

博士論文

Proposal of a comparative framework for multilateral
development banks involvement in regional
infrastructures

(地域インフラプロジェクトに対する開発銀行の関
与に関する比較フレームワークの提案)

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September 2016

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Abstract:

This research looks at the development process of regional infrastructures and the role that development banks can play on it. The final objective is to propose a methodology or framework for the identification of relevant actions from existing cases, so to derive valuable policy implications. These would support development banks for better utilizing and sharing the experience from existing case studies by a better selection of those projects to refer.

Regional infrastructures are those whose impact and development goes beyond national borders. These can bring important benefits to all the participating countries like a more sustainable use of natural resources, economies of scale in investment, better insertion in globalization and a reduction of political tensions. Indeed, international organizations like the G-20 have highlighted their relevance in the development agenda and they are even explicitly mentioned as one of the targets of the Sustainable Development Goals (SDG-9).

Although the benefits are widely accepted, there are also several political, institutional, economic and financial challenges. Among them, the lack of political will is commonly mentioned as the main barrier. There are several reasons to explain why countries can be unwilling to cooperate. A World Bank report written by Schiff and Winter (2002) mentions (i) national pride, political tensions, lack of trust, high coordination costs among a large number of countries, or the asymmetric distribution of costs and benefits; (ii) incentives to behave strategically in one-off negotiations; and as mentioned before (iii) given the absence of courts or higher authorities to which to appeal, the enforcement of property rights is ambiguous and weak at the international level.

Against this background, development banks can play an important function in fostering consensus between the parties in what has been commonly known as “honest brokers” role. Tan (2014) referred to this function as “lending its institutional support that encourages dialogue, provides the fora and extends assistance when needed”.

Therefore, the participation of development banks in regional infrastructures has been catching attention. Several researchers have been focusing on the identification of what type of actions development banks can realize to improve the development of regional infrastructures. Case studies are being conducted for several projects which either have proven to be successful or are facing difficulties. The outputs of these case studies could provide important lessons for the development of other regional infrastructures in different sectors or/and regions. In order to realize that, there is a need to understand the influence that context has on these type of projects in general. There is no systematic approach to this issue. Researchers on comparative regionalism have pointed out the difficulties that bring the lack of comparative dimension on regionalism studies (which covers also other areas of functional cooperation). Other intermediate approaches have been looking at either a particular sector in several regions or at one region and comparing different sectors. Nevertheless, these have also faced difficulties for providing supportive evidence on the process of transferring lessons between cases. In summary, existing methodologies have been found to either being strong in the identification of actions and lessons, or strong in the comparative analysis of the process; but no combining both aspects.

This research aims to develop a methodology to overcome such limitations. This is achieved through the proposal of a method for the identification of relevant actions from existing cases. It is expected that this would help development banks to improve their involvement in regional infrastructures programs. Globally, the research includes three objectives: (i) identification of the main contextual variables influencing regional infrastructures development process, (ii) evaluation of the contextual dependency of the actions realized, and (iii) proposal of a comparative framework to serve to development banks for the identification of relevant actions from existing cases.

This research is divided into five parts. The first serves as the choice of cases to study. This is based on two criteria: the level of integration achieved; and the possible combination of sectors and regions, to allow cross-regional and cross-sectorial comparison. Due to the absence of a suitable model, a process divided into five stages has been proposed for the evaluation of the level of integration achieved. The regional infrastructures development process proposed is based on previous studies on regional integration in general and on infrastructures and economic integration. The regional infrastructures development process is therefore considered to include five stages: (i) national stakeholders' agreement, (ii) high-level political agreement and commitment, (iii) physical construction, (iv) institutional construction, and (v) harmonization. These are not necessarily represented chronologically, although projects have commonly started with (i) and be completed with (iv) and (v), being (ii) and (iii) in between those. This five stages development process have been proven to be useful for the classification of forty existing cases. Three cases were found to combine the criteria established, the Greater Mekong Subregion (GMS) programs on Economic Corridors and Power Cooperation and the SIEPAC project for regional power sector integration in Central America.

The second part includes the analysis of the three cases. Causality analyses of each of the stages are conducted. For that, information was gathered from various sources, including existing literature, official documents, media reports, and interview surveys with experts, MDBs, and stakeholders involved. These analyses serve for the identification of the factors, actions, and outputs relevant for each case. In particular, the identified factors provide an understanding of how the particular context of each project influences the process. The relative impact of these factors is also evaluated based on the casual analysis and the interview surveys conducted.

The third part combine and compare the factors identified from the three case studies. All the factors are classified into nine categories: (i) power imbalances, (ii) rivalry between countries, (iii) national security concerns, (iv) overall stability of the countries, (v) publicness, (vi) national institutional structure, (vii) institutional integration, (viii) existing cooperation, and (ix) shared value of regional economies of scale. All these categories were found to correspond to relations between stakeholders, namely (i) government to government (Gov. ↔ Gov.), technical body to technical body (T.B. ↔ T.B), government to technical body (Gov. ↔ T.B), and national actors to technical body (Gov. ↔ N.A.).

The fourth part “builds” the comparative framework. For that, there is an initial evaluation of the relative weight of each of the contextual variables during the process in order to identify possible patterns. The result of this analysis shows that (i) for each case, the dominant variables change throughout the stages of the development process, (ii) for each sector or region, regional or

sectorial variables are not necessarily dominant, and (iii) a similar pattern has been found for each of the stages. Those contextual variables for the stage 1 (national stakeholders' agreement) are "T.B. ↔ T.B." and "Gov. ↔ T.B."; for stage 2 (high level political agreement and commitment), "Gov. ↔ Gov." and "Gov. ↔ T.B."; stage 3 (physical construction), "Gov. ↔ Gov." and "T.B. ↔ T.B."; stage 4 (institutional construction), "Gov. ↔ Gov." and "Gov. ↔ T.B."; and stage 5, "Gov. ↔ N.A.". Based on those findings, the comparative framework objective of this research is proposed. This facilitates the classification, and therefore the identification as well, of the selected cases through the evaluation of the contextual variables identified for each stage.

The last fifth part includes a practical case to show the utilization method as well as the potential policy implications that can be derived. Therefore, it applied to the stage 4 of the GMS Power Cooperation program, which has been facing struggles. The framework shows contextual similarities with the SIEPAC project on that stage. After a careful analysis, three actions are proposed in order to improve the institutional construction of the GMS Power Sector based on the lessons from SIEPAC: (a) establish RPCC as a permanent institution with representatives from national TSOs, (b) develop a prototypal agreement for utilization of third country grid, (c) actively promote interconnections with ASEAN countries (like Singapore) as well as look for connections with South Asia (Bangladesh, India) and rest of China, and (d) secure the independence of RPCC to be able to mediate in disputes.

The tentative results were presented to real practitioners from the ADB during the interview survey. The positive feedback received about the necessity of a methodology such the one proposed, as well as the novelty of its design and the appropriateness of the variables and process division are detailed in the last chapter. There some recommendations for future research are also presented.

Acknowledgment

First of all, I would like to express my deep gratitude to Professor Hideyuki Horii for his support and guidance. This thesis is also the fruit of his continuous and positive tutoring. I am much honored to have been part of his team. During this time, not only my research has growth, but I also did.

I also want to thank the other professors of the International Projects Laboratory, to Professor Hironori Kato for his constructive remarks and for helping to aspire for the highest; to Professor Riki Honda for his always support; to Associate Professor Shunsaku Komatsuzaki, for his close guidance; and to Dr. So Morikawa for his “strategic” advice. Although not being an “official” member of the laboratory, also to Professor Alexander Gilmore for his continuous advice and motivation during and after laboratory meetings. Also Professor Kazumasa Ozawa, for his advice and motivation during my master and doctoral studies.

I am also thankful to the Global Leader Program for Social Design and Management (GSDM). Let me highlight Professor Hideaki Shiroyama and Professor Hisashi Yoshikawa for their continuous feedbacks through the research and for their high expectations. Also to my fellow students, including Akiko, Giwon, Gyo, Mao, Minhyeok, Nan, Naoki, Nga, Natsume, Takashi, Xi among many others.

I also want to express my gratitude to the International Energy Agency (IEA) for letting me have the opportunity of conducting a three months internship. This was a wonderful experience which provided me with many lessons both for my research and myself. I would like to thank to my supervisor Joerg Husar, as well as to Araceli, Beatriz, Carlos, Ingrid, Daniele, David, Federico, Florian, Gianluca, John, Julia, Lisa Marie, Lucy, Luis, Olivier, Mikka, Misako, Paul, Pierpaolo, Rodrigo, Shelly, Urszula, Valerio, and Yayoi. I cannot forget the rest of interns who contributed to making my stay there unforgettable. David, Dina, Fabian, George, Joelle, Kumiko, Maddy, Maria, Marine, Mi Hee, Sanja, Soyeon and many others. Although there is no space here, these thanks are extensive to the entire organization.

Also, very special thanks to all the interviewees, and the persons who introduce me to them, who kindly shared with me their knowledge and experiences. Those has constituted a fundamental contribution to this study and have enriched me personally.

By no means can I forget about all the friends and colleagues from the international projects laboratory. Special thanks to Yao Lv, Minju Kim, Eunyoung Kim, and Hoang Chi Thanh with whom I have walked the ups and downs of the doctoral course. To Marie, Naoki, Yuriko and Yusuke, with whom I spend so many times discussing regional infrastructures. And to the rest members and alumni of the international projects laboratory and the civil engineering department.

Finally but not least, I am in deep with my family for their always there backing. And very special thanks to my wife, for her indefatigable support even during the intensive times of finalization of this thesis and its final defense.

To all of them, thank you.

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1. Background: Regional infrastructures and multilateral development banks (MDBs)

This chapter provides the background of the thesis. It starts introducing the concept of regional infrastructures, its potential merits and its position in the global development agenda. Then it describes the barriers faced by regional infrastructures development. Finally, it provides an overview of the role for MDBs in promoting regional infrastructures.

1.1. Definition of regional infrastructures

Regional infrastructures are understood as those with an impact beyond national borders. The most immediate image is roads or transmission line actually linking countries. Nevertheless infrastructures in one country can have also a wider impact on neighboring countries. For larger improvement and enlargement of a port facilities could have a positive impact in neighboring countries by reducing their cost of international commerce. Same can be said about large power plants (either thermal, hydropower or large renewable). The Asian Development Bank [ADB, 2009] provides a very comprehensive definition in which regional infrastructures are:

- Projects that involve physical construction works and/or coordinated policies and procedures spanning two or more neighboring countries; and
- national infrastructure projects that have a significant cross-border impact:
 - o their planning and implementation involve cooperation or coordination with one or more countries;
 - o they aim to stimulate significant amounts of regional trade and income; and
 - o they are designed to connect to the network of a neighboring or third country

Although regional infrastructures are receiving increasing attention these days, they are several old examples like the Silk Road between the ancient China and Europe. There are also examples of regional infrastructures in every sector. International river basins are a traditional clear example of the need for regional cooperation for the optimization of the resources (like dam location and operation). Internet and space cooperation are also examples of global functional cooperation. Nevertheless, this research focus on the road and power subsectors (of transport and energy sectors respectively).

1.2. Regional infrastructures' positive impacts

Regional infrastructures have been catching attention for the positive impacts they can bring to all the member countries from the region. By going beyond national borders, there are several benefits that can be obtained. In particular economies of scale in investments, a better optimization of regional resources, and a better insertion in globalization processes are some of the most attractive for participating countries.

Kuroda, Kawai, and Nangia (2008) proposes a new emphasis in the development of cross-border infrastructures in Asia. The logic behind is the promotion of economic integration. In that sense,

cross-border infrastructures are seen as a trigger of “economy’s competitiveness by reducing the economic distance from external markets, building economies of scale due to wider markets, increasing FDI inflows, and expanding trade and economic activity in general”

ECLAC (2009) also looks to regional infrastructures as another form to regional integration, different the traditional economic and political integrations, and call it the “silent physical integration”. This research pays more attention to the transport infrastructure services. In total seven benefits are mentioned. The first of them mentions increased effective economic, trade and political integration. Interestingly, there is a strong emphasis on non-economic aspects; for example, the second and third benefits detailed are “(ii) It is crucial if greater social equity is to be achieved and asymmetries among countries are to be reduced” and “(iii) some It has ample potential to foster unity, peace, and development, in the broadest sense.

ESMAP (2010) provides an analysis of regional sector integration (RPSI) projects around the world. The specific benefits identified from these experiences are “enhance energy security, bring economies in investments, facilitate financing, enable greater renewable energy penetration, and allow synergic sharing of complementary resources”.

All these studies, among many others, have contributed to attracting the interest from international development community on the issue. The G-20 (2010) already included regional infrastructure as a specific category of infrastructures.

“Gaps in infrastructure, including with respect to energy, transport, communications, water and regional infrastructure, are significant bottlenecks to increasing and maintaining growth in many developing countries.” (G20, 2010)

More recently, this interest has been raised with its explicit inclusion in the Sustainable Development Goal 9:

“9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.” (UN, 2015)

1.3. Challenges on regional infrastructures:

Although some issues need to be addressed in term of potential large environmental and social impact, due to their large size, there is a common agreement on the need for promoting regional infrastructures. Nevertheless, the development of regional infrastructures has proven to involve challenges beyond technical and/or investment issues. In particular, the lack of political will is usually mentioned. International organizations have looked to this issues from two approaches. The first consists of the identification of objectives that would be needed; for example, World Bank (2010) includes (i) mobilizing political will, (ii) developing effective regional institutions, (iii) setting priorities for regional infrastructure, (iv) harmonizing regulatory procedures, and (v) facilitate project preparation and cross-border finance. The second approach is to explain the reasons behind this lack of political will. In this approach, Schiff and Winter (2002) mentions (a)

national pride, political tensions, lack of trust, high coordination costs among a large number of countries, or the asymmetric distribution of costs and benefits; (b) incentives to behave strategically in one-off negotiations; and (c) given the absence of courts or higher authorities to which to appeal, the enforcement of property rights is ambiguous and weak at the international level.

1.4. Multilateral Development Banks (MDBs) involvement in regional infrastructures

Multilateral Development Banks have been important, if not the largest, advocates of regional infrastructures. They have been created and give support to numerous initiatives in different regions and sectors in order to promote these projects. Here a summary of some of the major is provided:

<i>Development Bank</i>	<i>Strategy / Initiative</i>	<i>Sub-region</i>	<i>Sector</i>
African Development Bank (AfDB) / New Partnership for Africa's Development (NEPAD)	Programme for Infrastructure Development in Africa (PIDA)	Africa	Multi
	Presidential Infrastructure Champion Initiative (PICI)	Africa	Multi
	Africa Power Vision ¹ (APV)	Africa	Power
	Sustainable Energy for All (SE4ALL) Hub for Africa	Africa	Power
	Infrastructure for Skills Development (IS4D)	Africa	Capacity training
	E-Africa Program	Africa	ICT
	Move Africa Initiative	Africa	Transport
	Infrastructure Consortium for Africa (ICA)	Africa	Multi
	Africa Action Plan	Africa	Multi
Asian Development Bank (ADB)	Greater Mekong Sub-region (GMS)	Mekong	Multi
	Central Asia Regional Economic Cooperation (CAREC)	Central Asia	Multi
	Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA)	Southeast Asia	Multi

¹ Based on the Programme for Infrastructure Development in Africa, <http://www.nepad.org/programme/power-africa>

	Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT) Program	Southeast Asia	Multi
	South Asia Subregional Economic Cooperation (SASEC) Program	South Asia	Multi
European Development Bank (EIB)	Trans-European Transport and Energy Networks (TENs)	EU	Energy, ICT, transport
	Infrastructure Consortium for Africa (ICA)	Africa	Multi
Inter-American Development Bank (IADB)	System for the Electrical Interconnection of the Central American Countries (SIEPAC)	Central America	Power
	Mesoamerica Project	Central America	Multi
	Initiative for the Integration of the Regional Infrastructure in South America (IIRSA)	South America	Multi
	Regional Public Goods Initiative (RPGs)	LAC	Multi
World Bank (WB)	West Africa Power Pool (WAPP)	West Africa	Power
	Central Asia-South Asia Electricity Transmission & Trade Project (CASA-1000)	Central and South Asia	Power
	Nepal-India Electricity Transmission & Trade Project	South Asia	Power
	Nepal-India Regional Trade & Transport Project	South Asia	Transport
	Mizoram Roads II Regional Connectivity Project	South Asia	Transport
	Caribbean Regional Communications Infrastructure Program for Latin America and the Caribbean	Caribbean	ICT
	Regional Integration Assistance Strategy (RIAS) for Sub-Saharan Africa (pillar 1)	Africa	Multi
	South Asia Regional Integration	South Asia	Multi

Table 1 - Overview list of initiatives supported by Multilateral Development Banks (MDBs)

It is clear the importance of their involvement as investors and knowledge-providers. But, in recent times, this has not been the one that is getting the most attention. They are being commonly

referred as “honest brokers” (Tan, 2014). There is not a clear definition of what this honest broker role, nevertheless, a general concept has arisen around. Some of the times mentioned has been:

- Perhaps most important, as honest brokers, multilateral institutions can play a catalytic role in cross-border infrastructure projects, bringing countries and other stakeholders together impartially and facilitating the dialogue and discussion process so that countries can reach political convergence to strengthen cross-border connectivity (Kuroda, Kawai, Nangia, 2006)
- ABD acted as a catalyst or an “honest broker” by lending its institutional support that encourages dialogues, provides the fora and extends assistance when needed (Tan, 2014).
- “While the emergence of individual leaders with vision and dedication is often the result of historical fate, it is certain that the governments of relatively larger and more advanced countries need to be willing to bear the brunt of integration cost, and that the action of an external trusted honest broker can be catalytic for collective action” (IADB, 2010)
- “In development projects that may affect neighboring countries and regional-integration projects, they may face difficulties in coordinating the interests of the relevant countries concerned. We expect the ADB to play the role of an “honest broker” in the planning and implementation of the projects that require such coordination.” (Noda, 2011)

Some studies have been looking for the types of actions that MDBs can realize to fulfill such honest broker role:

- “The role of the Bank in this initiative is very much that of a catalyst. By facilitating dialogue and providing analysis where appropriate, the Bank can concentrate on adding value to projects that are, increasing the benefits of development activities by helping forge linkages with projects in neighboring countries.” (ADB, 1993)
- “As a matter of fact, RDBs are playing an increasingly important role in the provision of RPGs to their DMCs in different regions through their ability to convene, generate and transfer knowledge, assist negotiations, and transfer funding” (Ferroni, 2002)
- “To be custodian to strengthen confidence and resolve bilateral and regional disputes putting issues of economic and environmental cooperation in the broader context of regional security, stability and sustainable development” (UNECE, 2002)
-

1.5. Summary

There is an increasing interest in the development of regional infrastructures. Nevertheless, this interest is being confronted with a lack of political will and commitment (even though the political will is mobilized, this should be continuous at the time). Against this background, Multilateral Development Banks have become a major actor in the process, their involvement in promoting consensus and solving disputes can have a largely positive impact on the development of regional infrastructures. Nevertheless, and although more initiatives are being proposed, there is still a not understanding of what concrete actions MDBs can realize.

2. Literature review

This chapter provides an overview of the existing literature and research on regional infrastructures and regional cooperation. The references included here are those with a stronger attention towards the transfer of lessons between different projects.

2.1. Independent case studies

There is a vast literature on particular regional infrastructures in the form of case studies. They look to identify key issues, drivers, barriers, and actions from existed cases.

Onga (2013) looks at the regional power sector cooperation in Central Asia. Although Central Asia countries used to have an integrated energy resources management, the collapse of the Soviet Union and creation of the new republics ended this cooperation. This has led to a sub-optimal management of the resources. Several international donors, as ADB, have been looking towards an improvement of the cooperation in the region. The author emphasizes the need of understanding the positions of the countries' leaders for understanding the potential impact of actions. The objective is the proposal of an approach for the assessment of potential decision-making of the political leader in Kazakhstan and Uzbekistan regarding power sector cooperation in Central Asia.

Del Barrio-Alvarez (2013) investigates also regional power sector cooperation but in Central America. This is a successful case whose study was expected to provide also valuable lessons for other regions, as the Central Asian case. The objective of this research was the identification of the governing mechanism of regional power systems integration, utilizing Central America a case of study. The outputs include the identification of drivers/motivations for cooperation as well the barriers faced. Several successful actions are also presented.

Matsui (2016) focuses on transport corridors development in South America. The case of study is the Inter-Oceanic Highway between Brazil and Peru, therefore connecting Atlantic and Pacific Oceans. The project had been already envisioned time before, but technical and environmental challenges due to the need of crossing the Amazonia, and difficulties from achieving the sufficient consensus at national level in Peru, had prevented its implementation. The project was included as a priority project in the portfolio of the IIRSA initiative, making it one of the frontrunner projects in the region. The author aims to identify the key factors of prompt implementation of a transboundary infrastructure project, with a particular focus on the creation of the national consensus support for the cross-border infrastructure.

Nishibayashi (2016) analyzes the regional cooperation in South Asia. The case study covers the transmission line between India and Bangladesh. Also, a long time sought project that had not been possible to be realized until recently due to the lack of continuous support from Bangladeshi and Indian governments. In fact, the main issue has been the switching position of the countries. The research is an analysis of the formation process of India-Bangladesh interconnection project, with an interest in the identification of critical factors of aid policy contributing to regional integration in South Asia.

2.2. Cross-regional comparison

There are also several studies that look to pool case studies of regional infrastructures in a particular sector in different parts of the world. This research is commonly conducted by international organizations and/or donors with a global scope of action.

JICA (2009) looks to the cross-border transport infrastructure in Sub-Saharan Africa and East Africa. There are several inter-regional and intra-regional corridors. The report highlights the need of Africa of regional cooperation, in particular focusing on the need to reduce the costs of trade to promote industrial development. It develops four strategic directions: (i) perspective as a system, (ii) coordination with RECs, (iii) effective linkage with trade and industrial development, and (iv) introduction of public-private initiatives.

World Bank (2010) compiles 12 case studies on regional power integration carried out by Economic Consulting Associates (ECA). These studies cover transmission and trade cases (Greater Mekong Sub-region (GMS), Southern Africa Power Pool (SAPP), Argentina-Brazil, South East Europe (SEE), Central American electrical Interconnection System (SIEPAC), Gulf Coast Countries (GCC), Nile Basin Initiative (NBI)), generation schemes (Cahora Bassa, Manantali, and NT2), and schemes in developed countries (Pennsylvania-New Jersey and Maryland Interconnection (PJM), and Union for the Coordination of the Transmissions of Electricity / European Network of Transmission System Operators for Electricity (UCTE / ENTSO-E)). The four key aspects those cases deal with were: (i) finding the right level of integration; (ii) optimizing investment on a regional basis; (iii) appropriate regional institutions (iv) technical and regulatory harmonization; (v) power sector reform and integration (vi) the role of donor agencies (vii) reducing emissions through RPSI; and (viii) RPSI and renewable energy.

2.3. Cross-sectorial comparison

Although in a lesser extends, some research also looks to regional initiatives covering a diversity of regions. In particular, the Initiative for the Regional Infrastructures of South America (IIRSA) and the Greater Mekong Sub-region (GMS) initiatives have attracted the attention of international institutions and academia for their own nature as multi-sectorial programs. In this case, the main

interest usually comes from regional organizations (as regional development banks) and from academia interested in regional cooperation studies.

IADB (2002) provides an overview of the new regionalism in Latin America and the Caribbean since the 1990s. It includes one chapter focusing on the infrastructures sector. It analyses the main barriers, such as the externalities like “costs and benefits that extend beyond countries’ borders”. It identifies as a key the need to “establish forms of coordinated decision-making that internalize the externalities, and at the same time overcome other political and regulatory risks that may arise due to the multi-country nature of the projects”. It provides the cases of IIRSA and Puebla-Panama Plan² (PPP) as successful examples.

Krongkaew (2004) reviews the developments of the Greater Mekong Subregion (MGS) Economic Cooperation. By looking at the different areas of cooperation in the program, the author looks to the “rationale for the formation of this subregional cooperation from each country’s point of view, the achievements so far, and the problems and prospects of further cooperation in the future”. The paper also acknowledges the role of the Asian Development Bank (ADB) in the regional cooperation program. It ends providing some proposals about the role that Thailand can play in the future development of the GMS.

Cespedes and Agostinis (2014) aims to provide an explanation for “the emergence and development of sectoral cooperation and policy coordination within the Union of South America Countries (UNASUR)”. The two key variables in this study are state preferences and regional leadership. By contrasting the cases of regional cooperation in infrastructures in general and in energy in particular in the same region (South America), the author identifies the relevance of regional leadership initiatives in the formation process of state preferences.

2.4. Theories on regional cooperation and comparative regionalism

The last set of research deals does not focus in a single sector or region but looks to the phenomena of transnational cooperation in different policy areas.

Axline (1994) utilizes a political economy approach to propose a framework for comparative regional analysis. This framework consists of a series of questions around (i) the major issues dealt with within the regional organization, (ii) the policy positions of member states, and (iii) the external influences. This framework is applied in parallel to four cases: Andean integration system, CARICOM, ASEAN, and South Pacific. The concluding chapter provides “some broad generalizations about the processes of regional cooperation among developing countries”.

