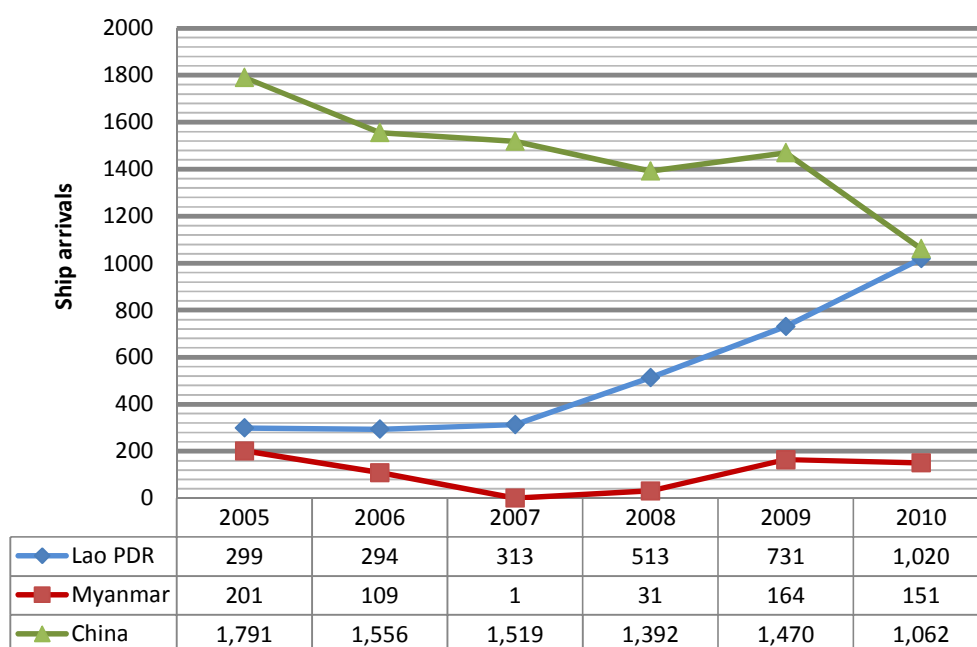
Source: Development Plan for International Navigation of the LM River of China.

75. Table 10 shows that when the new international shipping route for cargo ships, e.g., 300 DWT, to navigate from Yunnan to Luang Prabang is improved and put into operation, the capacity of the LM River in terms of waterborne transport connectivity throughout the year will be optimized through cooperation efforts by all the participating countries.
76. So far, most of cargo ships navigate mainly between China's ports and Chiang Saen port in Thailand to the Lao PDR, according to stakeholders in the Lao PDR and Yunnan province during the consultation process during May-June 2015. In particular, imports by China via Yunnan province are shipped from Thailand via Chiang Saen port, while Chiang Khong port mainly serves the bilateral trade between Thailand and the Lao PDR. Those imports are

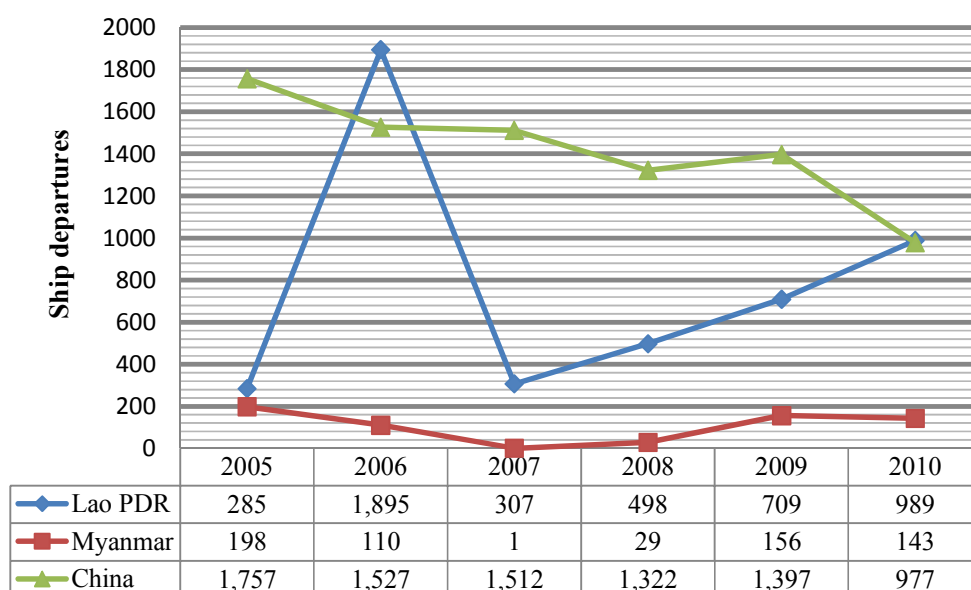
²⁸ ADB, 2011, *GMS Tourism Sector Assessment, Strategy and Road Map Study*.

unloaded at Guanlei port, and then transferred to other mainland provinces and cities such as Shandong, Guangzhou, Sichuan and Shanghai by sea and/or road. China's exports to Thailand are usually transited at Wan Pong port. As such, once these products are unloaded in Chiang Saen port, they are transported to other locations both by river and road transport. As a matter of fact, the opening of freight and passenger services between Yunnan and Chiang Saen have transformed the port into a fast-growing commercial zone, and a destination for 50-ton cargo ships in bilateral trade between China and Chiang Saen, and the downstream port of Chiang Khong, that has accelerated since 2001. Figures 5 and 6 show the fluctuation in the number of ships from China, the Lao PDR, and Myanmar entering and exiting Chiang Saen port during 2005-2010.

Figure 5. Number of Ship Arrivals at Chiang Saen Port, 2005-2010

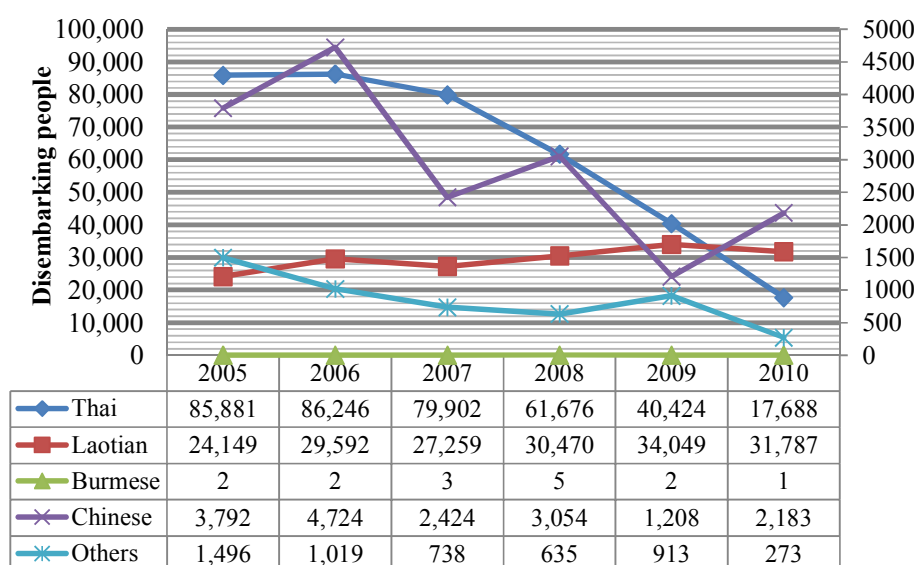


Sources: IDE-JETRO, 2013, *Border Economies in the Greater Mekong Subregion*, and Chiang Saen Immigration Office.

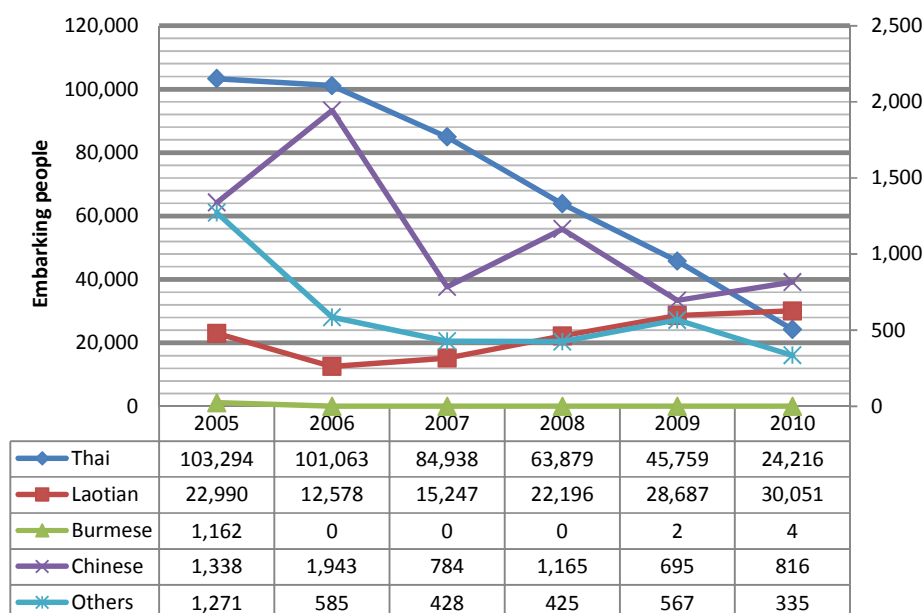
Figure 6. Number of Ship Departures from Chiang Saen Port, 2005-2010

Sources: IDE-JETRO, 2013, *Border Economies in the Greater Mekong Subregion*, and Chiang Saen Immigration Office.

77. The above figures show the volume of ships from China, the Lao PDR and Myanmar (regardless of nationality and ownership of these ships) arriving at, and departing from Chiang Saen port after the international shipping route opened from Yunnan to Chiang Rai in 2001. There are more ships departing to and from China and the Lao PDR, thanks to the close economic and trade cooperation between the Lao PDR-Thailand and China-Thailand, compared with Myanmar. This reflects the fact that freight transportation on the LM River is more regularly used by China, the Lao PDR and Thailand, while roads form the major transport links for cross-border trade between China and Myanmar. In most instances, cargo transported by road is discharged and transferred to ferries for crossing borders via domestic rivers, as noted during the in-depth interviews in Yunnan province.
78. In the case of the Lao PDR, current river trade is comprised more of the cross-border transport between the two sides of the river, e.g., via some parts between the Lao PDR and Thailand, and between the Lao PDR and Myanmar, although the Lao-Myanmar Friendship Bridge has just opened. Traders use river as the main link for transporting goods where there is no bridge. However, the Lao PDR considers that river transport is governed by a number of risks related to: time consumption; loading and unloading; incomplete safety for transporters and cargoes; lack of awareness of customs procedures, which are complex; low professional navigation capacity; especially among ship captains; and unstable water levels.
79. As for passenger transport on the LM River, statistical data are rather scarce for cross-border passenger transit in the four countries in recent years, while data collected from the questionnaire survey and in-depth interviews are also limited. Figures 7 and 8 illustrate the number of people, including tourists, and shipping crews, arriving from, and departing to China, the Lao PDR, Myanmar and other destinations via Chiang Saen (old port) during 2005-2010. In this regard, (a) the number of Laotian and Chinese people outweighed the number of Burmese people, (b) fluctuating changes, year-on-year, during the same period ultimately displayed a decreasing trend in all cases, but at different rates. Commercially, it is understood that Chiang Saen port mainly serves the cargo shipments and passenger transportation between Thailand and China.

Figure 7. Number of People Disembarking via Chiang Saen Port, 2005-2010

Source: IDE-JETRO, 2013, *Border Economies in the Greater Mekong Subregion*.

Figure 8. Number of People Embarking via Chiang Saen Port, 2005-2010

Source: IDE-JETRO, 2013, *Border Economies in Greater Mekong Sub-region*.

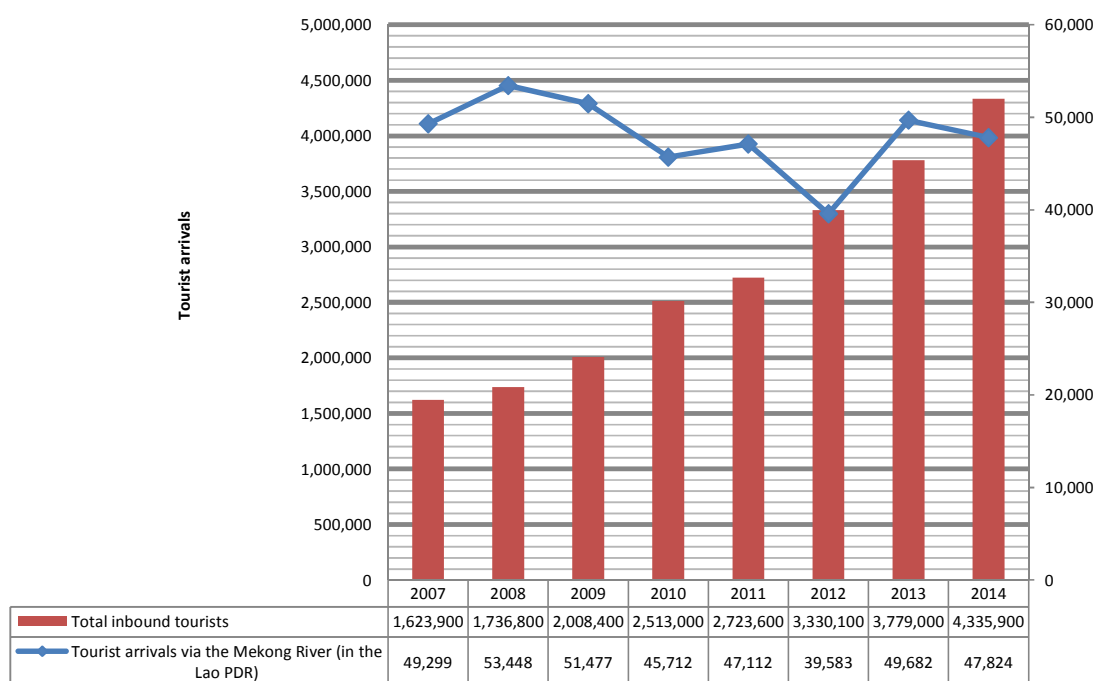
*Notes:

- i. The number of entries and departures includes persons using border passes.
- ii. The numbers in parentheses indicates the numbers of persons using passports. Data on Thai people who used passports in 2008 are not available. The details regarding users of passports are not clear except for persons of Thai nationality.
“Others” indicates all passport users.

80. In addition, figure 9 shows the number of tourists arriving via the Mekong River. This is by inland waterborne transport, which is consistent with the Lao PDR's view and interests in domestic river tourism industry along certain sections of the river within Lao PDR territory.

There was a continuous increase in the number of tourists arriving at Luang Prabang year-on-year during 2007-2014. There are no data on cross-border passenger transport, particularly via the route connecting the Lao PDR and Yunnan along the LM River. For this reason, the status of cross-border passenger transport between the countries is rather difficult to analyse. However, this could be due to existing constraints on deploying international river tours.

Figure 9. Tourist Arrivals via the Mekong River at Houayxay, Lao PDR



Source: Mekong River Commission, 2015.

81. In Myanmar, passenger transport in the form of domestic river tours and/or river cruise services focus mainly on the Ayeyarwady River from Mandalay to Bagan, while a three-day and two-night trip on the Mekong River costs about US\$ 1,000 per person, and is mostly used by international tourists, especially Europeans. The development of river tours has yet to be developed because the river section passing through Myanmar is shorter than that of the Lao PDR, while the country lacks river tourism infrastructure, river navigation safety and security for tourists, and is a long way from Yangon to the tourism port. For such reasons, interested tourist companies are still hesitant to open river tours and cruises on the LM River, according to a representative of BST Travel in Myanmar, a view which is consistent with that of the Tourism Association of Myanmar.
82. In Yunnan province, only aggregated data are available of passenger arrivals by (a) combined road and river transport; and (b) combined road, river, and air transport. This limited collection of data on the fields covered under this research project. In this regard, tables 12 and 13 collectively show the number of passengers and a breakdown of inbound and outbound tourists, without separate data for river passengers at Guanlei and Jinghong ports in Yunnan province. Thus, it is difficult to analyse the number of passengers traveling on the LM River during 2009-2011. However, an increasing trend in both inbound and outbound tourists, using all modes of transport, arriving in Yunnan province can be seen. It was also recorded during the in-depth interviews that there are domestic river cruises and

international cruise trips on the LM River. Domestic river cruises offer between 1.5 and 2 hours with a show. International cruise trips are offered from Jinghong to Chiang Saen, Thailand, and from Jinghong to Luang Prabang, Lao PDR, respectively, and are mainly operated by Thai travel agencies. However, information on passengers using these services is not available.

Table 12. Passenger Time via Mohan by R3A and by the River at Guanlei Port in Yunnan Province

Year	Total passenger time	Tourists	
		Inbound	Outbound
2009	313,756	104,954	108,459
2010	632,248	242,997	245,922
2011	665,618	244,282	246,367

Source: Yunnan province.

Table 13. Passenger Time by Air, Road and River at Jinghong Port

Year	Total Passenger time	Tourists	
		Inbound	Outbound
2009	202,929	192	3,199
2010	189,557	8,093	11,198
2011	118,173	10,772	11,446

Source: Yunnan province.

83. There are certain constraints to identifying the accurate amount of freight and number of people travelling on the LM River under this research framework. However, the potential for developing cross-border water navigation in the CLMT subregion that will result in larger flows of goods and people in future can be anticipated, especially as the Quadripartite Agreement²⁹ – a long-term development scheme on commercial navigation – has been implemented by all contracting countries since 2001. In addition, various works and other activities carried out under the development of the new shipping route have been completed, including upgrading of inland water transport on the upstream portion of the LM River through port improvements, dredging, shoal realignments, provision of navigational aids, improvement of waterborne transport, a navigation agreement and a variety of institutional measures. The impact and economic benefits gained through increased international trade, and the efficient transportation of various types of bulk freight by inland water transport, together with savings in transport costs are expected to further tourism development with increased passengers and tourists. Financial benefits can be realized through increased revenue for port and river authorities together with increased passenger traffic.

84. At the beginning of the Quadripartite Agreement, it was forecast that by 2015 there would be an annual flow of 1.5 billion tons of cargo transported by river and no fewer than 500,000 passengers taking river tours.³⁰

3.2. Port Infrastructure

85. To prepare for the new shipping routes connecting the four countries under the Quadripartite Agreement, the following river ports have been designated for international traffic:

- a. China – Simao, Jinghong, Menghan and Guanlei ports;

²⁹ Key features of the Quadripartite Agreement on Commercial Navigation include: (a) no charges on specific services; (b) designated ports being opening up to international traffic; (c) pilotage exemption; and (d) common regulations and guidelines, e.g., Most-Favored Nation treatment for shipping regulations.

³⁰ *Bangkok Post*, 2001, “Ports play catch-up before trade expands”, available at www.burmalibrary.org/TinKy/archives/2001-07/msg00008.html.

- b. Lao PDR – Ban Sai, Ban Xieng Kok, Muang Mo, Ban Khouane, Ban Houei Sai and Luang Prabang ports;
 - c. Myanmar – Wan Seng and Wan Pong ports;
 - d. Thailand – Chiang Saen and Chiang Kong ports.
86. Under the Quadripartite Agreement, each country is responsible for developing its participating river ports in order to effectively facilitate the passage of vessels and implementation of customs procedures. The current capacity of the shipping channel is up to 100 DWT while the river section within Chinese territory has been improved for the passage of vessels with 150 DWT freight barges and for navigation during low water levels in certain drier months of the year. In fact, China has vessels up to 300 DTW for domestic navigation on the Lancang section of the river.
87. To improve the international shipping route, the contracting countries plan to develop an 890- km channel that will allow 500-DWT vessels to navigate from Simao Port in Yunnan to Luang Prabang port in the Lao PDR through various ports in between by 2025.³¹ The development is expected to create an optimal effect on expanding the capability of the river system to become part of the wider supply chain that aims to ensure year-round navigation of substantially larger vessels.
88. In addition, table 14 presents the distance from Chiang Saen port to the other ports in China, the Lao PDR and Myanmar, and navigation time on the river, both in upstream and downstream directions. Navigation on the LM River depends on the direction of water flow. The table clearly shows that upstream navigation takes more time, e.g., 31 hours from Chiang Saen to Jinghong, while it only takes 16 hours to travel downstream from Jinghong port to Chiang Saen. In the lower part of the river, navigation between Chiang Saen and Luang Prabang is more time-saving despite being the longest stretch. This shows that international shipping transport on the LM River is affected by various factors; one factor is time efficiency, which can be improved through the modernization of shipping routes, and river-related infrastructure and facilities.

Table 14. River ports, distance and transport time in upstream and downstream navigation

Port	Country	Distance from Chiang Saen port (km)	Time for upstream navigation (hours)	Time for downstream navigation (hours)
Jinghong	China	348	31	16
Guanlei	China	268	26	13
Sue Lei	Myanmar	190	19	10
Xieng Kok	Lao PDR	116	12	6
Muang Mom	Lao PDR	26	3	2
Wan Pong	Myanmar	26	3	2
Golden Triangle	Thailand	16	2	1.5
Chiang Saen	Thailand	-	-	-
Chiang Kong	Thailand	52	3	3
Luang Prabang	Lao PDR	368	20	12

Source: In-depth interviews in Thailand.

89. During the consultation meeting and in-depth interviews in May and July 2015, the Lao PDR representatives explained that the Government was short of funding to finance the improvement of the infrastructure on the LM River, while the report of the Ministry of Public Works and Transport presented to the eighth Infrastructure Sector Working Group

³¹ *Maritime News*, June 2015.

(ISWG) Meeting on 21 September 2015³² detailed its achievements under the Quadripartite Agreement for fiscal year 2014/15, and planning for 2016 as follows:

- a. Revised Emergency Plan and Search And Rescue (SAR);
- b. Development Plan for International Navigation on the LM River (2015-2025), with an estimated investment of about US\$ 655 million;
- c. The Plan for FY 2015-2016:
 - Setting up a Technical Working Group for the Development Plan of International Navigation on the LM;
 - Recruitment of a consultant to carry out a Feasibility Study (under the ASEAN-China Cooperation Fund; 100 Million RMB); and
 - Implementation of the Channel Improvement Project

90. According to the Laotian Customs Department in Vientiane, only a small volume of products are transported by boat/ship along the river to Thailand via Chaiya Buri town. For exports to China from the Lao PDR, products such as maize, grains, fruit and vegetables can be shipped via land transport to Chiang Saen port as the infrastructure of Houayxay port is poor and lacks customs efficiency. Also, the Department of Public Works and Transport estimated that while about 85-100 ships were currently operating in the northern part of the country, that number was decreasing by 10 ships per year. This places river transport in a disadvantageous position when compared to land transport, which involves 200-400 trucks carrying goods daily on Highway 3A (R3A) from China and Thailand to Lao PDR. In terms of port operations and management, there is no effective coordination between the central Government of the Lao PDR and local authorities, including port authorities, on port-related activities and performance. By and large, river transport in the Lao PDR is still underdeveloped in terms of both domestic and international shipping services.
91. For the case of Myanmar, the stakeholders emphasized that Wan Pong port was standardized as a national port for LM River cooperation. As the water level in Wan Seng port is shoal level, it is not suitable for docking by large-sized ships, e.g., 300-500 DWT. Thus, this port is not yet active. Myanmar has also prepared an additional port that is categorized as a national port, which operates under the management of the Ministry of Transport. The Government of Myanmar has provided policy and financial support for the development of Wan Pong port, which will become the main connecting point between Myanmar and China. In this regard, the Government and the private sector have agreed to invest further in the development of the Wan Pong port. The location of Wan Pong port is near to Shan minority groups so that security in the port areas is an issue that needs consideration. However, the implementation status of the two ports has yet to be reported on during the consultation process.
92. An additional review shows that all the domestic river ports in Myanmar, except for Yangon and Kyauk Phyu deep-water ports, have concrete or metal jetties with barges but without fixed structures, i.e., non-mechanized handling facilities. The port of Yangon can only handle small ships/boats. It was expected that the port rehabilitation programme would be completed in 2015.
93. On the other hand, China upgraded three ports: (a) Simao, to achieve an annual capacity of 300,000 tons and 100,000 passengers, with investment of US\$ 5 million to begin operation in 2001; (b) Jinghong, with an annual capacity of 100,000 tons and 400,000 passengers, with investment of US\$ 5.7 million, starting operation in the end of 2002; and (c) Guanlei, with an annual capacity of 200,000 tons, with investment of US\$ 4.44 million, starting operation in 2004.³³

³² See rtm.org.la/wp-content/.../2015-iswg-report-to-DIC.docx-1111.docx.

³³ ESCAP, *Inland Waterway Transport – An Overview*, Chapter 11, Review of Developments in Transport in the ESCAP Region, 2003

94. According to Yunnan province officials, of the three designated ports under the Quadripartite Agreement, Guanlei port is the only active one and is used for handling trade goods with the neighboring countries. As for Simao port, it is located in the furthest upstream location on the LM River, and can serve two 120-DWT vessels at the same time. However, Simao mainly serves transportation of passengers now, i.e.; it is no longer used for cargo services. On the other hand, Jinghong operates at a low level compared to its available capacity. Currently, it is only utilized to serve inland waterway transport in the territory of Xishuangbanna prefecture for river tourism purposes. The questions regarding port operations and productivity in the case of Yunnan need further clarification and proposed solutions from transport planners and policymakers.

Figure 10. Map of Ports along the Lancang-Mekong River



Source: Google Map, adapted by Mekong Institute.

95. In Thailand, Chiang Kong port is situated on the bank of LM River in Chiang Rai province. The berth is 24 metres wide and 180 metres long, adjacent to the LM River, and opposite Moueng Houayxay, Bor Kaew Districts in the Lao PDR. Chiang Khong port is a relatively small river port, mostly serving small-sized ships sailing from/to the Lao PDR.³⁴ The capacity of the port is summarized below:
- Concrete quayside terminal with a width of 24 metres and length of 108 metres, serving three to five that is able to accommodate five 10-wheel trucks in total;
 - One-stop services, including public services, i.e., customs administration, tax services, marine management, immigration, and public health and sanitary and phytosanitary (SPS) services;

³⁴ Port Authority of Thailand, Chiang Kong Port, available at http://www1.port.co.th/ckp/index_en.html.

- c. Twenty-four-hour services for import-export activities.
- d. Throughput of 15,000 tons per year;
- e. In-transit warehouse services.

96. The operational performance of Chiang Khong port during 2011-2013 is shown in table 15.

Table 15. Operational Performance of Chiang Khong Port, Thailand

Operational results	Year		
	2011	2012	2013
Ship (call)	227	171	208
Vehicle (unit)	2,030	4,152	5,230
Import cargo (metric tons)	2,280	1,085	912
Export cargo (metric tons)	39,490	48,529	55,077

Source: Port authority of Thailand, "Transport and logistics innovation towards the review of the Almaty Programme of Action in 2014".

97. PAT has managed the operations of Chiang Saen port (old port) in Chiang Rai province since 2003. The port is a gateway for the development of Indochina and the GMS with cooperation between Thailand, Cambodia, China, the Lao PDR, Myanmar and Viet Nam. The port, which is linked to Chiang Kong,³⁵ is equipped with:
- a. Berth of 50 metres in length and two metres in depth, accommodating 200 -DWT ships;
 - b. 22x208 m quayside;
 - c. Two pontoons;
 - d. A buoy for docking two more ships;
 - e. Link-bridge, 6 metres wide and 30 metres long, that can handle 800 kg/ m²;
 - f. Forklifts and small trucks can be used for loading via a 12-degree slope bridge;
 - g. Truck parking lot for 50 8-10 wheel trucks;
 - h. One mobile crane with a capacity of 50 metric tons and a set of conveyor belts are available;
 - i. Throughput of 120,000 tons per year; and
 - j. In-transit warehouse services.
98. The river transport route from the Chiang Saen Port to Kuan Guan Lei Port in China is around 265 km with a draught of 1.5 to 7 metres; the through navigation varies seasonally. The inland cargo transport by road can follow Highway No. 1 to Highway No. 1016 at Mae Chan District in Thailand, which is about 30 km to Chiang Saen port.
99. The new Chiang Saen port (commercial port), which covers 153 acres, has been in operation since 2012. The new Chiang Saen Port is connected to both the East-West Economic Corridor (EWEC) and NSEC. It is considered as the gateway for trading from southern China, the Lao PDR and Myanmar, and forms a linkage for multimodal transport to/from China-Bangkok-Laem Chabang Port. The new port is equipped with:
- a. Two 50-metre long pontoons capable of serving four cargo ships docked simultaneously. Each pontoon can accommodate six to nine trucks;
 - b. A 250-metre long quayside handling three cargo ships;
 - c. Two mobile cranes with a capacity of 10 metric tons and 50 metric tons;
 - d. Two forklifts with a capacity of 5 metric tons and 10 metric tons;
 - e. A set of three conveyor belts; and
 - f. In-transit warehouse services.
100. The operational performance of Chiang Saen port during 2011-2013 is shown in table 16. Consolidation of the performance data from tables 15 and 16 shows there was a strong

³⁵ Port Authority of Thailand, Chiang Saen Port, available at http://www.csp.port.co.th/contact_en.html.

increase in the volume of export cargo through these ports in 2013 compared to 2011 and 2012. This reflects the important role of Chiang Saen commercial port in serving international freight transport on the LM River. The key point in this connection is that the operational capacity and productivity of Chiang Saen commercial port has expanded in line with its growing regional role through the increase in the number of cargo ships, especially those from upstream, as mentioned by stakeholders at the consultations in Thailand.