² Puebla-Panama Plan was replaced by the Mesoamerica Project

- The more developed and stronger member states will favor measures to increase benefits to the region as a whole, as they are likely to reap the larger share of those benefits, while the weaker and less well-off will be more interested in adopting policies that guarantee them a specified share of any regional gains.
- It is possible to predict the positions of member countries towards specific regional measures with respect to its opportunity cost
- There is, to some extent, a direct relation between the comprehensiveness of regional policies and the viability of regional grouping in terms of their continued survival and functioning

Mattli (1999) looks to the phenomena of regional integration to explain the “general logic” behind it. It develops a “general analytical framework for understanding regional integration” combining the stress of the importance of market factors, from economic theories, with the reference to institutional factors, from political science explanations. It concludes that regional integration occurs successfully when demand and supply conditions are fulfilled. This demand or “pressure for regional institutional arrangements” comes from the bottom, particularly market actors. The other condition required the supply conditions are the “willingness by political actors to accommodate demands for functional integration at each step of the integration process, and the presence of an undisputed regional leader”.

Acharya and Johnston (2007) applies institutional design to the analysis of regionalism. Their project looks to different regional cooperation schemes in Africa (OAU, AU), Asia (ASEAN, ARF), Europe (NATO, EU), Latin America (OAS), and Middle East (Arab League). For that, they propose to the collaborators to first look at the institutional design³ as their dependent variables, “to look at a wide range of plausible independent variables and see which helped them understand the form that regional institutions took”; and then as independent variable, “to investigate the degree to which the institution and its design helped explain the nature of cooperation”. For both of them, the authors gave some instructions about possible variables to be explored, although that didn’t limit the contributors. The variables utilized for comparison for the first analysis were: type of cooperation problem, the number of actors, ideology and identity, systems and subsystemic power distribution, domestic politics, extra-regional institution or non-state as agents of change, and geography. And for the analysis considering the institutional design as the independent variable were: membership, scope, rules, norms, and mandate. The final objective in to obtain “findings of the relationship between institutional design and the nature of cooperation. As conclusion, the authors present four propositions:

³ In this work, institutional design means “those formal and informal rules and organizational features that constitute the institution and that function as either the constraints on actor choice or the bare bones of the social environment within which actors interact, or both”

- (i) The more insure the regimes, the less intrusive are their regional institutions
- (ii) The design of regional institutions in the developing world has been more consistently sovereignty-preserving than sovereignty-eroding
- (iii) Functional imperatives are less important than ideational and normative considerations in shaping the design of regional institutions the developing world
- (iv) The contrast between the design features of the European Union and regional institutions in the developing world can be overstated in relation to the commitment to supranationalism and the development of a regional identity

Van Langenhove (2013) aims to contribute to the field of comparative regionalism by providing a framework for the dimensions of regions. It looks at “unpack regions along the main dimensions of statehood”. This done by looking at the three broad policy domains that define a state’s actorness: (i) economy policy, (ii) institutional framework with regard to the delivery of public goods, and (iii) sovereignty, which includes aspects from the ability to have diplomatic representations to a legal identity (as the EU and ASEAN).

2.5. Summary of the literature review

Research interest on regional cooperation programs, and in particular on regional infrastructures, has found a gap between the case studies (upper section of the below table) and general theories about contextual influence (lower section of the table). In order to improve the utilization of the knowledge acquired from existing cases, a methodology for the identification of actions based on contextual analysis is needed.

Typology		Strength	Weakness	References
Sector	Region			
Single	Single	Detailed description of actions and their impact on the process	Explanation of contextual influence insufficient for comparison	<i>Onga, 2013; del Barrio-Alvarez, 2013; Matsui, 2016; Nishibayashi, 2016</i>
Single	Multi	Possibility to identify key issues, and potential lessons to transfer	Parallel cases studies or best-practices. General conclusions	<i>JICA, 2009; World Bank, 2010</i>
Multi	Single	Detail explanation of governments’ incentives	Emphasis geopolitical and intergovernmental aspects	<i>Bhattacharyay, 2010; Cespedes, 2014</i>
Multi	Multi	Explanation of different mechanisms for regional cooperation	Focus on necessary conditions rather than on possible actions	<i>Axline, 1994; Mattli, 1999; Acharya and Johnston, 2007; Van Langenhove, 2013</i>
Comparative regionalism				

Table 2 - Summary of literature review

3. Objective and method

This section describes the overall objectives of this research and describes the methodology proposed in order to achieve those.

3.1. Objective:

The overall objective of this research is to propose a methodology for the identification of actions from existing cases based on contextual analysis. For that there are sub-objectives:

- (i) To identify the main contextual variables influencing regional infrastructures development process (so to explain how differences in the context affect the development of the projects)
- (ii) To propose a comparative framework to serve to development banks for the identification of relevant actions from existing cases
- (iii) To evaluate its potential utilization and impact

The methodology proposed by this research is expected to become a new approach for the utilization of existing case studies, serving to MDBs first to better manage and share their knowledge (inside the institution and between them) and, as a direct consequence, improve the effectiveness of their actions, benefiting in this manner to the recipient countries.

3.2. Method:

The overall method is qualitative comparative case studies based on causality analysis. The comparative approach is chosen for being able to cover different “contexts”, these are initially understood as a combination of regional and sectorial aspects. Causality analysis is utilized so to identify the factors that influence the development process, in a similar manner that “causal-process observations provides information about mechanism and context” (Brady, Collier, 2004).

This thesis is structured around 11 chapter as follows:

Chapter 1 – Background: Including an initial approach to regional infrastructures and describing the role of MDBs in their promotion. The chapter explains the need for a better understanding of concrete actions to improve the involvement of MDBs in regional infrastructures projects

Chapter 2 – Literature review: Provide an overall picture of the related research about MDBs participation in regional infrastructures projects. It identifies the gap in the existing literature and therefore the necessity of a methodology that can support the identification of concrete actions from existing projects. Current approaches that look

Chapter 3 – Objective and method: presents the overall objective of the research, with the sub-objectives included. It also presents the method for the research with an explanation of its selection

Chapter 4 – Selection of cases for study: Three case studies are selected from a survey of several projects. This choice is based on a development process presented in the same chapter, and with the condition of being able to combine sector and region.

Chapter 5 – Case study⁴ 1, GMS Economic Corridors: the first case analyzes is the development of the three original economic corridors in the Greater Mekong Subregion (GMS), supported by the Asian Development Bank (ADB).

Chapter 6 – Case study 2, Regional Power Sector integration in Central America (SIEPAC): the second case covers the development of the Central American Regional Electricity Market (MER), supported by the Inter-American Development Bank.

Chapter 7 – Case study 3, GMS Power Sector cooperation program: the third project focuses on the power sector cooperation being implemented in the GMS by the ADB.

Chapter 8 – Comparative analysis, identification of contextual variables: Based on the factors identified in the three case studies, this chapter identify the variables to explain the differences in the contexts of the projects (so that the term contextual variables)

Chapter 9 – Building the Comparative Framework: analyzes the differences in the influence of the contextual variables to explore the similarities in the development process. For that, it evaluates the relative impact of each of them along the different stages of every project. It includes a visualization of the Comparative Framework.

⁴ An overall description of the case studies structure is provided in the section 3.2.1.

Chapter 10 – Utilization of the Comparative Framework: it includes a practical application of the Comparative Framework for the stage 4 of the GMS Power Sector cooperation program. Therefore this chapter provides instructions for its future utilization, as well as an understanding of the potential policy implications that could be derived

Chapter 11 – Conclusion: summarizes the main findings and proposals of the thesis. It also includes a guideline of the future research that would be needed to continue the research.

3.2.1. Case studies structure:

The selected cases are analyzed in parallel following the same steps so to get comparable results. These steps are:

1. Overall description of the case / project, including
 - Main figures and objectives of the project (the physical or hardware components)
 - Description of the main institutions and agreements (the institutional or software components)
2. Description of individual member countries outlined and motivation for the regional infrastructure
3. Description in detail of the development process of the case in particular including a timeline of the project.
 - Timeline provides an overview main events occurred during the project. Those are also referred to a particular stage.
 - Each of the stages is presented in a descriptive manner to give a more natural explanation of the different events and issues during the development process
4. Causality analysis for each of the stages of the development process previously described
 - Distinguishing between:
 - Factors: Elements of the context that have an influence in the process
 - Actions: Realized by the MDB or another stakeholder
 - Outputs: Consequence of factors and/or actions
5. Analysis of factors and actions
 - In order to latterly identify the contextual variables more relevant for each stage, the relative of each factor is weighted as:
 - 5: Critical factor that overruns others
 - 3: Factor part the core process but equally important to others
 - 1: Without a direct, or lower, influence in the core process

- Although this evaluation has been realized by the author, the justification for the evaluation is provided for each factor based on information collected and in the understanding of the overall process (from the causality diagrams).
- A proposal for the improvement of this “subjective”, although grounded, evaluation is also included as a recommendation for further work in the chapter 11.1

4. Selection of cases for study

4.1. Selection criteria

The cases selected (chapters 5, 6 and 7) has been done based on:

- The depth of integration achieved: the regional infrastructures final aim is understood as a regional optimization. That is equal, or close to equal, to a situation where national boundaries would not exist. In order to assess this, a development process for regional infrastructures is proposed (see 4.3)
- Cases combining sector and region: these are understood as the two broad dimensions that compose the context affecting a particular project. A combination of those in the cases selected should allow to better understand the influence from the sector, and/or from the region independently.

4.2. Survey of existing cases

In total 40 existing regional infrastructures projects were initially surveyed. This does not aim to provide a full understanding of each of them, but just to grasp some common understanding of this type of projects, and to serve as the basis for the final selection of the cases for deeper study.

The list of projects is included below. The description of the project has been, in most of the cases, obtained from the websites and/or existing case studies of each project.

<i><u>Project Name</u></i>	<i><u>Sector</u></i>	<i><u>Area</u></i>	<i><u>Countries</u></i>	<i><u>Brief description</u></i>
Beira Corridor	Road	Africa	Mozambique, Zambia, Zimbabwe	The Beira Agricultural Growth Corridor (BAGC) initiative is a partnership between the Government of Mozambique, private investors, farmer organizations and international agencies. It was launched in 2010 and aims at promoting increased investments in commercial agriculture and agribusiness within the Beira Corridor (Tete, Sofala, and Manica Provinces). ⁵

⁵ <http://beiracorridor.org/>

CEMAC Trade Corridor	Road	Africa	CEMAC	To Improve the efficiency of trade and transport activities in the CEMAC 26 region the CEMAC Trade Corridor project was approved by member states in 2006. The goal of the project is to facilitate efficient regional trade among CEMAC member states and improve access to world markets. ⁶
Central African Interconnection	Power	Africa	South Africa, Angola, Gabon, Namibia, Equatorial Guinea, Cameroon, Chad	3 800 kilometer transmission line will run from the Democratic Republic of Congo (DRC) to South Africa through Angola, and Namibia .It will transfer the future power to be generated by the Inga III and Grand Inga stations and feed it to the Southern Africa Power Pool, SAPP. Both the Economic Community of Central African States, ECCAS, and the Central African Power Pool, SAPP, will be involved in the implementation of this project.
Chirundu One Stop Border	Road	Africa	Zambia, Zimbabwe	First One Stop Border initiative in Africa.
East African Power Pool (EAPP)	Power	Africa	Burundi, DR Congo, Egypt, Ethiopia, Libya, Kenya, Rwanda, Sudan, Tanzania, Uganda	Creation of power pool in the Eastern Africa Region to facilitate and secure power supply at the lowest possible cost. Ultimate objective of establishing a regional electricity market
Lobito Corridor	Road	Africa	Angola, DR Congo, Zambia	Transport corridor which runs from the port of Lobito and the city of Benguela through the hinterland of Angola before it connects with the mineral-rich regions of the Democratic Republic of Congo and Zambia. The once important Benguela railway was destroyed during the war and has not been in use since 1975. ⁷

⁶ <http://www.icafrica.org/en/topics-programmes/case-studies/transport-the-cemac-trade-corridor-project/>

⁷ <http://www.cmi.no/publications/5120-angolas-lobito-corridor>

Maputo Corridor	Road	Africa	South Africa, Mozambique, Swaziland	Rehabilitation of abandoned corridor between the industrial area of South Africa and Maputo Port in Mozambique. Bi-national PPP
Nacala Corridor	Road	Africa	Malawi, Mozambique, Zambia	Located in the Northern Region of Mozambique, and it extends from the Nacala Port to inland districts of Mozambique and further to neighboring countries, such as Malawi and Zambia. It was a historically international transport corridor consisting of Nacala Port and Northern Railway and Malawian Railway System. The Nacala Corridor was the most important export route for Malawi in those days. However, the prolonged civil war in Mozambique had disturbed international transport through the Nacala Corridor. ⁸
North-South Corridor	Road	Africa	Botswana, Democratic Republic of Congo, Malawi, Mozambique, South Africa, Tanzania, Zambia and Zimbabwe	The COMESA-EAC-SADC Tripartite lead this program with the intention of speeding up the flow of traded goods, thereby reducing the transactions costs of cross-border trade. The program represents an innovative approach to supporting and developing physical infrastructure while also addressing trade facilitation and regulatory needs and deficiencies along the corridor in a coherent and holistic manner.
North- South Power Transmission Corridor	Power	Africa	Egypt, Sudan, South Sudan, Ethiopia, Kenya, Tanzania, Malawi, Mozambique, Zambia,	The corridor will provide the infrastructure for an integrated East and Southern African power market, which will allow increased regional power trade. The implementation of this project will not only improve energy security in Eastern Africa but will help to reduce the need for reserve

⁸ <http://www.jica.go.jp/project/english/mozambique/002/outline/index.html>

			Zimbabwe, South Africa	capacities, resulting in lower energy costs. [NEPAD]
Southern African Power Pool	Power	Africa	Angola, Botswana, DR Congo, Lesotho, Mozambique, Malawi, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe	The Southern African Power Pool (SAPP) was created with the primary aim to provide reliable and economical electricity supply to the consumers of each of the SAPP members, consistent with the reasonable utilization of natural resources and the effect on the environment. ⁹
Trans-African Highways network	Road	Africa	Across Africa	UNECA envisioned project to constitute the backbone of the African continent and link all the countries through nine roads ¹⁰
Walvis Bay Corridor Group	Road	Africa	Namibia, South Africa, DR Congo, Zambia, Zimbabwe, Angola	The Walvis Bay Corridors are an integrated system of well-maintained tarred roads and rail networks - accommodating all modes of transport - from the Port of Walvis Bay via the Trans-Kalahari, Trans-Caprivi, Trans-Cunene and Trans-Oranje Corridors providing landlocked SADC countries access to transatlantic markets. ¹¹
West African Power Pool (WAPP)	Power	Africa	Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Nigeria, Senegal, Sierra Leone, Togo	The West African Power Pool (WAPP) is integrating the national power systems of its members into a unified regional electricity market which, over time, will provide the citizens of the region with a stable and reliable electricity supply at affordable cost ¹²
Westcor / Inga III	Power	Africa	Angola, Botswana, DR	Project for the construction of a mega power plant in Nigeria with the

⁹ <http://www.sapp.co.zw/>

¹⁰ <http://www.howwemadeitinafrica.com/trans-african-highway-remains-a-road-to-nowhere/>

¹¹ <http://www.wbcg.com.na/about-us.html>

¹² <http://www.icafrica.org/en/topics-programmes/west-african-power-pool/>

			Congo, Namibia, South Africa	capacity to supply of hydropower to a large part of the African continent. Southern African countries are the ones to benefit the most
Interoceanic Highway	Road	LAC ¹³	Brazil, Peru	Construction of a highway linking the East and West coasts of South America, through the Amazonia. Through this, shipping times between Brazil and Asia would be drastically reduced. Peruvian producers can benefit from easier access to Brazilian markets
International Network of Mesoamerican Highways	Road	LAC	Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama	Rehabilitation, maintenance, and construction of a total of 13,132 km of highways across 5 corridors (Pacific, Atlantic, Touristic, Interoceanic, and Complementaries). A trade facilitation program, TIM, is also under implementation
SIEPAC	Power	LAC	Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama	Creation of a superposed regional electricity market through the construction of a trunk transmission grid interconnecting with all the countries in several points, and the constitution of regional institutions for operation, regulation, and monitoring. It includes also interconnection with neighboring countries (Mexico and Colombia)
Andean Energy Market (SINEA)	Power	LAC	Bolivia, Peru, Colombia, Ecuador	Aimed to the development of a regional power market in the Andean region following a similar structure to SIEPAC. Transmission grid being constructed through bilateral interconnections between the countries.
CASA 1000	Power	Asia	Afghanistan, Kyrgyz Republic, Pakistan, Tajikistan	Transmission the surplus electricity (from May to September) from Tajikistan and the Kyrgyz Republic through Afghanistan to Pakistan

¹³ LAC refers to Latin America and the Caribbean

CAREC regional corridors	Road	Asia	Afghanistan, Azerbaijan, China, Kazakhstan, Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, Uzbekistan	Six corridors to link the region's economic hubs to each other and connect the landlocked CAREC countries to other Eurasian and global markets. Corridor 3 connects the Russian Federation to South Asia and the Middle East, running through six of CAREC's member countries. [ADB, web]
CAREC Regional energy market	Power	Asia	Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan	Set of initiatives to promote the power sector cooperation in the Central Asian former soviet republics. Ultimately project would evolve into a regional power market
GMS Economic Corridor	Road	Asia	Cambodia, China, Lao PDR, Myanmar, Thailand, Viet Nam	Initiative for the development of economic corridors in the GMS region. Initially, three corridors have been constructed. New ones are under construction. Projects look for the upgrading of transport corridors into economic corridors.
GMS Energy	Power	Asia	Cambodia, China, Lao PDR, Myanmar, Thailand, Viet Nam	Initiative for the promotion of intra-regional power trade in the GMS. Mostly by increasing capacity in Myanmar and Lao PDR. Ultimately project should end in the constitution or a regional power market in the region. Some relation to the development of an ASEAN power grid
Nam Theun 2 (NT2)	Power	Asia	Lao PDR, Thailand	Project for the construction of a large power dam in Lao PDR with a power purchase agreement with EGAT from Thailand
South Asia Regional Initiative for Energy Integration (SARI/EI)	Power	Asia	Afghanistan, Bangladesh, Bhutan, India, Pakistan, Nepal, Sri Lanka, Maldives	The program will address policy, legal, and regulatory issues related to energy in the region; promote transmissions interconnections, and

				work towards establishing a regional market exchange for electricity ¹⁴
Atlantropa	Power	Europe	North Africa, Europe	Development of a power dam in the Gibraltar Strait to produce electricity for the Europe-North Africa region. Expected to increase also the available land in the region. Old project never developed or really attempted
Desertec	Power	Africa ¹⁵	EU-MENA	Project for harnessing the solar power capacity in the Sahara desert and then transmission to North European countries
Nord Pool	Power	Europe	Denmark, Finland, Norway, Sweden, latterly also Estonia, Latvia, and Lithuania	The Nordic countries deregulated their power markets in the early 1990s and brought their individual markets together into a common Nordic market. Estonia, Latvia, and Lithuania deregulated their power markets and joined the Nord Pool market in 2010-2013. ¹⁶
Trans-European Energy Network / EU internal market	Power	Europe	Across EU	This policy aims to close the gaps between Member States' transport networks, remove bottlenecks that still hamper the smooth functioning of the internal market and overcome technical barriers such as incompatible standards for railway traffic. It promotes and strengthens seamless transport chains for passenger and freight while keeping up with the latest technological trends. This project will help the economy in its recovery and to grow, with a budget of €24.05 billion up to 2020. ¹⁷
Trans-European	Road	Europe	Across EU	EU project for the construction of transport corridors improving the interconnection through Europe

¹⁴ <https://aric.adb.org/initiative/south-asia-regional-initiative-for-energy-integration>

¹⁵ Project main infrastructure (generation) would be in Africa, although the consumers would be in Europe

¹⁶ <http://www.nordpoolspot.com/How-does-it-work/>

¹⁷ http://ec.europa.eu/transport/themes/infrastructure/index_en.htm

Transport Network				
Iberian power market	Power	Europe	Portugal, Spain	Integration of the power markets of Portugal and Spain
Asian Energy Highway	Power	Asia	Across Asia	UN-ESCAP sponsored project for the interconnection of power grids throughout Asia
Asian Highways	Road	Asia	Across Asia	UN-ESCAP sponsored project to create a highway network throughout Asia
Bi-oceanic tunnel Agua Negra	Road	LAC	Argentina, Chile	Proposal of a tunnel under the Andean mountains between Argentina and Chile to facilitate the connectivity between the Southern regions of both countries, especially during winter (when existing roads are blocked)
Connect 2022	Power	LAC	Colombia, United States are main promoters Finally, mostly all America would be interconnected	Development of a Pan-American power grid through the interconnection of sub-regional power markets across the continent. Colombia is the main advocate and was endorsed at the 7th Summit of the Americas in 2015
India-Bangladesh interconnection	Power	Asia	Bangladesh, India	Development of a transmission line and power purchase agreement between India and Bangladesh
One Bet One Road	Road	Asia ¹⁸	Across Asia	China sponsored project for the development of a Silk Economic Belt and a Maritime Silk Road for increasing the connectivity between China and the rest of Eurasia
Tufiño – Chiles – Cerro negro binational geothermal project	Power	LAC	Colombia, Ecuador	Development of geothermal power resources on the Chiles volcano area. Public utilities from Colombia and Ecuador would define the areas to explore
Olkaria-Lessos-Kisumu	Power	Africa	Kenya, EAPP	Project to strengthen the link between the eastern and western part of the grid

¹⁸ Most of the infrastructure would be in Asia, although there would be connections in Europe

Transmission Line				for system stability and to facilitate the evacuation of geothermal power ¹⁹ .
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Table 3 - Survey of existing cases

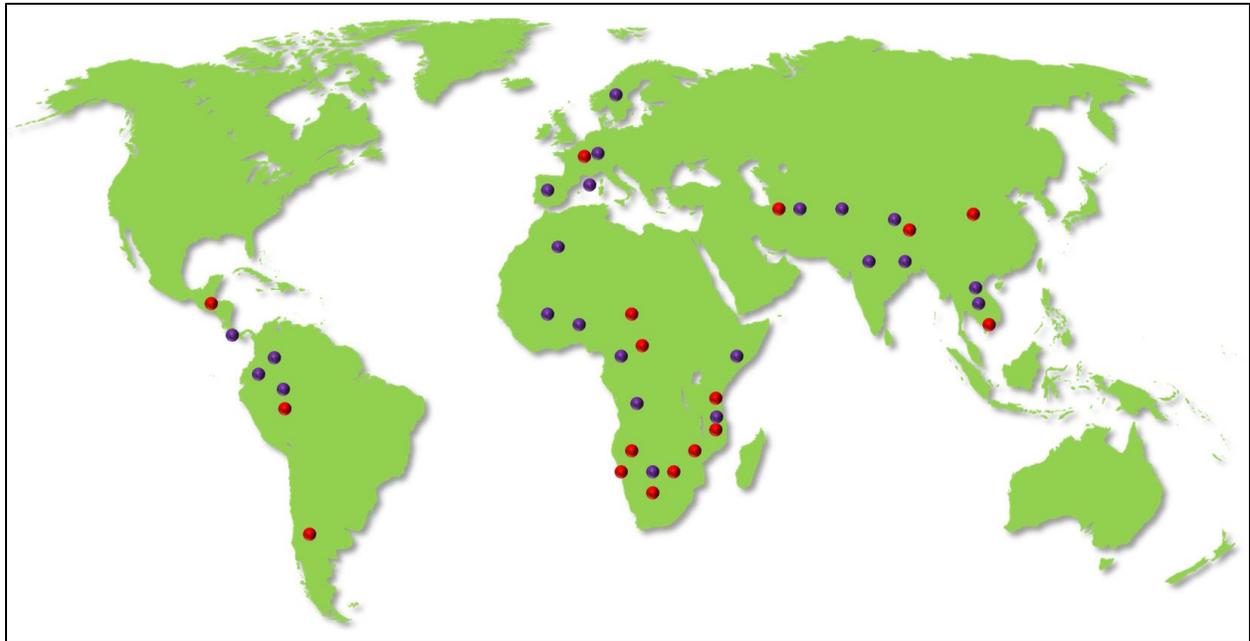


Figure 1 - Map of existing cases (location approx. drawn by the author)

4.3. A development process for regional infrastructures projects

Although there is not an overall theory for the concrete case of regional infrastructures development process, by looking to different studies looking at the phenomena of regional cooperation from different academic backgrounds, it is possible to derive a process divided into several stages.

Mattli (1999) describes integration as “the process of internalizing externalities that cross borders within a group of countries”. It defines two conditions to satisfy for a successful regional integration. The first one is the “demand condition”, which is a pressure for regional institutional arrangements that comes from the bottom. In particular, it identifies market actors as the initiators of this process. Secondly, it is also needed to fulfill the “supply condition”, a positive acceptance from political actors is also needed. This include the “willingness by political actors to accommodate demands for functional integration at each step of the integration process”, and “the

¹⁹ <http://www.ketraco.co.ke/projects/ongoing/olkaria-lessos-kisumu.html>

presence of an undisputed regional leader that can serve as a focal point in the coordination of rules, regulations, and policies, and is able to ease distributional tensions by actions as regional paymaster”. In this sense, we understand the process is initiated with a “National stakeholders agreement” (Stage 1) and “High-level political agreement” (Stage 2).

Estevaderodal, Frantz, and Nguyen (2004) describes how regional infrastructures development is usually divided into “hardware”, or the physical dimensions of infrastructures development; and “software”, or the program to formulate and implement cross-border agreements. Besides many institutions, this is the common approach utilized by the Inter-American Development Bank (IADB). This provides the basis for the proposal of stages of “Physical infrastructure” (Stage 3) and “Institutional infrastructure” (Stage 4).

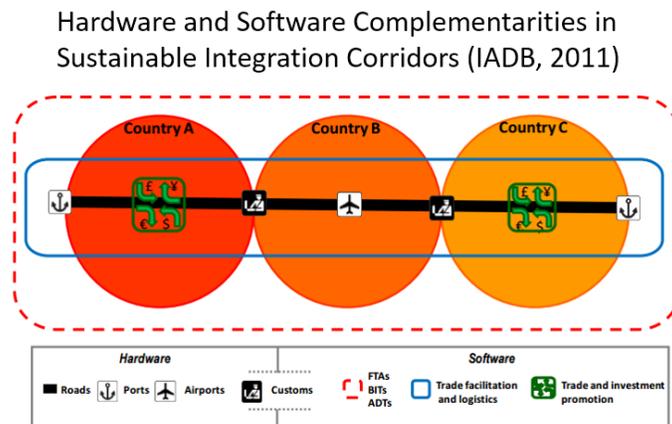


Figure 2 - Hardware and Software of regional infrastructures (source, IADB)

Balassa (1961) model is one widely used description of the economic integration process. The author divides the process in different degrees of integration: (i) free trade areas (FTA), (ii) customs union, (iii) common market, (iv) economic and monetary union, and (v) full integration or political union. In particular, this latest level of economic integration includes “the setting up of a supranational authority whose decisions are binding for the member states”. In this sense, for the matter of this research, this represents the need to include the latest stage of “Harmonization” (Stage 5).

<u>Stage</u>	<u>Description</u>	<u>Example on power</u>	<u>Example on road</u>
1. National stakeholders’ agreement	Initial drafting of the agreements and building of a vision	Support for a vision of regional power market	Support for a vision of open regional trade
2. High level political	Inter-governmental agreements and	Sign of commitment for	Sign of commitment for

agreement and commitment	commitments needed to start and define the goals of the project	regional power market	trade facilitation measure
3. Physical construction	Negotiation of routes and coordination of construction works	Agreement on regional grid network and integration with national grids	Agreement on and construction of road's network route
4. Institutional construction	Negotiation on the regulations and operational rules of the infrastructure	Operation and regulation measures	Agreement for trade facilitation
5. Harmonization	Reforms at national level needed to implement the stage 4 agreements	Reform of national power systems to comply with regional regulation	Implementation of regionally unified cross-border procedures

Table 4 - Stages of regional infrastructures development process

4.4. Choice of cases

As explained in the introduction of this chapter, the selection of the cases to study has been done in two steps as follows:

4.4.1. Evaluation of development process on survey of existing cases:

Based on the development process previously described, the projects from the survey of existing cases were evaluated in the level of success for each stage:

- ○: Stage fulfilled
- △: Limited progress and/or undergoing
- X: None or very limited progress

<u>Project Name</u>	<u>Sector</u>	<u>Area</u>	<u>Stage 1</u>	<u>Stage 2</u>	<u>Stage 3</u>	<u>Stage 4</u>	<u>Stage 5</u>
Beira Corridor	Road	Africa	○	△	○	△	X
CEMAC Trade Corridor	Road	Africa	△	X	X	X	X
Central African Interconnection	Power	Africa	△	X	X	X	X
Chirundu One Stop Border	Road	Africa	○	○	○	○	X

East African Power Pool (EAPP)	Power	Africa	○	○	○	△	x
Lobito Corridor	Road	Africa	○	○	○	x	x
Maputo Corridor	Road	Africa	○	○	○	○	△
Nacala Corridor	Road	Africa	○	○	○	△	x
North-South Corridor	Road	Africa	○	○	○	△	x
North- South Power Transmission Corridor	Power	Africa	○	x	x	x	x
Southern African Power Pool	Power	Africa	○	○	○	△	△
Trans-African Highways network	Road	Africa	△	x	x	x	x
Walvis Bay Corridor Group	Road	Africa	○	○	○	△	△
West African Power Pool (WAPP)	Power	Africa	○	○	○	△	△
Westcor / Inga III	Power	Africa	△	x	x	x	x
Interoceanic Highway	Road	LAC	○	△	△	x	x
Mesoamerican Highway	Road	LAC	○	○	○	○	△
SIEPAC	Power	LAC	○	○	○	○	○
Andean Energy Market (SINEA)	Power	LAC	△	△	△	x	x
CASA 1000	Power	Asia	○	△	△	x	x
CAREC regional corridors	Road	Asia	○	○	○	△	△
CAREC Regional energy market	Power	Asia	△	△	x	x	x
GMS Economic Corridor	Road	Asia	○	○	○	○	○
GMS Energy	Power	Asia	○	△	○	△	x
Nam Theum 2 (NT2)	Power	Asia	○	○	○	x	x
South Asia Regional Initiative for Energy Integration (SARI/EI)	Power	Asia	△	x	x	x	x
Atlantropa	Power	Europe	x	x	x	x	x
Desertec	Power	Africa	△	x	x	x	x
Nord Pool	Power	Europe	○	○	○	○	○

Trans-European Energy Network / EU internal market	Power	Europe	○	○	○	△	△
Trans-European Transport Network	Road	Europe	○	○	○	○	○
Iberian power market	Power	Europe	○	○	○	○	○
Asian Energy Highway	Power	Asia	△	x	x	x	x
Asian Highways	Road	Asia	○	△	△	x	x
Bi-oceanic tunnel Agua Negra	Road	LAC	△	x	x	x	x
Connect 2022	Power	LAC	△	x	x	x	x
India-Bangladesh interconnection	Power	Asia	○	○	○	x	x
One Road One Belt	Road	Asia	△	△	△	x	x
Tufiño – Chiles – Cerro negro binational geothermal project	Power	LAC	○	○	x	x	x
Olkaria-Lesso-Kisumu Transmission Line	Power	Africa	○	○	○	x	x

Table 5 - Evaluation of development process on survey of existing cases

4.4.2. Selection of cases with deeper level of integration

Here are presented those considered to have achieved large level of integration. Those are the ones which has shown progress across the five stages and/or in both progress:

<u>Project Name</u>	<u>Sector</u>	<u>Area</u>	<u>Stage 1</u>	<u>Stage 2</u>	<u>Stage 3</u>	<u>Stage 4</u>	<u>Stage 5</u>
Maputo Corridor	Road	Africa	○	○	○	○	△
Southern African Power Pool	Power	Africa	○	○	○	△	△
Walvis Bay Corridor Group	Road	Africa	○	○	○	△	△
West African Power Pool (WAPP)	Power	Africa	○	○	○	△	△
Mesoamerican Highway	Road	LAC	○	○	○	○	△

SIEPAC	Power	LAC	○	○	○	○	○
CAREC regional corridors	Road	Asia	○	○	○	△	△
GMS Economic Corridor	Road	Asia	○	○	○	○	○
GMS Power Cooperation	Power	Asia	○	△	○	△	x
Nord Pool	Power	Europe	○	○	○	○	○
Trans-European Energy Network / EU internal market	Power	Europe	○	○	○	△	△
Trans-European Transport Network	Road	Europe	○	○	○	○	○
Iberian power market	Power	Europe	○	○	○	○	○

Table 6 - Selection of cases with deeper level of integration

4.4.3. Selection combining sector and area

Among those, a selection was done on those that would combine sector and area. It is needed to note that cases from the European Union were finally not included because of the particularity of existence of regional bodies with a certain capability to impose sanctions on member countries.

<u>Project Name</u>	<u>Sector</u>	<u>Area</u>	<u>Stage 1</u>	<u>Stage 2</u>	<u>Stage 3</u>	<u>Stage 4</u>	<u>Stage 5</u>
SIEPAC	Power	LAC	○	○	○	○	○
GMS Economic Corridor	Road	Asia	○	○	○	○	○
GMS Power Cooperation	Power	Asia	○	△	○	△	x

Table 7 - Selected cases

4.5. Outline of selected cases

Therefore the final three cases selected are:

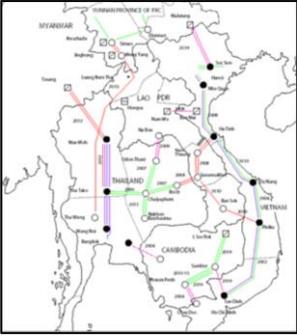
<u>Project</u>	GMS Economic Corridors	SIEPAC	GMS Power Cooperation																
<u>Region</u>	South East Asia	Central America	South East Asia																
<u>Sector</u>	Transport (Road)	Energy (Power)	Energy (Power)																
<u>Related MDB</u>	ADB	IADB	ADB/WB																
<u>Short description</u>	Three economic corridors connecting ports and inland areas, and regional agreement for trade facilitation	Regional transmission trunk and regional institutions for operating regional power market	Large power plants and cross-border transmission lines to facilitate optimization of regional resources																
<u>Image</u>		 <table border="1"> <thead> <tr> <th>País</th> <th>KMS</th> </tr> </thead> <tbody> <tr> <td>Guatemala</td> <td>252</td> </tr> <tr> <td>El Salvador</td> <td>287</td> </tr> <tr> <td>Honduras</td> <td>270</td> </tr> <tr> <td>Nicaragua</td> <td>339</td> </tr> <tr> <td>Costa Rica</td> <td>489</td> </tr> <tr> <td>Panamá</td> <td>151</td> </tr> <tr> <td>Total</td> <td>1788</td> </tr> </tbody> </table> <p>300 MW de capacidad = 300 MW 29 buzones en 18 subestaciones Costo O&M de 28 \$/hora</p> <p>INCLUYE PREVISTA PARA SEGUNDO CIRCUITO Ruta de Línea a 230 KV Subestacion de interconexion Subestacion nacional</p>	País	KMS	Guatemala	252	El Salvador	287	Honduras	270	Nicaragua	339	Costa Rica	489	Panamá	151	Total	1788	
País	KMS																		
Guatemala	252																		
El Salvador	287																		
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Nicaragua	339																		
Costa Rica	489																		
Panamá	151																		
Total	1788																		

Table 8 - Summary of selected cases

5. Case study 1, GMS Economic Corridors

5.1. The Greater Mekong Subregional (GMS) Economic Cooperation program

The Greater Mekong Subregion (GMS) Program on Economic Cooperation is an initiative launched by the Asian Development Bank and designed to enhance economic relations between Cambodia, China ²⁰ (Yunnan Province and Guangxi Autonomous Region), Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand and Viet Nam. It was officially launched (ADB) in 1992 at the First Conference on Subregional Economic Cooperation among Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and Yunnan Province of the People's Republic of China (First Ministerial Conference) in Manila (Philippines). The original objective of ADB with this program was to prepare the countries for working together after years of conflict. In the long term, the ADB hoped "to contribute to an ongoing process that will build confidence and trust among the participants and help provide an enduring framework for development assistance with a regional focus" (ADB, 19993). In respect to that, it can be said that the program has been proven to be highly successful, achieving the vision expressed by Thai's Prime Minister Chatchai Choonhavan's speech for "Turning Indochina from a battlefield to a marketplace". In fact, the term GMS has replaced Indochina to refer to the region [Cruz-del Rosario, p. 147].

The cooperation in the six sectors initially envisioned (transportation, telecommunications, energy development, environmental management, human resource development, and trade and investment). Currently includes also agriculture, tourism, and multi-sector or economic corridor.

The institutional setting of the GMS Program has also evolved and increase with the time and experiences. Initially started in a very informal and pragmatic manner, with the ADB serving as Secretariat, while ownership and decision-power remaining in the countries represented at annual Ministerial Conferences and Working Groups for each sector, it is, in fact, an international organization without a charter. The program now includes also GMS Heads of State Summit, Business Forum, GMS Senior Officials meeting and National Coordinators (NTFC).

In all this process, the role of the ADB has been critical, and has been called to have acted as:

- Catalyst: encouraging dialogue, providing forums for that dialogue, and assisting, if requested, in subregional cooperation through project identification and development [ADB, 1993, p. 28]
- Honest broker: by lending its institutional support that encourages dialogue, provides the for a and extends assistance when needed (Tan, from Faure 2007, ADB 2008)

²⁰ At this thesis, China is utilized for People's Republic of China

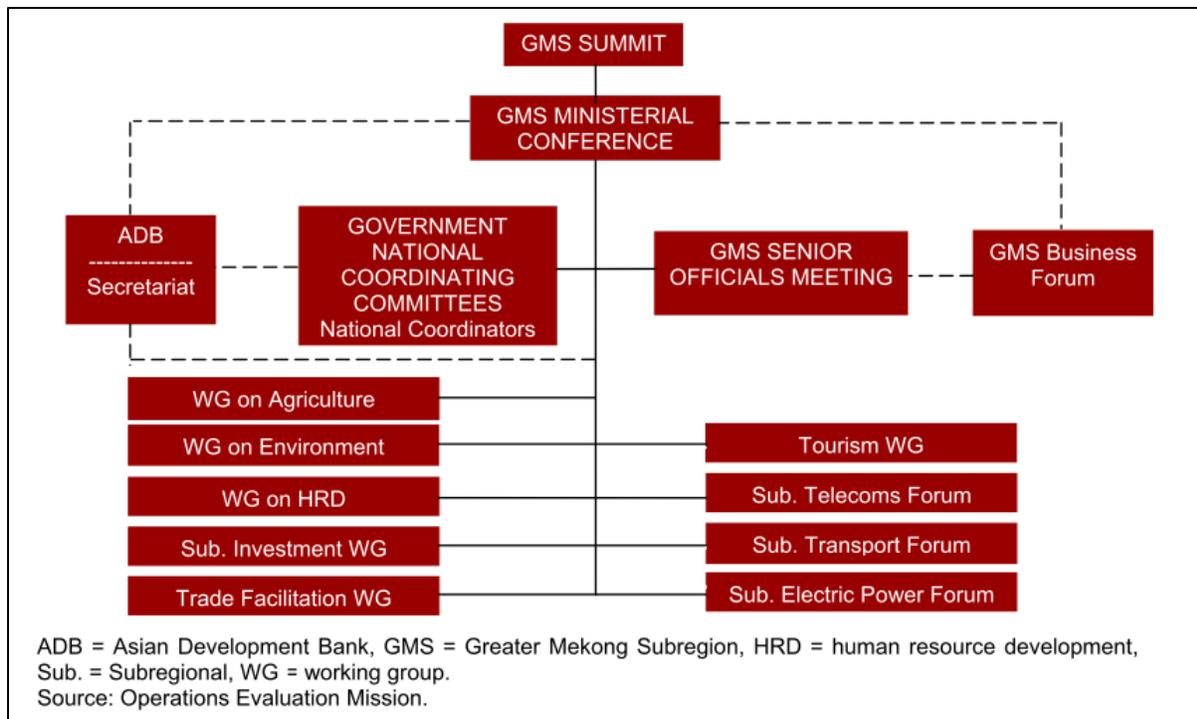


Figure 3 - Institutional Arrangements for the GMS (source: ADB, 2008, p.8)

5.2. The GMS Economic Corridors project

The transport sector has been one of the key sectors from the very beginning of the regional cooperation program. In fact, the Phase I found that “the most urgent need is in the transport sector”. The practical working hypothesis was “if things can move, they will move” [ADB, 1993, p. 19 (35)].

At the First Ministerial Conference, a list of projects was proposed. This was refined during the next ministerial conferences until the agreement on nine transport corridors. A new major step forward was agreed at the 8th Subregional Transport Forum (STF) meeting. The economic corridor approach was approved there.

Economic corridor concept is presented as a connector to link production, trade, and infrastructure within a specific geographical framework; the economic corridor is expected not only to connect the centers of economic activities but also to extend the benefits from developing transport projects to remote rural areas through linkages of production activities [Ishida, 2012, p.11]

An economic corridor promotes regional economic cooperation. It has the following characteristics²¹: [ADB, website]

²¹ <http://www.adb.org/countries/gms/sector-activities/multisector>

- Covers smaller, defined geographic space, usually, straddling a central transport artery such as a road, rail line, or canal;
- Emphasizes bilateral rather than multilateral initiatives, focusing on strategic nodes particularly at border crossings between two countries;
- Highlights physical planning of the corridor and its surrounding area, to concentrate infrastructure development and achieve the most positive benefits

5.2.1. Key institutions

In the process of the development of the economic corridors, a special institutionalism has been created both at national and subregional level to complement the initial GMS ministerial meetings.

<i>Institution</i>	<i>Key tasks</i>
Leader's Summit	<ul style="list-style-type: none"> • Sets vision and major directions for the GMS Program and its components.
Ministerial Meeting (MM)	<ul style="list-style-type: none"> • Approves and launches implementation of the Strategy and Action Plan (SAP) for economic corridors development. • Receives and deliberates on progress reports covering the implementation of the SAP for corridors development. • Considers and acts on SAP-related policy and implementation issues requiring high-level resolution and other related matters brought up to their attention.
Senior Officials' Meeting (SOM)	<ul style="list-style-type: none"> • Receives and deliberates on monitoring and evaluation reports covering the implementation of the SAP for economic corridors development. • Acts on SAP-related policy and implementation issues on which it has authority to decide. • Brings SAP-related policy or implementation issues requiring action from higher authorities to the attention of the MM. • Works closely with the GMS Business Forum to promote private sector participation in economic corridors development
GMS Forums and Working Groups	<ul style="list-style-type: none"> • Facilitate and coordinate the identification and formulation of initiatives focusing on economic corridors in their respective sector and areas of concern.

	<ul style="list-style-type: none"> • Coordinate the implementation of economic corridors initiatives (consolidated in the Action Plans for economic corridors development) in their respective sector and areas of concern. • Prepare progress reports on the implementation of economic corridors initiatives in their respective sectors and areas of concern. • Facilitate the resolution of issues and bottlenecks in the implementation of economic corridors initiatives in their respective sectors and areas of concern. • Work closely with the GMS-BF to promote private sector participation in economic corridors development.
GMS Secretariat	<ul style="list-style-type: none"> • Liaises between the MM and/or SOM and other concerned GMs institutions on matters involving economic corridors development • Provides overall secretariat support to GMS bodies and institutions in performing their functions related to economic corridors development. • Compiles monitoring and/or progress reports on SAP implementation for submission to the SOM, MM, and Economic Corridors Forum. • Liaises and coordinates with external partner agencies and institutions on matters involving economic corridors development.
National Coordinators	<ul style="list-style-type: none"> • Facilitate and coordinate in-country activities involving economic corridors development. • Monitor the progress of SAP implementation and highlight implementation issues in coordination with the GMs Secretariat in their respective areas. • Facilitate the in-country flow of information and coordination among agencies and institutions involved in economic corridors development. • Serve as in-country liaison with external partner agencies and institutions on matters involving economic corridors development, including national and local chambers of commerce and industry
GMS Business Forum	<ul style="list-style-type: none"> • Foster closer relations and cooperation among private sector organizations in economic corridors countries, and represents them in GMS deliberations involving their respective economic corridor matters. • Promotes domestic and foreign direct investment in each of the economic corridors development areas. • Advocates policies, regulations, and system and procedures favoring private sector investments in economic corridors areas. • Initiates the identification and dissemination of business opportunities in economic corridors areas.

	<ul style="list-style-type: none"> • Compiles and disseminates business information on economic corridors to private sector organizations and entities
<p>Economic Corridors Forum (ECF)</p>	<ul style="list-style-type: none"> • Provide a platform for strengthening cooperation among areas in the East–West Economic Corridor, North–South Economic Corridor, and Southern Economic Corridor (hereinafter referred to as EWEC, NSEC, and SEC, respectively) and among the GMS forums and working groups; • Serve as a venue for networking and sharing of information and views among central and local officials, businesspeople, and international agencies on strategies, approaches, programs, and projects to accelerate economic corridor development; • Highlight concerns, approaches, initiatives, and priorities in the transformation of transport corridors into economic corridors; • Discuss the implementation of strategies and action plans for economic corridor development, identify gaps in implementing such strategies and action plans, and propose actions to resolve implementation issues; • Help increase the involvement of local authorities and communities, encourage and support the Governors Forum, and expand the participation of the private sector in economic corridor development; • Bring to the attention of higher authorities issues that need resolution at the central level; and • Assist in mobilizing technical and financial resources for economic corridor development.
<p>Governors Forum</p>	<ul style="list-style-type: none"> • Provide a platform for networking among the governors (or their equivalent) of the provinces along the East–West Economic Corridor, North–South Economic Corridor, and Southern Economic Corridor (hereinafter referred to as EWEC, NSEC, and SEC, respectively); • Serve as a venue for the exchange of information and sharing of experience on strategies, approaches, and measures to promote economic corridor development; • Highlight issues and concerns in the development of economic corridors and discuss possible ways and means of addressing such issues and concerns; • Consider possible actions to resolve issues that arise in the implementation of strategies and action plans for economic corridor development; • Bring to the attention of the ECF issues that need resolution at the central level; • Assist in resolving issues that arise in implementing approved cross-border initiatives in respective areas;

- Promote private sector participation in cross-border development; and
- Discuss opportunities for cooperation among provinces along the GMS economic corridors to promote economic corridor development.

Table 9 - Existing Mechanisms and Arrangements on Economic Corridors (Source: ADB, generalized from NSEC)

Below an overview of the institutional structure of the GMS Economic Corridors is provided:

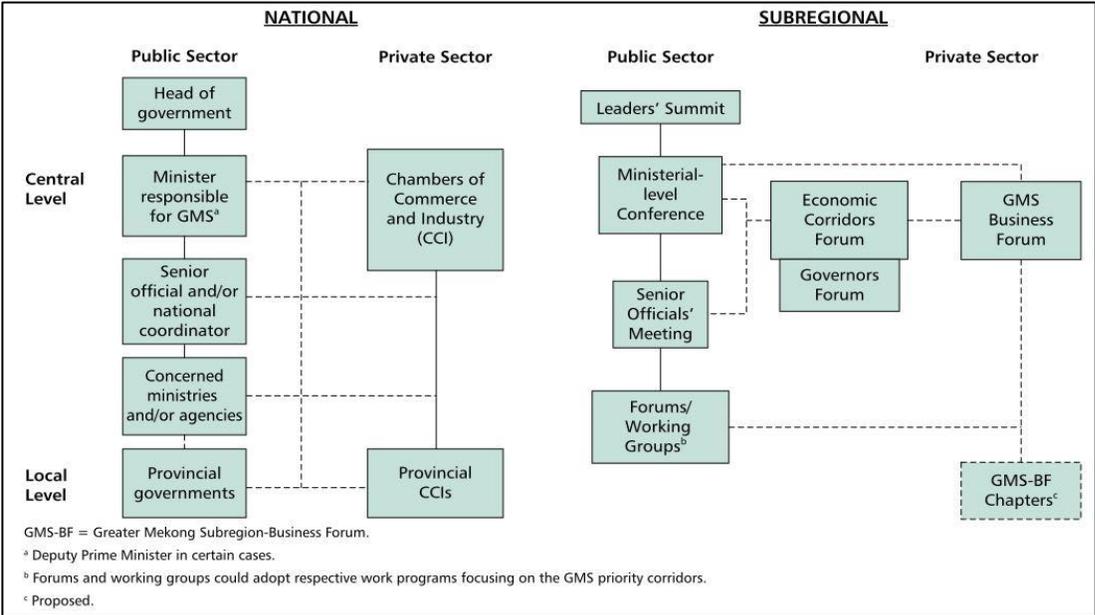


Figure 4 - Organizational framework of the GMS economic cooperation program (source, ADB, NSEC)

5.3. The original three economic corridors:

Although currently more economic corridors are being developed and more projects being funded under its scheme, the economic corridors initiative started with three projects

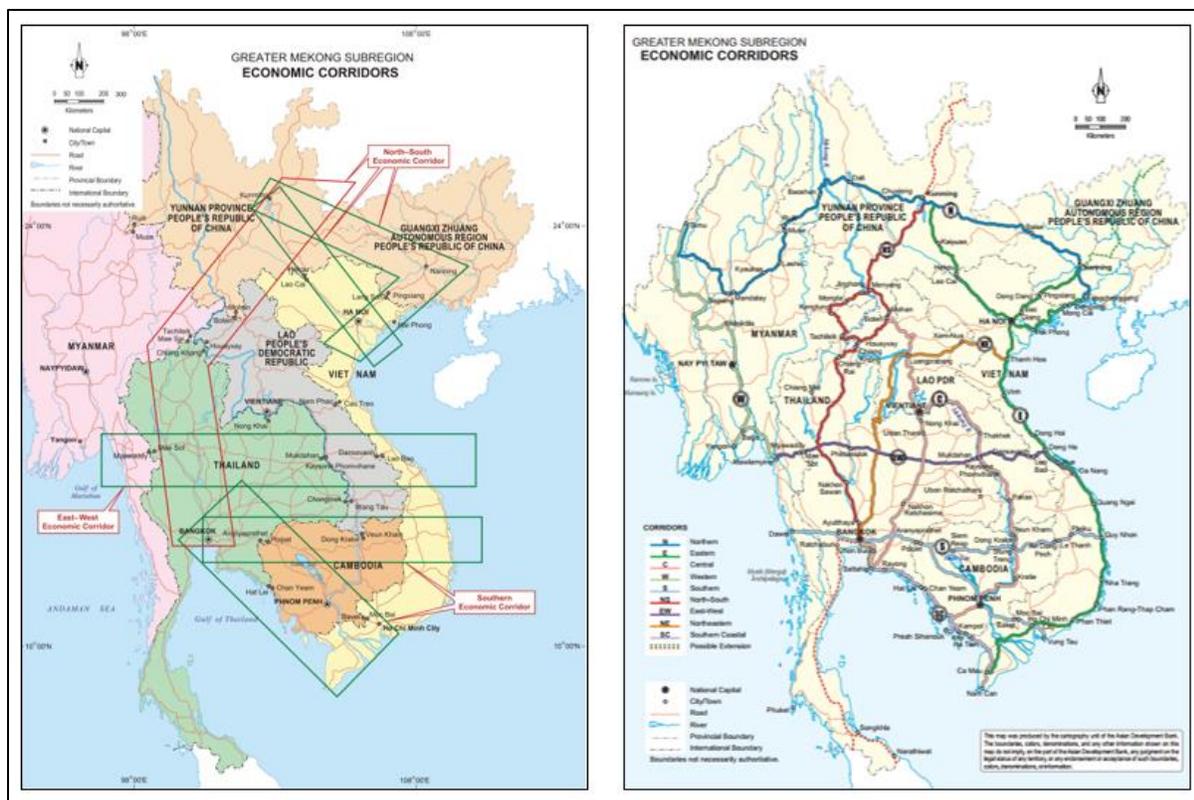


Figure 5 - GMS Three Economic Corridors and Transport Sector Strategy Study Economic Corridors (source: ADB)

5.3.1. North-South Economic Corridor (NSEC):

The North-South Economic Corridor (NSEC) crosses the sub-region connecting the landlocked region of Yunnan with Thailand, and more specifically to the port of Bangkok. The link between both countries is done through two alternatives, one crossing the northern part of Lao PDR, and the other one through Myanmar.