Table 16. Operational Performance of Chiang Saen Commercial Port, Thailand

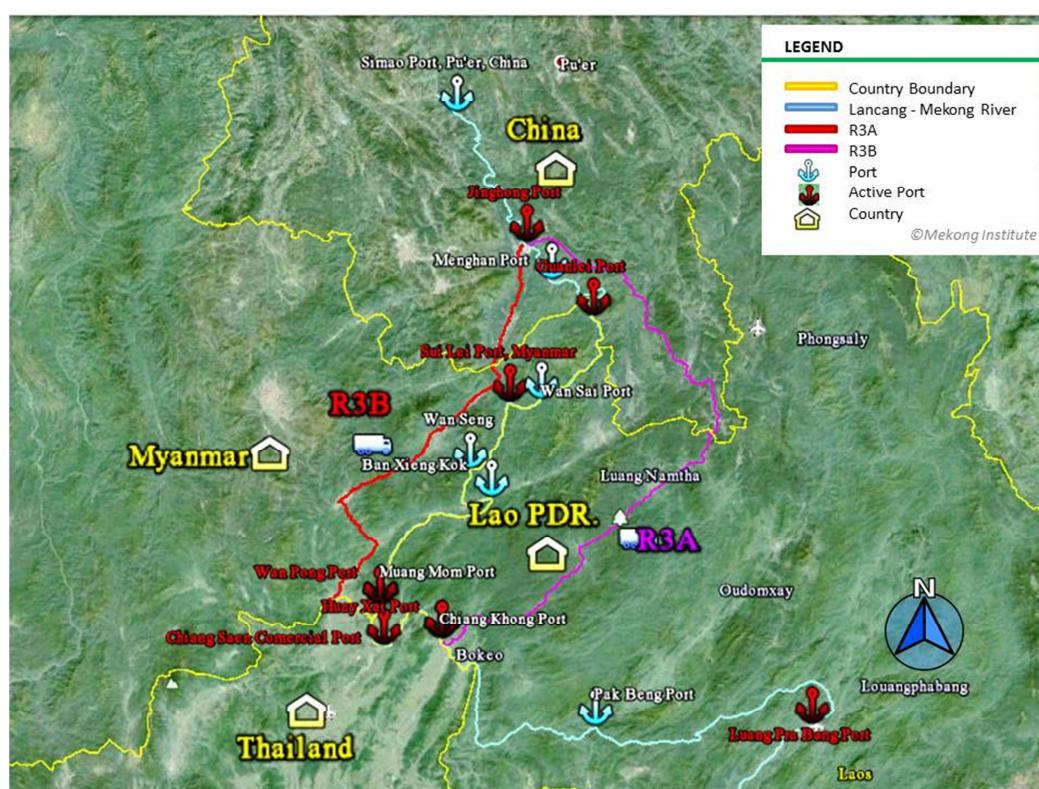
Operational results	Year		
	2011	2012	2013
Ship (call) ³⁶	1,071	2,175	8,367
Vehicle (unit)	13,483	6,932	19,083
Import cargo (metric ton)	58,372	16,528	23,640
Export cargo (metric ton)	91,103	75,706	282,272
Car (unit)	1,665	925	232
Passenger (person)	1,958	105	0

Source: Port Authority of Thailand, “Transport and logistics innovation towards the review of the Almaty Programme of Action in 2014”.

101. According to PAT, at an in-depth interview, the route from Thailand to China on the LM River is 268 km, while it is 393 km via R3B and 493 km via R3A, respectively, as shown in figure 11. In the context of increased transport connectivity by road and waterway, it is necessary to fully define the priorities in terms of the category of traded goods, transportation costs and time involved, in order to optimize economic efficiency, especially for those who are involved in transportation market, and the supply chain as a whole. These are analysed in chapter IV.

³⁶ Note: Port productivity is defined as the average of gross moves per hour for each call recorded. Gross moves per hour for a single vessel call are defined as container moves (loading, off-loading and repositioning) divided by the number of hours that the vessel is berthed.

Figure 11. River and Road Routes (R3A, R3B)



Source: Google Map, adapted by Mekong Institute.

102. In developing freight traffic under the Quadripartite Agreement, Thailand has linked each port on the LM River and identified potential routes for international shipping. Currently, PAT is at a stage of further preparation for increased capacity and readiness for port development, especially at Chiang Saen in order to match the development status of Guen Lei port of Yunnan in China, where a container port to support frozen shipments is to be constructed. Also, it is important to consider the water level that is required for through navigation of containerized ships. Thailand has already invested in port facilities and shipping services. In the future, Special Economic Zones (SEZs) will also be developed in such areas as Mae Sai, Chiang Saen and Chiang Khong. Therefore, PAT expects that the designated ports would be linked, especially through the effectiveness of the AEC, for enhanced regional economic development by interaction on transport connectivity. This will require strong and efficient coordination and cooperation among the CLMT members.
103. In summary, given their higher economic development levels Yunnan and Thailand have made stronger progress in investing in port infrastructure and port operations, at least within the framework for developing the Quadripartite Agreement. The Lao PDR and Myanmar have yet to release full information on the implementation progress of their port development; therefore, the next step is to work with both these countries on the Development Plans of International Navigation on the LM River, 2015-2025. It is important that port capacity and productivity is given priority by the four countries.

3.3. Logistics

104. This section focuses on logistics services provided to domestic and cross-border transport on the LM River under the Quadripartite Agreement. The first part provides an overall view of the logistics performance of the CLMT members.

3.3.1. Logistics Performance Index

105. From the economic perspective, logistics add value to processes by locating goods and services as needed to meet customer requirements. In this sense, logistics comprise a derived demand of trade, and an important driver in sustaining a country's competitive advantages. The concept of logistics is broad and goes beyond a transport infrastructure; it is viewed in different ways and may be subject to development policies of individual countries. In most instances, logistics should be placed in a value chain so as to be comprehensively developed.
106. The Logistics Performance Index (LPI) is a multi-dimensional assessment of logistics performance initiated by the World Bank, based on a score scale of 1 (lowest) to 5 (highest).³⁷ It uses numbers of assessments of approximately 1,000 international freight forwarders to compare the trade logistics profiles of 155/160 countries all over the world. Logistics performance is assessed based on a number of indicators, inclusive of expanded information on the time, cost and reliability of import and export supply chains, infrastructure quality, performance of core services and the friendliness of trade clearance procedures. The higher the logistics performance, the wider the trade activities are, i.e., economies open to trade, export diversification, economic growth etc.
107. The momentum and movement of international trade is highly influenced by country-specific factors, including import and export procedures, transport and telecommunications infrastructure, and the status of the domestic market.
108. The LPI survey consists of international and domestic parts, with the former responding to the six key dimensions of logistics performance:
- Efficiency of the customs clearance process;
 - Quality of trade and transport-related infrastructure;
 - Ease of arranging competitively priced shipments;
 - Competence and quality of logistics services;
 - Ability to track and trace consignments; and
 - The frequency that shipments reach the consignee within the scheduled or expected time.

Table 17. LPI of China, Lao PDR, Myanmar and Thailand, 2014

Country	Customs	Infrastructure	International shipment	Tracking and tracing	Logistics quality and competence	Timelines
China	3.21	3.67	3.50	3.46	3.50	3.87
Myanmar	1.97	2.14	2.14	2.36	2.07	2.83
Lao PDR	2.45	2.21	2.50	2.20	2.31	2.65
Thailand	3.21	3.40	3.30	3.45	3.29	3.96

Source: World Bank LPI, <http://lpi.worldbank.org/international/global/2014>.

109. In addition, the World Bank assesses the business environment through the Ease of Doing Business Index, which is a quantitative measure of regulations on: (a) starting a business; (b) dealing with construction permits; (c) employing workers; (d) registering property; (e) getting credit; (f) protecting investors; (g) paying taxes; (h) trading across borders; (i)

³⁷ World Bank (see <http://lpi.worldbank.org>).

enforcing contracts; and (j) closing a business as applied to small and medium-sized enterprises (SMEs).³⁸ It ranks an economy from 1 to 189, where 1 reflects the country with most business-friendly regulations.

110. The “trading across borders” indicator is associated with procedural requirements, including:
 - a. The number of documents required to export/import goods;
 - b. The time necessary for complying with all procedures required to export/import goods; and
 - c. Costs associated with all the procedures required to export/import goods.
111. Tables 17 and 18 show that the logistics performance and environment of business regulations are relatively poor in the Lao PDR and Myanmar. On the other hand, Thailand is more advanced in both indexes and strongly supported by government policies that are aimed at transforming all aspects of Thailand’s transportation infrastructure to become global competitive. The Government recently approved a new Infrastructure Development Plan for 2015-2022 with an investment target of US\$ 75 billion.³⁹ Overall, there is only a slight variation in LPI between China and Thailand, although Thailand outweighs China in creating more friendly business regulations.

Table 18. Ease of Doing Business Index of China, Lao PDR, Myanmar and Thailand, 2014 and 2015

	2014	2015
China	83	84
Lao PDR	139	134
Myanmar	177	167
Thailand	46	49

Source: World Bank, Doing Business project, <http://www.doingbusiness.org>.

3.3.2. *Status of Logistics Operations of China, Lao PDR, Myanmar and Thailand under the Implementation of the Quadripartite Agreement*

112. **Lao PDR**

- a. This landlocked country has no direct access to the sea. Instead, it can only do so via Da Nang port in Viet Nam or Laem Chabang port in Thailand. However, there are water transport companies operating⁴⁰ in the country. As mentioned in subsection 4.2 of this report, cross-border river transport of goods along the LM River in the Lao PDR faces certain constraints, including varying water levels depending on the season. In the dry season, the navigable length of the river is reduced to 1,300 km. In terms of infrastructure readiness, the river ports and facilities are yet not developed and thus are not suitable for handling containerized shipping.
- b. At present, transport and logistics infrastructure and trade facilitation operations in the Lao PDR are still underdeveloped. In ASEAN, the Lao PDR’s LPI is ranked second from the bottom in 2014.
- c. The interviewed logistics companies and ship owners said they were not fully aware of legal guidance on customs, taxes and procedures related to transport and logistics

³⁸ World Bank, Doing Business project, <http://www.doingbusiness.org>.

³⁹ Thailand Board of Investment, “Thailand ASEAN’s Logistics Hub”.

⁴⁰ According to an ADB assessment in 2007, there were 35 water transport companies in 2005, and 21 river port facilities in 2007. During an in-depth interview with the Department of Public Works and Transport of the Lao PDR between 85 and 100 cargo ships were in operation in 2015.

services. They prefer to provide services via cross-border road transport than the river transport mode, as the former has the advantage in terms of the widening scope of business services and growing businesses, and rapid services response. In fact, river shipping is merely used for short distances in the current context where each river port handles specific goods that it often imports. The interviewees also pointed out that it was costly for transporters/shippers/cargo owners because of complicated customs procedures for river transport of goods, causing an increase in unofficial costs. As a result, logistics services for shipping goods on the LM River have declined, especially since the Friendship Bridge was opened.

- d. In addition, coordination between central and local agencies/port authorities in managing river port operations is not effective. A weak administration does not encourage business activities and development of logistics services companies.
- e. The LM River is now categorized as an international river,⁴¹ which means that developing it into an international waterway for transporting goods and people may not be suitable if the river is merely used for domestic water transport in the case of Lao PDR. Indeed, the role of the river in the international shipping and transportation needs further consideration by the CLMT members in their policy-making process.

113. Myanmar

- a. Domestic and international connectivity is still inadequate to meet logistics requirements for the production of goods and the movement of people. Transport links to neighboring countries are both limited and substandard. Myanmar's LPI score for its overall logistics performance as well as the quality of the country's transport infrastructure and trade facilitation operation is the lowest compared with the other ASEAN members
- b. Although inland waterborne transport is important for passenger transport and commercial purposes, river port facilities are still underdeveloped. For the most part, navigational aids and safety equipment are outdated.⁴²
- c. An interviewed representative of the Customs Department in Tachilek noted that there were no formal commercial trading activities at Wan Pong port at present. Instead, shipments of mining equipment and products consigned by mining companies in the form of small-sized cargoes are handled in the Shan State.
- d. In addition, an interviewed LSP, who handles imports and exports of agricultural products between Thailand-Myanmar-China via R3B, mentioned that the company did not ship goods via the LM River as it is merely a small-sized enterprise, while a 300-ton equivalent cargo is required for one consignment. Loading and unloading are also time-consuming, and it is unsuitable for transporting perishable products such as fruit by ship from Myanmar to China. Therefore, road transportation is preferable for time-sensitive products and small-sized cargoes, while transport costs are also cheaper than charges by freight agents. A high tax rate imposed by Myanmar is also a common issue for business companies.
- e. The interviewed representative of the Chamber of Commerce and the Mining Association, who is running a manganese dioxide mining business in Mong Ko, which is approximately 17 km from Tachilek, stated that Wan Pong port charges are high for shipping facilities.⁴³ The company exports products to China via Thailand's Laem

⁴¹ Mekong River Commission.

⁴² Myanmar Logistics Infrastructure, August 2015, available at <http://dlca.logcluster.org/display/public/DLCA41>.

⁴³ One ton of manganese: US\$ 52 from Tachileik to Laem Chabang, US\$ 18 from Laem Chabang to China.

Chabang port. However, the representative noted that costs for shipping facilities were high and the company has to pay an import tax charged by Thailand. For such reasons, the company was considering a switch to land transport via the Myanmar-Lao PDR Friendship Bridge.

114. Thailand

- a. Thailand possesses a complete transport network and logistics supply chain that is linked to the other GMS countries, which are being expanding to the other ASEAN members and beyond. The country's transport and logistics connectivity comprises:
 - Northern gateway: Thailand, Myanmar, the Lao PDR and southern China;
 - Northeast gateway: Thailand, the Lao PDR, Viet Nam, southern China and East Asia;
 - Southern gateway: Thailand, Malaysia, Singapore and Indonesia;
 - Western gateway: Thailand, Myanmar and the BIMSTEC countries; and
 - Eastern gateway: Thailand, Cambodia, the Lao PDR, Viet Nam
- b. The growth of cross-border trade between Thailand-Cambodia, Thailand-Lao PDR and Thailand-Myanmar has been strongly facilitated by the full development of transport networks and logistics chains.
- c. Although the trade volume via waterway transport accounts for a smaller amount, e.g., 12% of the total in 2013,⁴⁴ than road transport, the growth in the volume of imports and exports has been facilitated by the two Chiang Kong and two Chiang Saen ports in the southern gateway (tables 14 and 15), which demonstrates the importance of these river ports in trade facilitation in the four-country region.

115. China through Yunnan Province

- a. The logistics industry in Yunnan has strongly developed through a logistics infrastructure comprising: (a) a transport network of railways, expressways, navigable waterways, civil aviation routes, and petroleum and gasoline pipelines; (b) vehicles; and (c) a multi-function logistics park for transportation, storage, packing, processing, warehousing and customs clearance.
- b. In addition, the province has constructed regional logistics information platforms, including southwestern Yunnan, which is considered to be the LM International Logistics Cooperation Zone.⁴⁵
- c. In the case of cross-border trade logistics for waterway, the LM River shipping channel with a stretch from China to Chiang Saen has already been developed and in operation since 2001 in compliance with the implementation and development of the Quadripartite Agreement.
- d. Logistics functions and development at Yunnan's ports are aimed at becoming logistics centers⁴⁶ that will provide the multi-function services of re-exporting, transiting, trading, cargo distribution and international business. To that end, border trade logistics industry has been built and expanded upon the trade and regional cooperation. A number of

⁴⁴ See http://www.boi.go.th/tir/issue_content.php?issueid=97;page=42

⁴⁵ Qin Fan, Bing-Lian Liu and others (eds.), *Contemporary Logistics in China: Proliferation and Internationalization, 2015*, pp.130.

⁴⁶ Kerry Logistics, "A Logistics Center is a staging area where different types of value-added logistics activities are being performed in order to reduce overall costs." See http://www.psdas.gov.hk/content/doc/PowerPoint_Vincent_Wong.pdf.

border trade logistics enterprises have emerged in Yunnan.⁴⁷ These logistics enterprises mainly engage in international transportation, which involves warehousing, cargo handling and customs clearance. Established logistics enterprises include joint-venture companies in South-East Asia and South Asia.

- e. However, it was also noted from the consultation that there were cases where cargo ships from Thailand docked and got stuck at the river ports in Yunnan while waiting for the cargoes to be unloaded. The cause was constraints in the port's capacity and productivity.
116. In conclusion, logistics – including transport and port infrastructure, port operations and shipping – contributes to the growth of trade in each country and the region as a whole. In this connection, the Lao PDR and Myanmar are still lagging behind the logistics development in Thailand and China. In the context of regional cooperation and economic integration, regional trade will continue to grow and logistics will concurrently respond to the increased demand for its services. If port infrastructure is subject to congestion and delays, or if the port operation is underperforming it will increase cost inefficiency or loss of cost incurred to shippers and exporters. By and large, there is a need for (a) enhanced port capacity and operational performance, and (b) an appropriate scheme for investment in port infrastructure, in order to integrate transport policies into the agreed regional cooperation framework.

3.4. Trade Patterns

117. The trade patterns formed in each of the four countries included in this study pertain to the ACFTA framework within which economic cooperation and implementation cover three stages: (a) the product FTA signed in 2005; (b) the services sector FTA signed and executed in 2007; and (c) the Investment Agreement signed in 2007. This free trade framework was officially established and came into effect in 2010.
118. In theory, implementing FTAs in general and ACFTA in particular will generate the so-called trade-creation and trade-diversion effects. The effects under ACFTA are that certain goods become tradable and provide low-cost import sources thanks to tariff liberalization, e.g., liberalization of trade in goods and services, tariff reductions under the Early Harvest Program, and Reduction of Tariffs on General Goods.⁴⁸ To this end, economic integration through ACFTA is expected to result in trade creation effects and increased bilateral benefits for participating countries. Table 19 illustrates the progressive tariff scheme in addition to reductions in non-tariff barriers to trading goods that positively affect the development of bilateral trade and the formulation of trade patterns.

Table 19. Tariff Reduction Scheme under ASEAN and ACFTA Frameworks

Year	Tariff	Products	Country members
2000	Zero to 5% for all ASEAN	85% of common CEPT items	Indonesia, Malaysia, Philippines, Singapore, Thailand and Brunei Darussalam (ASEAN 6)
2001	Approximately 14%	All products	China
2003	Zero to 5%	All CEPT items	ASEAN 6

⁴⁷ Chuntai Zhang, 2007, "Development study of NSEC: 26 large-sized logistics enterprises (type A) and 2,000 – 3,000 logistics services providers in Yunnan in 2006".

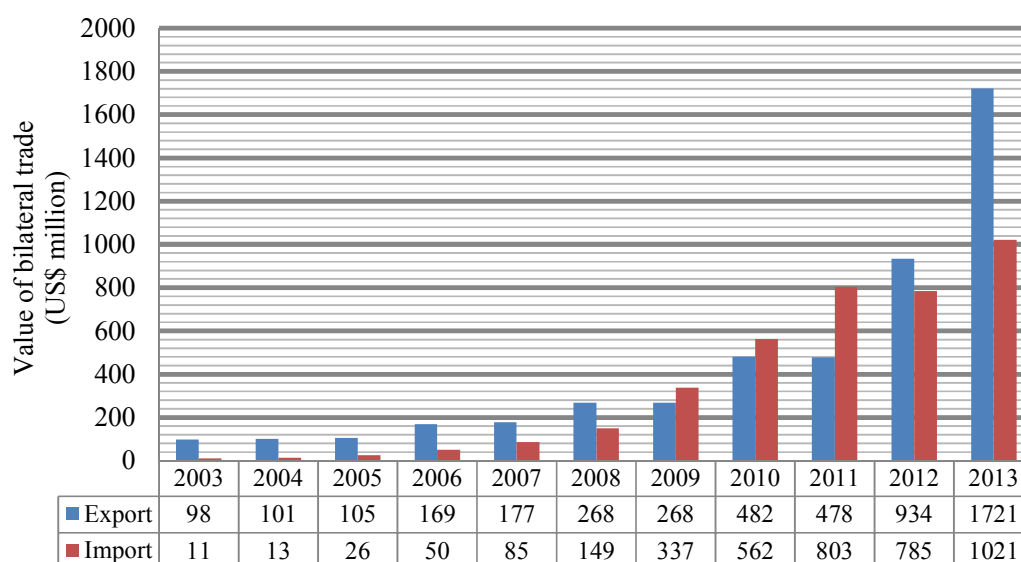
⁴⁸ ACFTA, available at http://www.thaifta.com/english/eng_ascn.html.

Year	Tariff	Products	Country members
2004	Reduced agricultural tariffs ⁴⁹	Agricultural products	All ACFTA members
2005	Zero per cent for all WTO	All products with tariff reduction	China
2006	Zero per cent for all ACFTA countries	All agricultural products	ACFTA members
2010	Zero per cent for all ASEAN countries	All products with tariff reduction	ASEAN 6
2015	Zero per cent for all ASEAN countries	Majority of sensible products	Four new ASEAN (Viet Nam, Cambodia, Lao PDR, Myanmar)

Source: www.asean.org/news/item/foreign-direct-investment-statistics.

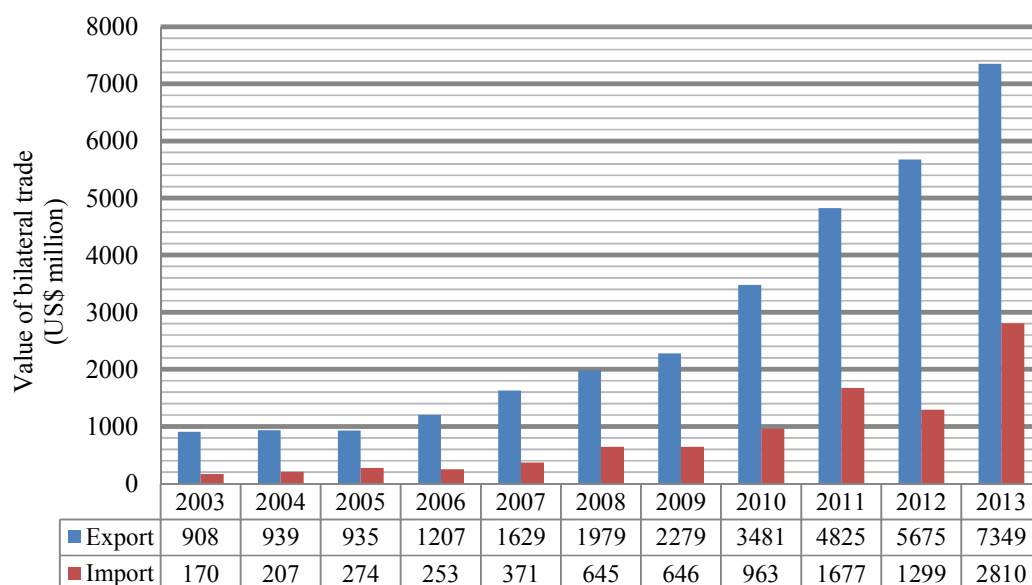
119. Trade interaction between China and the other three countries is evidenced by the trade value and categories of traded goods during 2003-2013 as depicted in figures 12, 13 and 14, and during 2011-2013 as shown in table 20. According to available data from the Ministry of Commerce in China (MOFCOM), and compiled by the United States-China Security and Economic Review Commission, China recorded a trade surplus with the Lao PDR and Myanmar, but a trade deficit with Thailand.
120. Import-Export Structure:
- China-Lao PDR: Natural resources comprise the majority of the Lao PDR's exports to China, while China is a dominant provider of heavy manufactures, machinery and electrical products, and transport equipment to Lao PDR.
 - China-Myanmar: While Myanmar depends on foreign markets for most manufactured goods, its imports from China comprise industrial products, machinery and electrical goods, transport equipment, textiles and chemicals (5%).
 - China-Thailand: The majority of exports from Thailand to China are plastics while its imports are mainly machinery and electronics. There is also intra-industry trade in the case of China and Thailand.

Figure 12. Value of Bilateral Trade between China and the Lao PDR

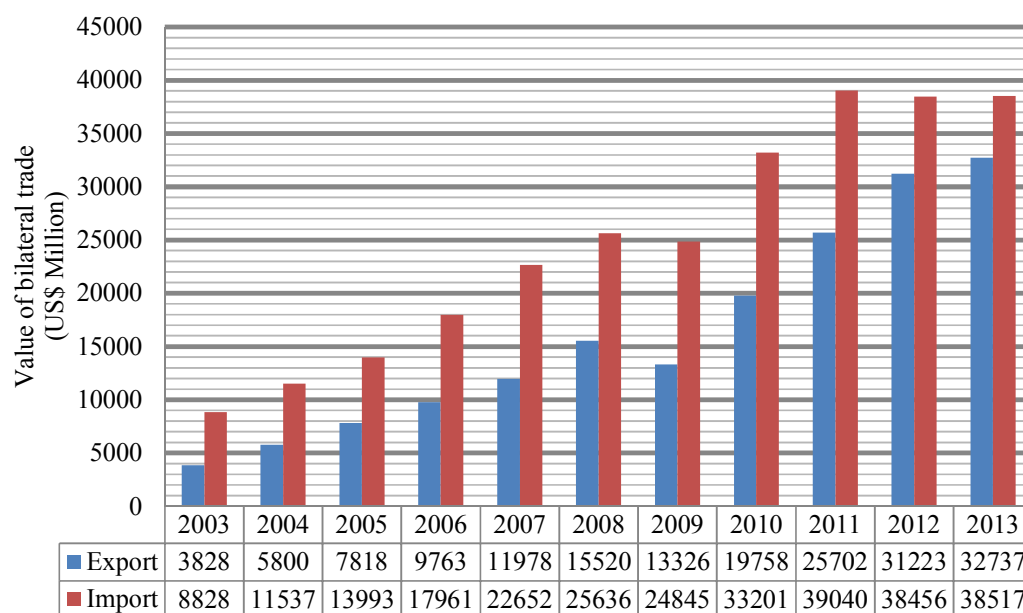


Source: MOFCOM and United States-China Security and Economic Review Committee..

⁴⁹ Under the Early Harvest Plan, China and Thailand initiated zero tariffs for vegetables and fruit on 1 October 2003.

Figure 13. Value of Bilateral Trade between China and Myanmar

Source: MOFCOM and United States-China Security and Economic Review Committee.

Figure 14. Value of Bilateral Trade between China and Thailand

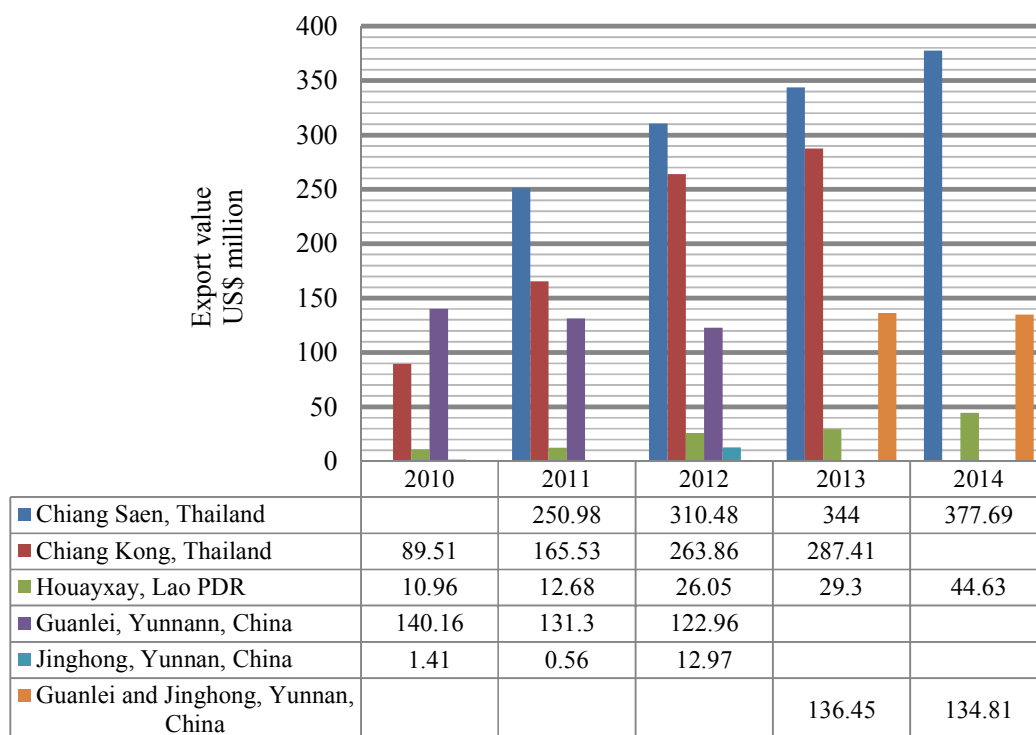
Source: MOFCOM and US-China Security and Economic Review Committee.

Table 20. Trade of Lao PDR, Myanmar, and Thailand with China: Import-Export Structure by Category and Share of Goods

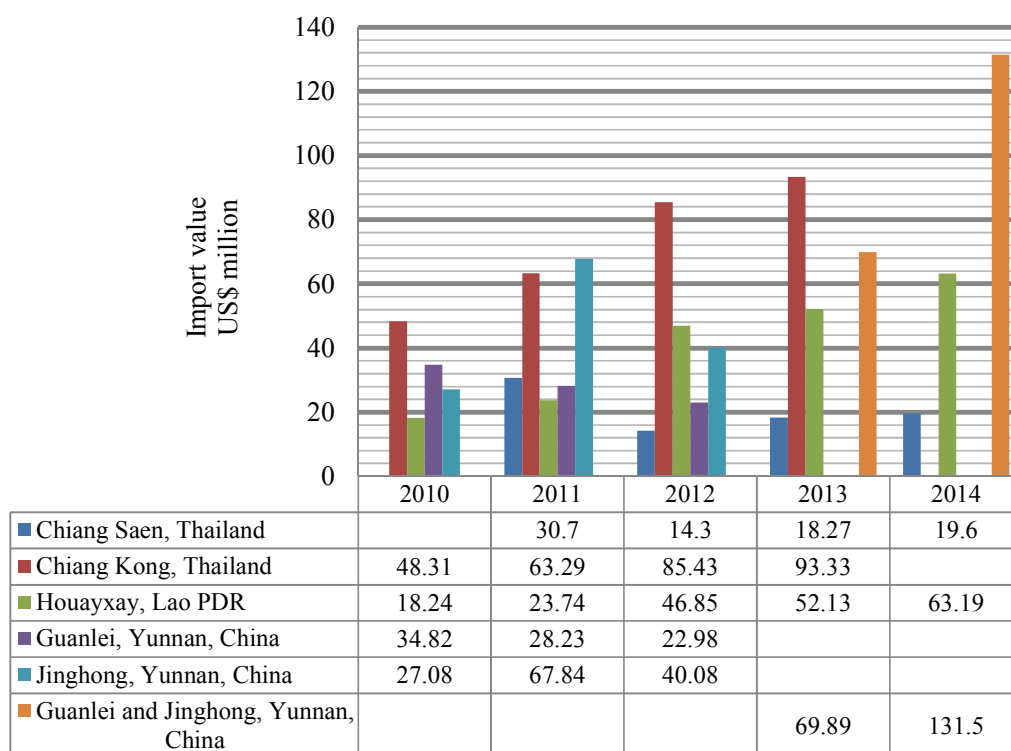
Traded Goods	2011		2011		2013	
	Lao PDR		Myanmar		Thailand	
	Exports	Imports	Exports	Imports	Exports	Imports
Plastics/rubber	4%		13%		34%	
Machinery and electronics		47%		27%	21%	50%
Chemicals				5%	12%	8%
Vegetables	3%		11%		10%	
Fuels					9%	
Metals	10%	10%		19%		13%
Transport		19%		19%		5%
Animal			7%			
Minerals	55%		26%			
Textiles		3%		13%		
Wooden	27%		31%			
Miscellaneous		10%		17%	14%	5%
Others	1%	11%	12%			19%
Total	100%	100%	100%	100%	100%	100%

Source: MOFCOM and US-China Security and Economic Review Committee.

121. In addition, the survey for collecting trade data conducted at the customs offices in Yunnan, Chiang Rai and Houayxay resulted in consolidated data at selected river ports (figures 15 and 16). These show a continuous increase in trade value, especially at Chiang Saen and Chang Khong ports during 2010-2014. However, there are no data for Wan Pong port in Myanmar, which could be due to the fact that informal trade forms the majority of Myanmar's bilateral trade with China, the Lao PDR and Thailand. This is consistent with the information provided by Myanmar's Ministry of Commerce at the consultation meeting as well as at an in-depth interview with business companies in Myanmar.
122. Although trade data for all the designated river ports in the CLMT are not fully available, the above paragraphs make it clear that Chiang Kong and Chiang Saen ports in Thailand play key roles in the transportation of traded goods from and to the Lao PDR, Myanmar and China through Yunnan province, and that the total trade value reported at each port during 2010-2013 accounts for a small share of (a) the total trade value of each country, and (b) bilateral trade between China-Thailand, China-Lao PDR and China-Myanmar. In addition, a continuous increase in trade value (imports plus exports) was recorded at all river ports from 2010 to 2014.

Figure 15. Export Value via Selected River Ports in China, the Lao PDR and Thailand, 2010-2014

Source: Customs authorities of Kunming (China), Thailand and the Lao PDR.

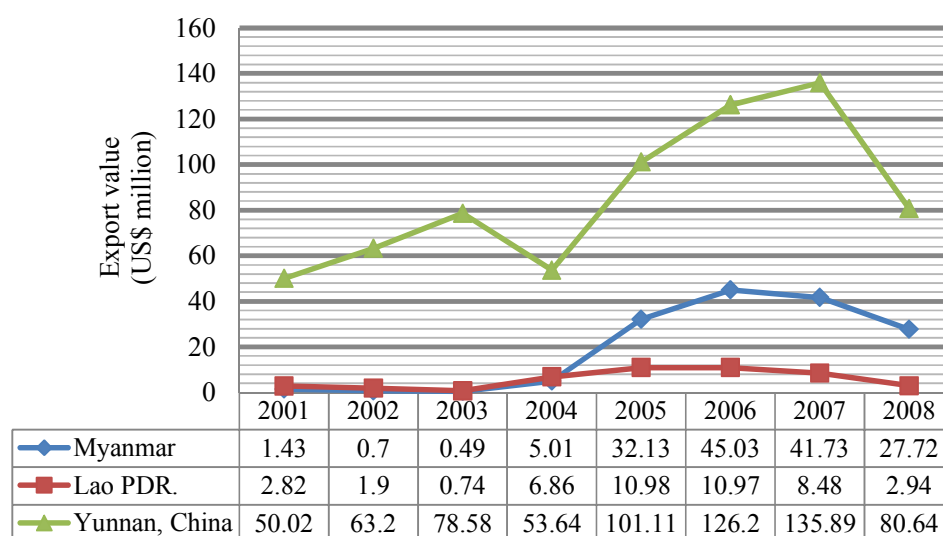
Figure 16. Import Value via Selected River Ports in China, the Lao PDR and Thailand, 2010-2014

Source: Customs authorities of Kunming (China), Thailand and Lao PDR

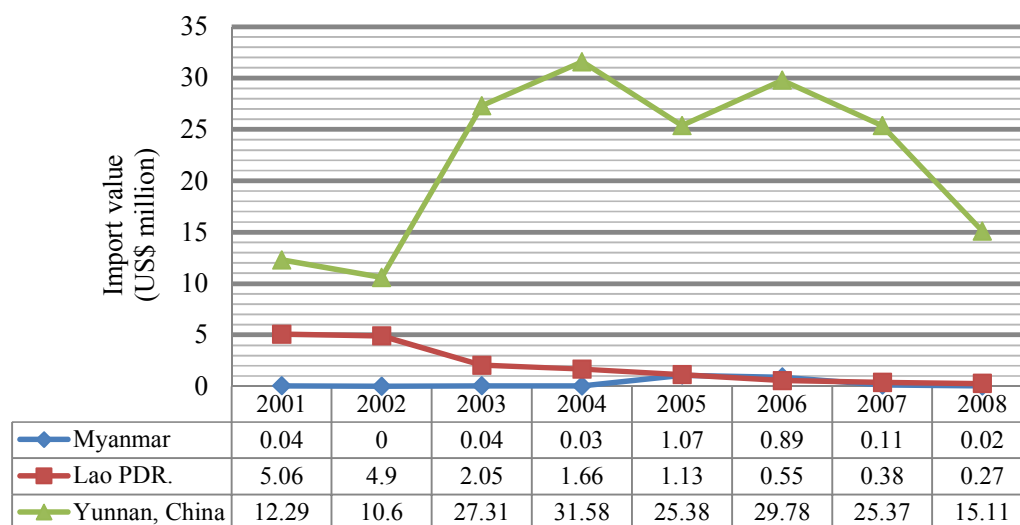
Note:

- a. Thailand
 - i. Trade value is recorded in Thai Baht (THB). All values are converted into United States dollars, using the United Nations Operational Currency Exchange Rate (US\$ 1.00 = Baht 35.83 in September 2015) for reference purposes only.
 - ii. The data source was Chiang Saen customs authorities. The customs office is responsible for administering two river ports: (a) Chiang Saen Port (the old port is now used for passengers), and (b) The new Chiang Saen Commercial Port (new commercial port) has been in operation since 2012. Therefore, the statistical data of 2011 refer to the old Chiang Saen port.
 - iii. Trade value covers cargo transported and declared at Chiang Saen port, the Friendship Bridge and checkpoints at border gates.
 - b. China
 - i. The data source was Kunming Customs District, Yunnan Province.
 - ii. Jinghong River Port and Guanlei River Port are now under the administration of Xishuangbanna Customs Office.
 - iii. There are no separate statistical data for Guanlei as of 2013, when it was handed over by Mengla customs to Xishuangbanna customs. Therefore, the data are a combination of Guanlei and Jinghong ports.
 - c. Lao PDR – Trade via Houayxay may be a combination of imports and exports via both river and road.
123. It is also necessary to track the growth in trade value during 2001-2008. For this purpose, Chiang Saen port was chosen in view of its important role as the trade gateway connecting the upper and lower Mekong regions and data availability.
124. During 2001-2008 at Chiang Saen old port (figures 17 and 18) the increasing trends of imports and exports were steady, and trade value was approximately 77%.

Figure 17. Export Value between Thailand and China, the Lao PDR and Myanmar during 2001-2008 via Chiang Saen (old port), Thailand



Source: Customs Department of Thailand, 2009.

Figure 18. Import Value between Thailand and China, the Lao PDR and Myanmar during 2001-2008 via Chiang Saen (old port), Thailand

Source: Customs Department of Thailand, 2009.

Note: The trade value is in Thai baht, and converted in to US\$ using commercial bank exchange rates (Bangkok Bank)

125. In addition to trade value, trade volume is an important aspect as it is closely related to transportation and logistics services. Trade volume together with associated value form the trade patterns between countries. Tables 15 and 16 detail trade volume in terms of operational performance by Chiang Khong and Chiang Saen ports from 2011 to 2013. It can be seen that the number of cars traded as well as passenger flow via these ports decreased. However, the number of ship calls, and imported and exported cargoes, increased consistently at these ports. The slight decrease in 2012 compared with 2011 can be ascribed to the fact that Chiang Saen Commercial port (new port) started operating in 2012.
126. As for the import and export trade patterns, the top 10 products traded among the four countries were chosen for the analysis. Due to the scarcity of trade data, Chiang Khong was selected for demonstrating trade patterns between Thailand and China, the Lao PDR and Myanmar. In this connection, since a similarity can be seen in the patterns of imports and exports during 2010-2014 is observed, the top 10 products in 2014 are presented in table 21.

Table 21. Top 10 Products Traded through Chiang Khong Customs, Thailand, 2014

No.	Imports			No.	Export		
	Type of product	Country	Value (US\$ million)		Type of product	Country	Value (US\$ million)
1	Vegetables	China	35.76	1	Diesel fuel	China, Lao PDR	90.57
2	Fruit	China	23.92	2	Consumer products	Myanmar, China, Lao PDR	50.62
3	Machinery and equipment	China	11.87	3	Fresh fruit	China, Lao PDR	39.19
4	Flowers, garden trees	China	6.06	4	Rubber, scrap rubber	Myanmar, China, Lao PDR	36.74

No.	Imports			No.	Export		
	Type of product	Country	Value (US\$ million)		Type of product	Country	Value (US\$ million)
5	Argon gas	China	3.76	5	Petroleum	China, Lao PDR	24.13
6	Cigarettes (EPZ)	China	1.16	6	Construction materials	China, Lao PDR	19.04
7	Dried tobacco leaves	China, Lao PDR	1.07	7	Almond, macadamia, dried walnut, Sachainchi	China, Lao PDR	17.62
8	Honey	China	0.92	8	Dried anchovy, fish	China, Lao PDR	15.82
9	Lumber/processed wood	Lao PDR	0.9	9	Private cars	Lao PDR	11.5
10	Trucks/tractors (cap)	China	0.39	10	Steel bars, shaped steel, scrap metals	China, Lao PDR	3.98
11	Other products	China, Lao PDR	5.07	11	Other products	Myanmar, China, Lao PDR	25.48
	Total		91.7				344.69

Source: Chiang Kong customs authorities, Thailand.

127. The trade patterns in the top 10 products traded between Thailand and the other three countries via Chiang Khong port in 2014⁵⁰ are briefly described below:
- Thailand-Lao PDR: Lumber and processed wood imports from the Lao PDR. Exports from Thailand include petroleum, diesel fuel, consumer goods, cars, construction materials and metals;
 - Thailand-Myanmar: Exports of consumer goods and rubber exports to Myanmar. Thailand does not import products from Myanmar via Chiang Khong;
 - Thailand-China: Most of the products on the top 10 list are traded between the two countries, except for lumber and processed woods (Thai imports), and cars (Thai exports). It is remarkable to see the high value of agricultural products (e.g., vegetables and fruit) that are traded between the two countries. The applied zero tariff for agricultural products has driven the growth of trade since 2003 when China and Thailand initiated tariff cuts under the Early Harvest Program as part of the ACFTA framework.
128. In addition, imports and exports via Chiang Saen port mainly comprise agricultural products, diesel fuel, cars, and consumer goods (Thai exports), and minerals (rubies), agricultural and food processing products (Thai imports). Generally, the import-export structure remained relatively unchanged during 2010-2014.
129. Given the insufficient availability of data faced by the survey, trade patterns between China-Myanmar and China-Lao PDR can be inferred from the import and export structure as shown in figures 12 and 13. Myanmar is not the main import and export partner of the Lao PDR.⁵¹ Therefore, the trade patterns are mainly developed between China-Thailand-Lao PDR, and China-Thailand-Myanmar.

⁵⁰ A list of the top 10 products from 2010 to 2014 at respective locations is annexed to this report.

⁵¹ The Lao PDR's experiences in participating in the regional trade agreements (RTAS), April 2014, available at http://unctad.org/meetings/en/Presentation/c1mem4_2nd_CHEUCHING.pdf.

130. It is noteworthy that border trade, which is part of the trade value exchanged between the countries, includes trade flows both goods that are consumed in the neighboring countries (cross-border trade) and trade flows of goods in transit to a third country. In this regard, border trade may also include informal border trade, barter trade, developed mostly between countries that share the same border, i.e., Myanmar-China, Myanmar-Thailand, Lao PDR-Thailand and Lao PDR-China.
131. In this regard, there is still considerable local and informal freight traffic using the river and ports, especially in the Lao PDR and Myanmar. Normally, informal trade is not officially recorded and trade value thus is not measured, while the river is the primary route for carriers of wood and non-refrigerated agricultural produce both to and from China and in local sectors as well. Trade into Myanmar via Wang Pong port is thus perceived as being, de facto, much higher than the statistics indicate. Much of the river traffic using the ports is said by the Government of the Lao PDR officials to be “local”, meaning that it is cross-river or informal, and therefore does not show up in official figures. Overall, the LM River traffic can be said to comprise either bulk or local trade. There is very little through traffic that does not have its origin or destination in the upper stretch; however, there is no evidence of intermodal traffic using the river.
132. In summary, opening trade among the CLMT can be considered as part of the intraregional trade under the ACFTA framework. China and Thailand are the leading import and export partners of each other as well as the other two countries, while economic and trade exchange between the Lao PDR and Myanmar is rather limited. As a matter of fact, the participating countries within ASEAN and ACFTA (China, the Lao PDR, Myanmar and Thailand) have increased the level of trade and commodity exchange by the application of various measures, including tariff liberalization. In this connection, freight transport on the LM River has made a great contribution to formulating trade patterns and bilateral trade among those countries.

3.5. Tourism

133. For tourism development in the GMS, the ADB initiated the Upstream Mekong River (Lancang) Tourism Planning Study in 1997 with identification of six segments of the river for tourism development.⁵² The result of the study is an assessment of the potential of river tourism, in order to facilitate the preparation of a feasibility study. In 2005, GMS Regional Tourism Sector Strategy was formed with the objective of positioning GMS as a destination. Subsequently, the Mekong Tourism Coordination Office (MTCO) was established in February 2006.⁵³ The core functions of the MTCO, which is known as the Secretariat of the GMS Tourism Working Group, with the ADB support covers the coordination for the (a) development of subregional tourism projects with a focus on pro-poor tourism development towards sustainability, and (b) promotion of the Mekong region as a single travel and tourism destination.
134. However, tourism is not yet defined as a core part in the operations under ADB’s Strategy 2020. So far, the subregional tourism projects having been financed by ADB and implemented by National Tourism Organizations (NTOs) in coordination with the MTCO, with the focus more on studying and planning tourism zones, capacity-building and pro-poor tourism, while river tourism,⁵⁴ is not being directly addressed and developed.

⁵² ADB, TA Completion Report, May 1999, available at <http://www.adb.org/sites/default/files/project-document/72160/30015-reg-tcr.pdf>.

⁵³ ADB, Evaluation Study on the Tourism Sector in the GMS, December 2008.

⁵⁴ River tourism consists of two areas: (a) tourism beside the river, i.e., hotels, restaurants, casinos and related businesses; and (b) tourism on the river, which includes implies cruising, water transportation, canoeing,

135. As part of an effort to identify the potential of the international shipping transportation, the research work aims to seek the value of river tourism, the connection between tourism and the LM River through a certain in-depth interviews and focus group discussions that were conducted in the four countries. It is found that:
 - a. In China, through Yunnan province, the river tourism services provided on the LM River by the Chinese boat company in Xishuangbanna are now less attractive, and mainly serve domestic river tourism in Yunnan. One of the reasons is related to market segment and client strategy with its focus on tourist groups instead of individual tourists, e.g., backpackers;
 - b. In Myanmar, tourism on the LM River is still facing constraints as described in paragraph 81 above.
 - c. The Lao PDR is interested in further investment in, and development of its domestic tourism industry, with priority given to inland waterborne tours along the lower Mekong river basin;
 - d. In Thailand:
 - Chiang Saen port is an important gateway to China and connection for the transport of passengers to and from Myanmar and the Lao PDR to Thailand and China. The number passengers disembarking and embarking at the port during 2005-2010, including tourists taking boat tours from Yunnan to Thailand via Chiang Saen, shows a decreasing trend.
 - According to the Tourism Association of Thailand (TAT), cruises on the LM River are possible, subject to the establishment and maintenance of good relationship networks. In addition, TAT has a tourism project on AEC linkage, comprising international tours of Thailand-Myanmar-China. However, restrictions related to road infrastructure in Myanmar exist. In Chiang Ra, TAT can support tours from Mae Sai-Chiang Tung-Mengla as a way of further promoting Thailand as a unique feature in regional travel and tourism development.
136. Overall, tourism operations on the LM River are underdeveloped at present. The following are the key areas of the tourism sector that need increased investment and development, from the perspective of the stakeholders concerned:
 - a. Natural attractions and manmade structures for the tourism industry are inadequate;
 - b. Accessibility, particularly to some parts of the LM River in Myanmar, has limits to a certain extent;
 - c. Infrastructure is not well-developed;
 - d. Facilities serving tourism, including hotels, restaurants, souvenir shops and entertainment centers are unable to fully meet tourists' needs; and
 - e. Hospitality is a most important factor. However, this aspect still needs to be further developed especially in the case of Myanmar and the Lao PDR where government officials' knowledge and ability are confined to the local context. Therefore, it can be seen that much needs to be done in terms of hospitality and service culture.
137. Development of human capital has lagged behind the development of infrastructure, marketing and transportation. This has a direct adverse impact on the capacity to deliver quality services in LM tourism. The shortage of quality and affordable tourism vocational education and training is also an underlying cause of low service quality, particularly in secondary destinations within the region.
138. While improving, the countries of the region except for Thailand were ranked low by the World Economic Forum's Global Travel and Tourism Competitiveness Report, 2015, of effectiveness in marketing and branding aimed at attracting international tourists. Thailand

("Developing river tourism on the upper Mekong: Challenges and opportunities", in *European Journal of Business and Social Sciences*, vol. 1, No. 10, January 2013.

was ranked 11 of 140 economies, followed by China at 42. The main constraints to tourism development are: (a) insufficient public financial resources for marketing and promotion; (b) poor coordination between industry stakeholders; and (c) the lack of capacity to design and implement effective destination marketing campaigns, in particular through using online tools like social media to directly reach out to consumers.

139. In addition to the above-mentioned constraints facing tourism development the LM region, table 21 presents a SWOT analysis of tourism products and markets. The analysis addresses weaknesses and threats, and seeks measures for improving the current situation and promoting tourism development in future.

Table 22. SWOT Analysis of Tourism Products and Market

Strengths		Weaknesses	
Product <ul style="list-style-type: none"> – Vibrant cultures and traditions – Diverse ethnic groups and festivals along the river – Scenic landscapes and natural attractions – Hospitable culture – Good value for money – Vibrant gateway cities – Unexplored secondary destinations 	Market <ul style="list-style-type: none"> – Proximity to thriving North-East and South-East Asian markets – Short flight times to Asian megacity links to LM ports – Expansion of low-cost air carrier networks – Strong national air-carriers 	Product <ul style="list-style-type: none"> – Overlapping tourism products and services between countries – Varied quality standards – Inexperienced staff in tourism industry – Inconvenient visa processes and policies – Weak business environment – Cumbersome regulatory system – Underdeveloped public group navigation systems – Low awareness of investment opportunities in the tourism sector 	Market <ul style="list-style-type: none"> – Limited awareness of the LM River – Lack of a coherent Mekong tourism branding strategy – Poor website – Limited segmented market targets – Lack of product information – Inadequate coordination among the public and private sector actors – Lack of information on minor destinations – No coherent digital marketing strategy
Opportunities		Threats	
Product <ul style="list-style-type: none"> – Potential attractions, itineraries and resources, which could significantly expand the regional products and services – Improved connectivity between gateway cities and secondary destinations – Collaboration among development partners in developing secondary destinations – Improved education and training programs – Energetic youth interested in tourism careers 	Market <ul style="list-style-type: none"> – Refresh LM tourism brand – Integrated regional digital marketing strategy – Popularity of the Mekong region – Unite and coordinate public and private sector stakeholders – Expand multi-country offerings of international tour operators 	Product <ul style="list-style-type: none"> – Lack of coordination between stakeholders – Degradation and overcrowding of core attractions – Low quality of tourism products – Failure to promote tourism branding – Unsecure navigation conditions 	Market <ul style="list-style-type: none"> – Increase in competition in the tourism market at the regional level – Natural disasters – Political instability – Economic downturns

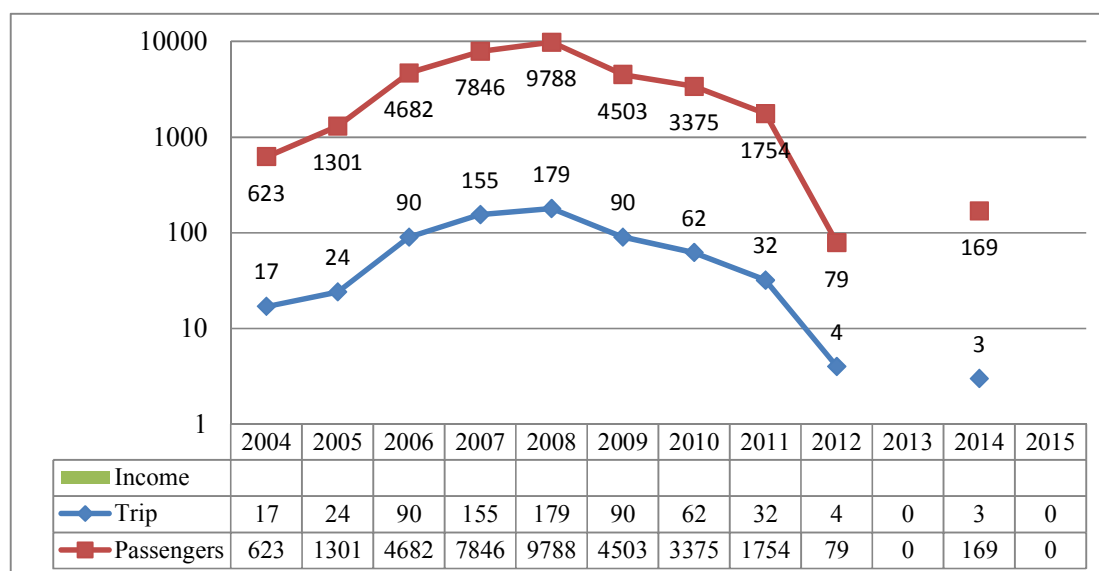
140. The following two case studies in China and Thailand provide a specific illustration of the waterborne tourism business services on the LM River and the development status of the two companies concerned.

Box A. Case Study 1: Leading Mekong River Tourism Shipping Company in Xishuangbanna, China

1. Introduction

Company name	Xishuangbanna Golden Triangle Tourism and Shipping Co., Ltd. (hereinafter referred to as Golden Triangle)	Xishuangbanna Beiye Tourism and Shipping Co., Ltd. (hereinafter referred to as Beiye)
Parenting group	Mekong River Group	
Year of establishment	Golden Triangle: 2003-2011	Beiye: 2012- present
Number of employees	C. 100	120
Registered capital	US\$ 966,545 (RMB 8,000,000, US\$ 1= 8.2767 RMB, Bank of China, Dec 2003)	US\$ 1,589,926 (RMB 10,000,000, US\$ 1= RMB 6.2896, Bank of China, December 2012)
Services	Golden Triangle: <ul style="list-style-type: none"> Provides scheduled and chartered international LM Waterborne Passenger Transport and Tourism services Provides scheduled and chartered domestic Lancang transport and sightseeing tour Arts and craft, tourism souvenirs, side food and catering 	Beiye: <ul style="list-style-type: none"> Provides scheduled domestic sightseeing tours along the Lancang River as the main business Provides chartered international shipping tour randomly along LM River Culture festival design and implementation, conference and exhibition services, tourism development etc.
Ships and facilities	Seven ships <ul style="list-style-type: none"> Three high-speed passenger ships (Mekong River No. 2, 3, 8), Two luxury cruisers (MR No. 1 and 9), One barge and one small passenger ferry 	Five ships <ul style="list-style-type: none"> Contracted to operate all five ships and cruises owned by the Golden Triangle Company in 2012 (Vessel MR Nos. 1, 2, 3, 8 and 9) Own private wharf and related facilities to serve waterborne tourism cruises on the Lancang River in Jinghong, China

- The Xishuangbanna Golden Triangle Tourism and Shipping Co., Ltd. was established in 2003 with a registered capital of about US\$ 966,545 under the Mekong River Group in Yunnan of China. It was the biggest and leading tourism shipping company in the LM river basin during 2006 to 2011. The Golden Triangle Company started regular international waterborne transport services on the LM River in September 2006. Every Monday, Wednesday and Friday, international passenger ships departed from Jinghong Port of China in the early morning, calling at Ganlanba port and Guanlei port for more domestic passenger to embark, to reach Chiang Saen port in Thailand in the evening. The return journey from Thailand to China was scheduled every Tuesday, Thursday and Saturday. One single trip cost US\$ 125 (RMB 800) per person-time, while the round trip cost US\$ 235 (RMB 1,500).
- The Golden Triangle also developed a unique river route for sightseeing from Chiang Saen, Thailand to the Golden Triangle and Mouangxi Island in the Lao PDR. The company set up two offices in Guanlei Port, China, and Chiang Saen Port, Thailand to facilitate and market international passenger transport and tourism.
- In addition to the scheduled passenger transport and tourism services, the company provided tailored international tours or surveys along the river, subject to requests from other inland travel agencies, private companies, government agencies and research institutes.

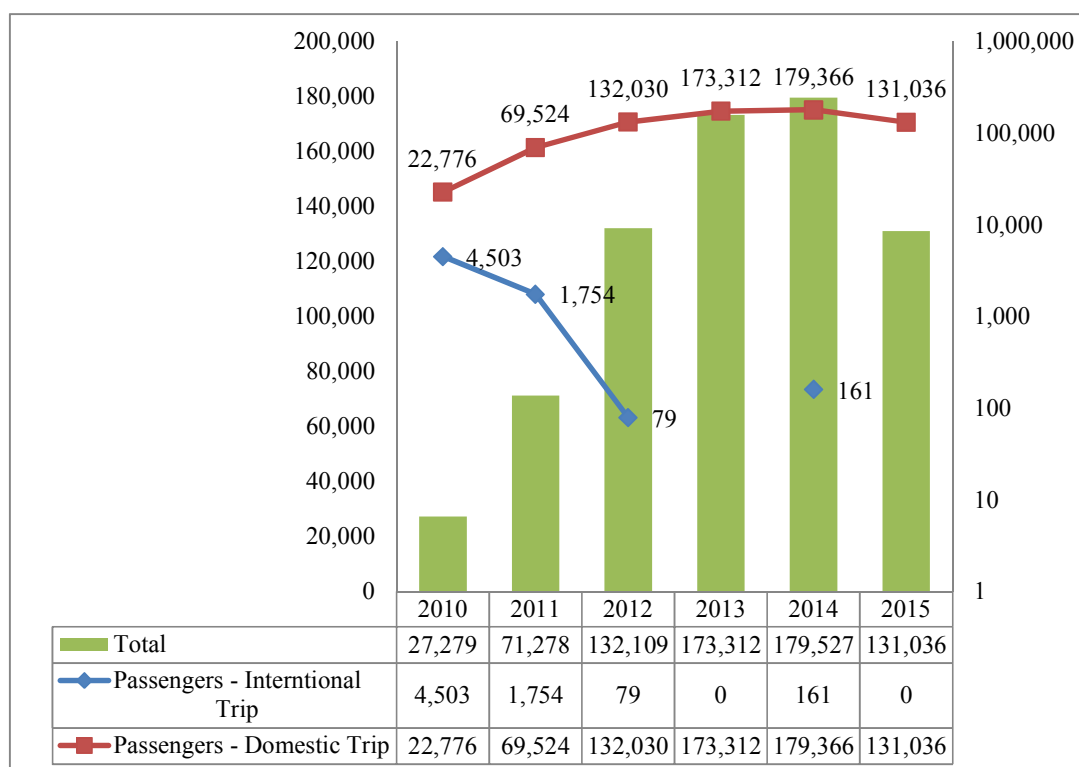
Figure A1. International Waterborne Passenger Transport by Scheduled and Chartered Vessels from Jinghong, China to Chiang Saen Port, Thailand, 2004-2015

Source: Xishuangbanna Beiye Tourism Shipping Co., Ltd. (since 2012) and Xishuangbanna Golden Triangle Tourism Shipping Co., Ltd. (since 2006).

Note: After the Mekong River Massacre on 5 October 2011, all scheduled passenger shipping was canceled. The four international trips in 2012 and three international trips in 2014 were all chartered.

2. Waterborne Tourism Operational Status

- According to the Golden Triangle Company, as shown in figure A1, the company organized 649 international trips, including scheduled and chartered trips, traveling from Jinghong Port to Chiang Sane Port along the LM River from 2006 to 2011. In 2008, the number reached a total of 179 trips and 9,788 passengers. However, it dropped by 50% in 2009, and continued to decrease until now. The concern over safe navigation was the biggest reason for the decline. The incident known as Mekong River Massacre, on 5 October 2011 created shockwaves through the entire international river tourism and shipping industry. After the incident, all scheduled international river transportation along LM was canceled. Only a few chartered trips were organized from 2012 to 2015.
- In 2012, the Golden Triangle Company re-merged and established a new company, Beiye Shipping Tourism Co., Ltd., which focused more on the domestic market and expanded the business from river tourism to other tourism-related industries.
- On 20 December 2012, Beiye signed an agreement with the Golden Triangle Company and took over its five main vessels to continual operating waterborne tourism along the LM River; however, the company focused mainly on in-city cruises and domestic passenger transportation. Just seven international trips from 2012 to 2015, were carried out under contract with certain Chinese travel agencies and institutes, both for sightseeing and for field surveys.
- Compared to international river tourism and tourists on the LM River, Figure B1 shows a different picture of domestic LM River tourism, which increased annually during 2010-2014. In other words, the figure suggests huge opportunities for LM River tourism development.

Figure A2. Domestic and International Trips, 2010-2014

Source: Xishuangbanna Beiyue Shipping Tourism Co., Ltd. and Xishuangbanna Golden Triangle Shipping Tourism Co., Ltd.

3. Ship and Passenger Capacity

- The Golden Triangle owned seven ships, including three high-speed passenger ships: MR Nos. 2, 3 and 8, two luxury cruisers: MR Nos. 1 and 9, and one barge and one small passenger ferry. The Mekong River No.2 and No.3 (capacity – 52 passengers each), and No. 8 (capacity – 60 passengers) were the main ships operating on the LM River from 2006 to 2011.
- From 2012, Beiyue took over the five ships from Golden Triangle, which were mainly used for domestic waterborne tours. MR Nos. 1 and 9 are used for in-city and domestic cruises over a short distance, while Nos. 2, 3 and 8 are for international tours. There were seven trips operated by Beiyue during 2012-2015 for some travel agencies and institutes for the purposes of sightseeing and surveys.

Table A1. Vessels Owned by Golden Triangle and Beiyue Companies

Ships	Type of ship	Size (Length: Width: Height)	Passenger capacity (people)	Draft (Light load draft/loaded draft in metre)	Travel route
Mekong River (MR) No. 1	Cruise ship	44.13:8.24:14.8	200	0.56 / 0.712	Waterborne Sightseeing Tour among Chiang Saen (Thailand), Golden Triangle area and Mounxi Island in December 2006.