Sub-corridor	Route
Western	Kunming (PRC) – Chiang Rai (Thailand) – Bangkok (Thailand) via Lao PDR or Myanmar
Central	Kunming (PRC) – Ha Noi (Viet Nam) – Hai Phong (Viet Nam) which connects to the existing Highway No. 1 running from the northern to the southern part of Viet Nam
Easter	Nanning (PRC) – Ha Noi (Viet Nam) via the Youyi Pass or Fangchenggang (PRC) – Dongxing (PRC) – Mong Cai (Viet Nam) route

Table 10 - Sub-corridors of the NSEC

Due to the connection between China and Bangkok, the traffic through the route has rapidly increased. Road infrastructure in both countries is of high quality, leaving Lao PDR as the weak link in that sense.

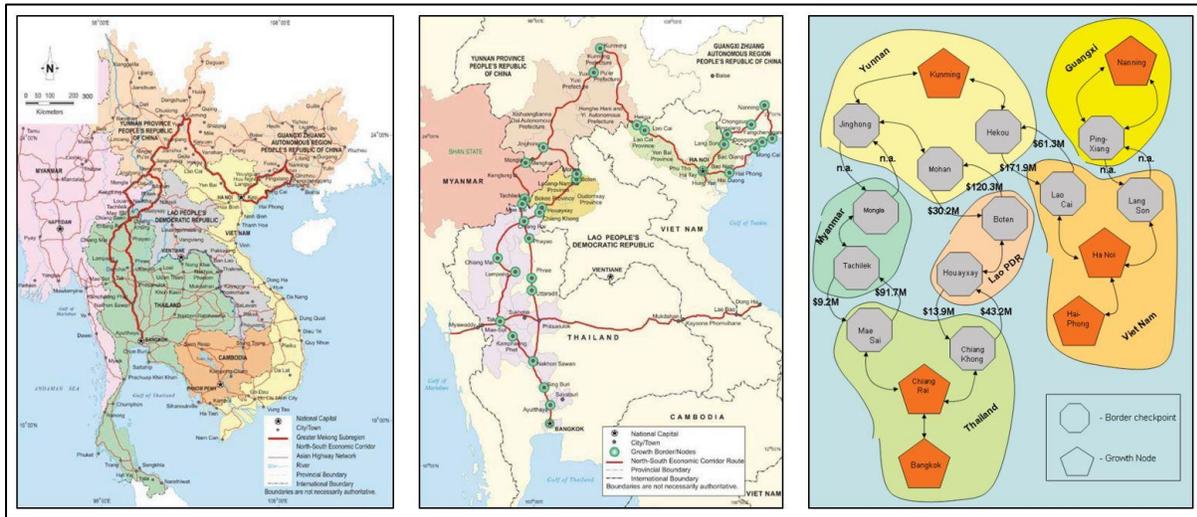


Figure 6 - NSEC (source ADB, NSEC)

5.3.2. East-West Economic Corridor (EWEC):

The East-West Economic Corridor connects Myanmar, Thailand, Lao PDR and Viet Nam without a direct link to major cities in the sub-region, in fact, it has been called to be “going from nowhere to nowhere”. Hence, the traffic has been found to be still low. Nevertheless, it provides an important connection for future development of logistics between Thailand and Viet Nam.

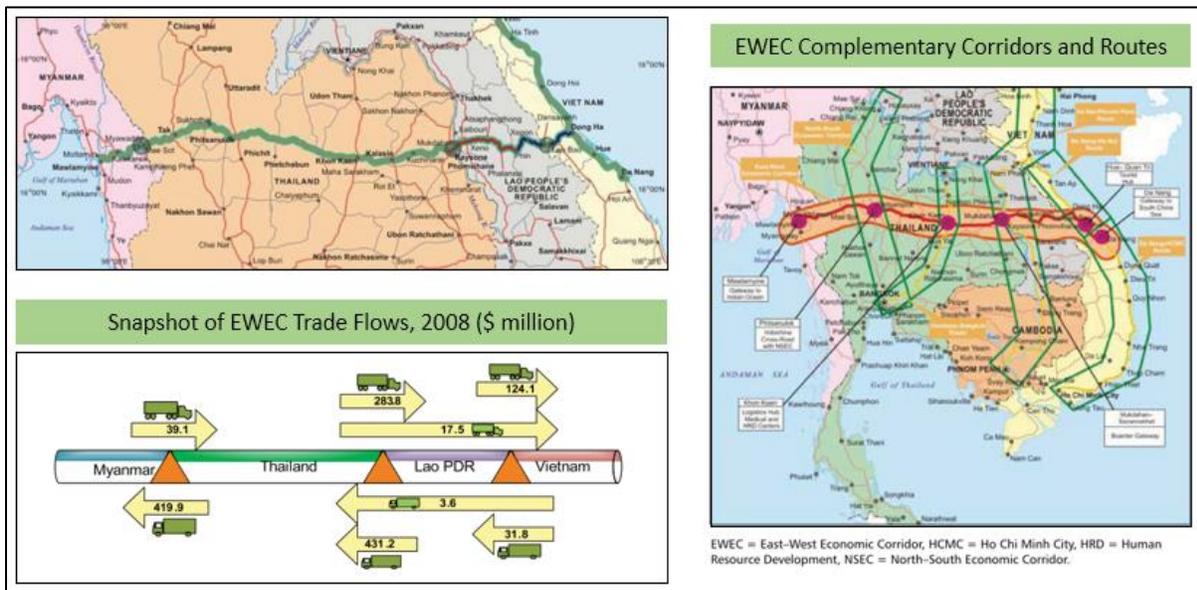


Figure 7 - EWEC (source: ADB, EWEC)

5.3.3. Southern Economic Corridor (SEC):

The Southern Economic Corridor provides a rapid connection between the economic centers of Bangkok and the South of Viet Nam. It is also an important mean for Cambodian development. Currently, it is also being extended to Myanmar in a project for the development of the Dawei deep seaport.

Sub-corridor	Route
Central	Bangkok–Phnom Penh–Ho Chi Minh City–Vung Tau
Northern	Bangkok–Siem Reap–Stung Treng–Rathanakini–O Yadov–Pleiku–Quy Nhon
Southern Coastal	Bangkok–Trat–Koh Kong–Kampot–Ha Tien–Ca Mau City–Nam Can
Intercorridor link	Sihanoukville–Phnom Penh–Kratie–Stung Treng–Dong Kralor (Tra Pang Kriel)–Pakse–Savannakhet

Table 11 - Sub-corridors of the SEC

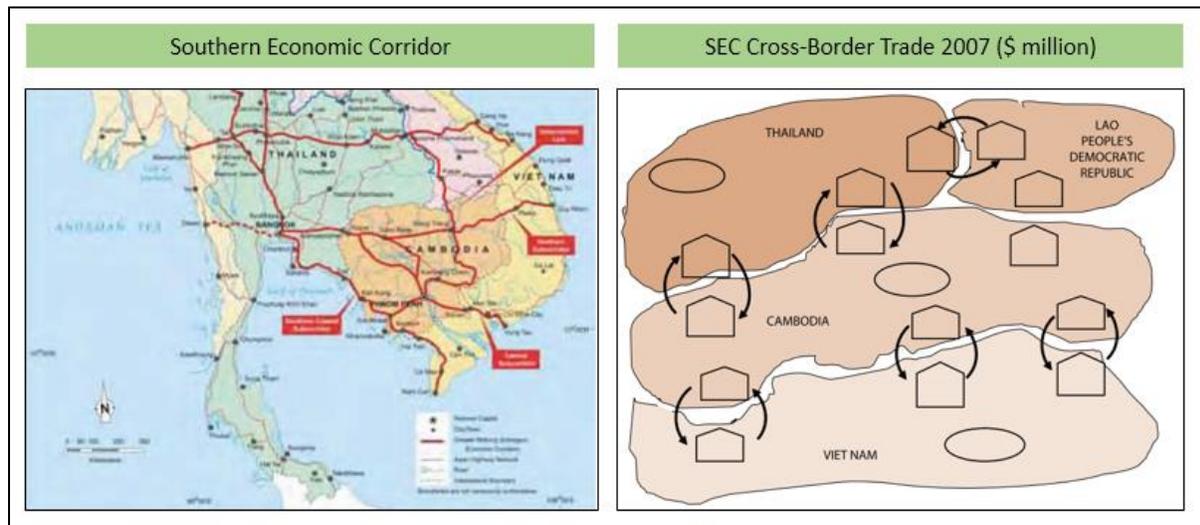


Figure 8 - Southern Economic Corridor (source: ADB)

5.4. Context of Regional transport sector integration in Greater Mekong Sub-region:

5.4.1. Countries overview:

The ADB carried out a series of studies of the transport infrastructure sectors in the GMS countries. This section provides a summary of those findings in order to capture the overall picture of the situation.

5.4.1.1. Cambodia:

Cambodia transport sector has experienced a transition from a state-controlled transport sector, with a number of state-run companies under the supervision of the Ministry of Transport, Post, and Tele-Communication (MTPT), in the 1980s, to a progressive liberalization and privatization of the sector since the 1990s. Currently, these responsibilities have been divided into four institutions: Ministry of Post and Tele-Communication (MPTC), in charge of Mail and electronics communication; Ministry of Public Works and Transport (MPWT), in charge of National & Provincial Road, Inland and Maritime transport, Railways and Airport; Ministry of Rural Development (MRD), in charge rural road; and Ministry of Land Management, Urban Planning and Construction. There has been also a process of privatization of the transport services. Since the early beginning of the GMS, Cambodian government showed a strong interest in increasing the connectivity with neighboring countries.

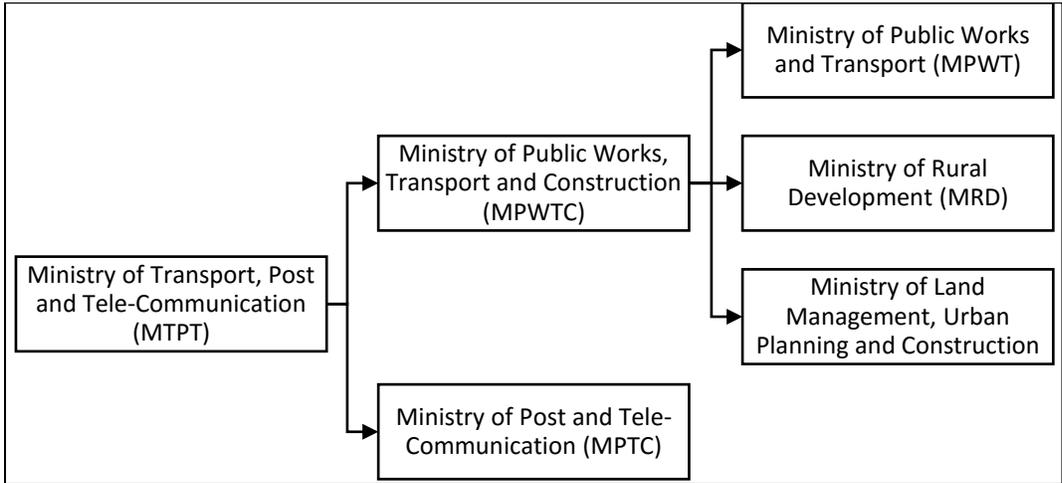


Figure 9 – Evolution of MPWT (source: ADB, 2010)

5.4.1.2. China:

Although the development stage of China is much higher than the majority of the member countries of the GMS, Yunnan remains as one of the least developed regions. This can be partially attributed to its landlocked situation, which limits its possible international trade. Except for the highways, the rest of the road network is said to be of lower quality. Since 1997, the highway law decentralized road administration to the provincial level. The Ministry of Transport is in charge of approving the development plans and of providing guidance and technical support to the provinces.

While the road network development and administration is carried out by the Yunnan Provincial Highway Administration Bureau (YHAB).

5.4.1.3. *Lao PDR:*

Roads represent the practical totality of the transportation sector in Lao PDR. Nevertheless, the quality of the infrastructure is said to be of low quality, as well as without sufficient density. The main institutions are the Ministry of Public Works and Transport (MPWT), in charge of national government activities; the Traffic Police Department in the Ministry of Public Security, for the traffic enforcement; urban development administration authorities, for urban roads; and the Ministry of finance for the financing with the resources of the national budget.

5.4.1.4. *Myanmar:*

Myanmar has faced a long period of isolation which has affected its development. The overall situation of the sector is dominated by the low quality of the infrastructures and the fragmentation and overlapping of its institutional structures. In total six institutions are in charge of the road development: (i) Ministry of Transport (MOT); (ii) Ministry of Rail Transportation (MORT); (iii) Ministry of Construction (MOC); (iv) Ministry for Progress of Border Areas and National Races and Development Affairs; (v) Ministry of Defense (MOD); (vi) Ministry of Home Affairs; and (vii) the Yangon, Mandalay, and Nay Pyi Taw city development committees. ADB assessment report also refers to the need of capacity building.

5.4.1.5. *Thailand:*

Thailand is the transportation hub of the region. Road infrastructure is of good quality in general. Nevertheless, ADB assessment mentions “an excessive number of agencies are responsible for the road, rail, and urban transport subsectors”. The road subsector is divided between the Department of highways (DOH), in charge of highways and motorways, and EXAT, responsible for expressways (which only exist in the metropolitan area of Bangkok). Other institutions with responsibilities are the Bangkok Metropolitan Administration (BMA), for local road development in Bangkok; the Office of Transport and Traffic Policy and Plan (OTP), of the Ministry of Transportation. The Neighbouring Countries Economic Development Cooperation Agency (NEDA), has been also actively participating in the promotion of the GMS by providing support to other member countries.

5.4.1.6. *Viet Nam:*

The Ministry of Transport is the main institution in the transport sector, including all the main transport agencies. The exception would be the urban transit which are below the specific people's

committees. These are under the control of their respective Provincial departments of transport (PDOTs), without a direct link to the Ministry of Transport.

5.5. The development process of GMS Economic Corridors

5.5.1. Timeline of the GMS Economic Corridors:

<u>Date</u>	<u>Description</u>	<u>Stage</u>
1978	Mekong Committee started to operate only as Interim Committee	-
1979	Viet Nam invasion of Cambodia	-
1984	Mr. Morita attended the meeting of Mekong Committee on behalf of ADB in Lao PDR. The hotel where he stayed was attacked by Thailand. The idea of a project that can foster friendship rather than enmity appeared.	1
1985	Peace talks started in Cambodia	1
1986	Major policy reforms in Lao PDR and Viet Nam starting transition towards market economies: - Laos declared <i>Chintanakan Mai</i> (New Thinking). Introduce the “New Economic Mechanism” (NEM) - Vietnamese Communist party also adopted the policy of <i>Doi Moi</i> (Renovation) at the Sixth Party Congress	1
1988	Thai’s Prime Minister Chatichai Choonhavan’s speech for “Turning Indochina from battlefield to marketplace”	1
1988	Construction of the Xeset hydroelectric project was started - Hydropower dam in Lao PDR with contract agreement for exporting electricity to Thailand - Agreement fostered through bilateral conversations held by Mr. Morita Thanks to personal relations, Mr. Morita fostered agreement between EGAT (Thailand) and EDL (Lao PDR) for Xeset hydroelectric project. Furthermore, this represented the ADB’s first ever project loan to Lao PDR since the revolution of 1975.	1
1989	Cambodia reestablished private property	-
1991	Construction of the Xeset hydroelectric project was concluded	1
1991, October 23	Paris Peace Accords, ending the military conflicts in Cambodia: - UN mission sent to Cambodia (UNCTAC) until 1993 to supervise the ceasefire	1

1992, March 9	ADB's approval of the regional technical assistance (RETA) to promote economic cooperation among Cambodia, the People's Republic of China (the PRC), Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam.	1
1992, Aug. - Sept.	Bank Study Team visited each of the countries in the subregion to undertake an initial survey of existing arrangements for subregional cooperation, to identify potential areas for cooperation, and to assess the impediments to enhanced cooperation [ADB, 1993]	1
1992, October	First Ministerial Conference in Manila (Philippines): - GMS program is officially launched - Countries represented by General David Bell (Myanmar), Dr. Supachai Panichpakdi (former Deputy Prime Minister of Thailand and the four factional leaders of the Cambodian government, including Mr. Hun Sen) [- Agreement on the road projects at the first phase	1
1992	Chinese Communist Party Congress adopted the "Socialist Market Economy"	1
1993, May 27-28	Quadripartite Meeting convened by the Thai Government in Bangkok addressed ways of promoting subregional transportation linkages among Thailand, China, Lao PDR and Myanmar: - Discussion about road project linking Yunnan Province, Myanmar, and Thailand	1, 2
1993, August	Mr. Qiao Shi, chairman of the standing committee of the National People's Congress, visit in Thailand and pointed out: [Zhu, 2010] - China concerned with Mekong development and utilization - China highly approved of the Mekong development and cooperation	1
1993, Aug. 30-31	Second Conference on Subregional Economic Cooperation Among Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and Yunnan Province of the People's Republic of China (Second Ministerial Conference) in Manila (Philippines) - Agreement on the five principles for project selection, prioritization, and design:	1 - 2
1994	USA lifting of commercial embargo over Viet Nam [Teresita]	1
1994	Third Ministerial Conference	1, 3
1994, April 8	First Thai-Lao Friendship Bridge opened connecting Nong Khai province and the city of Nong Khai (Thailand) with Vientiane Prefecture (Lao PDR) - Part of the AH12 - Different traffic directions in Thailand (left) and Lao PDR (right)	1, 3

	<ul style="list-style-type: none"> - First bridge across the lower Mekong and the second on the full course of the Mekong - Australia, through the Australian Agency for International Development (AusAID), provided \$42 million for feasibility studies, design and construction of the bridge between 1991 and 1994 	
1994, Sept. 15-16	<p>Fourth Ministerial Conference in Chiang Mai:</p> <ul style="list-style-type: none"> - Agreement to approve the Draft Final Report Submitted by PADECO, CO. after adding a ninth transport corridor - Need to improve the “software” issues was included for the first time 	2, 3, 4
1995	<p>Transport Master Plan formulated by ADB:</p> <ul style="list-style-type: none"> - Transport Corridors 	3
1995, April 24-25	<p>Second meeting of the Subregional Transport Forum (STF): [Ishida, 2013, p. 56]</p> <ul style="list-style-type: none"> - Agreement on remove cross-border barriers - Proposal of the UN-ESCAP Resolution 48/11 	2, 4
1996	<p>Third meeting of the STF:</p> <ul style="list-style-type: none"> - “Agreement to specify feasible and practical conventions with bilateral and multilateral basis in the short and the medium term and to examine the accession to the seven conventions in the long term” [Ishida, p 57] 	4
1997, August	<p>First Friendship Bridge between Thailand and Myanmar inaugurated [The Nation, 2012]</p>	1, 3
1998	<p>Eight Ministerial Meeting in Manila (Philippines):</p> <ul style="list-style-type: none"> - The Economic Corridor approach is adopted. 	2
1999	<p>Cross-Border Transport Agreement (CBTA) signed as trilateral agreement between and among the governments of Lao PDR, Thailand and Viet Nam</p>	4
1999, October	<p>Meeting of Cambodia, Lao PDR and Viet Nam Prime Ministers in Vientiane:</p> <ul style="list-style-type: none"> - Development Triangle Initiative started 	4
2000, Jan. 11-13	<p>Ninth Ministerial Conference in Manila (Philippines):</p> <ul style="list-style-type: none"> - Concrete routes of the economic corridors were identified 	
2001	<p>Cambodia acceded to the CBTA</p>	4
2001	<p>Vientiane Plan of Action for GMS Development for 2008-2012 [Selvarajah]:</p> <ul style="list-style-type: none"> - effective infrastructure linkages for cross-border trade, investment and economic cooperation - a framework for developing human resource capacity and skill competencies 	2

2001	6 th meeting of the STF	4
2001, November	10 th GMS Ministerial Conference in Yangon (Myanmar): - Reinvigorated GMS ministers: - Strategic framework of the GMS for next 10 years - the framework agreement for facilitation of cross-border movement - 11 flagship programs. Three economic corridors (EWEV, NSEC, and SEC) designated	2, 3, 4
2002, September	11 th GMS Ministerial Conference in Phnom Penh (Cambodia)	-
2002, November	First GMS Summit in Phnom Penh (Cambodia) under the theme: “Making it Happen: A Common Strategy on Cooperation for Growth, Equity, and Prosperity in the Greater Mekong Subregion” - Heads of state endorsed the Ten-Year Strategic Framework including the three economic corridors as a flagship initiative. - Phnom Penh Plan for Development Management (PPP) launched to develop capacity in civil servants - The three Cs: (i) enhance Connectivity, (ii) improve Competitiveness, and (iii) build strong sense of Community	2, 4
2002	China acceded to the CBTA	4
2002	Lao PDR established the National Transport Committee (NTC) for interagency coordination and consultation	4,5
2003	Myanmar acceded to CBTA	4
2003	Transport Master Plan upgraded to include the CBTA	3
2003, Feb. 25-27	First Negotiation Meeting on the CBTA Stage 1 held in Ha Noi (Viet Nam)	4
2003, Aug. 13-15	Second Negotiation Meeting on the CBTA Stage 1 held in Kunming (China)	4
2003, September	12 th GMs Ministerial Conference in Yunnan (China)	-
2003, November	Inter-government agreement for Asian highway Network adopted by UN-ESCAP including 24 countries	-
2004, April 27-29	First Negotiation Meeting on the GMS CBTA Stage 2 held in Phnom Penh, Cambodia	4
2004, August 9-12	Second Negotiation Meeting on the GMS CBTA Stage 2 in Kunming (China)	4
2004, August	8 th meeting of the STF: - Agreement to implement the CBTA before signing the annexes and protocols by prescribing the interim measures for them [Ishida] - Agreement came to be called as CBTA - Main agreement ratified by the six countries by the end of 2003	4

2004, October		4
2004, November 30	Japan agreed to provide non-refundable aid to small projects on rural development and social security [Viet Nam breaking news]	4
2005	Guangxi Zhuang Autonomous Region became member of GMS	-
2005, May	GMS Transport Sector Strategy Study	3
2005	MoU on the implementation of the Cross-Border Transportation Agreement (CBTA) at the EWEC [VBN, Feb 2015]	4
2005, July 4-5	Second GMS Summit held in Kunming, Yunnan (China) under the theme: “A stronger GMS partnership for common prosperity”	-
2005, December	Second Thai-Lao Friendship Bridge opened - Linking Savannakhet with Mukhadan - EWEC became operational	3
2006, April	Second EWEC conference held in Ho Chi Minh City (Viet Nam)	4
2006, May	GMS Transport Sector Strategy, TSS, 2006-2015 was published	3
2007	Second Thai-Lao Friendship Bridges with the development aid by Japan connecting Mukdahan and Savannakhet-> Route 9 (EWEC)	3
2007, January	Japan proposed the Mekong – Japan partnership program with focus in 3 main areas: sub-regional economic integration, expansion of trade, and the pursuit of universal values and the shared goals of the sub-region	3
2007	STF proposed new corridors in the Transport Sector Strategy Study as a blueprint for next ten years and approved at 14 th GMS Ministerial Conference in Manila on June 19-21, 2007	4
2007	Viet Nam and Cambodia signed a MoU on the establishment of a one-stop-shop model at the Moc Bai-Ba Vet border under the CBTA [VNB Breaking News, 2015]	4, 5
2007 August 23	MOU signed by Thailand – Lao PDR – Viet Nam at Savannakhet, Lao PDR (Wongsuksiridacha): - Cross-border transport of goods and passengers along the EWEC permitted - Designated transport route (Mae Sot – Phitsanulok – Khon Khen – Kalasin – Mukdahan – Savannakhet – Dansavanh – Lao Bao – Dong Ha – Hue – Danang) - Recognition of authorized transport operators by other contracting parties - Gradual implementation of SWI and SSI	4
2008	Economic Corridors Forum (ECF) was formed to “bolster efforts in transforming GSM transport corridors into economic corridors”	4, 5

	http://www.adb.org/countries/gms/sector-activities/multisector	
2008, March 30-31	Third GMS Summit held in Vientiane (Lao PDR) under the theme: “Enhancing competitiveness through greater connectivity”	-
2009, June 11	Commencement of the implementation of the MOUs between Thailand – Lao PDR – Viet Nam - Initial quota (trucks only) 400 vehicles / country	4
2011, November	Third Thai-Lao Friendship Bridge opened	3
2011, Dec. 19-20	Fourth GMS Summit held in Nay Pyi Taw (Myanmar) under the title of: “Beyond 2012: toward a new decade of GMS strategic development partnership”	2, 4
2013, Nov. 26	Fourth Joint Committee Meeting for the GMS Cross-Border Transport Agreement (CBTA) held in Nay Pyi Taw (Myanmar): - Action Plan for GMS Transport Facilitation (2013-2015) endorsed	4
2013, December	Fourth International Mekong Bridge between Hoayxay (Lao PDR) and Chiang Khong (Thailand) completed - Last missing link along the NSEC completed	3
2014, September	Noi Bai – Lao Cai Expressway (240 km long) in Viet Nam opened in the eastern part of the NSEC	3
2014, August 7-8	Sixth GMS Economic Corridors Forum (ECF-6) - Completion of its first full cycle of hosting of the Forum by all GMS countries	4
2014, Dec. 19-20	5 th GMS Summit: “Committed to Inclusive and Sustainable Development in the GMS” - Recognition to the ECF to has served “its role as the main advocate, overseer and coordination of all activities toward the development of the GMS economic corridors. It has facilitated networking and exchange of information, overseen the preparation of and endorsed strategies and action plans (SAPs) for specific economic corridors, identified the relevant corridor-related issues to be addressed, institutionalized the participation of local authorities, and enhanced the involvement of the private sector in economic corridor development” - Sixth GMS Summit to be held in Viet Nam in 2017	-
2015, February 6	Launch of the one-stop-shop customs model at the Lao Bao – Dansavanh International Border Gate (EWEC)	4, 5
2015, May 9	Myanmar and Laos formally opened the first ever friendship bridge across the Mekong River that links Myanmar's Tachileik in Shan state and Laungnamthat Province of Laos	3

	- Construction started in February 2013 - Plan raised during Lao Prime Minister Thongsing Thammavong visit to Myanmar in July 2011	
2015, May 20	Third East-West Economic Corridor Conference took place in Bangkok (Thailand) focusing on promoting the effective development of the region: - A Joint Declaration was approved, specializing in upgrading infrastructure and completing legal framework for trans-border transport	4, 5
2015, June 11	Seventh GMS Economic Corridors Forum (ECF-7) held in Kunming (China) under the theme of: “Fostering Pragmatic Cooperation towards the Future of GMS Economic Corridor	-
2015, August 30	Inauguration ceremonies of the construction of the second Thai-Myanmar Friendship Bridge crossing the Moei/Thaungyin River and of the handover of the Myawaddy – Kawkareik Road	3
2015, Sept. 10	20 th GMS Ministerial Conference in Nay Pi Taw (Myanmar)	-

Table 12 - GMS Economic Corridors, Timeline

5.5.2. Stage 1 - National stakeholders’ agreement: Mr. Noritada Morita initiative and the Ministerial Conferences

The origin of the GMS Economic Corridors can be traced together with the proposition of the GMS program. After the attach to his hotel during the Mekong Committee meeting in Lao PDR and the aftermaths discussions between the countries, Mr. Morita got strongly concerns about how to guarantee the peace after the peace agreements would be signed. He could observe how the confronting positions were getting stronger and the inability of the international powers to positively influence. At that moment the demand from Lao PDR for the construction of small hydropower dam was the opportunity for him to “foster projects that would promote cooperation rather than enmity” [Teresita]. As Mr. Morita explained during the interview, Lao PDR sought project was too small in size to have economic sense. Lao PDR wanted to develop small hydropower plant for increasing the electrification access, without any major industry in the country plants of about 50MW (minimum to support the investment economically profitable) was beyond their needs. Mr. Morita proposed then to export the surplus electricity to the highly demanding Thailand’s national utility EGAT. Even without surprise because of the tensions at that time, Lao PDR accepted to consider the deal if that would be possible. Mr. Morita then introduced the project to EGAT, which pointed out that “electricity has no color”. After several discussions at technical and political level among the countries with different levels of involvement of Mr. Morita team, the Xeset hydropower dam was agreed between the countries and approved by the ADB Board of Directors. This small project had a huge impact on the regional mindset, for the first time two countries, formerly declared enemies, had a joint project that was benefiting both.

The success of the Xeset hydropower agreement (even though its small size), allow Mr. Morita to start a round of bilateral talks with each of the countries in the Indochina region to propose a regional program for economic cooperation. For that, he formed a Bank Study Team which allowed him in this task. With this, he outreached all the countries, no matter of their political situation. The logic behind was that the ADB had the same responsibility towards every of its member countries, what granted him independence from the “geopolitics aspects” as well as granted neutrality in front of the member countries.

The Bank Study Team was led by Mr. Thomas Crouch, Senior Economist, under the guidance of Mr. Ricardo M. Tan, Programs Manager, Programs Department (West). Other core members of the Study Team were Mr. Cesar E. Virata and Dr. David Husband, who served as senior advisors to the Bank.²²

In order to foster that cooperation program, ADB approved a regional technical assistance (RETA) including two phases. The Phase I covered from August 1992 to February 1993 and included (i) consultations between the Bank study team and each of the participating governments, (ii) the preparation of a draft framework paper on subregional economic cooperation, (iii) the convening of the First Conference on Subregional Economic Cooperation to discuss the results of the consultation and to agree on work to be undertaken under Phase II, and (v) the publication of the result of Phase I [ADB, 1994].

After getting all the countries onboard, the next task was to find a place for the gathering. Considering the recent political situation, Mr. Morita’s main concern was to not fall in avoidable conflicts. For that, two conditions were put in place as preventive: (i) setting a neutral venue, the ADB headquarters in Manila; (ii) reducing the formalities to the minimal, and (iii) excluding ministries of foreign affairs (while the delegation should be appointed directly by Prime Ministers’ offices). This latter has been considering very important for avoiding international affairs discussions and concentrate on the pragmatic aspects.

In those terms, the First Ministerial Conference was held in Manila (Philippines) on October of 1992. This conference was a milestone in the regional politics. It was the first time in which high representatives from all the countries gathered in the same place. The meeting started very cold with the countries not talking to each other. In order to facilitate the conversation additional measures were put in place, the most relevant were to skip the need of signing any formal declaration and just create proceedings that written by ADB would reflect the visions of all the countries. This was also in order to avoid the need to report back to the cabinets and possible conflicts for interpretations. A second condition that was proposed and accepted in what later would be called the “two plus” principle which in sum, the “enables subsets of member countries to pursue regional cooperation initiatives without requiring full consensus” [ADB, 2002].

Subregional Road Projects identified and discussed during the consultations of Phase I:

²² ADB, 1993

1. Lao PDR/Yunnan Province: a road to Luang Prabang and Phong Sali, if extended, could connect with the Yunnan road system. This would also improve the link between Yunnan and Thailand
2. Lao PDR/ Viet Nam: Upgrading and completion of the road from Nakhon Phanom (on the border between Thailand and Lao PDR) to Vinh (on Viet Nam's coast) would give producers in Lao PDR and Thailand better access to Viet Nam and the South China Sea. Construction of a new port at or near Vinh is also favored by Lao PDR.
3. Lao PDR/Thailand: A second bridge across the Mekong would improve the link between Thailand, Lao PDR and Viet Nam, and increase access for Lao PDR and Thailand to the South China Sea.
4. Cambodia / Lao PDR and Cambodia /Viet Nam/Thailand: Rehabilitation of the most dilapidated sections of the primary network in Cambodia, including temporary structures (in particular RN5 and RN6) and key provincial roads (e.g., RP69), would improve the link between Cambodia's interior and its coast, and between Cambodia and Lao PDR, Viet Nam and Thailand.
5. Viet Nam / Cambodia/Thailand: rehabilitation of the Ho Chi Minh – Phnom Penh – Bangkok road would reduce travel time between the three capitals
6. Myanmar/Yunnan Province: Road improvement between Kunming-Dali-Ruili, known both as the Dian Mian Road and the Stilwell Road, would improve Myanmar's link to the Chinese transportation network and improve Yunnan's access to markets in Myanmar and Thailand. Some 320 km of the 900 km road are now being upgraded
7. Myanmar/Thailand: Construction and upgrading of sections of the Asian Highway, including the planned A2 route crossing the Salween River at Ta Kaw and linking with Thailand via Kengtung and Hpayak, would eliminate a weak link in a road system that connects Southeast Asia with South and West Asia

Based on the success of the First Conference, ADB approved a Phase 2.

After new consultations with the countries, the Second Ministerial Conference was held in Manila (Philippines) on 30-31 August 1993. At this time, the projects were better defined and for the transport sector an agreement was made for the "Five Principles for Project Selection, Prioritization, and Design, Especially in Regards to the Transport Sector" [ADB, 1993]:

- Priority should be given to the improvement and rehabilitation of existing facilities over that of construction of new ones.

- Subregional projects need not involve all six countries in the subregion. Priority should be given to those subregional projects on which there is already agreement among the countries that are directly concerned.
- The design of projects should give attention to the trade generation potential of projects, especially in light of the economic transformation taking place in the countries in the subregion
- To facilitate project implementation and provide immediate benefits, transport projects should be implemented in sections or stretches.
- In view of financial constraints, there is a need to establish some criteria for project selection. Among those that should be considered are the subregional (versus national) character of the project and the financial resources that are most likely to become available for funding subregional projects

Based on those five principles, five projects were prioritized [ADB, 1993, p. 56]:

- Upgrading of the Ho Chi Minh – Phnom Penh – Bangkok road connection, including possible extension to Vung Tau in Viet Nam;
- Construction of a Thai – Lao PDR – Viet Nam East-West Corridor involving Routes 8, 9 and/or 12, including associated ports and bridges;
- Development of a good quality road serving traffic between Chiang Rai (Thailand) and Kunming (southwest PRC) via Myanmar;
- Upgrading of the Kunming – Lashio road system.

In addition, other five projects was considered for further study by the consultants as part of the subregional transportation sector study:

- (i) The Kunming – Hanoi road link
- (ii) The Southern Lao PDR road link to Sihanoukville (Kompong Som) in Cambodia
- (iii) The Mongla – Kengtung – Takaw – Loilem road project
- (iv) The Yunnan Province – Kyugok – Lashio – Loilem road project.

Participants at the Second Conference included representatives from each of the countries. H.E. Chea Chanto, Minister of Planning for Cambodia, Mr. Li Ruogu actions direct of the International Department of China, H. E. Phao Bounnaphol, Minister of Prime Minister’s Cabinet, H. E. Khin Maung Yin, Minister of Construction of Myanmar; H. E. Supachai Panitchpadki, Deputy Prime Minister of Thailand; H. E. Tran Duc Luong Vice Prime Minister of Viet Nam.

5.5.3. Stage 2 – High level political support: Economic Corridors concept and 1st GMS Summit:

Based on the five principles agreed at the Second Conference, construction of road links was rapidly started in the region. Thailand held meeting with Lao PDR, China, and Myanmar to discuss what would become the NSEC; Cambodia approved its First Socioeconomic Development Plan including road development from border to border; and the First Friendship Bridge between Lao

PDR and Thailand funded by Australian cooperation was opened to the public on 1994. Under this positive environment, the negotiations for the regional road network continued and the final routes experiences several changes until at the Fourth Ministerial Meeting an agreement was achieved on 9 transport corridors. At the same occasion, the need to introduce measures to the “software” aspects was also raised by the consultant and included in the draft final report [Ishida 2013, p. 56].

The Asian Crisis in the 90s affected the implementation of the transport corridors. At that moment, the ADB staff proposed an alternative (also referred as an initial explosive by Ishida, 2013) in the form of the economic corridor concept. This aimed to a broader impact on the entire corridor (not only on the industrial poles), therefore reaching the development to remote rural areas. This new approach was very well welcomed by the member countries and immediately possible corridors were discussed at the time of Eight Ministerial Conference in 1998.

The economic corridor approach also emphasized the need for the software measures. The countries have also faced the difficulties for the approval of the conventions recommended at the UN-ESCAP 48/11. In fact, an agreement has already existed since the Third Meeting of the STF in 1996 about the need of developing new conventions that would be better suited to the conditions of the region in the near term. With the new impulse from the economic corridors, in 1999, the three countries across the EWEC agreed to implement a basic framework proposed by the consultant for the elimination of the non-physical barriers. Following the principles of “two plus”, the other member countries decided to join in the consecutive years, Cambodia in 2001, China in 2002, and Myanmar in 2003. With the incorporation of all the member countries, the now called Cross-Border Trade Agreement was going to become a key document to integrate all the measures needed for the facilitation of the intra-regional trade through the utilization of the economic corridors. This was beyond the capabilities of the STF, and at the Sixth Meeting of the STF (once the first full round through the countries), it was decided to move that discussions to the National Transport Facilitation Committee (NTFC) of each country and through a Joint Committee at the regional level.

The combination of the economic corridors and a fully operational CBTA needed of a political capital that was lacking at that moment. For that, a summit of heads of state of the GMS countries was arranged for the first time, as the superior hierarchy in the institutional set-up of the GMS program.

5.5.4. Stage 3 – From the road projects to the three Economic Corridors:

During the bilateral consultations of Phase I, seven road projects have emerged as priorities. From the map available (Ishida, Isono, 2012) these seven projects showed a clear focus on national road networks. With the approval of the five selection principles, there was a modification of the initial network already at the Second Conference. Discussions continued and at the Third Ministerial Conference, 8 projects were presented by the consultant. Finally, at the Fourth Ministerial Conference in 1994, the 8 projects were approved and another one added. These 9 projects constitute the transport corridors that were officially included in the 1995 GMS Transport Master

Plan. Finally, those were replaced by the three economic corridors after the Eight Ministerial Meeting.

These changes in the routes didn't create major complaints in the Southern Economic Corridor and the East-West Economic Corridor, but in the North-South Economic Corridor, the change on the route became a major concern for the Laotian government. The modification from trespassing throughout Lao PDR to only go through the Northern part had an evident impact on the motivation of Lao PDR for investing in a road that would not go through any economic or industrial center. For the Chinese and Thai side, this was a more direct and shorter route for communicating Yunnan province with Bangkok port and therefore had accelerated their investments. As a consequence, the entire was ready except the part inside Lao PDR national borders.

In order to facilitate the support from Lao PDR, China and Thailand offered to finance the construction of the infrastructure needed. Nevertheless, not only economic reasons were behind the Laotian opposition. What became to be the main concern was based on national defense issues. The presence of a Thai military base near the expected bridge triggered opposition at the national level based on the recent history of conflicts between both countries.

Thanks to the direct and private conversations between Mr. Morita and Lao PDR government, a new solution was possible. At this moment, the chance of losing the advantage as "land-linked" country finally balanced more in the decision because of the possibility (which in fact is included) of an alternative through Myanmar (although through the Sian State).

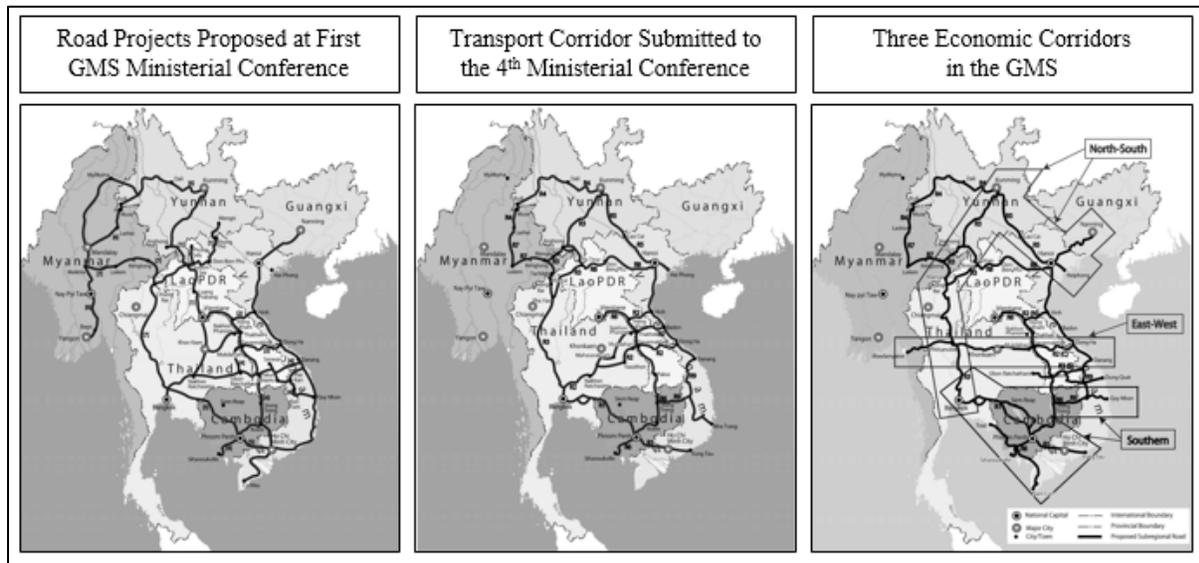


Figure 10 - Evolution of Economic Corridors since the First Ministerial Conference. (Source: Ishida, Isono, 2012)

5.5.5. Stage 4 - The institutional construction: The Cross-Border Trade Agreement (CBTA)

As explained before the removal of non-physical trade barriers became an important issue soon after the starting of the construction works, as well as one of the main complaints from transport operators. In order to facilitate the process, a standard set of recommended and widely use international conventions compiled in the UN-ESCAP 48/11 was the first approach. The seven international conventions recommended in the resolution are²³:

- *The Convention on Road Traffic of 1968, and the Convention on Road Signs and Signals of 1968.*
- *International customs transit regimes, such as those stipulated in the Customs Convention on the International Transport of Goods under Cover of TIR Carnets (TIR Convention) of 1975 (as recommended in Economic and Social Council resolution 1984/79 of 27 July 1984*
- *The Customs Convention on the Temporary Importation of Commercial Road Vehicles of 1956 (currently under review) and the Customs Convention on Containers of 1972, to enact facilities for the temporary importation of goods road vehicles and loading units*
- *The International Convention on the Harmonization of Frontier Control of Goods of 1982, as a legal framework for the harmonization of such operations to minimize border control measures in international transport, harmonize their inspection requirements, and to provide, if possible, for joint inspection locations*
- *The Convention on the Contract for the International Carriage of Goods by Road (CMR) of 1956, to establish internationally acceptable regulations on the legal relationship between road carriers and consignees or consignors;*

Also mentioned before, it was soon found that the approval of these international conventions by the six GMS countries was not going to be possible (in fact no one has ratified any of them). This made clear the need of setting a process of regional negotiations for the development of a set of agreements that would better suit the needs of the region in the short and medium term. The main agreement, which was drafted by the international consultant was rapidly approved and ratified by the six countries. The document was introduced in 1999 and Lao PDR, Thailand and Viet Nam had signed it by November 1999, Cambodia in November 2001, China in November 2002 and Myanmar in September 2003; so by the end of 2003 it was signed by all the countries [Yushu Feng].

²³ http://www.unescap.org/sites/default/files/tarns_annex1.pdf

The declared objectives of the CBTA are [Souvannavong]:

- Facilitation of border crossing formalities (single window and single stop customs inspection, coordinating of hours of operation; and exchange of advance information and clearance)
- Facilitate cross-border movement of people (multi-entry visa, recognition of driver license)
- Facilitate cross-border movement of goods (regional transit regime, phytosanitary and veterinary inspection)
- Exchange of traffic rights
- Requirements for admittance of road vehicles
- Institutional Arrangements

Nevertheless, after the signing of the main document the complications came for the discussion and negotiation of the 20 annexes and protocols. This process was beyond the capabilities of the STF and a new institutional setting was introduced with success.

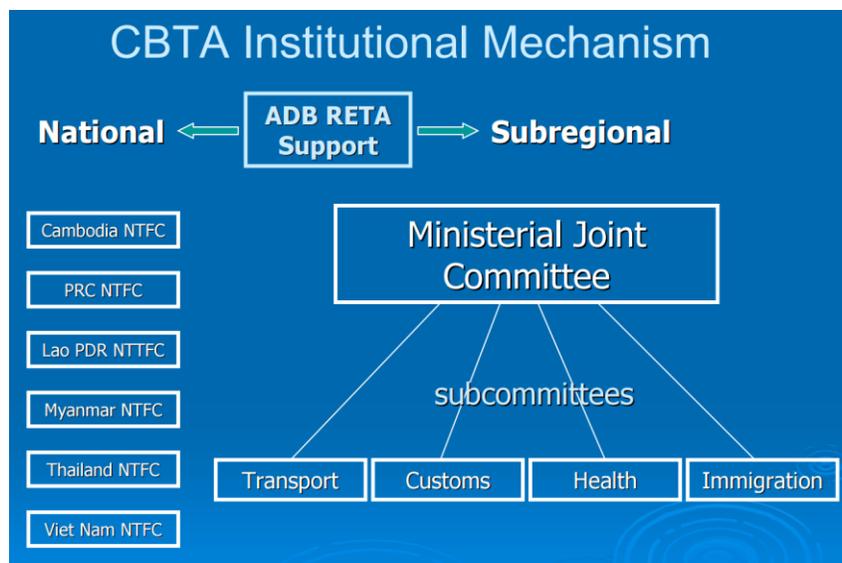


Figure 11 - CBTA Institutional Mechanism (source: Feng, 2014)

<u>Annexes and Protocols</u>		<u>Date of signing</u>	<u>Number of articles</u>
Main Agreement		Sep. 17, 2003	44
A1.	Carriage of Dangerous Goods	Dec. 16, 2004	12
A2.	Registration of Vehicles in International Traffic	Apr. 30, 2004	18
A3.	Carriage of Perishable Goods	Jul. 5, 2005	34

A4.	Facilitation of Frontier Crossing Formalities	Apr. 30, 2004	21
A5.	Cross-border Movement of People	Jul. 5, 2005	27
A6.	Transit and Inland Customs Clearance Regime	Mar. 20, 2007	22
A7.	Road Traffic Regulation and Signage	Apr. 30, 2004	13
A8.	Temporary Importation of Motor Vehicles	Mar. 20, 2007	21
A9.	Criteria for Licensing of Transport Operators for Cross-border Transport Operations	Dec. 16, 2004	15
A10.	Conditions of Transport	Jul. 5, 2005	20
A11.	Road and Bridge Design, Construction, and Specifications	Apr. 30, 2004	21
A12.	Border Crossing and Transit Facilitates and Services	Apr. 30, 2004	16
A13a.	Multimodal Carrier Liability Regime	Apr. 30, 2004	11
A13b.	Criteria for the Licensing of Multimodal Transport Operators for Cross-border Transport Operations	Dec. 16, 2004	15
A14	Container Customs Regime	Mar. 20, 2007	23
A15	Commodity Classification System	Apr. 30, 2004	15
A16	Criteria for Driver's Licenses	Dec. 16, 2004	13
P1.	Designation of Corridors, Routes, and Points of Entry and Exist (Border Crossings)	Apr. 30, 2004	12
P2.	Charges Concerning Transit Traffic	Jul. 5, 2005	17
P3.	Frequency and Capacity of Services and the Issuance of Quotas and Permits	Mar. 20, 2007	17
Total number of Articles			407

Table 13 - Main agreement, annexes, and protocols of the CBTA and the number of articles (source: Ishida)

Due to the long time that the negotiations took, the 8th meeting of the STF in August 2004 agreed to start an initial implementation of the CBTA was started (IICBTA) in five borders [Ishida, 2013]. Therefore Memorandum of Understandings were signed between the countries involved, in a bilateral manner. During the interview survey, this was also explained as the need of specifying issues that CBTA was not covering (CBTA as an umbrella agreement).