Mekong River (MR) No. 2	High-speed passenger ship	20.1: 4.12	52	1.015 / 1.10	International scheduled trip from Jinghong Port to Chiang Saen Port from September 2006 to September 2011.
Mekong River (MR) No. 3	High-speed passenger ship	20.1: 4.12	52	0.56 / 0.712	Same as above
Mekong River (MR) No. 8	High-speed passenger ship	23.25:4.12	60	0.639/0.760	Same as above
Mekong River (MR) No. 9	Cruise ship	46.8: 13:14.9	550	1.121/1.300	Domestic Lancang River cruise in Jinghong city since 2003



MR No. 9



MR. No. 8



ivate wharf owned by Beiye in Jinghong

4. SWOT Analysis, Strategy and Suggestions for International Transport by Beiye

- In 2014, the Beiye Company conducted a market survey of the potential for resuming the scheduled international waterborne passenger transport and tourism business. From this survey, Beiye Company identified the strengths, weaknesses, opportunities and threats (SWOT) of the international tourism market.

SWOT Analysis

<p>Strength</p> <ul style="list-style-type: none"> – A good business network and partnership with travel agencies in Yunnan of China, Thailand, the Lao PDR and Myanmar – Long-time operator and well-experienced in the LM River passenger shipping and tourism – Well-experienced crews and ship captains – Leading company in the industry – High-risk tolerance and investment capacity. River tourism is only one of the company's businesses and services, and not the main income source. The investment in other industry, domestic river tours and tourism-related operations could provide capital for investment in international river transport and tours – Cheaper individual costs for passenger travel by river – Unique sightseeing and natural tourism resources in the LM region 	<p>Weakness</p> <ul style="list-style-type: none"> – After nearly 10 years of operations, the three ships for international trips are aging and outdated. Their condition is not suitable for long distance travel and regular passenger transportation and tourism along the river. – High cost for investing in new ships – Development of new tourism projects to attract more tourists away from road and air transportation
<p>Opportunities</p> <ul style="list-style-type: none"> – The number of tourists for domestic Lancang River sightseeing is increasing; – The number of tourists traveling through Mohan border via NSEC are booming – The national policy support of “One Belt and One Road” 	<p>Threat</p> <ul style="list-style-type: none"> – Security along the LM River, especially in the Golden Triangle area – Climate change and seasonal changes may affect the water level, which will reduce the number of trips each year – Competition from other modes of transportation via road air and rail.

Strategy

- The company is planning to buy one new high-speed passenger ship, which will be suitable for long-distance waterborne passenger transport and tourism on the LM River. To this end, the application has been submitted to the Yunnan Navigation Administration Bureau for approval;
- Cooperation with the Yunnan Vocational and Technical College of Transportation to upgrade the current cruise, and design new ships; and
- Research and development of the passenger-cargo roll-on and roll-off system, and a plan to initiate the project in Xishuangbanna.

Suggestions

- Support by the Government for ensuring security in navigation on the LM River.
- Policy support by the Government for on-river tourism development on the LM River .

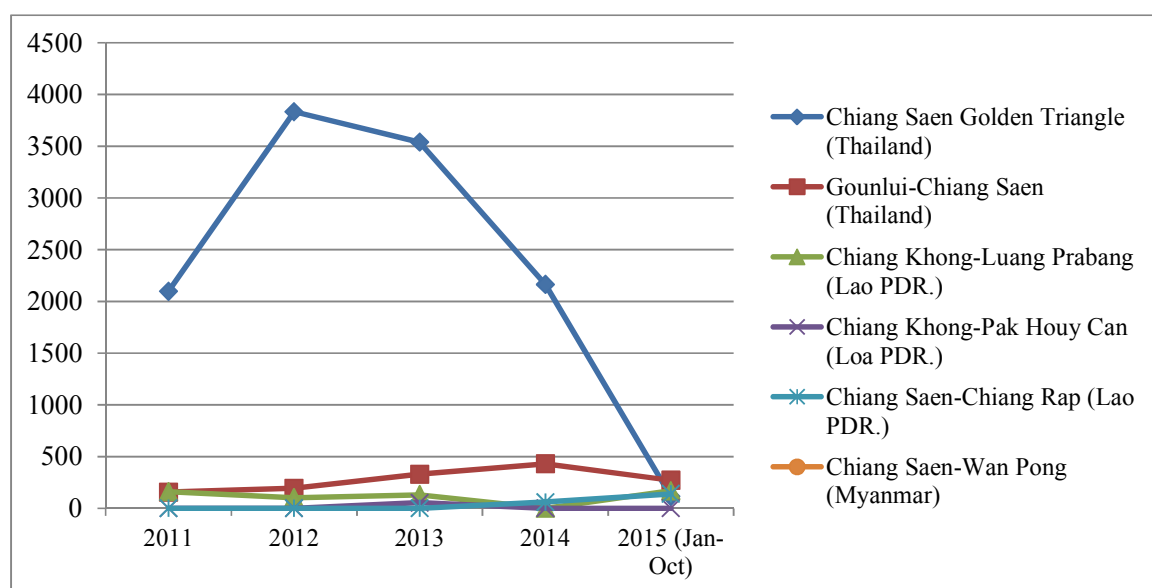
Box B. Case Study 2: Thailand Leading LM Tourism Shipping Company in Chiang Rai, Thailand

1. Introduction

Company name	Maekhong Delta Travel Agency Co., Ltd.
Year of establishment	2008
Number of employees	20
Services	<ul style="list-style-type: none"> – Hotel and accommodation: 130 rooms – Hotel and Resort Reservation Service, both domestically and abroad. – Convention Hall (Kengtung Rooms), can accommodate 500 people for banquets, seminars, conferences etc. – Group tour service – Cruises along the Mekong River – Air ticketing
Ships and facilities owned	Mekong Delta Boutique Hotel <ul style="list-style-type: none"> – 3 ships: Kasalongkham, Kasalongkham 2, and Maekhong Delta – 3 Buses (45 Seats) – 3 Buses (30 Seats) – 7 VIP Van

- Maekhong Delta Travel Agency Co., Ltd. was established and started its chartered international waterborne transport service on the LM River in 2005. It is the leading on-river transportation organization based in Chiang Rai. The customers are 100% Thai nationals, travelling with package tours, including hotel, food, car, documents, and guide services. The one-day trip ordinarily starts from Chiang Saen and Chiang Khong Port to (i) Golden Triangle in Thailand territory for domestic trip; and (ii) to Wan Pong Port in Myanmar for international trip. In addition, the company has also provided the package tour on the LM River from China to Chiang Saen, and the tour cost per person is USD 413.
- According to the company, it has mainly served the domestic waterborne tours between Chiang Saen and Golden Triangle in Thailand with an average of 3000 per year during 2011-2014, while the number of tourists of the tours between (i) Guelei, China-Chiang Saen, Thailand, and (ii) Chiang Khong, Thailand -Luang Prabang, Lao PDR are about some hundreds per year. It is also denoted that the number of passengers and tourists from Chiang Saen in Thailand to Wan Pong in Myanmar is quite limited. It can be seen that the domestic waterborne tourism services provided by the company has definitely outweighed the international river tours in recent years.

Figure B1. Number of Passengers Traveling by River Route Served by Mekong Delta Travel Agency Company during 2011-2015



2. Ship and Passenger Capacity



Kasalongkham



- Kasalongkham is the second ship of Thai nationality serving on-river tourists on the Mekong River. It is a two-deck fiber vessel that is 24 metres long and 4 metres wide. Its capacity is 80 passengers with security standards of radar and GPRS, and equipped with full facilities and entertainment. The captain and crew consist of Chinese and Laotian nationals who have expertise and experience in Mekong River cruise navigation and control.



Kasalongkham 2



- Kasalongkham 2 is a third ship of Thai nationality serving tourists on the Mekong River. It is a two-deck fiber ship that is 26.8 metres long and 5.2-metres wide. It is capable of carrying 116 passengers with security standards of radar and GPRS, and equipped with full facilities and entertainment. The captain is Chinese and the crew is comprised of Laotian nationals who have expertise and experience in Mekong River cruise navigation and control.





Maekhong Delta

- Maekhong Delta is a two-deck steel ship that is 40.4 metres long and 5.0 metres wide. Its capacity is 120 passengers. The rooftop seats provide wide views on two sides of the Lao PDR and Thailand along the Mekong River. It is also equipped with facilities such as karaoke, and food and beverage supplies as well as the standard security system.

Table B1. Description of Mekhong Delta Travel Agency Vessel with Specifications

Specifications	Vessel		
	M.V.KASALONGKHAM	M.V.KASALONGKHAM 2	MAEKHONG DELTA
Marine Department, Thailand. Registered Number	TG 54033	TG 57031	
Length	24 M.	26.80 M.	40.40 M.
Width	4 M.	5.20 M.	5 M.
Breadth	4.10 M.	5.20 M.	5.50 M.
Depth molded	1.55 M.	2.00 M.	
Navigation	Radar and GPRS	Radar and GPRS	Radar and GPRS
Materials	Fiber Glass	R. Fiber Glass	Steel
Draft	0.70 M	0.90 M	0.75 M
Maximum speed	55 km/ hour	45 km/ hour	35 km/ hour
Net/gross tonnage	23.00/ 53.00	29.00/ 96.00	74.6/109.06
Engines	2x670 hp Cummins engines	2x670 hp Cummins single engine	2x430 hp Cummins engines
Cabins	Two decks with sunroof, air-conditioners, kitchen, W.C.	Two decks with sunroof, CCTV, air-conditioners, kitchen, W.C.	Two decks with sunroof, air-conditioners, rest rooms, kitchen
Generator	Kholer 33kw, 24v, 50Hz./ 3ph	Kholer 33kw, 24v, 50Hz./ 3ph	
Passenger	80 persons	116 persons	120 persons
Crew	5 persons	7 persons	5 persons
Date of deployment	26/12/11	26/12/11	9/7/10

**M.V. Kasalongkham and M.V. Kasalongkham 2 are capable of cruising to Guan Lei, China and Luang Prabang, Lao PDR.

141. Given that the tourism industry is an integral area in the GMS's economic program, LM River tourism is considered to be a broad strategy of diversification of the tourism experience, according to MTCO.⁵⁵ Therefore, identification of international waterborne tourism (including river cruises on the LM River) as a major attraction for the region is

⁵⁵ "Unlock the potential of Mekong tourism via innovation", available at <http://www.mekongtourismforum.org>.

important and complementary to ocean cruises for growing tourism markets and enriching tourism-related activities such as adventure tourism, ecotourism and community-based tourism. Indeed, river tourism provides tourists with good physical experience by highlighting the value of the LM River, and promoting local culture among diversified communities and locations in interaction with nature along the Mekong and nearby physical structures.

3.6. Investment

142. Technical assistance and investment in physical infrastructure in the form of development projects, in principle, play crucial roles in realizing and achieving the development objectives of designated sectors in an economy. However, the development of the LM River in terms of economic/financial and social benefits from the river cannot be generated without substantial investment in the river-related infrastructure.
143. In this connection, international donor(s) in collaboration with the GMS countries are identifying investment projects for implementation by the recipients through their national implementing agencies. As such, investment in the LM region is part of the investment framework under the GMS economic cooperation programs and ACFTA.
144. Regional transport infrastructure projects under the GMS program include:
 - a. The Regional Investment Framework (RIF) of ADB provides an overview of ongoing and future transport infrastructure projects within the GMS region. The key thrust of the transport sector projects within the RIF is to complete and expand GMS transport corridors in order to develop them into economic corridors. Along these lines, the high priority projects in the RIF are aimed at:
 - Filling the remaining gaps in the transport corridors, including their effective extension into Myanmar, in order to accelerate that country's integration with the rest of the subregion;
 - Maximizing multimodal transport linkages via roads, railways, ports and inland water transport;
 - Prioritizing projects that strengthen GMS connectivity, increase trade and promote inclusive growth;
 - Giving greater attention to other important aspects of transport development, such as adequate maintenance of transport assets and enhancement of road safety; and
 - Improving connectivity within the subregion and expanding connectivity with other subregions, including South Asia and Central Asia.
 - b. Under this framework, during 2014-2018⁵⁶ the RIF comprises several investment projects associated with the development of the LM River:
 - Further maintenance and improvement of the upper Mekong River navigation channel project, from China (at Landmark 243) and Myanmar to Luang Prabang in the Lao PDR, under the Agreement on Commercial Navigation of the LM River that was signed by the four participating countries. To finance the project, the Government of China provided US\$ 5 million for the improvement of the Upper Mekong River navigation channel from China at Landmark 243 via Myanmar to Houayxay in the Lao PDR. Under this Agreement, the Lao PDR, Myanmar and Thailand proposed that China extend the navigable channel down to Luang Prabang, and continue to provide funding for Phase II of the project.

⁵⁶ ADB, GMS Regional Investment Framework Implementation Plan, 2014-2018, available at <http://www.adb.org/documents/gms-regional-investment-framework-implementation-plan-2014-2018>.

- At the Fourth Summit of the GMS Economic Cooperation Program, held in Myanmar in December 2011, the need for further maintenance and improvement of the Upper Mekong River navigation channel was recognized as being an important part of the regional connectivity project. To implement this decision, China will provide funds to (a) enable Cambodia, the Lao PDR, Myanmar and Viet Nam to jointly formulate the mid- and long-term planning for the development of international navigation on the LM River, and (b) study measures for further strengthening navigation safety. The implementation of the project will ensure the safety of the Upper Mekong River navigation channel, promote the development of international navigation among the four countries, and enhance connectivity within the region. The cost estimate is US\$ 370 million. China is financing a feasibility study and applying to the China-ASEAN Maritime Cooperation Fund for the financing. The draft implementation plan is under assessment and will be submitted to the CLMT for concurrence.
 - Port infrastructure in the Lao PDR at the Xiengkong River Port. Xiengkong is a small village in Long district, Luang Namtha province, located along the LM River. It has a suitable site for constructing a river port. Under the Quadripartite Agreement on the Commercial Navigation on the LM River, Xiengkong Port will be a checkpoint for downstream river traffic from China to Chiang Saen in Thailand. This port needs to be constructed to meet growing trade activities and passenger traffic, and should be equipped with the necessary handling equipment, immigration and customs offices, and warehouses. The cost estimate is US\$ 15 million and financing is now being sought.
 - A port at Ban Mom, which is a small village in Ton Pheuang district, Bokeo province, located along the Mekong LM River. Ban Mom has a suitable site to build a river port. Under the Quadripartite Agreement on the Commercial Navigation on the LM River, Ban Mom Port will also be a checkpoint for upstream river traffic from Chiang Saen port in Thailand to China. This port needs to be constructed to meet growing trade activities and passenger traffic, and should be equipped with necessary handling equipment, immigration and customs offices, and warehouses. The cost estimate is US\$ 12 million and financing is now being sought.
- c. As for the project on further maintenance and improvement of the lm navigation channel, the feasibility study commenced at the end of 2015. China, the Lao PDR, Myanmar and Thailand have agreed in principle on the implementation of the project and are now setting up a joint working group to prepare for the implementation of the preliminary work. The projects on port infrastructure have yet to be implemented.⁵⁷
145. Priority projects under the China-ASEAN cooperation framework cover a number of projects in the railway, highway, inland waterway, China coastal ports and air transport subsectors. For the inland waterway, the projects on (a) upgrading the navigation channel of the LM River – phase 2, and (b) expanding the Jinghong port and Guanlei port areas of Lancang River have already been listed.
146. In addition to investment projects, it is also recognized that each of the four participating countries has prepared for the Development Plan of International Navigation on the LM for 2015-2025. However, the participating counties did not share information on these development plans during this study.

3.7. Joint International Shipping Management

147. Under the Quadripartite Agreement, the Joint Committee on Coordination of Commercial Navigation (JCCCN) on the LM River was established in 2001, and has since held a series of

⁵⁷ ADB, RIF Implementation Plan, First Progress Report, September 2015.

joint meetings, e.g., 13 meetings with the participation of the CLMT representatives according to the Marine Department of Thailand.

148. As part of the Agreement, the JCCCN has managed the navigation of the river. The JCCCN has acted the official body for navigational cooperation since the river was officially opened for commercial navigation in June 2001. In addition, the JCCCN promotes regional economic cooperation and development of trade and tourism, develops and utilizes water resources, and realizes optimum benefits for the economies in the riparian region (JCCCN 6/2015). Through the work of the JCCCN, the CLMT members are concentrating their efforts on the development of international navigation on the LM River.
149. To date, navigation conditions remain a constraining factor even though the river has already opened for navigation and several projects have been implemented by the CLMT members for maintaining and improving the navigation channel (as mentioned in section 4.6 of this report). The stakeholders mentioned during the consultation process that (a) the strengthened coordination in, and management mechanism of international navigation on the river, and (b) an improved and harmonized legal system for ensuring the effective management and development of a sustainable navigation channel be in place under the JCCCN cooperation framework in particular and the Quadripartite Agreement as a whole.
150. In association with joint management of international shipping transport capacity strengthening and institutional development are important aspects. The consultation meetings and in-depth interviews have clearly shown that there are emerging needs for capacity-building in the four countries, including:
 - a. Cross-border transport regulations;
 - b. Navigation regulations and laws;
 - c. A navigation licensing system;
 - d. Port operation and management;
 - e. Radio navigation system through the Global Positioning System;
 - f. Language used for maritime navigation;
 - g. Navigation security;
 - h. Emergency management;
 - i. Environmental management.
151. The key findings from the analysis with regard to the factors that have an impact on the development of international shipping and the transportation of goods and passengers on the LM River are presented as below:
 - a. The new international shipping route from Simao to Luang Prabang has yet to be fully improved to meet the navigation standards and requirements, especially the section from Houayxay to Luang Prabang.
 - b. There is a relatively big gap in transport infrastructure and connectivity among the CLMT. In preparation for the development of the LM River, the Lao PDR and Myanmar are still in the initial preparatory phase. China and Thailand have already developed and modernized their port infrastructure and associated logistics services in line with the commitment under the Quadrangle Agreement.
 - c. The logistics infrastructure, communications system, services and other facilities are still inadequate in the Lao PDR and Myanmar. Thailand with its advanced transport systems, developed logistics industry together with effective logistics linkages to other countries in the region, is playing a leading role in a regional logistics corridor hub that is facilitating trade flows between: (a) the Lao PDR, Thailand and Myanmar; (b) the Lao PDR, China and Myanmar; and (c) China and Thailand.

d. With regard to traffic flow, current international freight and passenger transport on the LM River is mainly between the two-way connection between Chiang Saen commercial port in Thailand and the ports in Yunnan, China. The waterway traffic is in need of (a) the implementation of effective and harmonized policies by the four countries, and (b) close coordination in enabling stable water level and flows from upstream to downstream in the LM River.

e. In the case of trade and trade patterns, China and Thailand are strategic trade partners of the Lao PDR and Myanmar, respectively. The bilateral trade between these partners has been developed through (a) the Lao PDR-China and Lao PDR-Thailand links, (b) the Myanmar-China and Myanmar-Thailand links, and (c) the China-Thailand links, under the regional cooperation frameworks of ASEAN, and ACFTA. The intra-trade exports by the Lao PDR and Myanmar consist of primary goods. The intra-industry trade is between China and Thailand.

There was an increase in the volume of trade from 2003 to 2013, especially between China and the Lao PDR, Myanmar and Thailand, and between Thailand and the Lao PDR, Myanmar and China. Trade volume and value exchanged via the LM River, particularly at the river ports in China and Thailand, has increased..

Constraints faced by the river-based trade include import and export taxes (particularly in the case of by Myanmar), unclear customs clearance procedures, insufficient safety and security measures, and unstable water levels.

- f. Tourism is facing constraints caused by the need for further investment and development.
- Domestic river tourism in the CLMT countries is in need of further investment and development. In the case of Myanmar, cruise tours on the LM River are now at a disadvantage.
 - International river tourism on the LM River (e.g., Yunnan-Chiang Saen and Chiang Saen-Luang Prabang) is seen as having good potential by the stakeholders due to the fact that the river is endowed with a number of natural attractions that need to be promoted among international and domestic visitors. The opportunities can be seen in terms of promotion of heritage, culture, people, the natural beauty of the riparian countries, the creation of complementary effects with regard to the types of tourism, and gains in the local economic development, including employment generation and community development.

However, consideration of a number of issues is needed for developing river tourism on the LM River: (a) safety and security; (b) management of the water level to ensure the livelihoods of the people residing along the downstream stretch of the river; (c) tourism planning that is aimed at creating close collaboration between the central and local governments and the private sector, and the stakeholders concerned; (d) international cooperation in tourism policy development; (e) marketing and market development; (f) equal opportunities for each country to benefit from tourism development; (g) simplification of immigration regulations, e.g., visa procedures; (h) investment in tourism infrastructure; and (i) human resources and capacity development.

- g. Management and technical capacity, which is an integral part of soft infrastructure, need further strengthening to enable effective operation of international shipping of goods and passengers on the LM River. This aspect is elaborated further in chapter IV.

IV. Identified Development Potential

152. The findings in Chapter III have contributed to the identification of the developmental potential of the LM River. In this connection, the focal areas discussed in this chapter are the potential for expanded international shipping transportation, and the development and promotion of on-river tourism development. In order to fully realize such potential, the following aspects are in need of consideration for further implementation under the Quadripartite Agreement.

4.1. Prospects for Roll-on and Roll-off Services

153. Waterborne transportation on the LM River is viewed as having the potential for playing a wider role in the through-traffic to complement the current level of local traffic, which has traditionally been the mainstay of the river network.
154. In this connection, Roll-on and Roll-off (Ro-Ro) services⁵⁸ offers good prospects for waterborne freight transportation in line with the development of the LM River. In this connection, this research study focused on the potential development of freight ferry services.
- a. Ro-Ro freight ferries are normally used for linking islands with other islands or the mainland. In Asia, the use of Ro-Ro freight ferries is less developed, although there are services connecting China with southern Japan and the Republic of Korea that carry freight trailers between factories. In ASEAN, the Philippines have embraced the use of Ro-Ro ferries and developed them as the backbone of domestic freight connectivity.
 - b. The movement of trucks and trailers Ro-Ro services over long distances is most common in Europe where the drivers can take rest periods on the ferry so that they are able to drive on arrival. This can be overnight on the routes from North England to Europe, England to Spain, and even across the Mediterranean to North Africa. However, the shipment of unaccompanied trailers is more common on the longer routes. The trailers are then collected by local tractor units, and delivered to their destinations, reloaded and returned to the port for the return voyage.
 - c. Ferries do not move as fast as trucks on an open highway, but they do keep moving and they are not affected by traffic congestion in towns and villages along the way. They avoid small towns, children going to school and local life. They run on a nautical highway that acts as a bypass to small towns. They also avoid toll roads and local 'administrative' costs that can amount to a substantial amount on a long journey. Then, when they arrive at their destination port, their cargo can roll off and go directly to their destination on the same vehicle.
 - d. General cargo and container ports often require significant investment in port equipment, e.g., the purchase of cranes. Such high investment costs are often passed on to port users, leading to high user costs that are known as terminal handling charges. In addition, dredging ports to allow berthing larger vessels is expensive and usually an ongoing problem. Ports tend to silt up after initial dredging and this can mean ongoing costs for enabling docking by larger vessels.
 - e. In this regard, the advantage of Ro-Ro ferries is that they need very little infrastructure at ports. They can operate with a shallow draft and their port requirements are extremely

⁵⁸ Roll-on and Roll-off services consist of (i) Roll-on and roll-off passengers, (ii) Freight Ferry, and (iii) Multipurpose, "Performance and Prospects of Roll-on / Roll-off Service: A Study with Special Reference to Cochin Trust Port", School of Maritime Management, May 2015

modest. Ro-Ro operations usually require only a hard surface for loading/offloading. Many do not even need a vehicle ramp as they can lower their own ramp for the trucks to drive off the vessel. Since investment costs in ports are low, terminal handling costs are also usually low. Also, port turnaround time is very quick, which allows ports to accept more vessels and ship-owners to make more trips with one vessel. From a business perspective this may justify the investment in more expensive vessels by operators. Port upgrades are on the ADB's regional project list as discussed in chapter 3, and the inclusion of vehicle ramps and a hard standing would complement the redevelopment of ports and improve their functionality.

- f. Ro-Ro ferries come in all sizes, ranging from very small vessels that are used for carrying cars and passengers across rivers up to large sea-going vessels. Their key advantage is fast turnaround times without the need for expensive handling equipment. Further, their draft is usually much shallower than conventional vessels. Even the largest Ro-Ro only needs a depth of seven metres to operate, while regular coastal ferries can need as little as 1.5 metres.
155. Trailer traffic offers a number of potential benefits, although opposition to allowing entry to foreign-owned trucks remains in some countries.
- a. The Cross Border Transport Agreement (CBTA) as well as bilateral and trilateral agreements allow for traffic rights on the NSEC. However, there is still considerable resistance to allowing foreign-registered trucks into Thailand and China. However, the Lao PDR has admitted foreign trucks for many years. One compromise that has been promoted by the GMS Freight Transport Association (FRETA) is for foreign trailers to be allowed to enter countries and then be hauled by local tractor units. This would provide the following benefits:
 - i. The through-transportation of cargo without transshipment at the border;
 - ii. Reduced costs for transit cargo as there would be no transshipment costs for containers;
 - iii. Reduction of the unladed weight of vehicles by more than three tons;
 - iv. Increased payloads with reduced CO₂ emissions per ton; and
 - v. Greater cargo security as there would be no need to open the container.
 - b. By enabling the carriage of semi-trailers as part of an intermodal solution, the LM River can lead the way in promoting the use of trailer-swapping in the region. At the same time, the LM River can gain a competitive advantage over the land route by combining land and river transport. Such an option would also reduce wastage and increase cargo security, as the cargo would remain untouched from door-to-door. The use of semi-trailers, especially refrigerated trailers and containers, will have a significant effect on the use of the river for the transportation of perishable cargoes. Refrigerated trailers have their own electric motors, which can be plugged into a power supply on the river vessel. This would create a LM River cold-chain for through-traffic. Trailers and tankers could be loaded at the Thai ports and transported without tractors to China, where they would be collected by Chinese tractors. The reverse would happen with trailers and tankers (possibly empty) being loaded onto vessels in the Chinese ports and unloaded and delivered in Thailand by Thai tractors. At the intermediate ports it is more likely that that refrigerated trailers would be loaded with local produce and then transported along the river without tractors and then delivered from the destination port in China or Thailand by local tractors.
156. Barging of containers offers a viable alternative. While the use of the LM River to move bulk materials is commonplace, its use as an intermodal corridor has yet to be developed. As discussed above, there is good potential for Ro-Ro vehicle ferries and trailers as part of the process including fitting into regional supply chains. However, the river can also be used to

move containers, both as part of longer international supply chains and as an aid to the development of agribusiness within the four countries. This study found the following related facts:

- a. There is already considerable barge traffic in perishable cargo between Thailand and China. Key challenges relate to the integrity of the cold chain and transshipment at the Boten/Mohan, leading to wastage and damage of the cargo. The use of container barges is widespread, even on the lower reaches of the Mekong as well as in China, where it is used as a major feeder from the Pearl River delta to the port of Hong Kong. These vessels are also widely used on other river systems in China and their design is well-adapted for local conditions.
- b. Barges can also offer electric plug-in points to feed container reefer engines. While they require more port handling facilities than Ro-Ro vessels, they offer a higher capacity than Ro-Ro vessels because they can carry stacked containers. The downside of barges is their need for longer turn-around times in port (and consequently higher port expenses for operators) as well as the need for port equipment such as cranes at each port. In reality, however, this would likely not be an issue at all ports because the main ports in China and Thailand have existing crane capacity.
- c. Like Ro-Ro, barges are obviously slower than direct road freight. However, the market opportunity for barges lies in being part of an intermodal system for products that require cost-competitive transport and are not necessarily time sensitive. Hence, if costs can be kept substantially below pure road transport costs, it could offer an attractive transport option. Demand for such a service exists already for the return of empty containers due to an imbalance of trade. Additionally, using such a transport option is also more environmentally-friendly than road transport, making it attractive to major corporations looking to reduce their carbon footprints.

4.2. International Shipping

156. In the context of physical connectivity through the development of multimodal transport in the region where road transport is the key means of communication, the circumstances of the LM River are a matter of fact. Therefore, development plans for traffic on the river are recommended in alignment with the conditions of the river. The recent project to clear the channel and make it possible for vessels of up to 500 DWT to navigate as far south as Luang Prabang is a major step in making the river more competitive. It is quite understandable that this is a long-term development scheme that needs a timeline of 25-30 years, given that a 10-year development period of 2000-2015 was implemented. In this connection, the potential for waterborne transport and international shipping route attempts to look at what the river can offer, and explore avenues how the River can complement and compete with other modes of transport in the current context and in the long-term development path.
157. The medium-term development of the LM River can serve as a transit route, as mentioned above. The development of the land routes between China and the GMS/ASEAN, and the growth in traffic on the NSEC in particular, is not seen a threat to the development of the LM River connection as land transportation for trucks between Thailand and China on R3B is limited, including the security risks that exist in the Myanmar's territory. Although transportation between Kunming in China and Houayxay in the Lao PDR via this land route allows through-traffic, large-volume freight transport depends on the LM River waterway.⁵⁹ Thus, it is quite possible to view the increase in land transport connectivity as an opportunity

⁵⁹ Takao Tsuneishi, "Border trade and economic zones on the North-South Economic Corridor: Focusing on the connecting points between the four countries", IDE Discussion Paper No. 205, July 2009.

for the LM River to play a wider role in through-traffic that will complement the current level of local traffic, which has traditionally been the mainstay of the river network.