Border	Date of signing of MOU
Lao Bao (Viet Nam) / Dansavanh (Lao PDR)	March 25, 2005
Savannakhet (Lao PDR) / Mukdahan (Thailand)	July 4, 2005
Poipet (Cambodia) / Aranya Prathet (Thailand)	July 4, 2005
Moc Bai (Viet Nam) / Bavet (Cambodia)	March 31, 2006
Hekou (Yunnan, China) / Lao Cai (Viet Nam)	March 20, 2007

Table 14 - Borders for the IICBTA (source: Ishida, 2013)

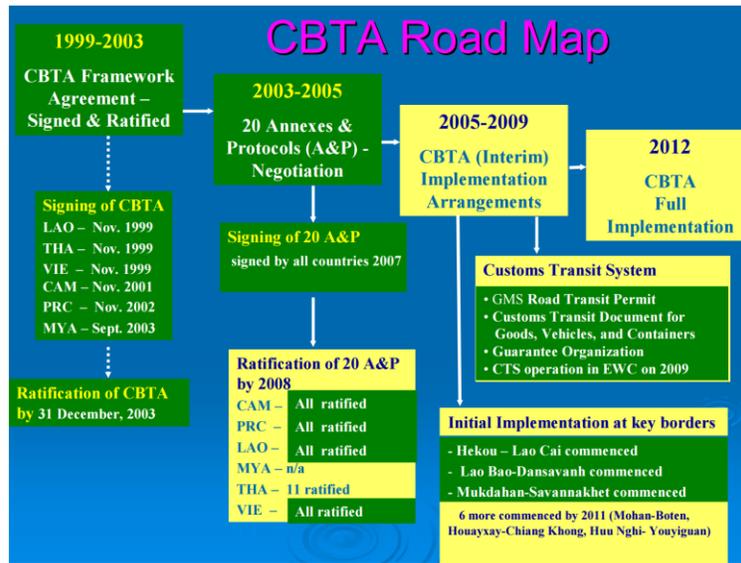


Figure 12 - CBTA Road Map (source: Feng)

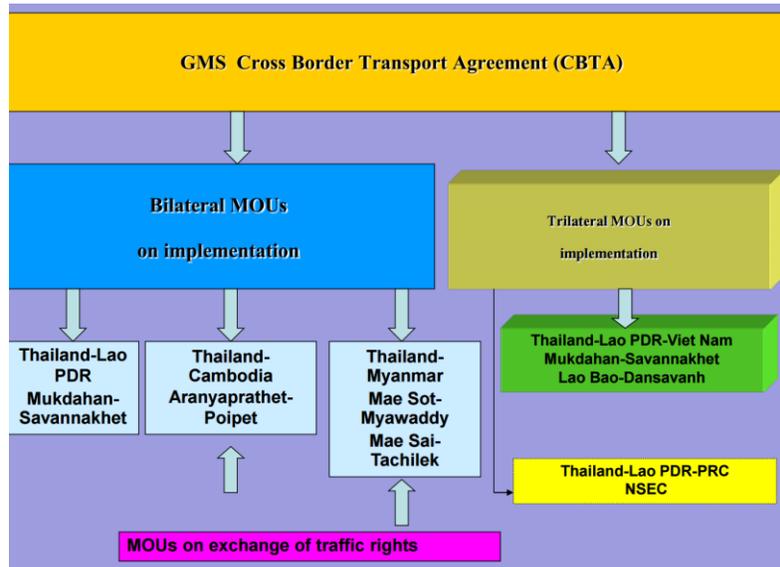


Figure 13 - Overview of IICBTA MOUs (source: Wongsuksiridacha)

5.5.6. Stage 5 - Harmonization: Initial implementation and ratification process of the CBTA

The main text of the CBTA was signed in 2003 and after several meetings, the sixteen annexes and three protocols were also signed. By the need of 2010, China, Lao PDR, Cambodia and Viet Nam have already ratified all the annexes and protocols. That was not the case of Thailand and Myanmar, who ratified not before 2015. During the interview survey, it was mentioned that the internal instability could be a reason behind the delay in Myanmar. The reasons for Thailand are more unclear, especially considering that Thailand has traditionally been one of the main promoters of the project. Some national level issues, like the 2014 military coup, could be a reasonable explanation.

	<i>Date of signing</i>	<i>CAMB</i>	<i>CHINA</i>	<i>LAO</i>	<i>MYAN</i>	<i>THAI</i>	<i>VIET</i>
Main	Sep. 17, 2003	R	R	R	R	R	R
A1.	Dec. 16, 2004	R	R	R	R	Signed	R
A2.	Apr. 30, 2004	R	R	R	R	R	R
A3.	Jul. 5, 2005	R	R	R	R	R	R
A4.	Apr. 30, 2004	R	R	R	R	Signed	R
A5.	Jul. 5, 2005	R	R	R	Signed	R	R
A6.	Mar. 20, 2007	R	R	R	R	Signed	R
A7.	Apr. 30, 2004	R	R	R	R	R	R
A8.	Mar. 20, 2007	R	R	R	R	Signed	R
A9.	Dec. 16, 2004	R	R	R	R	R	R
A10.	Jul. 5, 2005	R	R	R	R	Signed	R
A11.	Apr. 30, 2004	R	R	R	R	R	R
A12.	Apr. 30, 2004	R	R	R	R	R	R
A13a.	Apr. 30, 2004	R	R	R	Signed	R	R
A13b.	Dec. 16, 2004	R	R	R	Signed	R	R
A14	Mar. 20, 2007	R	R	R	R	Signed	R
A15	Apr. 30, 2004	R	R	R	R	R	R
A16	Dec. 16, 2004	R	R	R	R	R	R
P1.	Apr. 30, 2004	R	R	R	R	R	R
P2.	Jul. 5, 2005	R	R	R	R	R	R
P3.	Mar. 20, 2007	R	R	R	Signed	R	R

Table 15 - Ratification of CBTA annexes and protocol by 2012 (source: Wongsuksiridacha)

5.6. Causality analysis of the development process

5.6.1. Stage 1: National stakeholders' support

The Stage 1 of the GMS Economic Corridors occurred in parallel with the Stage 1 of the GMS Power Cooperation project. In order to better grasp the influences, both processes are presented together in the following causality analysis. The area surrounded in red refers specifically to the GMS Economic Corridors, while the GMS Power Cooperation appears surrounded by blue. Therefore, those respective factors, actions, and outputs are explained respectively. This section covers GMS Economic Corridors Stage 1, whilst section 6.4 deals with GMS Power Cooperation.

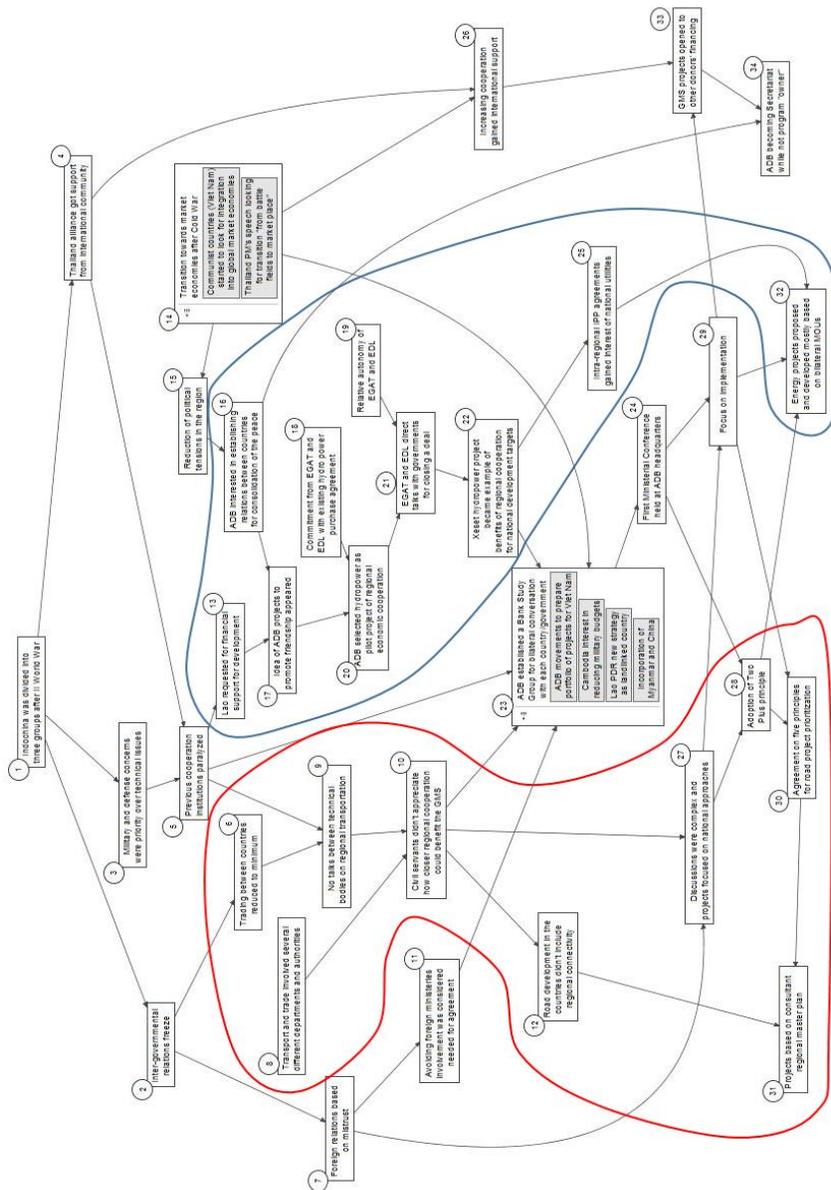


Figure 14 - Causality Analysis GMS Economic Corridors, Stage 1

5.6.1.1. Analysis of causality diagram

<i>Code</i>	<i>Factor</i>	<i>Description / Source</i>	<i>[Cat.]</i>
1	Indochina was divided into three groups after II World War	<p>The region was divided into soviet communism (Lao PDR and Viet Nam), Chinese communism (China and part of Cambodia), Western capitalism (Thailand) and nationally unstable countries (Myanmar and Cambodia)</p> <p>“In the 1980s, the countries through which the Mekong River flowed were separate nation-states that were divided not only by administrative and political boundaries but, more importantly, by ideological ones” [Cruz-del Rosario, pp. 141]</p>	Factor
2	Inter-governmental relations freeze	<p>Countries kept their foreign relations in terms of defense and agreements were minimal</p> <p>“Apart from a history of differing ideological alignments, the four counties were also the site of numerous border disputes” “Preah Vihar temple dispute between Thailand and Cambodia” “Other border disputes involved Thailand and Laos particularly in northern Thailand” “Thailand closed down its borders in November 1975” [Cruz-del Rosario, pp. 141]</p>	Output
3	Military and defense concerns were priority over technical issues	<p>Considering the borders’ conflicts mentioned before, the military concerns became dominant in the entire process. For later on stage was mentioned:</p> <p>“One is Route 9, Da Nang – Savannakhet and Thai's side is Mukdajan. That was to me to me the most difficult routing. It took almost three years because military groups were against” “In Thai side, Mukdahan, near to the river, there was a cantonment” “And if you have ever come from Da Nag to Laos and connect to the existing road. Savannakhet – Mukadahan was very</p>	Factor

		beneficial, but the Laotian side didn't agree because the Thai side had a military base" [GMS.II.EC-205-208]	
4	Thailand alliance got support from international community	Thailand's so-called "bamboo diplomacy" of "bending with the prevailing wind" [Asia sentinel] "Prior to the end of the Cold War, Thailand's foreign policy had a passive attitude: in response to international issues, it focused on accommodating foreign countries by either taking sides or balancing powerful countries against one another" [Carle, 2015, p. 40] "Western side was always siding with Thai side" [GMS.EC.II-18]	Output
5	Previous cooperation institutions paralyzed	The Mekong Committee, an only existing forum for regional cooperation, was not able to make decisions. International donors were not able to intermediate Mekong Committee even moved to interim status "Then, the meeting I attended was of the Mekong River Commission. Instead of people talking about the agenda, both countries started criticizing the other size" [GMS.EC.II-17]	Factor
6	Trading between countries reduced to minimum	Without formal relations, and lacking the infrastructure formal trading was reduced to a minimum. Even the transport of merchandises from Lao PDR to Bangkok, granted by international agreement, was commonly difficult "In the case of the port, they have to rely on Thailand." "We have to plan everything to Bangkok. The trucking company is Thai. And they inspect everything. So they know very well where we are, and what we are carrying. Everything is under their military observation"	Factor

		[GMS-EC.II.165-166]	
7	Foreign relations based on mistrust	Tensions between countries had moved towards. As mentioned during the interview survey, even media was critic with regional dialogue as it could be considered to	Output
8	Transport and trade involved several different departments and authorities	Cambodia through state-run enterprises under the control of Ministry Thailand division across authorities Myanmar atomized	Factor
9	No talks between technical bodies on regional transportation	No agreement between countries in building infrastructure for connecting countries at that time. Even not to build bridges across the Mekong river	Factor
10	Civil servants didn't appreciate how closer regional cooperation could benefit the GMS	"Civil servants back then didn't really appreciate how closer regional cooperation could benefit the GMS," [The Phnom Penh Plan For Development Management: A Retrospective, p. 4]	Output
11	Avoiding foreign ministries involvement was considered needed for agreement	Mr. Morita requested to countries to not include foreign affairs ministries because if so, building the agreements would have been more difficult "The reason why in the GMS I refused that is represented by the ministries of foreign affairs is because of the nature of foreign affairs. They are not guided to put priority for the international cooperation" "So when I started the sub-regional cooperation, GMS, I asked all the leaders "please do not put minister of foreign affairs s the coordination office, please remove them from the scheme" [GMS-EC.II.2-3]	Action
12	Road development in the countries didn't include regional connectivity	Absence of infrastructures connecting countries and of plans for developing	Output
13	Lao request for financial support for development	After the meeting of the Mekong Committee, during which Mr. Morita's hotel was attacked, Lao requested financial support from ADB expressing their concerns that no	Output

		<p>other international donor was supporting them</p> <p>“He said, I like to have ADB financing for us to construct a hydropower project” [GMS-P.I.28]</p>	
14	Transition towards market economies after Cold War	<p>Lao PDR Chintanakan Mai and Viet Nam’s Doi Moi introduced in 1986</p> <p>Reforms like the Doi Moi in Viet Nam and the New Economic Mechanism introduced in Lao PDR were with the intention to integrate into market economies [Interview]</p> <p>“The collapse of the Soviet Union in 1989 necessarily changed the dynamic in Indochina. Without the Soviet Union’s support for Vietnam and Laos, both countries faced the distinct possibility of economic collapse” [Cruz-del Rosario, p.142]</p> <p>“Furthermore, the prime minister of a free market country, Thailand, Mr. Chartchai Chunhavan advocated ‘the conversion of Indochina from a battlefield to a market’ in 1998” [Ishida, 2013, p.9]</p>	Factor
15	ADB interested in establishing relations between countries for consolidation of the peace	<p>In the aftermaths of the conflicts in the region, Mr. Morita’s concerns were more focused on how the peace was going to be maintained after the signing of the Peace Accords</p> <p>“Thailand is our shareholder, but your country is also our shareholder. For us, as long as you are our member country, whether country A or country B is correct is not my issue. My issue is how to create the peace” [GMS-EC.II.27]</p> <p>“What continues to make this possible after nearly two decades of uninterrupted economic exchange is what ADB refers to as the peace dividend”</p>	Action

		[Cruz-del Rosario, p.147]	
16	Reduction of political tensions in the region	<p>The Peace Accords signed on October 23 in 1991 represented the official end of the military tensions</p> <p>Cooperation started to be sought again in the region</p> <p>Establishment of the Mekong River Commission in 1995, replacing the interim Mekong Committee</p> <p>“It was probably because of the Peace Accord for Cambodia, that was possible in 1991-91” [GMS-EC.III]</p> <p>“Furthermore, the prime minister of a free market country, Thailand, Mr. Chartchai Chunhavan advocated ‘the conversion of Indochina from a battlefield to a market’ in 1998” [Ishida, 2013, p.9]</p>	Factor
17	Idea of ADB project to promote friendship appeared	<p>“Mr. Morita thought of the possibility, if any, to undertake project that would benefit Laos, yet would also promote cooperation rather than enmity among the countries” [Cruz-del Rosario, p.140]</p>	Output
23	ADB established a Bank Study Team for bilateral conversation with each country / government	<p>“A draft Framework Report, prepared after the bilateral consultations between the Bank Study Team and each of the participating governments, was the basic working document for the round table conference” [ADB, First Conference Proceedings, Preface]</p>	Action
24	First Ministerial Conference held at ADB headquarters	<p>“In late 1992, the ADB organized the first ever ministerial conference in Manila at the ADB Headquarters” [Cruz-del Rosario, p.146]</p>	Action
25	Intra-regional IPP agreements gained interest of national utilities	<p>Right after the initiation of the GMS program, several MOUs were being signed</p> <p>“Thai has met with Lao PDR and has signed a memorandum of understanding (MOU) for cooperation on energy projects” [ADB, 1993, Second Conference Proceedings, p. 35]</p>	Output

		Thailand, for example, has signed MOU with Lao PDR, Myanmar, China and Cambodia [GMS-P.III.3-21]	
26	Increasing cooperation gained international support	<p>The change in the foreign policies from Thailand can have</p> <p>In fact, US embargo over Viet Nam was removed a bit later, in 1991.</p> <p>Other international donors have been supporting the development and implementation of GMS projects</p> <p>“Australia joins Friendship Bridge anniversary celebrations”</p> <p>[Australian Embassy, 2009]</p>	Output
27	Discussions were complex and projects focused on national approaches	<p>It was reported that initially there were complexities (countries didn’t talk to each other)</p> <p>“They didn’t talk each other in the meeting”</p> <p>[Morita]</p> <p>When looking to the projects discussed, a strong focus on national needs rather than regional optimization can be observed</p> <p>[proceedings, Ishida]</p>	Action
28	Adoption of Two Plus principle	<p>For a project to be approved to be classified as GMS project need to include at least two member countries, keeping it open to the rest to join if they want</p> <p>“2+ principle: there is no need for the 6 countries to agree for a project”</p> <p>[GMS-EC.I.17]</p> <p>“I said as long as two countries agree to do that, whether you have a third or fourth country I said, it doesn’t matter”</p> <p>[GMS-EC.II.106]</p>	Action
29	Focus on implementation	Mr. Morita immediate objective was to develop the connections between the countries. As he mentioned, if there is money only for bamboo, bamboo bridge is ok	Action

		<p>“I said, if you are really to decide about the road network, which is very important. Everybody lets come together to one place and compare your map and my map and see at to the border what are the missing links. And connect these missing links, once the road is upgraded or not, if the missing link is due to the absence of a bridge, whether the bridge is wood or concrete or even bamboo, let’s accept it. Once you start designing, the new road takes the time. And let’s no create a new route. Initially, let’s connect existing road by filling the missing links and ask your village people which road should connect. Whether is a straight line or not, it doesn’t matter. If you want to make it straight line, you make later on. When you make the tunnel, you make later on. If you want concrete bridge you make when your country become rich”</p> <p>[GMS-EC.II.108]</p>	
30	Agreement of five principles for road project prioritization	The five principles mentioned previously were endorsed by the member countries at the Second Ministerial Conference [Proceedings of the conference, ADB 1993]	Action
31	Projects based on consultant regional master plan	ADB contracted the studies for regional master plan through an external international consultant, which was in charge of the plan and of the bilateral talks with the parties (PADECO)	Output
33	GMS projects opened to other donors’ financing	“Ownership belongs to countries: in fact, ADBs approval is not needed for a project to be done. Countries propose a project and then there is a call for donors. ADB can be donor, but it is not a requirement”	Action
34	ADB becoming Secretariat while not program “owner”	<p>One of the key issues for the GMS program was to increase the ownership of the countries of it. In that sense, it was open to their agreements to decide which project to fund. So, GMS most critical role was to serve as a platform or forum for dialogue in the region.</p> <p>“No secretariat: to avoid again conflicts because of excessive formalism. Neither</p>	Action

		ADB is secretariat, it only gives administrative support” [GMS-EC.I.20]	
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5.6.1.2. Links

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	2	The borders’ conflicts and the ideological differences between countries members clearly affecting the inter-governmental relations
1	3	The military concerns were said to come from fears of possible invasions (e.g. Laos and Thailand crossing-border issues)
1	4	As the only capitalist country in the region, Thailand remained as the only ally of Western countries (in particular the US)
2	7	During the interview survey, it was mentioned the need of removing foreign ministries from the scheme in order to overcome less than optimal agreements. This could be due to the mistrust between the parties, which would be more concerned about protecting national interests rather than in creating economies of scale from the regional cooperation
2	6	Under the context of increasing enmity (even worries about invasions), the trade between countries was reduced or even eliminated. Furthermore, even though Lao PDR had the right of access to Bangkok port as a landlocked country, this was said to be strongly complicated [interview]
3	5	The rise of military conflicts affected the operation of the technical forums (like the Mekong Committee). It was also reported how the international community, by siding on Thailand’s support, was aggravating such circumstances
4	5	
5	9	With the paralyzation of the existing technical cooperation forums (that is the Mekong Committee), and being under strict control of government policies, there were no attempts by roads or development authorities of looking to the regional dimension as a possibility
6	9	
8	10	Without existing technical forums and without a full vision of the sector by the technical bodies, the civil servants were unable to appreciate the potential benefits that could be derived from the cooperation scheme
9	10	
7	11	Because of this mistrust, avoidance of ministries of foreign affairs was a condition since the first conference.
5	23	

10	23	After the success of the Xeset hydropower dam, ADB had an existing case of effective cooperation which could serve for attracting the interest of the member countries. Without operational technical forums, ADB created a Bank Study Team that could convey that message to each of the countries individually. In order to grab the cooperation, the talks were directly at prime ministers level. It was understood that only by having them onboard the risk of second round national discussions would be avoided (needed discussions after reporting from countries' representatives)
11	23	
14	23	
22	23	
10	12	The lack of regional corridors plan could be a consequence of this lack of understanding of the merits. No country have prepared these types of plans, even though the interest they have showed latterly (e.g. Yunnan in NSEC, Lao's land linked policy and so on)
10	27	It was mentioned that the initial discussions were not easy: "at beginning countries didn't talk to each other" [interview]. In the case of the transport, it is possible to see how the road projects proposed initially had more of national routes rather than regional optimization.
7	27	
23	24	With that, ADB prepared a regional conference at its headquarters. This was not innocent but to find a neutral venue where the representatives would be able to discuss freely. In order to reduce the possible tensions, it was sought to have a low profile meeting. For example, no official statements were done, only a meeting note from the secretariat (ADB).
24	28	Although the program had a regional membership and objective, it was found that it was needed to have all the countries participant at every project (some of them would have no special interest in a road link between China and Thailand for example). It was also found that for some particular cases some countries might be ready to move towards deeper integration rather than others (for example, Thailand and Lao PDR in energy agreements). In that sense, the final agreement was to accept as GMS project any that would involve at least two countries and leave them open to the incorporation of other countries if they would like [interview] This would also help to better focus the large number of projects initially proposed.
27	28	
24	29	Against this background, the focus from the ADB was to connect the missing links, to get results as soon as possible, therefore to focus on implementation. It was mentioned that "if bridge must be of bamboo, bamboo will be good". [interview]
27	29	
28	30	After the agreement on the two plus principle and with the focus on implementation (getting rapid results), discussions at the second conference were about getting 5 principles for the prioritization [conference proceedings]
29	30	
4	26	

14	26	With the pacification and the support from Thailand, other international donors could feel more incentivized towards increasing support for regional cooperation
26	33	Under the need of getting the momentum for the cooperation and to bring as many partners as possible, the ADB accepted to leave the GMS opened to funding from other donors (which by the way are in their majority shareholders of the ADB)
29	33	
12	31	The lack of existing plans(and even the lack of real interest at technical level) could have been a trigger why ADB contracted international consultant for that (outsider point of view), rather than started from proposals by member countries (insiders point of view)
30	31	
15	34	With that action, ADB fulfilled another key objective, to increase the ownership of their own development to the member countries.
33	34	