158. Given the broad-based economic growth in the region in general, and more specifically the development of special economic zones (SEZ) and cross-border economic zones (CBEZ) in Thailand and China, respectively, and between these countries with neighboring countries – e.g., the Mohan-Boten Economic Cooperation Zone, and the SEZ in Chiang Rai province, where logistics centers will be promoted together with SEZ development in order to leverage industrial production and manufacturing integration, and create links to other economic zones in Myanmar, the Lao PDR and Yunnan.⁶⁰ The growth of production bases through linking the production of components and other inputs with plants assembling final products will push up demand for road transit, particularly as higher-value trade within the region is increasing in parallel.
159. In this context, the LM River system has the potential for playing a greater role in the expansion of competitive production networks in the region. While it is unlikely that the high-tech and time-sensitive cargoes will be attracted away from the land routes, there are opportunities to attract the most cost-sensitive⁶¹ cargoes to river transportation, provided that the transit schedule can be assured. To do so, factories need certainty in their supply chains, even if an intermodal transit time is slower than by just road. It has a potential role to offer so long as it is significantly cheaper and the transit time fits into supply planning. By and large, the LM River is best positioned to handle bulk raw materials, for which the cost of land transport is high relative to the value of the cargo. In fact, much of the road transport has come from air freight, as the increased transit times are offset by 30% to 40 % reductions in transport costs. While the LM River cannot hope to attract such cargo, it can look to attract bulk cargo away from the road transport system, especially where there is a need for specialist tankers of trailers that need to return empty.
160. Indeed, the increase in trade value and volume through the key river ports – e.g., Chiang Saen port from 2001-2014 – confirmed the strong market demand for freight transport on the LM River. Under the ACFTA (a) the early harvest program applied a zero tariff rate for agricultural products, pioneered by China and Thailand as of 2003, and (b) agreements on trade in goods and trade in services have boosted the growth of trade among the participating countries. The zero tariff rate will be applied to all ASEAN Free Trade Agreement (AFTA) and ACFTA members, except in the case of sensitive products⁶² as the case of the four new ASEAN members as of 2018. The effect of tariff liberalization is seen at a deeper economic integration through free trade, which has resulted in higher demand for traffic. The development of international shipping transportation on the LM River will be boosted by this factor. It means that the international shipping channel should be maximized in connection with the navigation capacity for vessels carrying cargo of 800,000 to 100,000,000 metric tons all-year-round.⁶³ In view of the annual volume of imports and exports through the LM River ports in recent years (e.g., Chiang Saen and Chiang Khong in Thailand and the ports in Yunnan in China during 2011-2013), it should be noted that the total volume of freight transport and port capacity have yet to fully deployed. This situation opens up more opportunities for the CLMT to cooperate in jointly improving the productivity of the international shipping channel.

⁶⁰ “Chiang Rai proposed as logistics hub for Mekong region”, available at <http://www.thailandtoday.in.th/economy/elibrary/article/819>.

⁶¹ Cost sensitivity is understood to mean such costs that directly affect merchandise with high cost elasticity

⁶² Most goods are put into the “normal track” for tariff cuts. The lists of normal and sensitive products vary from one ASEAN member to another.

⁶³ “Country Paper – People’s Republic of China”, available at www.unescap.org/sites/default/files/Pub_2072_app2.pdf.

161. In addition, international shipping transportation in alignment with China-ASEAN transport cooperation covering the further improvement of the LM River⁶⁴ is an important framework that creates momentum for further development of international shipping transportation on the river.
162. From the long-term development perspective, the development of international shipping transportation not only comes under the Quadripartite Agreement, but also the LM Cooperation Framework. An important aim of connectivity that is intended to create balanced socio-economic benefits for the participating countries in the region with the fact that international shipping transport, e.g. the bulk freight cargo, with low costs and efficiency, surely contributes to the process of transforming the economies towards to industrial production and urbanization. In order to do so, a long-term development scheme, such as the development plans for international navigation on the LM River being prepared by the CLMT, can be viewed as Policy and Development Master Plans that are aligned with one another from the design to the implementation phase, and which cover techniques to regulations on:
 - a. International shipping and modernization;
 - b. Port infrastructure construction and development, and improvement of port operations;
 - c. Integrated transport and logistics development;
 - d. Safety and security;
 - e. Social and environmental safeguards;
 - f. Human resources and capacity strengthening; and
 - g. Institutional and regulatory frameworks.
163. In fact, the analysis carried out during this study shows that the opening of the international shipping route between China and Thailand, from Yunnan to Chiang Rai province, has created positive effects on economic growth; the result has been increased trade, investment and development of the river port infrastructure at Chiang Khong and Chiang Saen ports during the past 15 years. Importantly, the establishment of the SEZ is aimed at transforming Chiang Rai into a logistics center that can promote industrial production and manufacturing linkages, and maximize economic benefits, facilitated by transport connectivity. In addition, the continued improvement of the navigation channel through Myanmar to Luang Prabang has brought more economic opportunities to those two countries through the linkages with the developed markets and industrial capacity of Thailand and Yunnan province. Utilization of the river route for the development of bilateral trade with China has allowed advantage to be taken of cheaper goods from China, imported via the designated river ports of the two countries. Transporting goods in the form of bulk freight cargo, e.g., refined oil products, from Thailand to Yunnan via the Lao PDR, has resulted in lower transportation costs. It was also found that international shipping development can contribute to the urbanization of rural provinces, leveraging river-based tourism, and generate revenue for the Governments of the CLMT.
164. In order to achieve the long-term development objectives under the Quadripartite Agreement, the CLMT will jointly accelerate the implementation progress of the “Further Improvement and Maintenance of the Navigation Channel of the LM River” project for the canalization of the entire navigation channel from Yunnan to Luang Prabang. The overarching objectives of this project are to:
 - i. Level the rapids and, reefs, and remove shoals that are natural barriers to shipping safety;
 - ii. Optimize commercial waterborne transport with through-traffic for large volumes of cargoes and numbers of passengers between the CLMT; and
 - iii. Enhance connectivity in the region.

⁶⁴ ASEAN Joint Ministerial Statement, available at www.asean.org.

To achieve these objectives, the Governments of the CLMT will need to finalize the feasibility studies that commenced in 2015, and develop the environment impact assessments (EIA) factored by implementing measures to improve navigational safety in a sustainable manner. This will need to be done through public consultations with stakeholders and communities of the CLMT and related riparian countries and ensure the EIA standards to be harmonized with the national laws and regulations of the CLMT.

165. In addition to the financial support provided by China for the feasibility studies and/or EIA, the CLMT will need to mobilize funding for the implementation of the listed investment projects on LM River-related infrastructure development in line with suggested modalities as depicted in section 4.6 of this report.

4.3. Agricultural Development

166. The production and transportation of agricultural products is the main industry in the GMS region. Seventy per cent of the Lao PDR's population is involved in agriculture. Thailand's vegetable exports represent some 4% of US\$ 2,079 million as the total export value in the GMS in 2013. Although there is no mention of the export destinations, it is likely that a significant amount has been going north to China, via either road or river transport. In the same period 3% of imports by China were categorized as vegetable products with a value of US\$ 66.2 million. This, of course, is spread across all entry points and modes of transport. While the largest perishable goods trade between Myanmar and China is via Muse, there is considerable local trade along the LM River. Much of the trade from Myanmar and the Lao PDR is informal, using local border crossings. This trade is not regulated and there is usually considerable waste, with local growers being controlled by traders who organize the supply chain and pay on a cash basis.
167. Therefore, the agricultural sector offers the largest opportunities for trade development along the LM River. However, in order to attract through-traffic and a high share of perishable cargo transport, three key issues need to be addressed:
 - a. An effective customs transit system needs to be put in place;
 - b. The need for manual transshipments needs to be eliminated;
 - c. A reliable and continuous cold chain is required. This does not only mean refrigerated containers on river vessels. Packing and sorting facilities will be needed at ports in the Lao PDR, Myanmar and even Thailand as well as on local transport to the ports to ensure the integrity of the cold chain and the protection of the products;
 - d. Agricultural trade development is dependent on good handling and the elimination of waste from the supply chain. Waste not only reduces the returns to the producer or trader, it also increases the cost per kilo of the products shipped as well as the cost of discarded/downgraded produce. By sorting, cleaning, packing and accepting perishable cargo close to the point of production, a shipper or trader can receive higher returns, lower transport costs and lower losses from wastage. It also benefits the local community because value-added services contribute to rural employment and income generation at the farm level.

4.4. Tourism Development

168. Tourism development on the LM River can be divided into three categories: (a) Chinese, Thai and international tour groups either cruising or using the LM as part of a wider tour in the GMS; (b) high-end luxury river cruises aimed at European retirees with time and money to spend; and (c) younger travelers, back-packers and adventurers from all over the world.
169. The upper LM River (Lancang) offers the potential to combine travel through remote areas with eco-tourism and adventure activities such as trekking and wild water rafting. The success of Luang Prabang as a destination for young people is a good case in point. If travel

up or down the upper LM river is sold as a remote territory adventure to Western travelers, it offers significant growth potential. A key issue could be visas. However, this could be covered by a Mekong “port” visa that would allow tourists to stay within certain areas of the upper LM River. This could be coupled with an intermodal approach that would allow tourists to travel one way by river and another method in the other or onward direction.

170. In other words, waterborne tourism in the LM region is an important industry that can contribute to the region’s economic development, although it currently is fronting both foreseen opportunities and constraints. As a matter of fact, inland waterborne tourism has drawn attention from the GMS Governments for further contribution to, and investment in tourism infrastructure in order to meet the growing demand for tourism. For example,, MRC has forecast the number of tourists traveling along the downstream stretch of the LM River between Houayxay and Luang Prabang between 2014 and 2040.(table 23).

Table 23. Forecast of the Number of Tourists Traveling on the Mekong River between Houayxay and Luang Prabang, 2014-2040

	2014 (Base year)	2015	2020	2025	2030	2035	2040
Low growth forecast (status quo)	47,824	49,628	55,146	67,362	80,321	96,010	114,418
Medium growth forecast (GDP growth)	47,824	51,282	73,621	103,258	141,472	184,899	235,983
High growth forecast	47,824	49,628	95,251	269,448	589,019	1,152,119	1,961,450

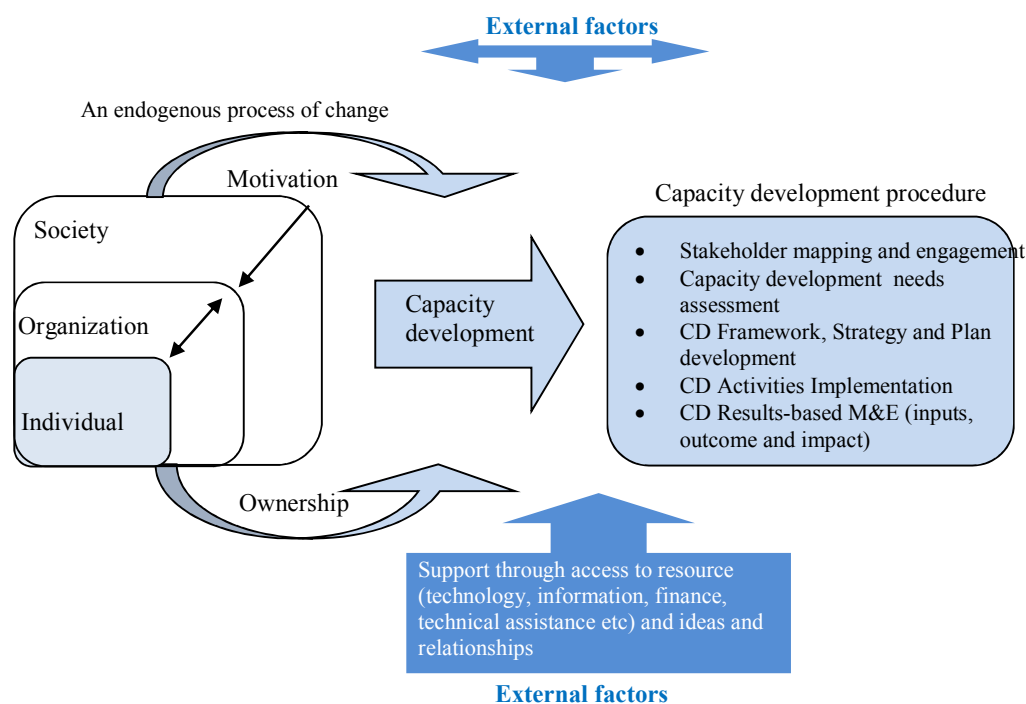
Source: Economic Assessment, MRC Office of the Secretariat, Phnom Penh, Meeting, 18-28 May 2015..

171. International waterborne tourism on the LM River has yet to be fully developed although the river has long been recognized as an important tourist corridor. It is recognized that the both the growth in air transport and the opening of the fourth Friendship Bridge at Chiang Khong has led to a big increase in the number of long-distance buses, yet the river remains an attractive and adventurer alternative. Other modes of transport can be considered as complementary to the use of the LM River, provided that the cross-border river tours are able to attract tourists with various tourism products and services to make their trips more diverse from upstream to downstream.
172. In the long term, the development of tourism along the LM River will need greater support from China and the lower Mekong Basin countries (e.g., the Lao PDR and Thailand as well as the Mekong Tourism Coordination Office (MTCO), MRC and ADB in formulating the LM Tourism Plan as part of the policy and development master plan as described in paragraph 163 above. This is inclusive of:
- An investment scheme for both hard and soft infrastructure in tourism development;
 - An effective coordination mechanism among the participating countries at various levels, such as ministries, agencies, departments as well as between central and local government authorities;
 - A partnership between the public and private sectors that is aimed at creating stronger momentum in exploring and utilizing the tourism potential of the LM River.

4.5. Capacity Development Needs

173. One of the findings of this research study is the need for capacity development among the stakeholders in the CLMT. The study identified specific areas that would be able to effectively and systematically meet greater requirements for managing and developing the capacity of the LM River and the riparian region, including essential factors facilitating international shipping and transportation as well as associated industries, e.g., logistics, tourism, in the next implementation phase of capacity development. One of the key objectives of capacity development is changing the current situation to enable a higher level of achievement to be reached. The changes or improvements can be categorized under human resources development, institutional capacity development and societal changes that are commensurate with individual, organizational and societal levels.⁶⁵ These levels can either be implemented through interlinked cooperation, or independently designed and developed subject to the needs and/or development context.
174. The implementation of the Quadripartite Agreement by the CLMT has enabled major progress to be made in hard infrastructure development during the past 10 years. JCCCN plays a key role in jointly coordinating all related activities, projects and policy preparations for the development of the LM River. Despite a gradual removal of the physical barriers to navigation on the river, various non-physical barriers that hinder the integration of LM River development into the regional growth framework still exist. Capacity development, through human resources, institutional enhancement and organizational development, has proven its importance. This is highly significant with regard to expanding the functions of JCCCN in the development context within the AEC and the LM cooperation mechanism. As such, human capability is an intrinsic factor in ensuring the success of the Quadripartite Agreement of the CLMT.
175. To achieve the strategic objectives of human resources development, in line with the institutional strengthening of the JCCCN, capacity development is a crucial component under the Development Plans of the CLMT. In this regard, capacity development enables the adoption of an integrated approach that links projects and/or programs to be implemented in an effective manner at the local, national and regional levels. The plans will also need to encourage the participation of the public and private sectors. By doing so, the capacity development strategy will tailor to the needs of stakeholders, whose capacity has to be pre-assessed through a process that identifies and designs capacity development programs.
176. In the development context of the LM River, those stakeholders in need of further capacity development are mainly in the areas and sectors covering waterborne transportation, water resource management, port operation and management, transport and trade facilitation, logistics services and tourism development. To meet the requirements of capacity development at all levels, the JCCCN should take the leading role in coordinating with the CLMT Governments, in partnership with training organizations and institutions, through: (a) promoting capacity development strategies and plans; and (b) implementing them in the form of single and/or multi-year projects and/or programs where appropriate. Monitoring and evaluating under the result-based framework would be carried out in the subsequent development phases. Figure 19 shows the suggested capacity development planning process for JCCCN implementation.

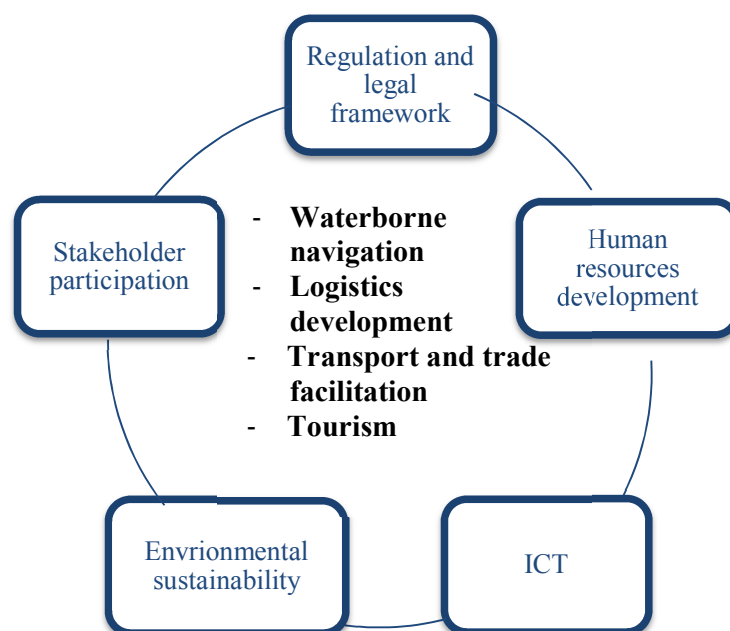
⁶⁵ United Nations Development Programme, available at www.undp.org/capacity.

Figure 19. Capacity Development Process

Sources: *Capacity Development: A UNDP Primer*, 2009, United Nations Development Programme; and *Manual of Capacity Development: Guidelines for Implementing Strategic Approaches and Methods in Austrian Development Cooperation*, Austrian Development Agency, 2011.

177. In particular, capacity development and management by the JCCCN would comprise two pillars (figure 20): (a) institutional development through the establishment of an effective organization under the framework of the Quadripartite Agreement; and (b) human resources development programs that take into consideration the regional and national needs in such areas as waterborne navigation, transport and trade facilitation, logistics development, information systems and tourism development. The objective of these programs should be to provide knowledge and perspectives, with focus on regulation and legal frameworks, the importance of human resources development, the application of information and communication technology (ICT), and environmental management and sustainability through a participatory process that includes country members and their stakeholders as part of the implementation of the Quadripartite Agreement.

Figure 20. Human Resources Development as Part of the Institutional Framework for LM River Development



Source: Mekong Institute.

178. Since 2001, the implementation of the Quadripartite Agreement has achieved significant results in regional cooperation on trade development, and economic growth through transport connectivity. This progress has led to the openness of the international shipping route linking Yunnan to the lower Mekong countries, especially through Chiang Rai, Thailand. However, the countries are still facing specific constraints, particularly the Lao PDR and Myanmar, due to the lack of financial resources for investment in infrastructure and human capital in order to keep up with the development pace of the partner countries.
179. To narrow down the disparities among the upper Mekong countries, further investment in the improvement of international navigation on the LM River in the Lao PDR and Myanmar is been prepared under the LM Development Plan 2015-2025. Therefore, the suggestions made within the scope of this research study concentrate on further improvement of the soft infrastructure through institutional development and capacity development with the objective of enhancing the regional LM cooperation.
180. Certain institutional arrangements will be necessary to assist the JCCCN as the main coordination body in further improving coordination work on the promotion of international shipping along the LM River. With the development of the LM region, it will be necessary to revamp the existing institutional arrangements in order to ensure active engagement in providing oversight, coordination and optimal utilization of resources. In this regard, the JCCCN is seen as playing a larger role in the promotion of international shipping on the LM River.
181. Therefore, to facilitate the international navigation from Yunnan province to Luang Prabang, an upgraded institutional development and partnership model for JCCCN is suggested to enable the development goals to be reached through the improved institutional structure, strengthened roles and functions, expanded partnership development and a financing mechanism. For this purpose, this chapter proposes the following institutional development models, which are highly correlated with the work of the JCCCN:

- a. Institutional models for navigation coordination, such as the MRC that was established for cooperation in the lower Mekong countries and the Central Committee for the Navigation of the Rhine (CCNR), may be referred to as good examples of river basin coordination. These models are independent organizations with the mission of formulating and developing the riparian waterborne navigation development strategies, promoting policy dialogues and forums, and leading capacity-building programs, including navigation.
 - b. Both MRC and CCNR were established with fully defined structures, covering:
 - (i) The Governing Body;
 - (ii) A Standing Administration body;
 - (iii) A decision-making body in the form of a consultative or joint committee;
 - (iv) A consultation body;
 - (v) Representation of all the member countries on each of the structural bodies
 - c. The consultation body usually comprises a mixture of representation of both the public and private sectors. Both MRC and CCNR have management and operational systems that are identical, i.e., from the liaison office or national committee of the each member country to the highest authority, which is the Governing Body, through various concerned bodies at middle management level.⁶⁶
 - d. Based on the advantages of the institutional development models of MRC and CCNR, this study suggests certain institutional arrangements that could assist in restructuring the JCCCN to enable it to promote and implement the common interests of the CLMT in all related areas, including capacity strengthening for stakeholders as well as achieving balanced and inclusive development through the creation and transferring of knowledge and skills to the public and private sectors of the participating economies.
182. The proposed institutional structure for the JCCCN (figure 21) could include:
- a. **A Central Committee** comprising ministerial-level members of the riparian countries, to represent waterborne transport, environmental and water resources management, planning and investment, trade and industry, customs, immigration and tourism. In line with the current JCCCN structure, among the eight members of each country, one chief and one deputy chief would be assigned to represent members in the transport sector. In this regard, the Ministry of Transport/Ministry of Public Works and Transport of each of the CLMT Governments would take the lead role in administering the Committee. Assignment of the members of each country to the Committee would be the responsibility of the national Governments. The Committee would be responsible for convening conferences and meetings on development matters and managing the resources of the LM River within the Quadripartite Agreement framework.⁶⁷ The decisions and policies would be finalized in the form of resolutions.
 - b. **Standing Administration Body, as the Secretariat**, would be responsible for coordinating the national liaison agencies, organizing meetings and capacity-building, programs and activities, producing and circulating documentation, and implementing designated projects and activities as assigned. The Secretariat would be responsible for reporting its operations to the Central Committee on a semi-annual basis, covering

⁶⁶ The MRC website, at <http://www.mrcmekong.org/> and the CCNR website at <http://www.ccr-zkr.org/>.

⁶⁷ The structure referred to is that of the MRC organizational structure, details of which can be found at <http://www.mrcmekong.org>.

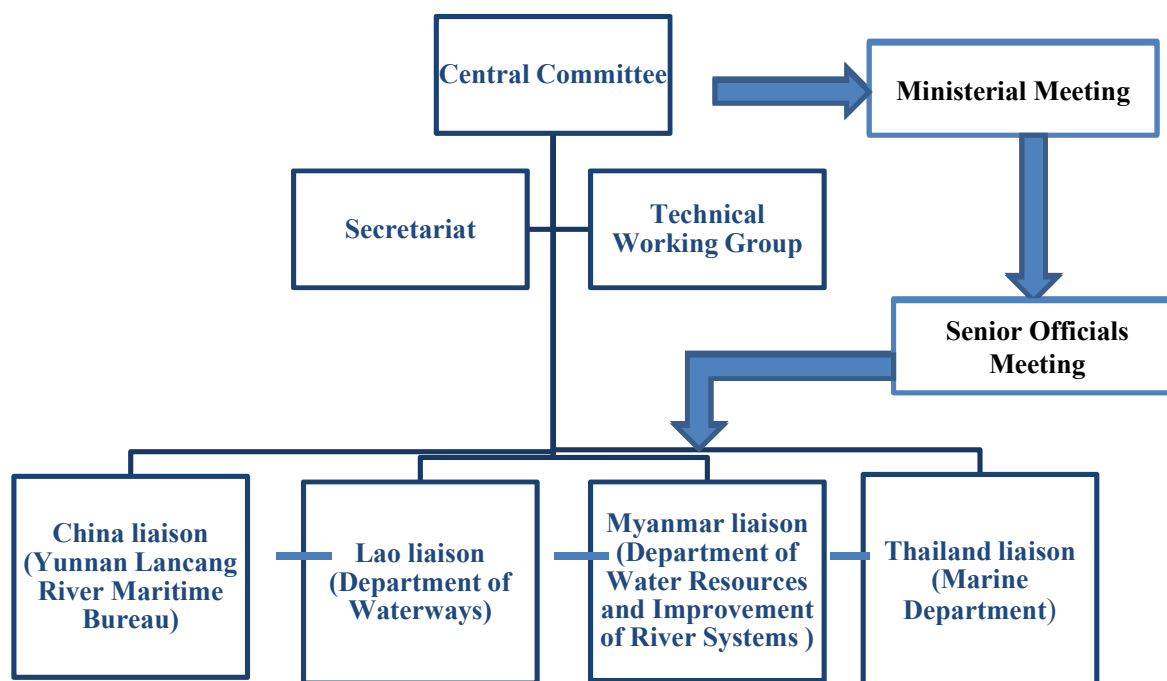
designated roles and responsibilities, locations, and personnel and structure as detailed below.

- c. Roles and responsibilities (TOR) include:
 - Providing an information-sharing and communication network for CLMT;
 - Providing a focal point for liaison with the national liaison agencies, and concerned regional cooperation mechanism;
 - Providing a full range of secretariat support services to CLMT, the CLMT chair and CLMT host authorities, including the organization of meetings and capacity-building programs and activities, documentation, and information circulation;
 - Implementing projects and activities approved and assigned by the Central Committee;
 - Facilitating the implementation of resolutions passed by the Central Committee in full compliance with the Strategic Plan and Annual Work Plan(s); and
 - Reporting its operations to the Central Committee on a semi-annual basis.
- d. Location. The location of the Secretariat should be selected based on ease of implementing its role as a coordination, information and expertise hub for engaging, promoting and facilitating national and regional cooperation and development under the Quadripartite Agreement. To this end, the Secretariat would be required to effectively strengthen collaboration between the CLMT countries, and leverage the linkages with concerned regional organizations. At this stage, it is suggested that the Secretariat be headquartered in Kunming, the capital city of Yunnan province, China upon consideration of the capabilities of China to provide advanced technical assistance and financial support to CLMT as well as requirements of accountability and commitments to balanced development under the Quadripartite Agreement.
- e. Personnel and structure
 - Management. The Secretary-General, selected and appointed by the Central Committee based on a term appointment and a rotational basis, would be responsible for managing the Secretariat and ensuring its efficient operation. To this end, the Central Committee, with the agreement of the CLMT countries, would nominate candidates for the position of Secretary-General. The Secretary-General would also act as the spokesman for the interests of the member countries. In addition, the Secretary-General would have the authority to appoint operational and administrative staff in order to fulfill task and personnel requirements, subject to each development stage (e.g., the program managers involved in the prioritized areas such as safety and prosperity of international shipping and transportation, transport and trade facilitation etc.
 - Operations. The Operations Team(s) under the management of the Secretariat would be proposed for coordinating and implementing the regional work, including projects, programs and events, in cooperation with the national liaison offices in the CLMT and in full compliance with the objectives and priorities of JCCCN as well as the needs of member countries and concerned stakeholders. Each Operations Team can be composed of such positions as program managers, and project officers. These positions are opened to candidates from the CLMT and other countries, and contractually recruited by the Secretariat in alignment with the specific position requirements. They would be governed by the Staff Regulations.
 - General Services, covering finance, human resources, IT services, and assistants would operate under the supervision of the Secretary-General. These positions are mainly local hires for providing administrative support to the Secretariat, including the Operations Team(s), in project implementation and daily office operations under the Secretariat.
 - The Secretariat would function as an intergovernmental organization in order to

address regional issues and play an effective advisory role for the LM region.

- f. **Decision-making body.** Organized and facilitated by the Secretariat, the JCCCN – through a decision-making body – would be responsible for holding the Ministerial Meeting (MM) once a year, and Senior Officials Meeting (SOM) twice a year (mid-year and end-year) to discuss and review the LM development plans and implementation progress.⁶⁸ The meetings would be chaired in turn by each member country. The MM would be held for the Central Committee members to give joint approval of the strategy and action plan, and other issues that need high-level decisions on the LM development. In compliance with the MM’s decisions and directions, the SOM would be responsible for preparing action plans for implementation at the national and regional levels. Assigned members of Ministry departments are required to attend the SOM, consult the Central Committee on LM development-related issues, and monitor and evaluate the program and project monitoring implementation and results.
- g. **Consultation body as Technical Working Group (TWG).** The TWG would be established to assist the Central Committee on all technical work and advisory services. It can comprise various members, including government officials, technical experts, think-tanks, intergovernmental organizations and other relevant institutions. The TWG would be responsible for the preparation and development of all technical and advisory services, subject to the needs of projects and programs developed and coordinated by the JCCCN, in coordination with the Secretariat, and for reporting to the Committee. The TWG’s consultative suggestions would be used by the Committee in formulating its resolutions.
- h. **National Liaison Bodies.** The national liaison bodies would be represented by the Departments of River Transport under the Ministries of Transport of the CLMT. Each national liaison body would be responsible for coordinating all in-country activities that are decided the SOM. They would be required to work closely with the Secretariat on all assigned tasks, including needs assessment surveys, the dissemination of information, reporting on data, and assisting in establish a database. Their task would be to concentrate on local operations as part of the JCCCN’s mandate..

⁶⁸ ADB, “*Strategy and Action Plan for the GMS North-South Economic Corridor*”, 2010

Figure 21. Suggested Institutional Structure of the JCCCN

Source: Mekong Institute, with reference to the current JCCCN structure information provided by the Yunnan Department of Transport.

183. Suggested functional roles and operations include the following aspects:

- a. As already noted, the JCCCN will expand its regulatory and coordination roles in the development of international navigation on the LM River.⁶⁹ More precisely, the JCCCN will comply with the two principles of:⁷⁰ (a) continuing to promote navigation by resolving any physical, legal, regulatory or administrative obstructions that restrict the use of the LM River, and (b) conforming and updating the regulation systems for the LM navigation, and ensuring the fair treatment of the member countries in order to enhance the development of an integrated inland navigation market. These principles will lay the foundation for the JCCCN to bolster the regional economic growth through the following four prioritized areas:
 - i. Safety and prosperity of international shipping and transportation;
 - ii. Transport and trade facilitation, and logistics development;
 - iii. Tourism development; and
 - iv. Environment and hydropower utilization, including coordination between the development of hydropower and navigation.

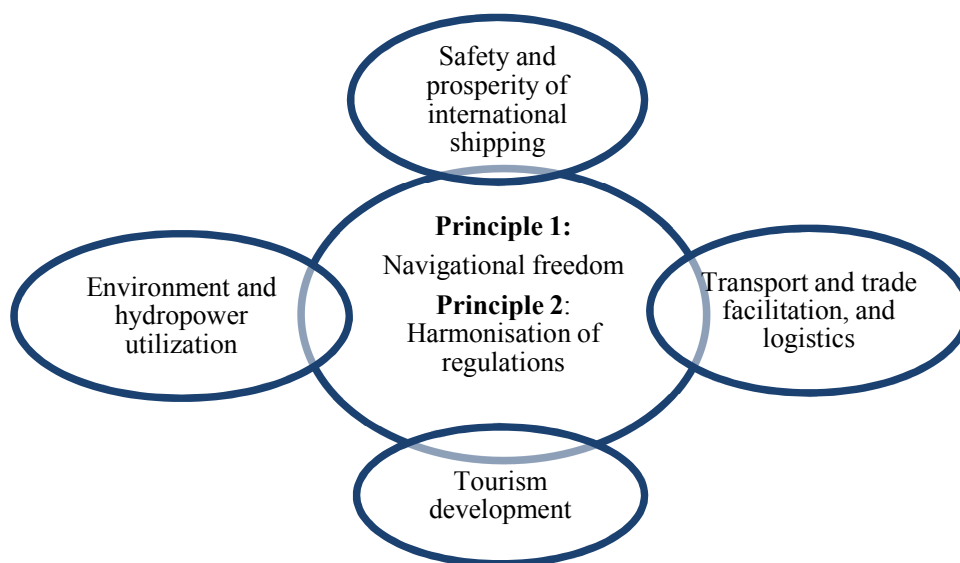
- b. In line with the above two principles, the JCCCN is involved in the development process of both hardware (physical) and software (non-physical) infrastructure, covering regulatory and legal preparation and advocacy, institutional arrangements, and capacity development for the stakeholders of CLMT. To this end, the JCCCN needs to begin improving its functions, especially in the area of international shipping and transportation on the LM River as part of the regional multimodal transport system. This will result in increased

⁶⁹ JCCCN, “Draft Development Plan of International Navigation on the Lancang-Mekong River (2015-2025)”, June 2015, unpublished

⁷⁰ Ibid and also referring to the roles of CCNR obtained from the website: <http://www.ccr-zkr.org/>

demand for improvement of river infrastructure and facilities, which will require the JCCCN to coordinate the development of investment projects. In parallel, the JCCCN is responsible for accelerating the process of transport and trade facilitation along the LM River. The suggested functional roles and operations are summarized in figure 22.

Figure 22. Suggested Functional Roles and Operations



Source: Mekong Institute, with reference to the Central Committee for the Navigation of the Rhine (CCNR)

184. With regard to suggested partnership development., as an intergovernmental organization, the JCCCN could partner with the local, national, and regional stakeholders in mobilizing resources for the development of the LM region. The partnership in this connection is understood as a vehicle for the JCCCN to expand greater cooperation in identifying, preparing and developing its prospective investment and capacity development projects and programs in an interactive manner. Partnership development can also provide a platform for the relevant stakeholders and parties to communicate and share information and experience in designing and implementing policies and strategies as well as apply approaches and measures to issues, specifically those which are directly related to LM River development. By doing so, the JCCCN could promote the influence of the LM region in long-term development. Therefore, potential development partners for consideration should include bilateral and multilateral donors, business associations, think-tanks and academic institutions, companies in the private sector, and non-governmental organizations and intergovernmental organizations. The suggested partnership development modality is depicted in figure 23.

Figure 23. Suggested Partnership Development

Source: Mekong Institute.

185. In addition, the JCCCN could act as a bridge between the public and private sectors in order to encourage the joint promotion of international shipping and transportation on the LM River. One of the priorities is to expand private sector participation through the Public-Private Partnership (PPP) modality. In this connection, the JCCCN needs to consider a suitable PPP model that is able to effectively encourage the participation of the private sector in terms of (a) co-investment in river infrastructure development and (b) sharing expertise for the development of projects and programs for both hard and soft infrastructure. Furthermore, in partnership with the public sector, private sector entities would have more opportunities to contribute to policy development. Therefore, PPP is viewed as a catalyst for encouraging larger commitment by both sectors in the development of international shipping and transportation in particular, and the LM region as a whole.
186. With regard to financing, development of international navigation on the LM River is a long-term plan of the CLMT. Factually, financing for development is of the utmost importance to realizing and implementing the plan in the form of projects and programs for achieving the development objectives. It is noted that in the case of the Lao PDR and Myanmar their investment projects within the scope of the Quadripartite Agreement may have encountered certain challenges in accessing finance, i.e., the Development Plan of International Navigation on the LM River for 2015-2025 is in need of a huge injection of capital investment. Therefore, mobilization of more financial resources in addition to the China-ASEAN Maritime Cooperation Fund requires more efforts and commitment by the CLMT Governments in order to keep pace with the regional development process. In this regard, the following two categories of financial needs should be considered:
- Funding for the JCCCN operations be mainly contributed by all CLMT countries;
 - Sources of funding needed to fill the financial gaps facing the CLMT in investment with which the JCCCN with its coordination role needs to deliberate wider options to finance the development of the LM region in an innovative manner. To this end, it is strongly recommended that the financing mechanism for the CLMT, coordinated by the JCCCN, comprise:
 - Domestic resources of the CLMT, i.e., government funding;

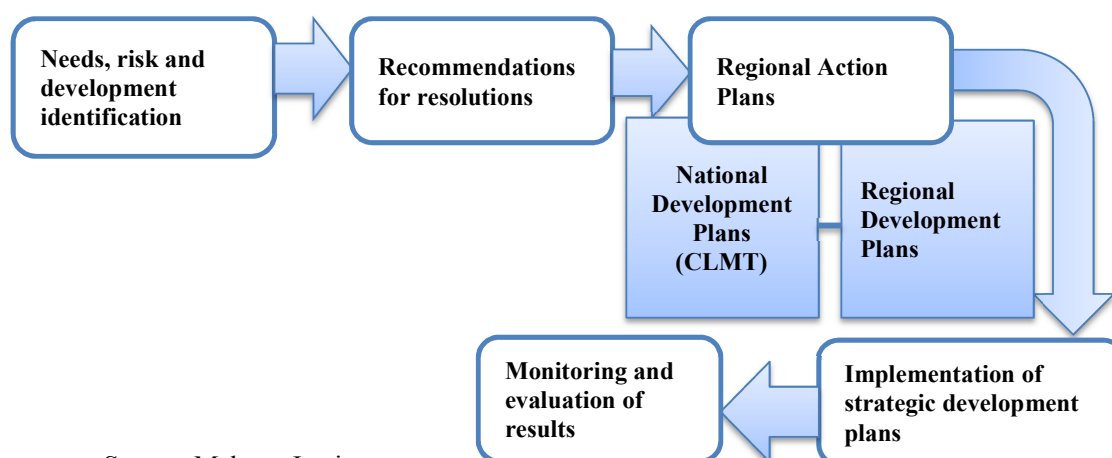
- International and private financing, including the capital market, bank loans and FDI;
- Bilateral and multilateral donors, especially the aid from emerging donors in the official development assistance (ODA) landscape, for investment and assistance to the projects and programs under the Quadripartite Agreement

4.6. Suggested Coordination Mechanism

187. In addition to the suggested institutional development for the JCCCN, an effective coordination mechanism for the LM region at the regional and national levels should be considered. In this regard, the JCCCN should take the lead role in coordinating the related policies and implementation under the Quadripartite Agreement as well as integrating the national development planning and governance systems of the CLMT into the regional framework. This approach is crucial to achieving effective results for international shipping and transportation on the LM River as well as for LM region development.
188. As mentioned above, the overarching objective of the JCCCN-centered coordination mechanism would be to optimize existing resources and mobilize new resources for investment in the LM River system. This is necessary to achieving strategic results that will open the whole international shipping route and generate positive effects on local economic development in the riparian countries through urbanization, agricultural development, increased trade flows and investment in economic zones, and the development of associated industries such as tourism. This will be conducive to sustaining the inclusive economic growth model. With the proposed institutional arrangements for subsequent development phases, the JCCCN will be required to implement the LM development work through a result-based approach, including:
- a. Identification of the needs, opportunities and risks;
 - b. Recommendations for resolutions by the CLMT, within the LM development framework through policy dialogues and high-level consultation meetings;
 - c. Coordination of the implementation of the regional action plans integrated from national development plans, e.g., the Development Plan of International Navigation on the LM River for 2015-2025;
 - d. Realization of the strategic plans in the form of development projects and programs at the regional, national and local levels;
 - e. Monitoring and evaluation of the development results.

189. The suggested coordination mechanism and process for development is shown in figure 23.

Figure 24. Suggested Coordination Mechanism and Process for LM River Development



Source: Mekong Institute.

190. It is also suggested that the JCCCN enhance its cooperation with the MRC through an effective information exchange mechanism to align the development plans and projects with the lower Mekong countries. The MRC master plan for regional waterborne transport,⁷¹ which prioritizes navigation freedom and safety in consistency with the principles of the JCCCN's development plan, could form a foundation for aligning the coordination strategies. At the same time, JCCCN could continue its development partnership with other regional and subregional frameworks as well as its collaboration with the donor community, the private sector, and associated organization and institutions in order to accelerate the implementation process of the Quadripartite Agreement within the planned timeframe.
191. One of key drivers for the JCCCN and CLMT stakeholders to successfully implement close coordination and development plans, and projects and programs is the provision of further support for capacity development through strengthening knowledge capital. Thus, this research study has highlighted the specific capacity-building programs in the following section.

4.7. Suggested Regional Capacity-Building Projects

192. The proposed capacity-building projects are aimed at organizations, both in the private and the public sectors, in order to enhance capacities to deliver services for promoting international shipping along the LM River. Capacity-building needs to cover a range of activities, including training, forums, workshops, structured learning visits, policy dialogues and research activities. These activities will need to be tailored to the needs of the JCCCN and its stakeholders. Based on the capacity needs assessment of the key stakeholders, the study has identified the following key capacity-building projects: (a) an International Shipping Program; (b) a Logistics Capacity-Development Program; (c) a Cross-Border Trade Facilitation Program; (d) a Tourism Development and Promotion Program; and (e) development of a database for multimodal transport logistics services.

193. International Shipping Project

- a. Objectives:
 - i. To promote the policy and legal framework that will act as the backbone in enhancing freedom and safety of navigation in the LM River basin;
 - ii. To train a pool of professional navigation operators who could utilize and implement the regulations at the operational level; and
 - iii. To improve communications and coordination capacity by applying new technology in vessel and water management.
- b. Components:
 - i. Legal framework for cross-border waterborne transport;
 - ii. Vessel standardization and inspection;
 - iii. Rules and guidelines on navigation security, including search and rescue, and salvage on the LM River;
 - iv. Dangerous goods management through vessel inspections and port management;
 - v. A navigation licensing system;
 - vi. Emergency management;
 - vii. International waterborne shipping association development;
 - viii. Development of the GPS Vessel Guidance System and Low Water Alert System for the LM River;
 - ix. A statistics database on the movement of vessels and passengers;
 - x. Humanization of navigation communication language;
 - xi. Organizational development for navigation.

⁷¹ MRC, "Navigation Programme Document 2013-2015", October 2012,

- c. Target participants:
 - i. Government officials concerned with waterborne transport;
 - ii. Customs brokers;
 - iii. Port operators;
 - iv. Ship owners;
 - v. Captains and crews.

194. **Logistics Capacity-Development Project**

- a. Objectives:
 - i. To improve cross-border and trans-shipment logistics services through capacity-development and accreditation of local logistics providers;
 - ii. To decrease cross-border logistics cost;
 - iii. To improve quality and timely services of local logistics providers in the LM region;
 - iv. To integrate local logistics providers into sub-regional, regional and global logistics chains.
- b. Components:
 - i. Transport and logistics market assessment;
 - ii. Regional agreements and regulations on international shipping and transport logistics;
 - iii. Basics of freight carriers and international shipping management;
 - iv. Dangerous goods management;
 - v. Licensing of multimodal transport operators for cross-border transport operations;
 - vi. Basics of warehousing and materials handling;
 - vii. Cool-chain management;
 - viii. Business membership organization development in the logistics sector;
 - ix. Green logistics;
 - x. Database development for multimodal logistics services.
- c. Target participants:
 - i. Government officials relevant to transport and logistics development;
 - ii. Customs brokers;
 - iii. Port operators;
 - iv. Trucking and shipping companies and associations;
 - v. Warehouse or trans-shipment facility operators;
 - vi. General transport companies;
 - vii. Other LSPs.

195. **Cross-Border Trade Facilitation Project**

- a. Objectives
 - i. To simplify the customs procedures for waterborne transit through an e-system;
 - ii. To standardize transit documents;
 - iii. To introduce paperless trade facilitation tools;
 - iv. To improve trade statistics and information system;
 - v. To build and enhance the trade portal.
- b. Components
 - i. Simplification and harmonization of customs rules and procedures;
 - ii. Standardization of documents and paperless trade facilitation;
 - iii. Single Window system;
 - iv. Establishment of multimodal transit procedures;
 - v. E-platform development for enhancing the utilization of FTAs;

- vi. Trade statistics and information system development and humanization.
- c. Target participants
 - i. Government officials concerned in trade, transport, agriculture and other relevant sectors;
 - ii. Business membership organizations; and
 - iii. Private company owners and senior management

196. **Tourism Development and Promotion Project**

- a. Objectives
 - i. To achieve a better understanding of the current tourism development status and strengthen the tourism engagement between LM countries;
 - ii. To identify prospective market areas and strategies for increasing tourism flows in the LM region;
 - iii. To draw up a market-driven plan of activities for future collaboration in promoting waterborne tourism in the LM region;
 - iv. To integrate upper Mekong tourism in the GMS tourism development system.
- b. Components
 - i. Tourism market study in the upper Mekong region;
 - ii. Tourism promotion and standards;
 - iii. Waterborne tourism policy development and legal framework;
 - iv. Waterborne tourism products and services diversification;
 - v. Business membership organization development in the tourism sector;
 - vi. E-market tourism;
 - vii. Ecologic tourism.
- c. Target participants
 - i. Governmental officials concerned with customs, waterborne transport and tourism;
 - ii. LSPs;
 - iii. Tourism associations;
 - iv. Tourism companies.

V. Conclusion

- 197. Based on the consensus on the development potential of international shipping and transportation on the LM River under the Quadripartite Agreement on Commercial Navigation of the CLMT as the legal foundation, this study has determined that the freedom of navigation on the LM River, from the Simao in China to Luang Prabang in the Lao PDR, can fully be realized through various policy measures as well as the upgrading of the institutional arrangements for JCCCN together with an effective coordination mechanism for development. Such actions should be given high priority in the next development phases of the CLMT within the Quadripartite Agreement framework.
- 198. The levels of trade, investment, and people exchange are key indicators in measuring the performance and successes of regional cooperation and economic integration through FTAs and policy development and implementation in the CLMT and GMS region. These indicators have shown remarkable achievements, especially the growth of trade and investment between China and the Lao PDR, Myanmar and Thailand as well as between Thailand and China, the Lao PDR and Myanmar. Significantly, trade facilitation, transportation and logistics are indispensable to trade creation and development at the regional level. Regional initiatives such as the Quadripartite Agreement have enabled the

participating countries to progress further in economic cooperation in connection with the improvement of multimodal transport, including domestic and international waterborne transport navigation, throughout the length of the LM River.

199. In addition, the participating countries have prepared a 10-year Development Plan of International Navigation for 2015-2015, and implemented infrastructure development projects, including those that support the development of river transport. These achievements reflect the strong commitment of the CLMT to strive for greater and deeper economic cooperation and integration in the region in both soft and hard infrastructure enhancement. As regional economic and social interactions continue to expand, joint decisions by participating countries will lead to stronger cooperation frameworks and achievements.
200. Waterborne tourism is a subsector of the national and regional tourism sector. As such, it can be further developed to optimize the comparative advantages of economic development and greater economic integration in a balanced manner for all the participating countries in the LM region.
201. In addition to the ongoing implementation of hard infrastructure projects and programs, the study has identified and proposed five regional capacity development projects for the JCCCN and its stakeholders, which focus on (a) international shipping (b) logistics capacity (c) cross-border trade facilitation and (d) tourism development and promotion. These five regional projects can be implemented successfully with the understanding that knowledge capital is an important factor that can assure the successful implementation of the Quadripartite Agreement, especially in the light of the recently established AEC, the LM cooperation mechanism as well as China's "One Belt and One Road" initiative.

Annexes

Annex 1. Suggested Multi-year Capacity-Building Projects

Proposed Projects	Components	Objectives	Target Participants	Cooperative Partners	Duration and Frequency
International Shipping Project	<ul style="list-style-type: none"> • Legal framework for cross border waterborne transport • Vessel standardization and Inspection • Rules and Guideline on navigation security, including search and rescue, and salvage on the LM River • Dangerous goods management through vessel inspection and port management • Navigation licensing system • Emergency management • Waterborne International shipping association development • Development the GPS Vessel Guidance System and Low Water Alert System for the LM River • Statistics database on movement of vessel and peoples • Humanization of navigation communication language • Organizational development for navigation 	<ul style="list-style-type: none"> • To promote the policy and legal framework which will work as backbone to enhance freedom and safety of navigation along the LM River basin; • To train a pool of professional navigation operators who could utilize and implement the regulation at operational level; and • To improve the communication and coordination capacity by applying new technology in vessel and water management 	<ul style="list-style-type: none"> • Government officials from division of waterborne transport • Customs brokers • Port operators • Ship owners • Captains and crews 	<ul style="list-style-type: none"> • Regional organizations and association, such as MI, ADB and MRC • National and local corresponding governmental agencies, business associations, vocational schools 	<ul style="list-style-type: none"> • 2 modular trainings per year at regional level • 3-4 weeks per training cycle • Action Plans will be implemented in national and local level by the participants who attended the regional level training

Proposed Projects	Components	Objectives	Target Participants	Cooperative Partners	Duration and Frequency
Logistics Capacity Development Project	<ul style="list-style-type: none"> Transport and logistics market assessment Regional agreements and regulations on international shipping and transport logistics Basics of freight carriers and international shipping management Dangerous goods management Licensing of Multimodal Transport Operators for Cross-Border Transport Operations Basics of warehousing and materials Handling Cool Chain Management Business membership organization development in logistics sector Green Logistics Database Development for Multimodal Transport Logistics Services 	<ul style="list-style-type: none"> To improve cross- border and trans-shipment logistics services through capacity development and accreditation of local logistics providers. To decrease cross-border logistics cost; To improve quality and timely services of local logistics providers on the LM region; and To integrate the local logistics providers into sub-regional, regional and global logistics chains. 	<ul style="list-style-type: none"> Government officials from department of transport and commerce Customs brokers Port operators or authorities Trucking and shipping companies and association Warehouse or trans-shipment facility operators General transport companies 	<ul style="list-style-type: none"> Regional organizations and association, such as MI, ADB, FRETA, and MRC National and local corresponding governmental agencies, business associations, vocational schools 	<ul style="list-style-type: none"> 2 modular trainings per year at regional level 3-4 weeks per training cycle Action Plans will be implemented in national and local level by the participants who attended the regional level training
Cross-Border Trade Facilitation Project	<ul style="list-style-type: none"> Simplification and harmonization of customs rules and procedures Standardization of documents and paperless trade facilitation Single Window System Establishment of Multimodal transit procedure E-platform development for enhancing utilization of FTA Trade statistics and information system development and humanization 	<ul style="list-style-type: none"> To simplify the customs procedures for waterborne transit through e-system; To standardize the transit documents; To introduce the paperless trade facilitation tools; To improve the trade statistics and information system; and To build and enhance the trade portal 	<ul style="list-style-type: none"> Government officials in trade, transport, agriculture and other relevant areas Business Membership Organizations Private company owners and senior management 	<ul style="list-style-type: none"> Regional organizations and association, such as MI, ADB, FRETA, and MRC National and local corresponding governmental agencies, business associations 	<ul style="list-style-type: none"> 2 modular trainings per year at the regional level 3-4 weeks per training cycle Action Plans will be implemented in national and local level by the participants who attended the regional level training

Proposed Projects	Components	Objectives	Target Participants	Cooperative Partners	Duration and Frequency
Tourism Development and Promotion Project	<ul style="list-style-type: none"> Tourism market study in the upper Mekong region Tourism promotion and standards Waterborne tourism policy development and legal framework Waterborne tourism product and services diversification Business membership organization development in the tourism sector E-market in tourism Ecologic tourism 	<ul style="list-style-type: none"> To have a better understanding on the current tourism development status and strengthen the tourism engagement between LM countries; To identify the prospective market areas and strategies for increasing the tourism flow in the LM Region; To draw up a market driven plan of activities for future collaboration to promote waterborne tourism in the LM Region; and To integrate the upper Mekong tourism in the GMS tourism development system 	<ul style="list-style-type: none"> Governmental officials in customs, waterborne transport and tourism Logistics services providers Tourism associations Tourism companies 	<ul style="list-style-type: none"> Regional organizations and association, such as MI, GMS Tourism Forum, ADB-Mekong Tourism Coordinating Office and MRC National and local corresponding governmental agencies, business associations 	<ul style="list-style-type: none"> 2 modular trainings per year at regional level 3-4 weeks per training cycle Action Plans will be implemented in national and local level by the participants who attended the regional level training
Cross-Cutting Program for sustainable environment soundness and community benefits sharing	<ul style="list-style-type: none"> Environmental and Social Impact Assessment (EIA) in Upper Mekong Region CSR and community engagement 	<ul style="list-style-type: none"> To reduce negative environment impacts from navigation activities To identify ways of benefit sharing for riparian populations and rural communities 	<ul style="list-style-type: none"> Professional EIA Agency, Leader of Local Communities, CSR manager in Large Enterprises in trade, logistics and tourism sector 	<ul style="list-style-type: none"> Professional EIA Agency, Local Communities, Large Enterprises 	
Institutional Strengthening, Capacity building and training	<ul style="list-style-type: none"> Regional transport planning and Navigation Regulations Database Development and Information Harmonization International Cooperation and Regional Project Management Private and public partnership development 	<ul style="list-style-type: none"> To enhance knowledge and skills of regional cooperation and regional project management To enhance awareness of apply private and public partnership for project planning and design To enhance the capacity of river information services management 	<ul style="list-style-type: none"> Governmental officials of the JCCCN counterparts in CLMT countries Port management and operation authorities 		<ul style="list-style-type: none"> 2 times a year 4 weeks per training cycle Action Plan will be conducted in national and local level

Source: Mekong Institute adapted from on interviews of capacity needs and MRC planned training under Navigation Program

Annex 2. Participant List of Inception Workshop on 26-27 February 2015 at MI, Khon Kaen, Thailand

No	Name	Position	Affiliation
1	WANG Dezhong	Deputy Director	Maritime Safety Administration of Lancang River, Navigation Affairs Administration Bureau of Yunnan Province, P.R. China
2	LI Guoliang	Official	International Cooperation Division of Transport, Department of Yunnan Province, P.R. China
3	THUANGMALY Phimphasay	Staff	Department of Foreigner Affairs of Luang Namtha , Lao PDR
4	SOUPHANH Gnabanhhdith	Director	Division of Port and Navigation Channel Management, Ministry of Public Works and Transport, Lao PDR
5	AUNG KHIN Myint	Chairman	Myanmar International Freight Forwarders Association (MIFFA), Myanmar
6	SAI NAW Ywet Hein	Member	Chamber of Commerce and Industry of Myanmar, Shan state, Myanmar
7	KANNIKAR Ratleelaharn	President	Sahaphan Intertrade Limited Partnership, Thailand
8	MAKHAWAL Jongsirichaigul	Customs Technical Officer	Mae Sai Customs House, Thailand
9	GEERINCK Lieven	International Technical Advisor	National Program Operations Division, Mekong River Commission
10	LUN Tharath	Liaison Officer	National Program Operations Division, Mekong River Commission
11	PETER Hodgkinson	Transport Economist and Planner	
12	JITTICHAJ Rudjanakanoknad	Associate Professor/ Deputy Director	Transportation Institute, Chulalongkorn University, Thailand
13	SUTHEP Nimsai	Program Director	MBA Program in Logistics and Supply Chain Management, School of Management, Mae Fah Luang University, Thailand
14	PHOOMMHIPHAT Mingmalairaks	Lecturer/Director	PH.D. program, School of Management, Mae Fah Luang University, Thailand

Annex 3. Field Survey

Annex 3.1. Interviewee list

1. China

1.1. 1st group meeting interviewee list during field data collection in Kunming, Yunnan Province, China

No	Name	Position	Affiliation
1	ZHUANG Liying	Deputy Division Director	International Cooperation Division, Department of Transport of Yunnan Province
2	DUAN Tao	Deputy Director	Academy of Commerce of Yunnan Province, Department of Commerce of Yunnan Province
3	WANG Yongqing	Deputy Director General	Bureau of Yunnan Highway Transport Administration
4	GUO Xiaolan	Associate Advisor	Transportation Administration Division, Department of Transport of Yunnan Province
5	ZHAO Huiru	Division Director	International Transport Division, Bureau of Yunnan Highway Transport Administration
6	SONG Yuquan	Section Chief	Yunnan Entry-Exit Inspection and Quarantine Bureau, Yunnan Province
7	WANG Chuanming	Principle Staff Member	International Regional Cooperation Office of Yunnan Province, Foreign Affairs Office of Yunnan Province
8	XIONG Linsen	Principle Staff Member	Comprehensive Planning Division, Department of Transport of Yunnan Province
9	ZHAO Gang	Principle Staff Member	Section of Planning, Navigation Affairs Administration of Yunnan Province
10	JIE Yingxun	Staff	Public Security Frontier Corps of Yunnan Province
11	WANG Ran	Senior Staff Member	Logistics Section, Supervision and Customs Clearance Division, Kunming Customs

1.2. 2nd group meeting interviewee list during field data collection in Jinghong, Xishuangbanna, Yunnan Province, P.R. China

No	Name	Position	Affiliation
1	LI Zhen	Chief Engineer	Engineer Office, Xishuangbanna Bureau of Traffic and Transportation
2	DAO Zhihua	Deputy Division Director	Xishuangbanna Entry- Exit Inspection and Quarantine Bureau
3	LI Weibiao	Section Chief	Foreign Affairs and Oversea Chinese Affairs Office, Xishuangbanna People's Government
4	LI Xiangchun	Section Chief	Xishuangbanna Customs Office
5	SHEN Huifen	Section Chief	Fundamental Industrial Section, Xishuangbanna Development and Reform Commission
6	YANG Xuemei	Vice Station Chief	Jinghong Port Frontier Inspection Station
7	CHEN Daming	Director	Port Authority of Xishuangbanna
8	LIU Rongming	Deputy Director	Local Maritime Safety Administration (MSA) of Xishuangbanna
9	CHEN Yanping	Deputy Director	Port and Border Gate Administration Office, Xishuangbanna Prefectural People's Government
10	WANG Long		Yunnan Investment Banna Petrochemical Co., Ltd
11	CHEN Qibiao	Manager	Yunnan Investment Banna Petrochemical Co., Ltd
12	WU Dechang	Captain	Xishuangbanna Jiazhou Ship Dockyard
13	ZHEN Guangrong	Chief Executive Officer	Mengla Guanlei Port Yousheng Ship Repair Factory
14	ZENG Liangcang	Shipping Manager	Xishuangbanna Jianye Shipping Co., Ltd
15	ZHU Chuanchu	General Manager	Xishuangbanna Impression Lancangjiang Shipping Co., Ltd./ Xishuangbanna Renda International Logistics Co., Ltd
16	XIANG Shilin	Chairman	The Board of Xishuangbanna Zhongshan Shipping Co., Ltd., and Lancang River Ship-owners' Association of Xishuangbanna
17	ZENG Yunsong	Secretary General	Xishuangbanna Ship-owners' Association
18	FANG Guoyou	Focal Peron	Jinghong Dihong and Qianjin Waterborne Transportation Operator
19	XIE Yongbin	General Manger	Jinghong Shanghai-Kunming Waterborne Transportation Operator
20	LUO Chengfang	Driver	Jinghong Huayu Waterborne Transportation Operator
21	MAO Zhihong	Operation Manager	Yuancheng Waterborne Transportation Operator
22	WANG Fenglin		Jinshui Waterborne Transportation Operator
23	MAO Shuangmei	Operation Manager	Baoshou Waterborne Transportation Operator
24	JIA Zhonglin,	Deputy General Manager	Xishuangbanna Golden Triangle Tourism Shipping Co., Ltd. and Xishuangbanna Beiye Tourism Shipping Co., Ltd

No	Name	Position	Affiliation
25	CHENG Yingjie	Deputy General Manager	Jinghong Qianjin Lancang River Waterborne Tourism and Sightseeing Co., Ltd
26	WANG Zhizhong	Deputy General Manager	Xishuangbanna Tourism Passenger Vehicle Co., Ltd

2. Lao PDR. Interviewee list of field data collection in Vientiane, Luang Namtha and Bokeo

No	Name	Position	Affiliation
1	SYSMOUTH Keoxaya	Officer	Lao PDR Customs
2	SOULAXAY LEUANGPHOXAY EOTA Silichandeng	Director	Import-Export Department, Ministry of Industry and Commerce, Vientiane
3	NIDAPHONE Nalisack		Import-Export Department, Ministry of Industry and Commerce
4	VANTHA Phomvilay		Department of Industry and Commerce
5	VIENGSAVANG Thippavong	Director	Economic Research Institute for Trade (ERIT), Ministry of Industry and Commerce
6	NIVANLATH Sramany	Staff	Economic Research Institute for Trade (ERIT), Ministry of Industry and Commerce
7	TENGFAH Yangleuxay	Deputy Director	Department of Industry and Handicraft, Ministry of Industry and Commerce
8	PHAPHATSONE Luangphinith		Ministry of Industry and Commerce
9	KEOTA Silichandeng		Ministry of Industry and Commerce
10	ITHIRITHYangnouvon g	Staff	International Trade Policy Department, Ministry of Industry and Commerce
11	SAYSOMPHONE Bachongphanith	Deputy Director	Department of Water Way, Ministry of Public Works and Transport, Vientiane
12	SOUPHANH Gnabanhith	Director	Division of Port and Navigation Channel Management, Ministry of Public Works and Transport
13	BOUNTA Onnavong	General Director	Department of Transport, Ministry of Public Works and Transport
14	CHANSAMONE Outamavongsa	Project Director	The Lao-Myanmar Friendship Bridge Construction Project

No	Name	Position	Affiliation
15	PHOUXAY Thepphavong	Head	Lao National Chamber of Commerce and Industry
16	Sathitorn	Logistics Manager	State Enterprise Inland Waterway and Roads Transportation Services
17	Tui	Head	Boat Association, Nongda Facilities
18	SOMPHONE Phasavath	Director	Lao Freight Forwarder Co., Ltd
19	RAPHAEL Kern	Director	Diethelm Travel Laos
20	BOUNTHANH Mayongseun	General Director	HoungAhLun Trading Import-Export Co., Ltd
21	SISAVANH Mayongseun		HoungAhLun Trading Import-Export, Co., Ltd
22	SAMLY Sisomphone	Deputy Director	Department of Public Work and Transport (DPWT) of Luang Namtha
23	BOUNTHAM Inthapaseuth	Deputy Director	Department of Planning and Investment of Luang Namtha
24	PHONSAVANH Kanmathone	Deputy Director	Provincial Department of Industry and Commerce of Luang Namtha
25	PHAVANH Manyvong	Director	Luang Namtha Chamber of Commerce
26	TONGLY Yiaxeung		Luang Namtha Chamber of Commerce
27	BOUNPHENG Souphatthone	Director	Customs Regional I, Luang Namtha
28	SOMOAK Manychanh	Deputy Director	Department of Public Work of Bokeo
29	SAENGPANH Soulipaeng	Deputy Director	Department of Industry and Commerce of Bokeo
30	KHANMET Silimanotham		Lao PDR Agricultural Development Co., Ltd
31	PHAY NGEUN Thipphasombath	Manager	Charoen Phatthana Import-Export Co., Ltd