5.6.2. Stage 2: High level political agreement

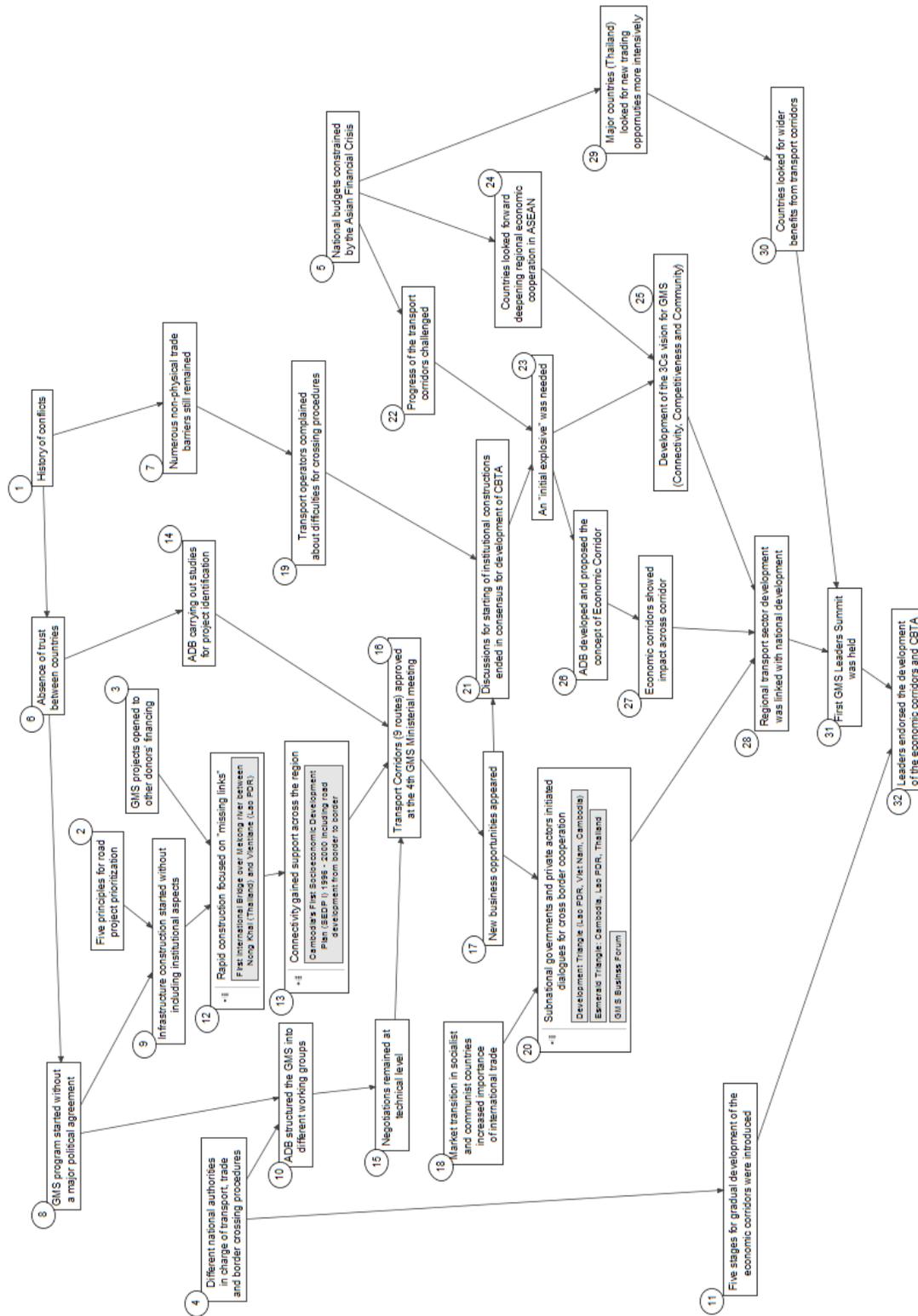


Figure 15 - GMS Economic Corridors, Stage 2

5.6.2.1. Analysis of causality diagram:

<u>Code</u>	<u>Factor</u>	<u>Description / Source</u>	<u>[Cat.]</u>
1	History of conflicts	<p>Indochina suffered several wars and there were continuous concerns among countries about invasions (possible invasion of Viet Nam into Thailand, border conflicts between Thailand and Lao PDR as well as with Cambodia, border conflicts with Myanmar, drug and human trafficking at the Golden Quadrangle...)</p> <p>“In the 1980s, the countries through which the Mekong River flowed were separate nation-states that were divided not only by administrative and political boundaries, but, more importantly, by ideological ones” [Cruz-del Rosario, pp. 141]</p>	Factor
2	Five principles for road project prioritization	<p>“Five Principles for Project Selection, Prioritization and Design, Especially in Regard to the Transport Sector:</p> <ul style="list-style-type: none"> • Priority should be given to the improvement and rehabilitation of existing facilities over that of construction of new ones. • Subregional projects need not involve all six countries in the subregion. Priority should be given to those subregional projects on which there is already agreement among the countries that are directly concerned. • The design of projects should give attention to the trade generation potential of projects, especially in light of the economic transformation taking place in the countries in the subregion • To facilitate project implementation and provide immediate benefits, transport projects should be implemented in sections or stretches. • In view of financial constraints, there is a need to establish some criteria for project selection. Among those that should be considered are the subregional (versus national) character of the project and the 	Action

		<p>financial resources that are most likely to become available for funding subregional projects</p> <p>”</p> <p>[ADB, 1993, Second Conference Proceedings, p.53]</p>	
3	GMS projects opened to other donors' financing	<p>One of the agreements at the two initial regional conferences and that has continued. Very active since its inception, for example, the First Friendship Bridge over the Mekong was funded by Australia</p> <p>“Australia joins Friendship Bridge anniversary celebrations”</p> <p>[Australian Embassy Lao PDR, 2009]</p>	Action
4	Different national authorities in charge of transport, trade, and border crossing procedures	<p>As described in the initial section of this chapter, transport sector is divided into many authorities and ministries in every country (although there are differences also in the level of “atomization” of the sector for each country)</p> <p>“The related authorities that inspect the borders are different: the Ministry of finance for customs; the Ministry of the Interior, the Ministry of Public Security, or the Ministry of Defense for immigration; the Ministry of Agriculture for animal and plant quarantine; and the Ministry of Health for public health quarantine and drug and food quarantine”</p> <p>[Ishida, 2013, p. 57-58]</p>	Factor
5	National budgets constrained by the Asian Financial Crisis	<p>“The implementation of the GMS program, including the 9 road projects, faced with stagnation caused by the Asian Currency Crisis”</p> <p>[Ishida, 2007, p.10]</p>	Factor
6	Absence of trust between countries	<p>As mentioned before, ideological differences and military conflicts, reduced the trust between the countries to minimal levels</p>	Factor
7	Numerous non-physical trade barriers still remained	<p>Borders control was very complex. At the time of starting the CBTA and its initial implementation these have been clearer. Even during the development of the transport</p>	Factor

		corridors, there were complaints from operators [Ishida, book]	
8	GMS program started without a major political agreement	As a matter of fact, GMS does not have an official statement, even it lacks a charter to rule its operations “I think this is first and last international group without a charter. People just don’t notice it, but it doesn’t have it. Because I know, it’s nicer to have but if you propose something among countries they are shooting each other until yesterday, nothing will be agreed. If country A said chapter 1 ok, country B will say no. Going back to parliament, to cabinet and 1 year 2 years 3 years disappear. So I said we have to skip this very critical and unnecessary thing to avoid any conflict. So when the Indochina war was ended, I didn’t think I need to introduce new war that is battle” [GMS-EC.II.91]	Action
9	Infrastructure construction started without including institutional aspects	The initial phases of the corridors were more concerned about the missing links (with statements as “bamboo bridge is ok”). The increase in the demand proved later the need to include institutional of software aspects “The road corridor was only to provide infrastructure, but there was a need to facilitate the usage of the provided infrastructures” “That was the genesis of the pre-CBTA in the late 90s” [GMS-EC.III.49-50]	Action
10	ADB structured the GMS into different working groups	The institutional setting of the GMS was divided into a different working groups for each of the sectors plus a hierarchical superior meeting of GMS ministers, which responded directly to Primer Ministers’ Offices “GMS bodies: Subregional Transport Forum, Economic Corridors Forum, Working Group on Human Resource Development, Subregional Energy Forum, Subregional	Action

		Telecommunications Forum, Tourism Working Group, Working Group on Agriculture, Working Group on Environment” [ADB, 2011, p. 26	
11	Five stages for gradual development of the economic corridors were introduced	Srivastava, 2011 mentions five stages for the development of regional corridors: (i) Transport Corridor (ii) Transport and Trade Facilitation Corridor (iii) Logistics Corridor (iv) Urban Development Corridor (v) Economic Corridor [Srivastava, 2011]	Action
12	Rapid construction focused on “missing links”	Rather than building new corridors, the initial construction works were focused on connecting the missing links. In that sense, the construction of the Friendship Bridges over the Mekong was essential. This was possible thanks to the involvement of other international donors. “The first Friendship Bridge, which was built and funded by Australia, first opened in 1994” [Australian Embassy Lao PDR, 2012]	Action
13	Connectivity gained support across the region	Countries started to include regional connectivity issues in their own development plans [Cambodia’s First Socioeconomic Development Plan]	Output
14	ADB carrying out studies for project identification	ADB contracted new studies (the second stage) [GMS proceedings]	Action
15	Negotiations remained at technical level	At the institutional structure of the GMS, the main part of the work was assigned to Working groups, over which Senior Officials meetings also were included	Action
16	Transport Corridors (9 routes) approved at the 4 th GMS Ministerial meeting	The original road projects were transformed into transport corridors, with some modifications that show a more comprehensive regional optimization	Action
17	New business opportunities appeared	With the establishment of new links and the promising reduced distances between main	Output

		<p>industrial centers, growing interest appeared into the business community (which for example supported the establishment of the GMS Business Forum)</p> <p>“Established in 2000, the Greater Mekong Subregion Business Forum (GMS-BF) is a multicountry, independent, nongovernment organization, and a joint initiative of the chambers of commerce of the six GMS countries; Cambodia, People’s Republic of China (PRC), Lao People’s Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam. It plays a key role in promoting and facilitating cross-border trade and investment in the region.</p> <p>The main goal of the GMS-BF is to foster cooperation and growth of the private sector through information sharing, networking, and public-private sector dialogue. It is active on issues of common interest to members such as trade facilitation, cross-border trade agreements, and preshipment financing and capacity building for small and medium-sized enterprises. The forum seeks to promote the GMS as a unique trade-investment-transport hub.”</p> <p>[GMS Business Council website: www.gmsbizfourm.com]</p>	
18	Market transition in socialist and communist countries increased importance of international trade	It is assumed that with the reforms in Lao PDR and Viet Nam aiming at increasing foreign direct investment, promotion of international trade was another objective.	Factor
19	Transport operators complained about difficulties for crossing borders	It had been reported that complaints from transport operators were common (and still are in some cases) at the time of the transport corridors and the beginning of the economic corridors [Ishida]	Factor
20	Subnational governments and private actors initiated dialogues for cross-border cooperation	Different initiatives started to arise in the region outside the direct control of central governments. For example the development triangle [Ishida, 2012]	Action

21	Discussions for starting of institutional construction ended in consensus for development of CBTA	After the attempt of implement the recommended conventions by UN-ESCAP, it was decided to develop a new umbrella agreement better suited to the conditions of the region [Ishida, 2013]	Action
22	Progress of the transport corridors challenged	“The implementation of the GMS program, including the 9 road projects, faced with stagnation caused by the Asian Currency Crisis” [Ishida, 2007, p.10]	Output
23	An “initial explosive” was needed	“The need for a kind of initial explosive was also felt from the speeches of ADB staff and some ministers” [Ishida, 2007, p.10]	Output
24	Countries looked forward deepening regional economic cooperation in ASEAN	“There was a change in Viet Nam’s foreign policy to normalize relations with ASEAN and China” [GMS.I.25]	Factor
25	Development of the 3Cs vision for GMS (Connectivity, Competitiveness and Community)	“To realize its vision of a prosperous, integrated, and harmonious subregion, the GMS Program has adopted a three-pronged strategy (the 3Cs)” [ADB, 2015, http://www.adb.org/sites/default/files/publication/29387/gms-ecp-overview-2015.pdf]	Action
26	ADB developed and proposed the concept of Economic Corridor	“The economic corridor is a concept proposed by the ADB as such kind of initial explosive “ [Ishida, 2007, p.10] “But then, in 2006 or 7, the countries agreed that they should look at more comprehensive development along GMS transport corridors” “At that time, economic corridor concept was brought in” [GMS.III.29-30]	Action
27	Economic corridors showed impact across corridor	The major difference between the transport corridors and the economic corridors was the change from linking economic centers to a more comprehensive development across the entire corridor. Belt-shaped [Ishida]	Action

28	Regional transport sector development was linked with national development	It is understood that by aiming at extending the growth across the corridors, central government felt those better suited their national strategies	Output
29	Major countries (Thailand) looked for new trading opportunities more intensively	<p>“ASEAN was also important at that time. At the end of the 80s, their economy was booming so the next was to extend that to Indochina. Leaders from major countries like Indonesia, Malaysia and Thailand were looking for opportunities to invest” [GMS.I.29]</p> <p>It is reasonable to think that as a way to re-start after the crisis, countries looked even more towards their neighbouring countries</p>	Factor
30	Countries looked for wider benefits from transport corridors	As a mean to recover their economies, it is assumed that countries’ thoughts were at the maximization of the benefits of the infrastructures being built (in this case, the roads)	Output
31	First GMS Leaders’ Summit was held	<p>“We, the Heads of Government of the Kingdom of Cambodia, the People’s Republic of China, the Lao People’s Democratic Republic, the Union of Myanmar, the Kingdom of Thailand and the Socialist Republic of Viet Nam, assembled for the first time in Phnom Penh, Cambodia for the GMS Summit of Leaders on the tenth anniversary of the Program of Economic Cooperation in the Greater Mekong Subregion (GMS Program), to reaffirm our commitment to the subregional economic cooperation,” [GMS Summit, Joint GMS Summit Declaration]</p>	Action
32	Leaders endorsed the development of the economic corridors and the CBTA	<p>The countries showed a strong commitment with the implementation: “We will accelerate the implementation of “software” arrangements of infrastructure linkages” “We will expedite the full implementation of the Framework Agreement for the Facilitation of Cross-border Movement of Goods and People” [Joint Summit Declaration: 1st GMS Summit of Leaders]</p>	Output

5.6.2.2. *Links:*

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	6	It seems clear that in a context of continuous conflicts between the countries, the level of trust between the governments would be minimal if not null
1	7	As a direct consequence of the conflicts between the countries, the border crossing procedures were highly complex. This could be observed since the starting of the transport corridors from the claims of the transport operators. [Ishida, 2013]
6	8	In order to avoid conflictive situations, ADB decided to give a low profile to the GMS. In that sense, the GMS lacks a charter for example [Interview Mr. Morita]
8	9	As a direct consequence of this lack of political considerations, and counting with the agreed 5 principles before mentioned, the construction started with including institutional aspects
2	9	
9	12	Without considering institutional aspects and thanks to involvement of other international donors, construction could started rapidly (by the way, one of the objectives at the beginning)
3	12	
12	13	This initial rapid implementation could potentially have triggered in the countries a rapid reaction for including regional connectivity issues in their own development plans [
6	14	In order to overcome the lack of trust between countries, ADB assumed this role of carrying out the studies for project identification
8	10	In order to coordinate the work of different issues, the GMS was divided into working groups
4	10	
10	15	By doing so, the negotiations were kept at technical level
15	16	The transition from the initial road projects to the transport corridors could be understood as a consequence of the independent studies discussed at technical levels (where countries confrontation importance is lower) and with the increasing acceptance of the connectivity in the region
13	16	
14	16	
16	17	The transport corridors looked not only for allowing the connection between countries but also to make it economically profitable. In any case, by opening the borders and with a clear strategy of stimulating the growth of trade in volume and value, new opportunities were created
7	19	With the increasing traffic demand in the corridors, the numerous non-physical barriers could become more evident. The first in suffering those

		barriers would have been the transport operators, who consequently reported their complaints. [Ishida, 2013]
19	21	Partly due to the complaints from operators, and in order to grab the new business opportunities being created, negotiations started at regional level for the agreements on institutional aspects
17	21	
5	27	Asian Financial Crisis could be considered as a trigger for the countries to look for more comprehensive approach towards the transport corridors [interview ADB]. This could be understood as a political incentive for the countries to proceed with deeper integration
5	22	“The implementation of the GMS program, including the 9 road projects, faced with stagnation caused by the Asian Currency Crisis” [Ishida, 2012]
22	23	Starting new negotiations for institutional reforms under reduced investment in infrastructure was an important challenge. For that, it seems reasonable that “The need for a kind of initial explosive was also felt from the speeches of ADB staff and some ministers” [Ishida, 2007, p.10]
21	23	
23	26	Although it is not clear how the consultant/ADB came with the concept of economic corridor approach, it seems clear that this was a response to that demand for an “initial explosive”
27	27	The economic corridors were drawn belt-shaped rather than a link, this could have served to show the impact not only from point to point but across the entire corridor
5	24	Increasing regional cooperation became a mean to solve the economic crisis in the region, increasing the interest on ASEAN
23	25	Ideas or visions similar to those of ASEAN (like community) get more interest as part of the political agenda. In that sense, the initial explosion adapted to those ideals.
24	25	
17	20	These new opportunities were clear for the business community, who started to try to do collective action for the reduction of bottlenecks. Also sub-national governments could have seen new opportunities from the increasing traffic (in areas that previously were battlefronts) due to the opening to international traffic. Private sector gathered around the GMS Business Forum, while sub-national governments (with the support of central governments) started to create the so-called development triangles [Ishida]
18	20	
20	28	The technical solution proposed (economic corridors with broad impact across the route) matched with overall national goals or visions as well as with the demands from national actors
27	28	
25	28	
5	29	The close of international markets could have led to larger countries like Thailand to try to reach out more opportunities in the neighbouring countries

29	30	In order to maximize those investments, a more comprehensive approach for regional value chains seems to have been more intensively sought
28	31	As a consequence of this better matching the overall national goals and to give the sufficient support, involvement and active support from countries' leader was the next step
39	31	
4	11	In order to overcome the differences between countries and between involved areas, a more gradual process was proposed (doing at once was not possible)
11	32	This gradual process helped to reduce concerns from countries' leaders of ceding "too much" sovereignty, ending in their active support
31	32	

5.6.3. Stage 3: Physical construction

Until reaching the agreement on the final route design of the three initial GMS Economic Corridors, different drafts were proposed. An evolution can be observed from the initial road projects to the final design. Those changes created also difficulties in some cases, in particular, as will be explained later, in the North-South Economic Corridor (NSEC).

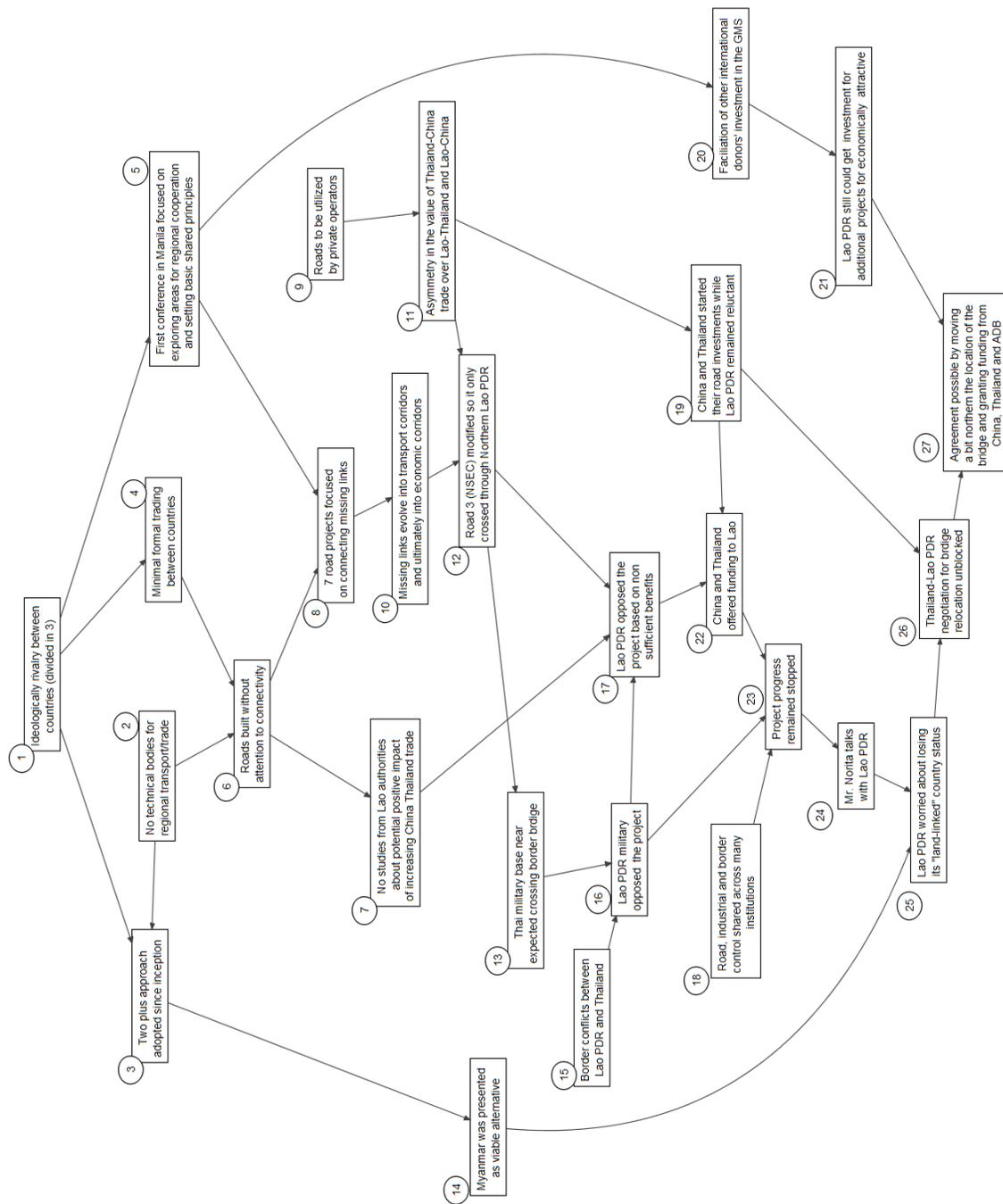


Figure 16 - GMS Economic Corridors, Stage 3

5.6.3.1. Analysis of causality diagram:

<u>Code</u>	<u>Factor</u>	<u>Description / Source</u>	<u>[Cat.]</u>
1	Ideologically rivalry between countries (divide in 3)	<p>The region was divided into: soviet communism (Lao PDR and Viet Nam), Chinese communism (China and part of Cambodia), Western capitalism (Thailand) and nationally instable countries (Myanmar and Cambodia)</p> <p>“In the 1980s, the countries through which the Mekong River flowed were separate nation-states that were divided not only by administrative and political boundaries, but, more importantly, by ideological ones” [Cruz-del Rosario, pp. 141]</p>	Factor
2	No technical bodies for regional transport/trade	<p>Technical cooperation in the region was limited to the Mekong Committee (and even this was not properly functioning, as mentioned before)</p> <p>“Then, the meeting I attended was of the Mekong River Commission. Instead of people talking about the agenda, both countries started criticizing the other size” [GMS.EC.II-17]</p> <p>In terms of transport, no existing forum was found</p>	Factor
3	Two plus approach adopted since inception	<p>Approved from the First Conference, it was accepted that as long as a project would involve at least two member countries, that would be considered to benefit the regional cooperation, and therefore would be included as GMS project. As a consequence, that means that other countries could not oppose to it.</p> <p>For a project to be approved to be classified as GMS project need to include at least two member countries, keeping it open to the rest to join if they want</p>	Action

		<p>“2+ principle: there is no need for the 6 countries to agree for a project” [GMS-EC.I.17]</p> <p>“I said as long as two countries agree to do that, whether you have a third or fourth country I said, it doesn’t matter” [GMS-EC.II.106]</p>	
4	Minimal formal trading between countries	<p>Without formal relations, and lacking the infrastructure formal trading was reduced to minimum. Even the transport of merchandises from Lao PDR to Bangkok, granted by international agreement, was commonly difficult</p> <p>“In case of the port, they have to rely on Thailand.” “We have to plan everything to Bangkok. Trucking company is Thai. And they inspect everything. So they know very well where we are, and what we are carrying. Everything is under their military observation” [GMS-EC.II.165-166]</p>	Factor
5	First conference in Manila focused on exploring areas for regional cooperation and setting basic shared principles	<p>From the proceedings of the First Conference it can be understood that many topics were discussed in order to identify the most relevant for the member countries under a regional economic cooperation scheme</p> <p>“The Conference reached a consensus on the concept and basic modalities for subregional economic cooperation” [ADB, 1993, First Conference Proceedings]</p>	Action
6	Roads built without attention to connectivity	The lack of connections between countries seems to be due to the lack of interest about connectivity issues during the planning of national networks	Action
7	No studies from Lao authorities about potential positive impact of increasing China-Thailand trade	As a matter of fact, the connection between China and Thailand through the Northern side of Lao seemed the originally ideal option for those two countries. No evidence was found that Lao PDR had prepared development plans in advance for taking advantage of that position. Claims that the	Factor

		<p>project was not aligned with national interests of Lao PDR appears to support such logic</p> <p>For example, gold mines have been found and are being utilizing thanks to the NSEC “Thank you, without GMS road we could not get a hit on gold mine. How to develop, how to transport out. It was our headache. But now, thanks to this project, the gold mine give us more money than hydropower. It is very nice” [GMS-EC.II.266]</p>	
8	7 road projects focused on connecting missing links	<p>“Prior to the ministerial meeting, a study team of the ADB visited each of the countries of the subregion and identified potential areas for subregional cooperation/ In accordance with the consultations between the ADB and the governments of the 6 countries, 7 road projects were listed as prioritized projects” [Ishida, 2012, p. 3]</p>	Action
9	Roads to be utilized by private operators	<p>Contrary to power sector, in the road sub-sector, government only provides the infrastructure, while the utilization is then up to private operators. Because of that, economically merit of the project becomes more critical. In the case on roads, reduction of distance is a clear factor then</p> <p>“Road transport is very different from other types of transport or other types of infrastructure” [GMS-EC.III.45]</p>	Factor
10	Missing links evolved into transport corridors and ultimately into economic corridors	<p>As explained in the previous section, the initial road projects were modified into transport corridors, which ended becoming the economic corridors (NSCE, EWEC, and SEC)</p> <p>[Ishida, 2013]</p>	Output
11	Asymmetry in the value of Thailand-China trade over Lao-Thailand and Lao-China	<p>During the interview survey, it was mentioned about this relative imbalance in the trade relations between countries. This asymmetry represents the relative higher importance that trade with China, in</p>	Factor

		<p>comparison with Lao PDR, meant for Thailand and vice versa</p> <p>“I found that the real reason was not the question of the need of financing. No legal aspects, or financial aspects. It was really Laotians that were saying this road which we are offering our land and participating the financing, which we have to borrow from outside, really benefits only Thailand and China, not us.”</p> <p>[GMS-EC.II.236]</p>	
12	Road 3 (NSEC) modified so it only crossed through Northern Lao PDR	<p>The originally road number 3 was supposed to have crossed Lao PDR from South (Vientiane) to North. Nevertheless, this plan was latterly change and crossed only from North part</p> <p>[Road maps]</p>	Output
13	Thai military base near expected crossing border bridge	<p>During the interview survey it was mentioned that one of the issues referred by Lao’s officials were the concerns about a military base near the initial border point</p> <p>“Fears of possible military actions from Thailand using the Second Mekong bridge to be constructed”</p> <p>[GMS-EC.I.46]</p>	Factor
14	Myanmar was presented as viable alternative	<p>The transport corridor was divided into two alternatives, Road 3A and Road 3B</p> <p>[Road maps]</p>	Action
15	Border conflicts between Lao PDR and Thailand	<p>Several border conflicts were reported between Lao PDR and Thailand, and these having implications for the other member countries (particularly Viet Nam and China)</p> <p>[New York Times, 1988]</p> <p>“Other border disputes involved Thailand and Laos particularly in northern Thailand where the Meo tribespeople from Laos took refuge after the Pathet Lao seized power in 1975”</p> <p>[Cruz-del Rosario, p.141]</p>	Factor
16	Lao PDR military opposed the project	<p>During the interview survey it was reported that a key actor opposing the construction of</p>	Output