3. Myanmar

3.1 Interviewee list of field data collection in Yangon, Naypyidaw

No	Name	Position	Affiliation
1	SEIN Tun	Deputy Director General	Department of Water Resources and Improvement of River System
2	MYAT Hla	Director	Department of Customs
3	EIH Maung	Wang Paung Port Developer	Myanmar Ayar Mon Group of Companies
4	ZAW NAING Maung	Wang Paung Port Developer	Myanmar Ayar Mon Group of Companies
5	KHIN ZAW Shein	Wang Paung Port Developer	Myanmar Ayar Mon Group of Companies
6	MYO Thant		NMT Co., Ltd
7	SOE Naing	Vice- Chairman	Myanmar Container Truck Association
8	SOE Win	Deputy Director General	Department of Trade Promotion and Consumer Affairs, Ministry of Commerce
9	OHNMAR Maw	Managing Director	Award Logistics Co., Ltd
10	HLA HLA Yee		MMI Logistics Co., Ltd
11	KYU Khin	Chairman	Costal Ship Owner Association
12	EI PHYUSIN Htay	Managing Director	Barons & Fujikura EPC Co., Ltd
13	NYI NYI Aung	Chairman	Myanmar Customs Broker Association
14	HTAY Aung	Minister	Ministry of Hotel and Tourism
15	MAY Oo Khaing	Owner	Ocean Crown Services Co., Ltd./ Asian Myanmar Beauty Travel and Tour
16	HLA Oo	Chairman	Myanmar Highway Truck Assocoation
17	AUNG MYAT Kyaw	Chairman	Union of Myanmar Travel Association
18	NAW MUTAKA Paw		Deparment of Trade, Ministry of Commerce
19	HLA MYO Yee		Deparment of Trade, Ministry of Commerce
20	HTAN SHAUNG Kan		Ministry of Railways Transportation
21	KHINE KHINE Thin	Deputy Director,	Ministry of Railways Transportation
22	ELLY Win		MMU

3.2. Interviewee list of field data collection in Thachilek, Myanmar

No	Name	Position	Affiliation
1	KYAT AUNG Thike	Officer	Local Custom Department
2	BUA Kway		Chinese Garments and Goods Trader
3	SUM Pa		Logistic Service Provider
4	AR-Ming		Logistic Service Provider
5	Oo Myint Oo	Chairman	Chamber of Commerce and Mining Association

4. Thailand. Interviewee list of field data collection in Thailand

No	Name	Position	Affiliation
1	AMNUAY Thiamkeerakul	Executive Director	ASEAN South Asia and South Pacific Region Department
2	CHANSAK Siri	Director	Port Authority of Thailand (PAT-Bangkok)
3	SUPALERK Pindatisha	Assistant Director	Port Authority of Thailand (PAT-Bangkok)
4	PATTARASUDA Namasatr	Chief	Freight Marketing Division, State Railway of Thailand
5	KONGRIT Chantrik	Executive Director	The National Shipping Council
6	KAMOLWAN Kularbwong	Acting Director	International Affairs Division, Marine Department
7	VILAIWAN Tapwonggsri	Executive Director	Department of Foreign Trade, Ministry of Commerce
8	PAIROJ Phtomwat	Senior Trade Officer	Department of Foreign Trade, Ministry of Commerce
9	KANIKA Kurdpradit	Senior Trade Officer	Department of Foreign Trade, Ministry of Commerce
10	SOMRUAM Mongkolkaew	Skill Development Training Officer	Chiang Saen International Institute for Skill Development
11	VIRACHAI Sriakajon	Director General	Thailand Professional Qualification Institute (Public Organization)
12	MANOP Vierra	Deputy Managing Director	Thai Indochina Trading and Service (Thailand) Co., Ltd
13	PONGSAK Chalaewpong	Supervisor Operation	Chiang Saen Port 1

No	Name	Position	Affiliation
14	PRASATH Kittina		Thai Chiang Saen Co., Ltd
15	BOONRADA Chiam		Major Inter-trade Co., Ltd
16	PEERAPAHT Chatpong		Kewalee Co., Ltd
17	NATTAPHON Rattanasilpin	Head	Port and Shipment, Port Authority of Thailand (PAT-Chiang Saen)
18	KANTATH Theeraratwath	Director	Customs Service, Chiang Saen Customs Office
19	NIRAN Sripadungporn	Assistant Manager	Larnnathai Transport Co. LTD
20	PATTANA Suthisombat	Director	The Committee for the Economic Quadrangle 10 Chamber of Commerce, Northern Thailand. (CEQC)
21	YUREEPHAN Sanjaiya	Assistant Director	Ching Rai Branch, Tourism Authority of Thailand
22	APICHA Tarasint	President	Thailand Tourism Council
23	PATCHARIN Promviharn	Transport Technical Officer	Department of Land Transport
24	RACHAN Noycheun	Head of Planning and Survey	Department of Highways
25	THEERAPONG Meesri	Senior Civil Engineer	Department of Rural Roads
26	THINNAWAT Silarak	Head	Investigation and Suppression, Chiang Khong Customs Office
27	KANNIKAR Ratleelaharn	Owner	Sahaphan Intertrade Limited Partnership
28	Ton		Doitung Transport Chiang Khong, Chiang Rai
29	YUTHAHAT Meesuth	Transportation Manager Assistant	Doitung Transport
30	PRAKAYMAS Veira	Owner	Maekhong Delta Travel Agency Co., Ltd
31	SIRICHAH Kunabhut	Director	Maesai Customs House

Annex 3.2. Quantitative Questionnaire for Data Collection

1. PORT/CUSTOMS



No. _____

Mekong Institute
Khon Kaen, Thailand

**Development Potential of the International Shipping on
 the Lancang-Mekong River in China, Lao PDR, Myanmar and Thailand
 Survey of
PORT / CUSTOMS**

This questionnaire is part of a research project conducted by Mekong Institute (MI), Khon Kaen, Thailand with no commercial interests involved. It aims to assess the information on the current status and development of the Lancang-Mekong River navigation for international shipping in China, the Lao PDR, Myanmar and Thailand (CLMT).

To achieve this objective your contribution is very important, as your opinions and comments will shape the recommendations, in the terms of improved (or new) standards for transport logistics in the Lancang-Mekong River for international shipping.

Your opinions expressed in this survey are ‘personal to you as an expert’. We understand that they do not necessarily represent the opinions or policy of your organization and will not be used as such. Your response will be treated in strict confidence, and names of individual respondents or organizations will not be used in published material or given to third parties.

Thank you,

If you have queries then please do not hesitate to contact:

PORT / CUSTOMS

Part 1: Your Organizational Profile

1.1 Please state the following core details about yourself and your organization. This data will be used to analyze the results and to contact you. It will not be shared with any 3rd parties.

Name:	
Company:	
Organization:	
Email Address:	
Phone Number:	
Type of Organization:	

1.2 Which country do you work in (CLMT)?

- ☐ 1. China
 ☐ 2. Lao PDR
 ☐ 3. Myanmar
 ☐ 4. Thailand

1.3 What type of organization/business do you work with? (you can tick more than one selection)

- ☐ 1. Importer
☐ 2. Exporter
☐ 3. Transport or logistics service provider

- ☐ 4. Shipping Company
☐ 5. Independent Firm/Entrepreneur
☐ 6. Government Department/Organizations
☐ 7. Other.....

Part 2: Your Organizational Profile

2. Project information			
2.1	Your current organization set-up in CLMT (China, Laos, Myanmar and Thailand)		
	What are service locations of your organization (related to Lancang-Mekong River)?		
	What are the processes of service that your organization provides to your customers?		
	How much growth do you foresee in the coming five years in international shipping business via Lancang-Mekong river? (In terms of turnover and in terms of volumes)		
	Which other relevant developments do you foresee in the near future that might impact your CLMT logistics and supply chain? (e.g. new logistics route, new product launches, new markets, new production or sourcing locations, etc.)		
2.2	Logistics partners		
	Do you currently work with transportation or logistics company in CLMT? <i>If so, please state their names</i>	Yes	No
	Are you already in contact with transportation or logistics service providers in the CLMT countries? <i>If so, please state their names</i>	Yes	No

Part 3: Transportation/Logistics Systems

For the following questions please make an estimation of the planned operation in CLMT

3. Inbound/Outbound transportation and receiving from CLMT					
3.1	Average Number of Inbound shipment per year / per month				
	Country and city of origin	20' Container	40' Container	Lancang-Mekong Shipment	Other,
	1.				
	2.				
	3.				
	4.				
	Average Number of Outbound shipment per year / per month				
	Country and city of origin	20' Container	40' Container	Lancang-Mekong Shipment	Other,
	1.				
	2.				
	3.				
	4.				
3.2	Average quantity per shipment				
	Are the products palletized at origin?	Yes	On		
	Number of pallets				
	Number of Cartons				
	Average Value	US \$			
	Average weight	Kgs			
3.3	Average cost of transportation				

3.4	Cost per shipment	=	US \$
	✓ <u>Formal</u> cost per shipment	=	US \$
	✓ <u>Informal</u> cost per shipment	=	US \$
	Cost per Ton/Kg./Box	=	US \$
3.4	Average Labour cost per shipment	=	US \$ /Or = percent of Total Cost
3.5	Average Administration cost per shipment	=	US \$ / Or = percent of Total Cost

3.6 What type of major products that you deal with import/export from/to countries (via LM River) ? (you can tick more than one selection)

Product.....

From country.....

To country.....

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> 1. Fresh fruit | <input type="checkbox"/> 1. China |
| <input type="checkbox"/> 2. Fresh Vegetable | <input type="checkbox"/> 2. Lao |
| <input type="checkbox"/> 3. Agricultural (dry) Products | <input type="checkbox"/> 3. Myanmar |
| <input type="checkbox"/> 4. Processing Food | <input type="checkbox"/> 4. Thailand |
| <input type="checkbox"/> 5. Construction Materials | |
| <input type="checkbox"/> 6. Machines | |
| <input type="checkbox"/> 7. Rubber | |
| <input type="checkbox"/> 8. Wood | |
| <input type="checkbox"/> 9. Fresh fruit | |
| <input type="checkbox"/> 10. Others.....(please specify) | |

Part 4. Outstanding transportation

4. Outstanding transportation				
4.1	Number of inbound/outbound shipment per month)from CLMT(
	Country and city of destination	Percentage of total Outbound	Number of shipment per month	Average size per shipment)In pallets ,cartons or kgs(
	1.	%		
	2.	%		
	3.	%		
	4.	%		
	Country and city of destination	Percentage of total Inbound	Number of shipment per month	Average size per shipment)In pallets ,cartons or kgs(
	1.	%		
	2.	%		
	3.	%		
	4.	%		
4.2	Normal delivery lead time)from order entry until delivery (Days	
4.3	Demand forecasting (number of customer or volume of trade) in next 3 years <input type="checkbox"/> Increasepercent Why..... <input type="checkbox"/> Decreasepercent Why.....			
4.4	Do you consider using the alternative route (R3A route) in the future? <input type="checkbox"/> Yes which route/ part of the route..... Why..... <input type="checkbox"/> No Why.....			

Part 5. In this part of the questionnaire, you are invited to rate 4 countries (CLMT) listed below along seven 7 dimensions in **logistics performance in the Lancang-Mekong River for international shipping**. The countries have been generated based on the trading partners of your selected country of work.

Based on your experience in international shipping, please select the option that best applies to each individual country against the generally accepted industry standards or practices:

Note: *Very high* = 5
 High = 4
 Average = 3
 Low = 2
 Very low= 1

Logistics Performance Indicators	China	Lao PDR	Myanmar	Thailand
4. Clearance Process				
<ul style="list-style-type: none"> • Speed • Simplicity • Predictability of formalities 				
5. Trade and transport related infrastructure				
<ul style="list-style-type: none"> • Port • Information • Location 				
6. Assess the ease of arranging competitively priced shipments				
<ul style="list-style-type: none"> • Average Cost per shipment 				
7. Competence and Quality of Logistics Services				
<ul style="list-style-type: none"> • Transport • Operators • Customs brokers 				
8. Ability to track and trace your consignments when shipping				
<ul style="list-style-type: none"> • Tracking ability 				
9. Management process when arrange shipment				
<ul style="list-style-type: none"> • Screening • Advance information • Safety (physical security) • Trust (between private) • Trust (between Government) 				
10. Delivery Performance: time and quality				
<ul style="list-style-type: none"> • Scheduled or expected delivery performance 				

Part 6. Please prioritize your views on the relative importance of these element in ensuring quality transportation/logistics along Lancang-Mekong River for international shipping (from 1 to 5, where 5 represents highest and 1 represents lowest).

Index (Lancang-Mekong River transportation)	1	2	3	4	5
Transportation Cost (reference price, compare with land transportation via R3A route)					
Quality of transportation (Physical and Time management)					
Quantity of transportation (amount of goods/product per consignment)					
Custom service and Inspection (process and complication)					
Risk assessment					
Regulations /Agreement (Including the benefit of International Agreement)					
Trade facilitation					

Linkage to consumer/ market					
Other.....					
.....					
.....					

Part 7. Please provide information regarding the current capacities to deliver effective services-

Topics	Have you attended any trainings/workshops on the topics as indicated?	Which are the topic (s) you think are relevant for your current job and why?
1). GMS Cross-border Transport Agreement (CBTA)		
2). Custom Management		
3). Port Management		
4). Logistics Management		
5). Trade facilitation		
6). Knowledge of AEC (mainly for CLMVT excluding China)		
7). Any other topic (s), please specify		

Part 8. Please explain the development policy/activity that your organization focuses on (or working with business sector and/or public sector) the capacity need assessment

Capacity need assessment	Development policies/ Activities	Status
1). GMS Cross-border Transport Agreement (CBTA)		
2). Port Management		
3). Custom Management		
4). Logistics Management		
5). Trade facilitation		
6). Knowledge of AEC (mainly for CLMVT excluding China)		
7). Any other topic (s), please specify		

We are keen to hear your opinions and comments on these factors, whether we have missed any, combined some or otherwise raised issues you wish to comment on. Please use the free text box below:

--

Thank you very much for your cooperation and valuable time.

2. TRANSPORT DEPARTMENT/GOVERNMENT OFFICE

Part 1: Your Organizational Profile

1.1 Please state the following core details about yourself and your organization. This data will be used to analyze the results and to contact you. It will not be shared with any 3rd parties.

Name:	
Organization:	
Email Address:	
Phone Number:	
Type of Organization:	

1.2 Which country do you work in (CLMT)?

- ☐ 1. China
 ☐ 2. Lao PDR
 ☐ 3. Myanmar
 ☐ 4. Thailand

Part 2: Your Organizational Profile

2. Project information	
2.1	Your current organization set-up in CLMT (China, Lao PDR, Myanmar and Thailand)
	What are the characteristics of your current major service to your CLMT customers?
	What are service locations of your organization (related to Lancang-Mekong River)?
	How much growth do you foresee in the coming five years in your CLMT business? (In terms of turnover and in terms of volumes)
	Which other relevant developments do you foresee in the near future that might impact your CLMT logistics and supply chain? (e.g. new logistics route, new product launches, new markets, new production or sourcing locations, etc.)

Part 3. Outstanding transportation

3.1	Demand forecasting (number of customer or volume of trade) in next 3 years <input type="checkbox"/> Increasepercent Why..... <input type="checkbox"/> Decreasepercent Why.....
3.2	Do you consider using the alternative route (R3A route) in the future? <input type="checkbox"/> Yes which route/ the part of the route..... Why..... <input type="checkbox"/> No Why.....

Part 4. In this part of the questionnaire, you are invited to rate 4 countries (CLMT) listed below along seven 7 dimensions in **logistics performance in the Lancang-Mekong River for international shipping**. The countries have been generated based on the trading partners of your selected country of work.

Based on your experience in international shipping, please select the option that best applies to each individual country against the generally accepted industry standards or practices:

Note: Very high = 5
 High = 4
 Average = 3
 Low = 2
 Very low = 1

Logistics Performance Indicators	China	Lao PDR	Myanmar	Thailand
1. Clearance Process				
<ul style="list-style-type: none"> Speed Simplicity 				

• Predictability of formalities				
2. Trade and transport related infrastructure				
• Port				
• Information				
• Location				
3. Assess the ease of arranging competitively priced shipments				
• Average Cost per shipment				
4. Competence and Quality of Logistics Services				
• Transport				
• Operators				
• Customs brokers				
5. Ability to track and trace your consignments when shipping				
• Tracking ability				
6. Management process when arrange shipment				
• Screening				
• Advance information				
• Safety (physical security)				
• Trust (between private)				
• Trust (between Government)				
7. Delivery Performance: time and quality				
• Scheduled or expected delivery performance				

Part 5. Please prioritize your views on the relative importance of these elements in ensuring quality transportation/logistics along Lancang-Mekong River for international shipping (from 1 to 5, where 5 represents highest and 1 represents lowest).

Index (Lancang-Mekong River transportation)	1	2	3	4	5
Transportation Cost (reference price, compare with land transportation via R3A route)					
Quality of transportation (Physical and Time management)					
Quantity of transportation (amount of goods/product per consignment)					
Custom service and Inspection (process and complication)					
Risk assessment					
Regulations /Agreement (Including the benefit of International Agreement)					
Trade facilitation					
Linkage to consumer/ market					
Other.....					
.....					

Part 6. Please provide information regarding the current capacities to deliver effective services

Topics	Have you attended any trainings/workshops on the topics as indicated?	Which are the topic (s) you think are relevant for your current job and why?
1). GMS Cross-border Transport Agreement (CBTA)		
2). Custom Management		
3). Port Management		
4). Logistics Management		

5). Trade facilitation		
6). Knowledge in AEC (mainly for CLMVT excluding China)		
7). Any other topic (s), please specify		

Part 7. Please explain the development policy/activity that your organization focuses on (or working with business sector and/or public sector) the capacity need assessment

Capacity need assessment	Development policies/ Activities	Status
1). GMS Cross-border Transport Agreement (CBTA)		
2). Custom Management		
3). Port Management		
4). Logistics Management		
5). Trade facilitation		
6). Knowledge in AEC (mainly for CLMVT excluding China)		
7). Any other topic (s), please specify		

We are keen to hear your opinions and comments on these factors, whether we have missed any, combined some or otherwise raised issues you wish to comment on. Please use the free text box below:

--

3. BUSINESS SECTOR

TRADE ASSOCIATION/CHAMBER OF COMMERCE IMPORTER/EXPORTER

Part 1: Your Organizational Profile

1.1 Please state the following core details about yourself and your organization. This data will be used to analyze the results and to contact you. It will not be shared with any 3rd parties.

Name:	
Company:	
Email Address:	
Phone Number:	
Type of Business:	

1.2 Which country do you work in (CLMT)?

- ☐ 1. China ☐ 2. Lao PDR ☐ 3. Myanmar ☐ 4. Thailand

1.3 Which level of management are you in your organization

- ☐ 1. Executive management ☐ 2. Middle management ☐ 3. Operational personal

1.4 Years of experience in the import/export business along the Lancang-Mekong River

- ☐ 1. Less than 1 year ☐ 2. 1-5 years ☐ 3. 6-10 years ☐ 4. 10+up

**1.5 What type of organization/business do you work with?
(you can tick more than one selection)**

- ☐ 1. Importer
☐ 2. Exporter
☐ 3. Transport or logistics service provider
☐ 4. Shipping Company
☐ 5. Independent Firm/Entrepreneur
☐ 6. Other.....

**1.6 What type of products that you import/export from/to CLMT countries?
(you can tick more than one selection)**

Product.....
From country.....
To country.....

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> 1. Fresh fruit | <input type="checkbox"/> 1. China |
| <input type="checkbox"/> 2. Fresh Vegetable | <input type="checkbox"/> 2. Lao PDR |
| <input type="checkbox"/> 3. Agricultural (dry) Products | <input type="checkbox"/> 3. Myanmar |
| <input type="checkbox"/> 4. Processing Food | <input type="checkbox"/> 4. Thailand |
| <input type="checkbox"/> 5. Construction Materials | |
| <input type="checkbox"/> 6. Machines | |
| <input type="checkbox"/> 7. Rubber | |
| <input type="checkbox"/> 8. Wood | |
| <input type="checkbox"/> 9. Fresh fruit | |
| <input type="checkbox"/> 10. Others.....(please specify) | |

Transport or Logistics Service Question

1.7 Please tick the following services your organization uses: (You can tick more than one selection)

1. Port and/or terminal operator
2. Logistics Service Provider (warehousing and/or added value activities).
3. Multimodal transport operator

4. Port and/or terminal authority
5. Single mode transport operator

1.8 Please tick the modes that your organization currently uses: (You can tick more than one selection)

1. Inland waterway
2. Sea
3. Road
4. Rail
5. Air

1.9 Direction of trade and transport you are primarily dealing with: (You can tick more than one selection)

1. Export
2. Import
3. Export and Import
4. Domestic
5. All

Part 2: Your Organizational Profile

2. Business information			
2.1	Your current business set-up in CLMT (China, Lao PDR, Myanmar or Thailand)		
	What is the current major transportation system that you are using for your customers in CLMT? (e.g. water transport, land transport, air transport)		
	What are production locations of your company (related to Lancang-Mekong River)?		
	What are the current stocking locations/major supplier of your company?		
	How much growth do you foresee in the coming five years in your CLMT business? (In terms of turnover and in terms of volumes), which partner country do you foresee to have the largest growth?		
	Which other relevant developments do you foresee in the near future (eg 5 years) that might impact your CLMT logistics and supply chain? (e.g. new logistics route, new product launches, new markets, new production or sourcing locations, etc.)		
2.2	Logistics partners		
	Do you currently work with logistics service providers whose services you would like to use in CLMT as well? <i>If so, please state their names</i>	Yes	No
	Are you already in contact with logistics service providers in the CLMT countries? <i>If so, please state their names</i>	Yes	No
2.3	Which of the following logistics services do you want to use for your logistics management?		
	Ocean freight forwarding; Consolidation services (LCL)	Yes	No
	Ocean freight forwarding ; Full container loads (FCL)	Yes	No
	Air freight forwarding	Yes	No
	Warehousing	Yes	No
	Cross docking	Yes	No
	Value adding logistics (e.g. labeling, packing, etc.)	Yes	No
	Value adding services (e.g. order management, customer / financial services)	Yes	No
	Transportation of full loads	Yes	No
	Transportation of part loads	Yes	No
	Parcel distribution	Yes	No
	Return management	Yes	No
	Other, (Please describe)		

Part 3: Product/Service Information

3. Product information	
3.1	Brief description of your products/services (Quantity and type of products)
	<i>Please attach product list or pictures if possible</i>

3.2	Number of SKUs² (number of different items/articles produced/served by you company)		
3.3	Can any of the goods be classified as perishable?	Yes	No
	<i>If, so, please indicate the product's average shelf life?</i>		
3.4	Product packing		
	Please describe how your products are packed. (e.g. in carton boxes, in big bags, in drums, etc.)		
	Please describe the different packing units. (e.g. x pieces per carton, y cartons per pallet)		
	Average weight per carton	Kgs	
	Average product packs per shipment	eg. Boxes, bags, drums, containers, pallets	

Part 4: Transportation/Logistics Systems**For the following questions please make an estimation of the planed operation in CLMT**

4. Inbound/Outbound transportation and receiving from production to port/warehouse in the CLMT						
4.1	Number of Inbound/Outbound shipment per year					
	Country and city of origin	20' Container	40' Container	Lancang-Mekong Shipment	R3A Shipment	Other,
	1.					
	2.					
	3.					
	4.					
4.2	Average quantity per shipment					
	Are the products palletized at origin?				Yes	On
	Number of pallets					
	Number of Cartons					
	Number of SKUs					
	Average Value				US \$	
	Average weight				Kgs	
4.3	Is Special handling equipment required?				yes	No
	If so, please specify					
4.4	Average cost of transportation					
	Cost per shipment			=	US \$	
	✓ Formal cost per shipment			=	US \$	
	✓ Informal cost per shipment			=	US \$	
	Cost per Ton/Kg./Box			=	US \$	
4.5	Average Labour cost per shipment =			US \$ /Or =	percent of Total Cost	
4.6	Average Administration cost per shipment=			US \$ / Or =	percent of Total Cost	

Part 5. Outstanding transportation

5. Outstanding transportation				
5.1	Number of inbound/outbound shipment per month)from warehouse to customers(
	Country and city of destination	Percentage of total outbound	Number of shipment per month	Average size per shipment)In pallets ,cartons or kgs(
	1.	%		
	2.	%		
	3.	%		
	4.	%		
5.2	Normal delivery lead time)from order entry until delivery (Days
5.3	Do you expect express shipments?			Yes No
	If so, please specify as percentage of total outbound volume			
5.4	Types of delivery addresses			

			% of total
Importer Address		Yes	No
Retail address		Yes	No
Whole sale/industry address		Yes	No
5.5	Do you have preference for a mode of transport?		Yes No
If so, please specify			
5.6	Are transport related value adding activities required?		Yes No
If so, please specify (e.g. removal of old material, unpacking, installation)			
5.7	Demand forecasting (number of customer or volume of trade) in next 3 years <input type="checkbox"/> Increasepercent Why..... <input type="checkbox"/> Decreasepercent Why.....		
5.8	Do you consider to use the alternative route (R3A route) in the future? <input type="checkbox"/> Yes which route/part of the route..... Why..... <input type="checkbox"/> No Why.....		

Part 6. In this part of the questionnaire, you are invited to rate 4 countries (CLMT) listed below along seven 7 dimensions in **logistics performance in the Lancang-Mekong River for international shipping**. The countries have been generated based on the trading partners of your selected country of work.

Based on your experience in international shipping, please select the option that best applies to each individual country against the generally accepted industry standards or practices:

Note:

Very high	=	5
High	=	4
Average	=	3
Low	=	2
Very low	=	1

Logistics Performance Indicators	China	Lao PDR	Myanmar	Thailand
1. Clearance Process				
<ul style="list-style-type: none"> Speed Simplicity Predictability of formalities 				
2. Trade and transport related infrastructure				
<ul style="list-style-type: none"> Port Information Location 				
3. Assess the ease of arranging competitively priced shipments				
<ul style="list-style-type: none"> Average Cost per shipment 				
4. Competence and Quality of Logistics Services				
<ul style="list-style-type: none"> Transport Operators Customs brokers 				
5. Ability to track and trace your consignments when shipping				
<ul style="list-style-type: none"> Tracking ability 				
6. Management process when arrange shipment				
<ul style="list-style-type: none"> Screening Advance information 				

<ul style="list-style-type: none"> • Safety (physical security) • Trust (between private) • Trust (between Government) 				
7. Delivery Performance: time and quality				
<ul style="list-style-type: none"> • Scheduled or expected delivery performance 				

Part 7. Please prioritize your view on the relative importance of these elements in ensuring quality logistics along Lancang-Mekong River for international shipping (from 1 to 5, where 5 represents highest and 1 represents lowest).

Index (Lancang-Mekong River transportation)	1	2	3	4	5
Transportation Cost (reference price, compare with land transportation via R3A route)					
Quality of transportation (Physical and Time management)					
Quantity of transportation (amount of goods/product per consignment)					
Custom service and Inspection (process and complication)					
Risk assessment					
Regulations /Agreement (Including the benefit of International Agreement)					
Trade facilitation					
Linkage to consumer/ market					
Other					
.....					

Part 8. Please provide information regarding the current capacities to deliver effective services-

Topics	Have you attended any trainings/workshops on the topics as indicated?	Which are the topic (s) you think are relevant for your current job and why?
1). Trade facilitation		
2). GMS Cross-border Transport Agreement (CBTA)		
3). Custom Management		
4). Knowledge in AEC (mainly for CLMVT excluding China)		
5). Port Management		
6). Logistics Management		
7). Any other topic (s), please specify		

We are keen to hear your opinions and comments on these factors, whether we have missed any, combined some or otherwise raised issues you wish to comment on. Please use the free text box below:

4. Transport/Logistics Service Provider or Shipping Company

Part 1: Your Organizational Profile

1.1 Please state the following core details about yourself and your organization. This data will be used to analyze the results and to contact you. It will not be shared with any 3rd parties.

Name:	
Company:	
Email Address:	
Phone Number:	
Type of Business:	

1.2 Which country do you work in (CLMT)?

- ☐ 1. China ☐ 2. Lao PDR ☐ 3. Myanmar ☐ 4. Thailand

1.3 Which level of management are you in your organization

- ☐ 1. Executive management ☐ 2. Middle management ☐ 3. Operational personal

1.4 Years of experience in the transport/logistics service sector

- ☐ 1. Less than 1 year ☐ 2. 1-5 years ☐ 3. 6-10 years ☐ 4. 10+up

**1.5 What type of products that you transport or ship from/to CLMT countries?
(you can tick more than one selection)**

Product.....
From country.....
To country.....

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> 1. Fresh fruit | <input type="checkbox"/> 1. China |
| <input type="checkbox"/> 2. Fresh Vegetable | <input type="checkbox"/> 2. Lao |
| <input type="checkbox"/> 3. Agricultural (dry) Products | <input type="checkbox"/> 3. Myanmar |
| <input type="checkbox"/> 4. Processing Food | <input type="checkbox"/> 4. Thailand |
| <input type="checkbox"/> 5. Construction Materials | |
| <input type="checkbox"/> 6. Machines | |
| <input type="checkbox"/> 7. Rubber | |
| <input type="checkbox"/> 8. Wood | |
| <input type="checkbox"/> 9. Fresh fruit | |
| <input type="checkbox"/> 10. Others.....(please specify) | |

Transport or Logistics Service Question

1.6 Please tick the following services your organization provides/uses: (You can tick more than one selection)

1. Port and/or terminal operator
2. Logistics Service Provider (warehousing and/or added value activities).
3. Multimodal transport operator
4. Port and/or terminal authority
5. Single mode transport operator

1.7 Please tick the modes that your organization currently uses: (You can tick more than one selection)

1. Inland waterway
2. Sea
3. Road
4. Rail
5. Air

1.8 Direction of trade and transport you are primarily dealing with: (You can tick more than one selection)

1. Export
2. Import

3. Export and Import
4. Domestic
5. All

Part 2: Your Organizational Profile

2. Project information			
2.1	Your current business set-up in CLMT (China, Lao PDR, Myanmar and Thailand)		
	What are the current major transportation services to your consumers in CLMT? (e.g. water transport, land transport, air transport)		
	What are service locations of your company (related to Lancang-Mekong River)?		
	What are the current stocking locations/major customers of your company?		
	How much growth do you foresee in the coming five years in your CLMT business? (In terms of turnover and in terms of volumes) which partner country do you foresee to have the largest growth?		
	Which other relevant developments do you foresee in the near future that might impact your CLMT logistics and supply chain? (e.g. new logistics route, new product launches, new markets, new production or sourcing locations, etc.)		
2.2	Logistics partners		
	Do you currently work with transportation or logistics service providers whose services you would like to use in CLMT as well? <i>If so, please state their names</i>	Yes	No
	Are you already in contact with transportation or logistics service providers in the CLMT countries? <i>If so, please state their names</i>	Yes	No
2.3	Which of the following logistics services do you want to use for your logistics management?		
	Ocean freight forwarding; Consolidation services (LCL)	Yes	No
	Ocean freight forwarding ; Full container loads (FCL)	Yes	No
	Air freight forwarding	Yes	No
	Warehousing	Yes	No
	Cross docking	Yes	No
	Value adding logistics (e.g. labeling, packing, etc.)	Yes	No
	Value adding services (e.g. order management, customer / financial services)	Yes	No
	Transportation of full loads	Yes	No
	Transportation of part loads	Yes	No
	Parcel distribution	Yes	No
	Return management	Yes	No
	Other, (Please describe)		

Part 3: Product/Service Information

3. Product information			
3.1	Brief description of your products/services (Quantity and type of products)		
	<i>Please attach product list or pictures if possible</i>		
3.2	Number of SKUs² (number of different items/ served by you company)		
3.3	Can any of the goods be classified as perishable?	Yes	No
	<i>If, so, please indicate the product's average shelf life?</i>		
3.4	Product packing		
	Please describe how your products are packed. (e.g. in carton boxes, in big bags, in drums, etc.)		
	Please describe the different packing units. (e.g. x pieces per carton, y cartons per pallet)		
	Average weight per carton	Kgs	
	Average volume per pallet	M ³	
	Type of pallet	Euro/Block/Other	

Part 4: Transportation/Logistics Systems**For the following questions please make an estimation of the planed operation in CLMT**

4. Inbound/Outbound transportation and receiving from production to port/warehouse in the CLMT						
4.1	Number of Inbound/Outbound shipment per year					
	Country and city of origin	20' Container	40' Container	Lancang-Mekong Shipment	R3A Shipment	Other,
	1.					
	2.					
	3.					
	4.					
4.2	Average quantity per shipment					
	Are the products palletized at origin?				Yes	No
	Number of pallets					
	Number of Cartons					
	Number of SKUs					
	Average Value				US \$	
	Average weight				Kgs	
4.3	Is Special handling equipment required?				Yes	No
	If so, please specify					
4.4	Average cost of transportation					
	Cost per shipment			=	US \$	
	✓ Formal cost per shipment			=	US \$	
	✓ Informal cost per shipment			=	US \$	
	Cost per Ton/Kg./Box			=	US \$	
4.5	Average Labour cost per shipment =			US \$ /Or =	percent of Total Cost	
4.6	Average Administration cost per shipment=			US \$ / Or =	percent of Total Cost	

Part 5. Outstanding transportation

5. Outstanding transportation						
5.1	Number of inbound/outbound shipment per month)from warehouse to customers(
	Country and city of destination	Percentage of total outbound	Number of shipment per month	Average size per shipment)In pallets ,cartons or kgs(
	1.	%				
	2.	%				
	3.	%				
	4.	%				
5.2	Normal delivery lead time)from order entry until delivery (Days		
5.3	Do you expect express shipments?			Yes	No	
	If so, please specify as percentage of total outbound volume					
5.4	Types of delivery addresses					
						% of total
	Importer Address	Yes	No			
	Retail address	Yes	No			
	Whole sale/industry address	Yes	No			
5.5	Do you have preference for a made of transport?			Yes	No	
	If so, please specify					
5.6	Are transport related value adding activities required?			Yes	No	
	If so, please specify)e.g. removal of old material, unpacking, installation(
5.7	Demand forecasting (number of customer or volume of trade) in next 3 years					
	□ Increasepercent					
	Why.....					

	<input type="checkbox"/> Decreasepercent Why.....
5.8	Do you consider to use the alternative route (R3A route) in the future? <input type="checkbox"/> Yes which route/part of the route..... Why..... <input type="checkbox"/> No Why.....

Part 6. In this part of the questionnaire, you are invited to rate 4 countries (CLMT) listed below along seven 7 dimensions in logistics performance in the Lancang-Mekong River for international shipping. The countries have been generated based on the trading partners of your selected country of work.

Based on your experience in international shipping, please select the option that best applies to each individual country against the generally accepted industry standards or practices:

Note: *Very high* = 5
 High = 4
 Average = 3
 Low = 2
 Very low= 1

Logistics Performance Indicators	China	Lao PDR	Myanmar	Thailand
1. Clearance Process				
<ul style="list-style-type: none"> • Speed • Simplicity • Predictability of formalities 				
2. Trade and transport related infrastructure				
<ul style="list-style-type: none"> • Port • Information • Location 				
3. Assess the ease of arranging competitively priced shipments				
<ul style="list-style-type: none"> • Average Cost per shipment 				
4. Competence and Quality of Logistics Services				
<ul style="list-style-type: none"> • Transport • Operators • Customs brokers 				
5. Ability to track and trace your consignments when shipping				
<ul style="list-style-type: none"> • Tracking ability 				
6. Management process when arrange shipment				
<ul style="list-style-type: none"> • Screening • Advance information • Safety (physical security) • Trust (between private) • Trust (between Government) 				
7. Delivery Performance: time and quality				
<ul style="list-style-type: none"> • Scheduled or expected delivery performance 				

Part 7. Please prioritize your views on the relative importance of these element in ensuring quality transportation/logistics along Lancang-Mekong River for international shipping (from 1 to 5, where 5 represents highest and 1 represents lowest).

Index (Lancang-Mekong River transportation)	1	2	3	4	5
Transportation Cost (reference price, compare with land transportation via R3A route)					
Quality of transportation (Physical and Time management)					
Quantity of transportation (amount of goods/product per consignment)					
Custom service and Inspection (process and complication)					
Risk assessment					
Regulations /Agreement (Including the benefit of International Agreement)					
Trade facilitation					
Linkage to consumer/ market					
Other					
.....					

Part 8. Please provide information regarding the current capacities to deliver effective services-

Topics	Have you attended any trainings/workshops on the topics as indicated?	Which are the topic (s) you think are relevant for your current job and why?
1). Logistics Management		
2). Port Management		
3). GMS Cross-border Transport Agreement (CBTA)		
4). Custom Management		
5). Knowledge in AEC (mainly for CLMVT excluding China)		
6). Trade facilitation		
7). Any other topic (s), please specify		

We are keen to hear your opinions and comments on these factors, whether we have missed any, combined some or otherwise raised issues you wish to comment on. Please use the free text box below:

Annex 3.3. Qualitative Questionnaire for Field Interview

Country:.....

Respondent Number:

Date of Interview:

Time of Interview:

Place of Interview:

A. Semi-structured Interviews with Key Informants (Custom)

1. First, we would like to have some general information about your organization: *Vision, mission, goals, specific projects, relationship with the information on the current status of the Lancang-Mekong River navigation for international shipping.*
2. What do you know about the current status information on the Lancang-Mekong River navigation for international shipping in China, Lao PDR, Myanmar and Thailand?
(*eg., Importance for the economy, value of international market, logistics and supply chain systems, geographical location, main import-export products, Major buyers, major suppliers, etc.*)
3. What does your organization specifically do/help in the development of the Lancang-Mekong River for international shipping?
(*eg., Programs, projects, etc. Where? How many projects are involved?*)
4. In your opinion, what are the major limitations faced by the Lancang-Mekong River for international shipping, especially in your country?
5. What are major custom processes for international shipping in the Lancang-Mekong River?
6. What are the advantages and disadvantages of using Lancang-Mekong River for international shipping?
7. What are the advantages and disadvantages of new logistics systems (compared with other logistics system/route: eg. R3A route?)
8. Do you know about requirements imposed by logistics systems used by private sector? What are the main key success factors?
9. What are the major challenges or problems to develop the Lancang-Mekong River for international shipping?
10. What specific plans do you have in the near future to support the Lancang-Mekong River for international shipping?
11. What recommendations do you have for construction 'best practice' models to enhance the competitiveness of the logistics system along the Lancang-Mekong River for international shipping?
12. What role should institutions and organizations play to construct this logistics model? Other comments?

Note: Also ask responder about does he/she knows someone who are working or involved with the Lancang-Mekong River for international shipping in this country?(*Snowball*)

B. Semi-structured Interviews with Key Informants (Port Officers)

1. First, we would like to have some general information about your organization: *Vision, mission, goals, specific projects, relationship with the information on the current status of the Lancang-Mekong River navigation for international shipping.*
2. What do you know about the current status information on the Lancang-Mekong River navigation for international shipping in China, Lao PDR, Myanmar and Thailand?
(*eg., Importance for the economy, value of international market, logistics and supply chain systems, geographical location, main import-export products, Major buyers, major suppliers, etc.*)
3. Please describe the development of Logistics and Supply Chain Redesign in the Lancang-Mekong River. (eg. Traditional Logistics System, New Logistics System?)
4. What does your organization specifically do/help in the development of the Lancang-Mekong River for international shipping?
(*eg., Programs, projects, etc. Where? How many projects are involved?*)
5. In your opinion, what are the major limitations faced by the Lancang-Mekong River for international shipping, especially in your country?
6. What are the advantages and disadvantages of using Lancang-Mekong River for international shipping?
7. What are the advantages and disadvantages of new logistics systems (compared with other logistics system/route: eg. R3A route?)

8. What are your major duties at the port to facilitate the shipping processes in the Lancang-Mekong River?
9. What specific plans do you have in the near future to support the Lancang-Mekong River for international shipping?
10. What recommendations do you have for construction ‘best practice’ models to enhance the competitiveness of the logistics system along the Lancang-Mekong River for international shipping?
11. What role should institutions and organizations play to construct this logistics model? Other comments?

Note: Also ask responder about does he/she knows someone who are working or involved with the Lancang-Mekong River for international shipping in this country? (*Snowball*)

C. Semi-structured Interviews with Key Informants (Government, Donors, Universities)

1. First, we would like to have some general information about your organization: Vision, mission, goals, specific projects, relationship with the information on the current status of the Lancang-Mekong River navigation for international shipping.
2. What do you know about the current status information on the Lancang-Mekong River navigation for international shipping in China, Lao PDR, Myanmar and Thailand?
(eg., Importance for the economy, value of international market, logistics and supply chain systems, geographical location, main import-export products, Major buyers, major suppliers, etc.)
3. Please describe the development of Logistics and Supply Chain Redesign in the Lancang-Mekong River. (eg. Traditional Logistics System, New Logistics System?)
4. What does your organization specifically do/help in the development of the Lancang-Mekong River for international shipping?
(eg., Programs, projects, etc. Where? How many projects are involved?)
5. In your opinion, what are the major limitations faced by the Lancang-Mekong River for international shipping, especially in your country?
6. What are the advantages and disadvantages of using Lancang-Mekong River for international shipping?
7. What are the advantages and disadvantages of new logistics systems compared with other logistics system/route: eg. R3A route? And in comparison with the Lancang-Mekong River for international shipping?
8. Do you know about any experience of private sector transporting along the Lancang-Mekong River? If yes, what can you tell about that experience?
9. Do you know about requirements imposed by logistics systems used by private sector? What are the main key success factors?
10. What specific plans do you have in the near future to support the Lancang-Mekong River for international shipping?
11. What recommendations do you have for construction ‘best practice’ models to enhance the competitiveness of the logistics system along the Lancang-Mekong River for international shipping?
12. What role should institutions and organizations play to construct this logistics model? Other comments?

Note: Also ask responder about does he/she knows someone who are working or involved with the Lancang-Mekong River for international shipping in this country? (*Snowball*)

D. Semi-structured Interviews with Private Sector

(e.g. importer, exporter, logistics service provider, shipping company)

1. **Company background** (*Some of this information may also be usefully obtained from any copies of company brochures/annual reports/websites, etc, that may be available from the company*)
 - **What kind of business/products do you do/buy/sell?**
 - **What are the various activity/product that the company is involved with?**
2. **Transportation/Logistics Management**
 - a. Please describe the supply sources and transportation/logistics channels vary according to the type of product? Please describe. (eg., *all product transport by Mekong-Lancang River? Some transport by R3A? ect.*).

- b. How important is the Mekong-Lancang River transportation for the company (eg 50% of sales transporting via Mekong-Lancang River)
- c. Please describe the history and the development of transportation/logistics systems along the Lancang-Mekong River of your business in last five year. *(eg. Market share increased 15% per year, forces and trends driving in business, competitors?, changing of transporting strategies?)*
 - What are the main key successful factors of transportation/logistics management along the Lancang-Mekong River for international shipping? *(eg. logistics systems, pricing, quality of suppliers, logistics systems, staffs, international trade facilitation etc)*
 - Please describe the major difficulties faced in transportation/logistics management along the Lancang-Mekong River for international shipping in the present and last five years. *(eg., changing of cost, environmental concerned, competitors, excess demand or excess supply)*
 - Please describe the future trends and forces driving transportation/logistics management along the Lancang-Mekong River for international shipping *(eg. growing up to 50% of total market?, cost? quality standard?, economic growth, global market chain?)*
 - Did you ever compare your transportation/logistics management model between the Lancang-Mekong River and R3A route for international shipping? *(eg., at the same cost, at a lower or higher cost (by how much))*
 - Do you have any projects or specific plans to support your future transportation /logistics management along the Lancang-Mekong River for international shipping? What are they?
 - View about future business with transportation/logistics management model between the Lancang-Mekong River and R3A route for international shipping – is it likely to expand?
 - What are the major key success factors of successful? What are the motivations of your business to use the transportation/logistics model via Mekong-Lancang River for international shipping?
 - What are the main limitations faced in the transportation/logistics management model between the Lancang-Mekong River and R3A route for international shipping?

Note: Also ask responder about does he/she knows someone who are working or involved with the Lancang-Mekong River for international shipping in this country? *(Snowball)*

E. Additional Semi-Structure Questionnaire for tourism stakeholders

Public Sectors

- What are the major problems/challenges for tourism along the Mekong River?
- Competitiveness of the tourism along the Mekong River compared to other ways?
- Growth trend of the Mekong River tourism in the last three to five years, and the prediction of the next five-year growth?
- How could the tourism along Mekong River expand in the near future?
 - Any targeted markets?
 - Public-Private Partnership (PPP)
- How could the public sector help promote the tourism in the Mekong River?
- Policy incentive measures
- Infrastructure investment
- Regional/international cooperation with other countries (including bilateral, trilateral, multi-lateral agreements)
- Data consolidation
- How could the public sector help ensure the tourists' security when traveling along the Mekong River?
- List of the active partners/companies in the tourism along the Mekong River

Entrepreneur Sectors

- How could the business ensure service delivered to the tourists at acceptable satisfaction level?
- Price competitiveness
- Transportation Comfort
- Additional Service (eg, first-aid, mini-market, entertainment facilities on the cruise)
- Safety (including the emergency management for any incidents and natural disaster)

- Training of captain and crews
- 2. Policy advocacy from the government to support the growth of the Mekong River tourism, if any, please illustrate their policy effects?
- 3. Please compare and explain Mekong tourism environment between present and in the future.
- 4. Compare to the Cruise companies in other countries, what should private sectors to learn to stimulate their business for the Mekong tourism?
- 5. How do you plan to promote Mekong tourism in the future? Any future challenges or difficulties ahead? If so, how will you overcome?

Annex 4. Consultation Meeting

1. Participant list of consultation meeting in Kunming, China on July 27, 2015

No	Name	Position	Affiliation
1	YANG Tingren	Deputy Director General	Department of Transport of Yunnan Province
2	MA Jun	Deputy Director General	International Regional Cooperation Office of Yunnan Province, Foreign Affairs Office of Yunnan Province
3	PENG Zhihui	Division Director	International Cooperation Division, Department of Transport of Yunnan Province
4	BAO Mengqiong	Deputy Regimental Staff Officer	Frontier Inspection Division, Public Security Frontier Corps of Yunnan Province
5	QIN Zongmo	Director	Maritime Affairs Administration of Xishuangbanna
6	LI Xudong	Advisor	Port Customs Clearance and Facilitation Division, Department of Commerce of Yunnan Province
7	CONG Lie	Advisor	Comprehensive Planning Division, Department of Transport of Yunnan Province
8	GUO Xiaolan	Associate Advisor	Transportation Administration Division, Department of Transport of Yunnan Province
9	QIN Yanmin	Deputy Director	the Chinese Office of the Joint Committee on Coordination of Commercial Navigation on the Lancang-Mekong River (JCCCN)
10	ZHAO Huiru	Chief	Section of International Road Transport, Road Transportation Administration Bureau of Yunnan Province
11	NI Sujun	Deputy Chief	Section of Planning, Navigation Affairs Administration of Yunnan Province
12	LIAO Yuquan	Section Chief	Yunnan Entry-Exit Inspection and Quarantine Bureau, Yunnan Province
13	LIAO Chao	Section Chief	Port Administration Section, Bureau of Commerce of Xishuangbanna, Yunnan Province
14	ZHANG Jiapeng	Principal Staff Member	International Regional Cooperation Office of Yunnan Province, Foreign Affairs Office of Yunnan Province
15	CHEN Shiyong	Project Officer	GMS Cooperative Government Office of Yunnan Province, Yunnan Development and Reform Commission, P. R. China
16	LI Guoliang	Principal Staff Member	International Cooperation Division, Department of Transport of Yunnan Province
17	ZHONG Cheng	Senior Staff Member	International Cooperation Division, Department of Transport of Yunnan Province
18	WANG Ran	Senior Staff Member	Supervision and Customs Clearance Division, Kunming Customs
19	BI Shihong	Deputy Director/ PhD Professor	GMS Study Center and Institute of Southeast Asian Studies, School of International Studies, Yunnan University
20	LUO Shengrong	Associate Researcher	School of International Studies, Yunnan University

No	Name	Position	Affiliation
21	XIANG Shilin	Chairman	Lancang River Ship-owners' Association of Xishuangbanna
22	ZENG Biao	Secretary General	Lancang River Ship-owners' Association of Xishuangbanna

2. Participant list of consultation meeting in Vientiane, Lao PDR on July 24, 2015

No	Name	Position	Affiliation
1	HOUNGLA Sengmuang	Director General	Department of Waterways, Ministry of Public Works and Transport
2	VANTHONG Somphavath	Deputy Director General	Department of Waterways, Ministry of Public Works and Transport
3	SOMPHONE Louanglath	Director	Department of Waterways, Ministry of Public Works and Transport
4	XAYSOMPHONE Banchongphanith	Deputy Director	Department of Waterways, Ministry of Public Works and Transport
5	POTTHAXAY Sirisack	Director	Department of Transport, Ministry of Public Works and Transport
6	SENGSAVANG Phandanouvong	Deputy Director	Department of Transport, Ministry of Public Works and Transport
7	LAYTHONG Phommavong	Deputy Director	Department of Roads, Ministry of Public Works and Transport
8	SOUKSAMAY Xaysith	Deputy Director	Department of Aviation, Ministry of Public Works and Transport
9	SONESACK Yoyanesana	Deputy General Director	Department of Railway, Ministry of Public Works and Transport
10	KAVINH Xayavong	Deputy Director	Department of Planning and Co-operation, Ministry of Industry and Commerce
11	VIENSAVANG Thipphavong	Director	Economic Research Institute for Trade (ERIT), Ministry of Industry and Commerce
12	Chamthaphone	Staff	Economic Research Institute for Trade (ERIT), Ministry of Industry and Commerce
13	PHOUTSAKHONE Sengmanithone	Deputy Director	Department of Foreign Trade Policy, Ministry of Industry and Commerce
14	Phetda	Director	Department of Industry & Handicraft, Ministry of Industry and Commerce
15	PHONEXAY Chanthavong	Deputy Director	Department of Import-Export, Ministry of Industry and Commerce
16	MANITTO Phomphothi	Deputy Director of Division	Lao National Chamber of Commerce
17	SOMPONG Vongsay	Representative	Department of Tourism Development, Ministry of Industry and Commerce
18	VIENGXANH Chantha	Deputy General Director	Department of Evaluation, Ministry of Industry and Commerce
19	PHONESAVANH Sithidet	Deputy Director	National Economic Research Institute, Ministry of Planning and Investment
20	SOMPHONE Phasavath	Deputy Managing Director	Lao Freight Forwarder Co., Ltd
21	Tui	Association Head	Boat Association, Nongda Facilities

No	Name	Position	Affiliation
22	PHOUMMACHANH Bodhisane		Department of Economic Affairs, Ministry of Foreign Affairs
23	BOUNPHANH Mayongxuen	General Director	HoungAhLun Trading Import-Export Co., Ltd
24	THUANGMALY Phimphasay	Staff	Department of Foreign Affairs of Luang Namtha

3. Participant list of consultation meeting in Yangon, Myanmar on August 4, 2015

No	Name	Position	Affiliation
1	SEIN Tun	Deputy Director General	Department of Water Resources and Improvement of River System
2	MYAT Hla	Director	Department of Customs
3	EIH Maung	Wang Paung Port Developer	Myanmar Ayar Mon Group of Companies
4	ZAW NAING Maung	Wang Paung Port Developer	Myanmar Ayar Mon Group of Companies
5	KHIN ZAW Shein	Wang Paung Port Developer	Myanmar Ayar Mon Group of Companies
6	MYO Thant		NMT Co., Ltd
7	SOE Naing	Vice- Chairman	Myanmar Container Truck Association
8	SOE Win	Deputy Director General	Department of Trade Promotion and Consumer Affairs, Ministry of Commerce
9	OHNMAR Maw	Managing Director	Award Logistics Co., Ltd
10	HLA HLA Yee		MMI Logistics Co., Ltd
11	KYU Khin	Chairman	Costal Ship Owner Association
12	EI PHYUSIN Htay	Managing Director	Barons & Fujikura EPC Co., Ltd
13	NYI NYI Aung	Chairman	Myanmar Customs Broker Association
14	HTAY Aung	Minister	Ministry of Hotel and Tourism
15	MAY Oo Khaing	Owner	Ocean Crown Services Co., Ltd./ Asian Myanmar Beauty, Travel and Tour
16	HLA Oo	Chairman	Myanmar Highway Truck Association
17	AUNG MYAT Kyaw	Chairman	Union of Myanmar Travel Association
18	NAW MUTAKA Paw		Department of Trade, Ministry of Commerce
19	HLA MYO Yee		Department of Trade, Ministry of Commerce
20	HTAN SHAUNG Kan		Ministry of Railways Transportation

No	Name	Position	Affiliation
21	KHINE KHINE Thin	Deputy Director	Ministry of Railways Transportation
22	ELLY Win		MMU

4. Participant list of consultation meeting in Chiengrai, Thailand on July 31, 2015

No	Name	Position	Affiliation
1	KAMOLWAN Kularbwong		International Affairs Division, Marine Department
2	SOMRUAM Mongkolkaew		Skill Development Training Officer, Chiang Saen International Institute for Skill Development
3	PRAKAYMAS Veira	Owner	Maekhong Delta Travel Agency Co., Ltd
4	NATTAPHON Rattanasilpin	Head of the Port and Shipment	Port Authority of Thailand (PAT-Chiang Saen)
5	CHATCHAY Therasuvipakorn	Customs Officer	Chiang Saen Customs Office
6	NIRAN Sripadungporn	Assistant Manager	Larnnathai Tranport Co. LTD
7	PATTANA Suthisombat	Director	The Committee for the Economic Quadrangle 10 Chamber of Commerce, Northern Thailand. (CEQC)
8	PATCHARIN Promviharn	Transport Technical Officer	Transport Technical Officer
9	KARN Katung	Customs Officer	Chiang Khong Customs Office
10	SIRICHAH Kunabhut	Director	Mae Sai Customs House
11	BOONRADA Saensrichan		Major Inter-trade Co., Ltd
12	JETNIPHAT Chailarm		Major Inter-trade Co., Ltd

Annex 5. National and Cross National Transport Projects

Yunnan, China

Project: Further Maintenance and Improvement of the Upper Mekong River Navigation Channel from China (at Landmark 243) and Myanmar to Luang Prabang, Lao PDR. Priority: High

Under the framework of the Agreement on Commercial Navigation of the ML River, signed by China, Lao PDR, Myanmar, and Thailand, the Chinese government has provided \$5 million for the improvement of the Upper Mekong River navigation channel—from China (at Landmark 243) and Myanmar to Houayxay, in the Lao PDR. The plan is to extend the navigable channel down to Luang Prabang, in Lao PDR, and continue to offer funding for Phase II of the maintenance and improvement of the Upper Mekong River navigation channel. The Fourth GMS Summit, in December 2011, recognized the further maintenance and improvement of the Upper Mekong River navigation channel as an important part of its regional connectivity project. To implement this decision, China will provide funds to enable the four countries to jointly formulate mid and long-term planning for the development of international navigation of the ML River and to study measures for strengthening navigation safety. Implementation of the project will ensure the navigational safety of the Upper Mekong River navigation, promote the development of international navigation, and enhance connectivity within the region.

Project: Yuxi–Mohan Railway Priority: Medium

Running from Yuxi West Railway Station to Mohan via Xishuangbanna, this 511 km line links up with the Kunming–Yuxi railway. Once it is connected with railways of other countries in the region, this route will be the most direct from China to the ASEAN countries. As a section of SKRL's middle route, this line is crucial to the establishment of an ASEAN–China Free Trade Agreement (FTA), the economic development of the GMS subregion, and to the formation of a modern integrated transport network.

Lao PDR

Project: Xiengkong River Port Priority: High

Xiengkong is a small village in Long District, Luang Namtha Province, located on the Mekong River. It has a suitable place in which to build a river port. Under the Quadrilateral Agreement on the Commercial Navigation on Upper Mekong–Lancang River, it is agreed that Xiengkong port will be a checkpoint for downstream river traffic from China to Chiang Saen port, in Thailand. This port needs to be constructed to meet the growing trade activities and passenger traffic, and should be equipped with necessary handling equipment, immigration and customs offices, and warehouses.

Project: Ban Mom River Port Priority: High

Ban Mom is a small village in Ton Pheuang District, Bokeo Province, located on the Mekong River. Ban Mom has a suitable place in which to build a river port. Under the Quadrilateral Agreement on the Commercial Navigation on Upper Mekong–Lancang River, it is agreed that Ban Mom port will be a checkpoint for upstream river traffic from Chiang Saen port, in Thailand, to China. This port needs to be constructed to meet the growing trade activities and passenger traffic, and should be equipped with necessary handling equipment, immigration and customs offices, and warehouses.

Project: Houei Sai River Port

Priority: Low

As inland transport is becoming important, especially for tourism, there is a need to build this river port.

Project: Pakbeng River Port**Priority: Low**

The town of Pakbeng is located on the Mekong River, on NR2. It is on the border between Sayabouly and Oudomxay provinces, and at the midpoint between Bokeo and Luang Prabang. As inland transport is becoming important, especially for tourism, Houei Sai River Port As inland transport is becoming important, especially for tourism, there is a need to build this river port.

Project: Luang Prabang River Port**Priority: Low**

Inland water transport traffic between Bokeo and Luang Prabang, in terms of goods and passengers, is growing steadily. There is an urgent need to construct a good river port in Luang Prabang that has necessary handling equipment and warehouses.

Project: Luang Prabang–Samneua Second Northern GMS Network**Priority: High**

The Second Northern GMS Transport Network Improvement Project will provide a link between the North–South Corridor (Kunming–Bangkok) with the Central Corridor (Kunming–Vientiane) and the Eastern Corridor (Kunming–Ha Noi).

Project: Muong Ngeune–Chomphet–Luang Prabang (120 km)**Priority: High**

This tourism corridor extends from Chiang Rai–Chiang Mai–Luang Prabang (Chiang Thong)–Vientiane. The section from Muong Ngeune–Chomphet–Luang Prabang is part of this initiative. If a good road is in place, it will promote trade, investment, and tourism.

Project: Muong Ngeune–Xieng Hone–Muong Kob–Pak Tha**Priority: High**

This road project supports the socioeconomic development of northern Sayabouly Province. It also provides provincial connectivity, particularly between Sayabouly and Bokeo–Luang Namtha, and with southern CHINA.

Project: Vientiane–Boten Railway Project (420 km)**Priority: Medium**

Under the Sino–Lao Cooperation Scheme, the Vientiane–Boten Railway Project is going through its final technical design review. The train speed has been reduced from high speed to about 200 km/h, and the financial negotiation is also underway

Myanmar**Project: Improvement of Inland Ports****Priority: Medium**

This project refers to the construction of four inland ports on the Ayeyarwady River (Bhamo, Mandalay, Pokokku, and Magway) and two inland ports on the Chindwin River (Monywa and Kalewa). The objective of the project is to improve the transportation and handling of domestic and international cargo and containers.

Project: Daluo (China)–Tachilek (Myanmar) Highway**Priority: High**

This project involves the improvement of an existing highway, which is the part of GMS North South Economic corridor as well as a part of ASIAN & ASEAN Highway in Myanmar, linking with CHINA to the north and Thailand to the south. This highway is also one of the major border trade routes between Myanmar and Thailand via Tachileik. The improvement will consist of upgrading the Kyaington–Monglar road (93 km) along into ASEAN class II.

Thailand

Project: Construction of a New Railway from Den Chai to Chiang Rai and Chiang Khong Priority: Medium

The project will construct a new doubling track from Den Chai to Chiang Rai as part of the development of railway networks and a rail transportation system to diminish the country's logistics costs and fuel imports; enhance the convenience, speed, and safety of passenger travel; support integration with neighbouring transportation systems, including those in the Lao PDR and southern CHINA; and spread the benefits to the northern provincial areas.

Project: Chiang Rai–Chiang Khong Highway Improvement Project Priority: High

The project will improve highway capacity and resolve the bottleneck on the North–South Economic Corridor (NSEC) in Thailand. This project will upgrade the existing road from two to four lanes; total length is 80 km

The Greater Mekong Subregion (GMS)

The Greater Mekong Subregion (GMS) comprises of five South-East Asian countries and two provinces of China sharing the Mekong River, i.e., Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and Yunnan province and Guangxi Autonomous Region of the People Republic of China.

About Mekong Institute

Mekong Institute (MI) is an Intergovernmental Organization owned and operated by the six countries of the Greater Mekong Subregion to promote regional development, cooperation and integration through capacity development programs and projects in three thematic areas on Agriculture Development and Commercialization, Trade and Investment Facilitation and Innovation and Technological Connectivity.



Mekong Institute (MI)

Mittraphap Road, Muang District,
Khon Kaen 40002, Thailand

Tel: (+66) 43 202411-2, or (+66) 43 203656-7

Fax: (+66) 43 343131

Email: information@mekonginstitute.org

Website: www.mekonginstitute.org