		<p>the bridge between Thailand and Lao PDR was the military of the former</p> <p>“Fears of possible military actions from Thailand using the Second Mekong bridge to be constructed” [GMS-EC.I.46]</p>	
17	Lao PDR opposed the project based on non-sufficient benefits	<p>It was extensively reported that Lao PDR opposed the project in several occasions, delaying continuously the project</p> <p>[“I found that the real reason was not the question of the need of financing. No legal aspects, or financial aspects. It was really Laotians that were saying this road which we are offering our land and participating the financing, which we have to borrow from outside, really benefits only Thailand and China, not us.” [GMS-EC.II.236]</p>	Output
18	Road, industrial and border control shared across many institutions	As mentioned before, the responsibilities were shared among different departments and agencies at each country	Output
19	China and Thailand started their road investments while Lao PDR remained reluctant	<p>“actual length was from Kunming to Chiang Mai, but route of Chinese side already done, and good part of Thailand already done before they started the missing link” [GMS-EC.II.226]</p>	Action
20	Facilitation of other international donors’ investment in the GMS	<p>ADB decision to open the funding scheme to other international donors</p> <p>“Ownership belongs to countries: in fact ADBs approval is not needed for a project to be done. Countries propose project and then there is a call for donors. ADB can be donor, but it is not a requirement” [GMS-EC.I.21]</p>	Action
21	Lao PDR still could get investment for additional projects economically attractive	Being the availability of resources potentially unlimited (resources could come from other international donors), Laotians could have seen this project not as a total loss of opportunity	Output

22	China and Thailand offered funding to Lao	<p>“ADB, Thailand and China put equally US\$30 million each to build the Lao section of the NSEC (R3E—228 km)”</p> <p>“To complete the NSEC plans, Thailand and China also agreed to share the cost of the US\$43 million bridge linking Houayxay (Laos) to Chiang Khong (Thailand)”.</p> <p>[Tan, 2014]</p>	Action
23	Project progress remained stopped	<p>It was mentioned that until Lao PDR was convinced about the merits of the land-linked opportunity, no agreement was possible. Mr. Morita mentioned to explain they could be like Switzerland</p> <p>“I was given example to the deputy minister. Switzerland, where there is no main road there, the life is different”</p> <p>[GMS-EC.II.270]</p>	Output
24	Mr. Norita talks with Lao PDR	<p>It was reported that Mr. Norita was requested to have bilateral talks with Laotian officials in order to</p> <p>[Interview, del Rosario]</p>	Action
25	Lao PDR worried about losing its “land-linked” country status	<p>Although it is not fully confirmed, it seems that the concerns about not being able to continue with its strategy as land-linked country</p> <p>Mr. Morita conveyed the message that they could risk to lose their opportunity to become land-linked country (as Switzerland)</p> <p>“I mobilized so much my limited knowledge that [...] Laotians were going to miss one the very important ones”</p> <p>[GMS-EC.II.240]</p>	Output
26	Thailand-Lao PDR negotiation for bridge relocation unblocked	Finally the project was realized	Action
27	Agreement possible by moving a bit northern the location of the bridge and granting funding from China, Thailand and ADB	The final location of the bridge was mentioned to be northern from the initial point [interview]	Action

5.6.3.2. *Links:*

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	3	It seems clear that the Two plus approach was chosen partly based on the impossibility to involve all countries under same programs/projects, or at least in order to avoid impositions on them. During the interview, it was reported that was part of the consideration of “regional democracy”
2	3	
1	4	It also seems reasonable that the conflicts between countries had an important impact on trade, which would be instable and depending on regular conflicts between countries
2	6	A possible explanation for the lack of connectivity between the countries would be the low level of regional trading (demand condition) and the lack of coordination mechanisms to incentivize it (supply condition)
4	6	
1	5	From the interview survey it was understood that the main objective of the First Conference was to sit all the countries under the same table for the first time. In order to achieve that, it was aimed to reduce the potential level of conflict as much as possible. The selection of a neutral venue and the opening for accepting different topics were done with that purpose [interview]
6	8	It was also reported that, in the absence of roads between countries, connecting the missing links was the top priority. This should be done also with the available resources and without imposing burdens. In that sense, the idea of even bamboo bridges was acceptable [interview]
5	8	
8	10	With the progress in the discussions for the road projects, the agreement for road prioritization principles and the studies brought by the international consultant, the road corridors evolved into transport corridors and finally to economic corridors.
9	11	As mentioned during the interview survey, a big difference between road subsector and others (like energy or even railway) is that government only provides infrastructure, while the use depends to private operators. [Interview]. Because of that, asymmetries in the relatively importance of the trade relations between countries could be observed.
11	12	Then, it seems reasonable that during the process of regional optimization of the infrastructure (including the transition from connecting roads to economic corridors), some links would be abandoned favoring others or new ones. This is what seems to have happened for the modification of the NSEC.
10	12	
6	7	Although this is not clear, it seems that Laotian authorities had not prepared for the possibility of taking advantage of a connection between China and Thailand through the northern part of the country.

12	16	The new location of the bridge between Lao and Thailand raised concerns on the Laotian military which considered it could be a threat for the national security of the country [interview]
15	16	
13	16	
7	17	The lack of economic incentives (or at least reduced from the original proposal) and the opposition from members of the military were reported to have played the most important roles in the initial decision of the government of not accepting / cooperating with the construction of the NSEC [interview]
16	17	
12	17	
11	19	Due to the economic incentives, Thailand and China started rapidly their investments in their respective sections of the NSEC
17	22	These already done investments (as well as the economic incentives) and the concerns from Lao PDR about the low profitability for them, triggered that China and Thailand offered the funding for the bridge and the road in the Laotian territory (it is also worthy to noted that it seems clear that Thailand and China also considered the budget difficulties of Lao PDR)
19	22	
16	23	Nevertheless, that didn't have the expected effect on the Laotian government. A possible reason for that would be that the concerns from the military weighted more than the potential recommendations from trade & development experts (who may have proposed some alternatives for Lao to take advantage of the infrastructure development). The lack of coordination between them could explain why that happened.
22	23	
18	23	
23	24	Due to the lack of progress from the negotiations, Mr. Morita was requested to have bilateral talks with Laotian officials due to his close relations with them [interview, Teresita]
3	14	The change of the NSEC put the road near to the borders of Myanmar. In that sense it was a possible alternative for the road through Lao PDR.[Road map] Although this was a complicate alternative [Interview, Ishida], it also fulfilled the will from the ADB of involving all the countries [Interview, ADB], something that was more complex with Myanmar due to the international sanctions and the internal situation [Interview, Morita]
14	25	Talks initiated by Mr. Morita had an influence in the Laotian officials to continue with the strategy as land-linked country [interview]. The potential alternative through Myanmar potentially had an influence on this decision too.
24	25	
19	26	With the reinforced perspective of land-linked country (with examples as Switzerland) and the pressure on Thailand and China, a commonly acceptable solution was found by moving northern the location of the bridge. [interview]. It seems reasonable that by increasing the value of the project for the national development of Lao PDR, the military concerns were reduced (this could be understood as another contribution from the ADB)
25	26	

5	20	One of the consequences of the First Conference was the opening of the GMS project to other international donors (this was explained in previous section)
20	21	The opening of the funding to other international donors could potentially mean for Lao PDR that although some investment would be for the NSEC, there would still other projects they could get funded
21	27	In that sense, it seems reasonable that the reduction of potential negative consequences and the understanding of the potential benefits were relevant for achieving the consensus building across the NSEC
26	27	

5.6.4. Stage 4: Institutional construction

The CBTA is the key document for the institutional construction of the GMS Economic Corridors. As mentioned before, it integrates all the measures needed for the removal of the non-physical barriers for the cross-border procedures. The development of the CBTA was a complex process and involved several actions

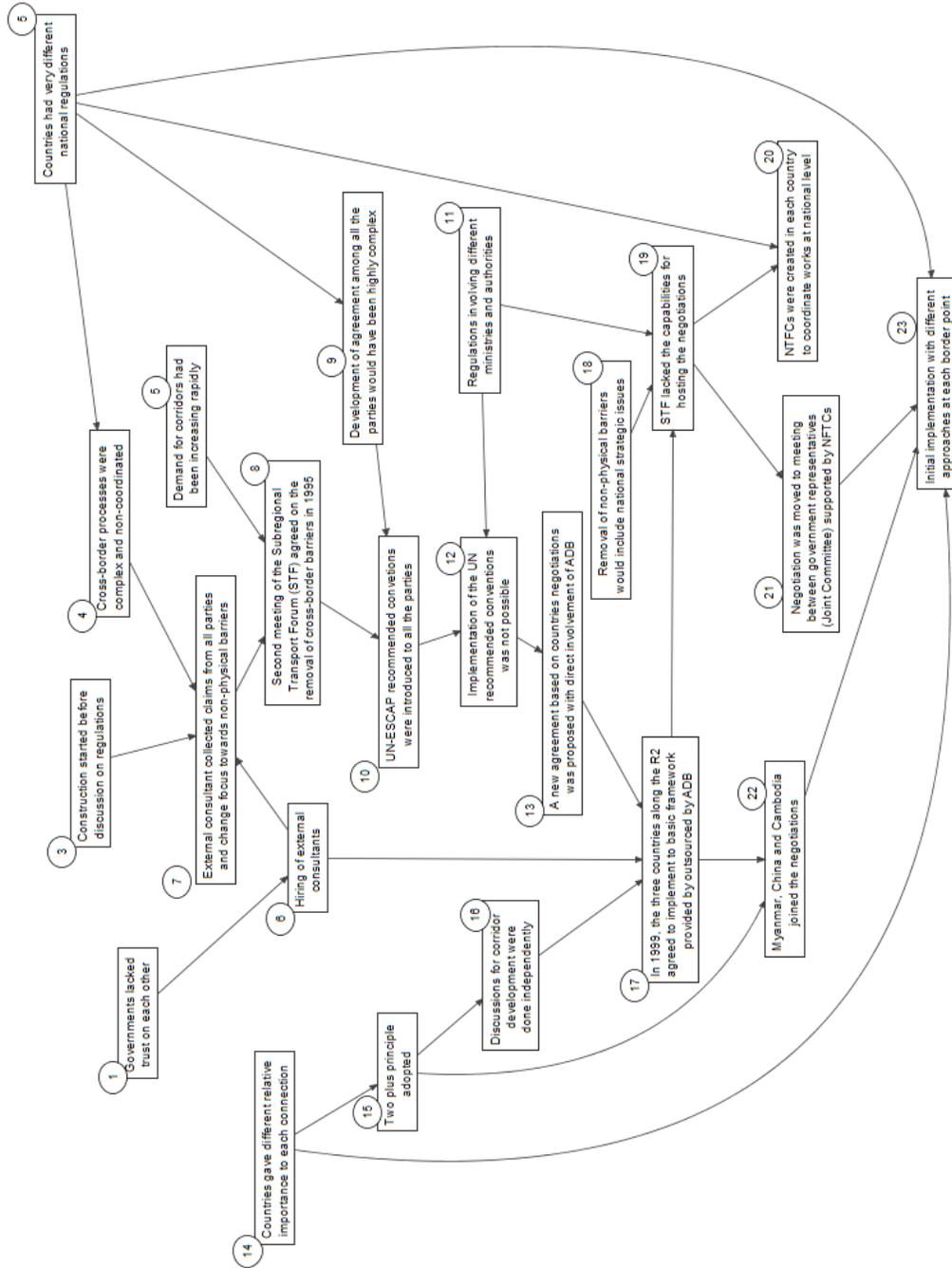


Figure 17 - GMS Economic Corridors, Stage 4

5.6.4.1. Analysis of causality diagram:

<i>Code</i>	<i>Factor</i>	<i>Description / Source</i>	<i>[Cat.]</i>
1	Governments lacked trust on each other	There was a clear mistrust between countries which considered each other enemies before than neighbours “The first meeting in Manila, in 1992. IT was not a big event at all. People dind’t understand whas was naturally. To me it was a dream, countries shooting each other now coming to the Philippines, which is outside the Indochina, in a way neutral They didn’t talk each other in the meeting” [GMS.EC.II.86-87]	Factor
2	Countries had very different national regulations	“The need to improve the ‘software’ issues in the subregional transport system was first addressed in the draft final report on the subregional transport sector study submitted by a consulting company to the fourth GMS ministerial conference” [Ishida, 2013, p.56]	Factor
3	Construction started before discussion on regulations	The initial focus was to start connecting the missing links, therefore, the infrastructure was first “I said, if you are really to decide about the road network, which is very important, everybody lets come together to one place and compare your map and my map and see at to the border what are the missing links. And connect these missing links,” [GMS-EC.II.108]	Output
4	Cross-border processes were complex and non-coordinated	“There were lot of contradictions between the domestic laws and the seven conventions used by the GMS member countries” [Ishida, 2013, p. 57]	Output
5	Demand for corridors had been increasing rapidly	“Connecting the two metropolises in the Greater Mekong Subregion (GMS), Bangkok and Hanoi, by land has drawn the attention of a lot of businessmen in East Asia”	Output

		<p>“Thus, driving experiments had been undertaken by private firms and governments since 2004. In consequence, a number of logistics firms have established chartered services between Bangkok and Hanoi”</p> <p>[Ishida, 2013, p.53]</p>	
6	Hiring of external consultants	<p>“The consultants representing PADECO Co. Ltd., the firm selected to conduct the comprehensive subregional transport sector study, presented their proposed technical approach and methodology”</p> <p>[ADB, 1993, Second Conference proceedings, pp. 6-7]</p>	Action
7	External consultant collected claims from all parties and change focus towards non-physical barriers	<p>“The need to improve the ‘software’ issues in the subregional transport system was first addressed in the draft final report on the subregional transport sector study submitted by a consulting company to the fourth GMS ministerial conference”</p> <p>[Ishida, 2013, p.56]</p>	Action
8	Second meeting of the Subregional Transport Forum (STF) agreed on the removal of cross-border barriers in 1995	<p>“The second meeting of the Subregional Transport Forum (STF), a working group formed under the senior official meeting of the GMS Program, agreed to remove cross-border barriers in the GMS in reflecting such complaints on April 24-25 1995”</p> <p>[Ishida, 2013, p.56]</p>	Output
9	Development of agreement among all the parties would have been highly complex	<p>“It was understood that more time was needed for discussion”</p> <p>[Ishida, 2013, p.57]</p>	Output
10	UN-ESCAP recommended conventions were introduced to all the parties	<p>“At the meeting, Economic and Social Commission for Asia and the Pacific (ESCAP) Resolution 48/11 adopted in 1992 was introduced. The resolution recommends that the countries in Asia and the Pacific region ratify the eight conventions elected from among 50 conventions introduced throughout the world”</p> <p>[Ishida, 2013, p. 56]</p>	Action
11	Regulations involving different ministries and authorities	<p>“The related authorities that inspect the borders are different: the Ministry of finance for customs; the Ministry of the Interior, the Ministry of Public Security, or the Ministry</p>	Factor

		of Defense for immigration; the Ministry of Agriculture for animal and plant quarantine; and the Ministry of Health for public health quarantine and drug and food quarantine” [Ishida, 2013, p. 57-58]	
12	Implementation of the UN-ESCAP recommended conventions was not possible	“There are no countries in the GMS, however, that had acceded to even one of the seven conventions” [Ishida, 2013, p.57]	Output
13	A new agreement based on countries negotiations was proposed with direct involvement of ADB	“In order to formulate an agreement that would be accepted by the GMS countries and implemented without delay, the countries, with the assistance of the ADB drafting team, formulated and developed the CBTA to broadly incorporate provisions of the international conventions, while at the same reflecting the unique realities of the GMS countries.” [ADB, 2011, p. 2]	Action
14	Countries gave different relative importance to each connection	“For example, if we look at the border point between Myanmar and Thailand” “That might not be relevant to other countries” “Then, it might not be necessary to discuss at such GMS big meeting, but just with the two countries at ministry level or even agency level in order to implement” [GMS.III.79-81]	Factor
15	Two plus principle adopted	For a project to be approved to be classified as GMS project need to include at least two member countries, keeping it open to the rest to join if they want “2+ principle: there is no need for the 6 countries to agree for a project” [GMS-EC.I.17] “I said as long as two countries agree to do that, whether you have a third or fourth country I said, it doesn’t matter” [GMS-EC.II.106]	Action

16	Discussion for corridor development were done independently	“The three corridors evolved more or less independently” [GMS.III.37]	Action
17	In 1999, the three countries along the R2 agreed to implement the basic framework provided by outsource by ADB	“In 1999, the three countries along the R2 agreed to implement the basic framework provided by outsource by ADB” [Ishida, 2013, p.57]	Action
18	Removal of non-physical barriers would include national strategic issues	It is understood that strict border control was considered a strategic issue for the countries. Especially considering the illegal trafficking occurring in some areas (like in Northern Thailand).	Factor
19	STF lacked the capabilities for hosting the negotiations	“It was then understood that more time was needed for discussion” [Ishida, 2013, p. 57]	Output
20	NTFCs were created in each country to coordinate works at national level	“National Trade Facilitation Committees (NTFC) were created to coordinate with other ministries involved like finance, police & military, agriculture” [GMS-EC.I.81]	Action
21	Negotiation was moved to meeting between government representatives (Joint Committee) supported by NFTCs	“As a result it was decided that discussion is to be made by the government officials of the National Working Group under the National Transport Facilitation Committee of each government – instead of the meeting of the STF” [Ishida, 2013, p. 57]	Action
22	Myanmar, China and Cambodia joined the negotiations	“Later, Cambodia, China and Myanmar acceded to the basic framework, in 2001, 2002, and 2003, respectively” [Ishida, 2013, p.5 7]	Output
23	Initial implementation with different approached at each border point	“CBTA only umbrella to facilitate the trade/transport flow within the region” “But for the implementation, you need to go to the details for the cross-border point for the two countries” [GMS-EC.III.77-78]	Action

5.6.4.2. *Links:*

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	6	External consultants would the so much needed neutrality to the studies.
2	4	Countries differences in ideologies had also impact in the way their national systems were structured (some more open to international trade, always with tight public control on the sector). These created asymmetries in the processes at borders, making more difficult to harmonize those procedures
6	7	From their neutral position, the external consultants were able to gather the demands and complains from all the parties. That process helped to include also demands from private operators about the difficulties for border crossing procedures.
3	7	
4	7	
7	8	With an increasing demand (that is countries expecting to get more gains) those demands for removing non-physical barriers were better accepted by public authorities, with the consequent agreement at the second meeting of the STF
5	8	
2	9	The differences between regulations at each country also increased the complexity of finding a standard approach for all. Such difficulties also affected the initial implementation (as ween at 2->23)
8	10	In order to keep neutrality, aiming at international standards (support by another independent and neutral institution as UN-ESCAP) could have appeared as an optimal solution
9	10	
10	12	The implementation of those common standards (the international conventions) was proved also to be highly complex. The need to modify regulations and systems involving different departments seems to have played an important role on that
11	12	
12	13	In order to unblock the situation, ADB proposed the creation of a new based agreement trying to better consider the context and particularities of the member countries
14	15	Partially the logic of the Two plus principle was based in the possibility of developing projects that would not interest equally to all the countries. In this sense, it was accepted that some countries would speed up their cooperation in areas of their particular interest, while others would be allowed to incorporate if they would latterly like
15	16	Based on this similar idea, each of the corridors was developed independently
16	17	This agreement was actually initially proposed by the external consultant for the EWEC
6	17	
13	17	
15	22	Based on the Two plus principle, the other countries (Myanmar, China and Cambodia) also requested their participation
17	22	

11	19	As similar as occurred for the implementation of the UN-ESCAP recommended international conventions, the development of an umbrella agreement for the border-crossing procedures involved several aspects that were beyond the possibilities of the STF to negotiate
18	19	
17	19	
19	20	By moving the negotiations to a more politically group, the discussion about technical implementation in each country was allocated to each country. For that purpose (implement what was going to be agreed) national committees were created at each country (the NTFCs)
2	20	
19	21	The negotiations were therefore moved to higher level officials which could better represent the countries and had authority over different departments
2	23	Once the umbrella agreement (CBTA) was finally approved, differences between border-crossing points became more relevant and in fact it was understood that each of them would need some specific measures and bilateral agreements between countries
14	23	
21	23	
22	23	

5.6.5. Stage 5: Harmonization

No causality analysis of this stage was conducted because of shortage of relevant information. As explained at 1.5.6., it is still not clear the reasons that delayed the ratification of the CBTA in Thailand.

5.7. Analysis of factors and actions:

The factors are evaluated as follows:

- 5: Critical factor that overruns others
- 3: Factor part the core process but equally important to others
- 1: Without a direct, or lower, influence in the core process

<i>Stage</i>	<i>Code</i>	<i>Factor</i>	<i>Impact</i>	<i>Weight</i>
1	1	Indochina was divided into three groups after II World War	The ideological differences were one the factors that continuously influenced the process from the beginning, making more complex the project (for example, the acquisition of the written agreement between governments for the pilot project).	3

1	3	Military and defense concerns were priority over technical issues	More importantly, the military conflicts were affecting any possible collaboration at any level, as the attack to Mr. Morita during the Mekong Committee meeting showed	5
1	5	Previous cooperation institutions paralyzed	The paralyzation of these bodies was an important component, but since those were not directly related to transport, the influence had not been direct	1
1	6	Trading between countries reduced to minimum	The low levels of trading was an important factor, making more complex the understanding of the potential benefits of the regional project (probably because the military and defense minds were predominant)	3
1	8	Transport and trade involved several different departments and authorities	The coordination of different departments was also an important factor at national level for not having comprehensive approaches towards the communications with neighboring countries	3
1	9	No talks between technical bodies on regional transportation	In the absence of such institutions or forums, no relationships were established between the national authorities, making more complex the identification of commonly beneficial projects and/or mutual understanding	5
1	14	Transition towards market economies after Cold War	The process towards opening to international market was one of the drivers for the socialist and communist countries to join the program, as well as an incentive for Thailand to cooperate with them	3
1	16	Reduction of political tensions in the region	The perspective of pacification of the region helped the process to be moved, nevertheless, this pacification didn't finish the conflicts between countries.	1

<i>Stage</i>	<i>Code</i>	<i>Factor</i>	<i>Impact</i>	<i>Weight</i>
2	1	History of conflicts	Indochina wars had left a common mistrust between the countries, nevertheless at this stage those were not any more active.	1
2	4	Different national authorities in charge of transport, trade, and border crossing procedures	The entire set-up of the program needed to adapt to such reality, first by creating different ad-hoc groups as well as establishing a gradual process of implementation of the economic corridors	5
2	5	National budgets constrained by the Asian Financial Crisis	Another factor that putting more emphasis on the need of the “initial explosive”, although the influence was indirect	1
2	6	Absence of trust between countries	A major factor during the entire process, influencing different consensus building processes	3
2	7	Numerous non-physical trade barriers still remained	One of the background factors that highlighted the need of moving beyond the simple construction of the infrastructure	3
2	18	Market transition in socialist and communist countries increased importance of international trade	One of the drivers for the governments to be willing to sign high level agreements	3
2	19	Transport operators complained about difficulties for crossing borders	Complains from private operators and business community became an important trigger for the governments acceptance of facilitate border-crossing procedures	3
2	24	Countries looked forward deepening regional economic cooperation in ASEAN	The development of the ASEAN community became a main trigger for countries in the region willing to increase their cooperation becoming a main policy objective for every country. In addition, successful cooperation in the GMS became also an objective for ASEAN itself	5
2	29	Major countries (Thailand) looked for new trading	An increasing willingness for regional trading and the creation of regional value chains became another major	5

		opportunities more intensively	driver for countries to seek collaboration.	
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<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Impact</u>	<u>Weight</u>
3	1	Ideological rivalry between countries (divided in 3)	At technical level the ideological differences only had indirect influences.	1
3	2	No technical bodies for regional transport / trade	The absence of such bodies reduced the regional perspective on the national authorities, becoming an important factor for the “two plus” approach (due to the unlikelihood of getting projects that all countries would initially agree on)	3
3	4	Minimal formal trading between countries	Although at beginning it had influence, this was overrun by the demands from business community to facilitate the trading	1
3	7	No studies from Lao authorities about potential positive impact of increasing China-Thailand trade	Such lack of national plans to take advantage of regional connectivity projects became a major issue for the agreements on the routes of the corridors	3
3	9	Roads to be utilized by private operators	The role of the private sector gained relevance as the construction of the infrastructure progressed	3
3	11	Asymmetry in the value of Thailand-China trade over Lao-Thailand and Lao-China	The differences of the relative value that each country puts to each of their neighbors is a major consideration during the entire negotiation process	5
3	13	Thai military base near expected crossing border bridge	The presence of the infrastructures or installations that could be considered a threat was an important factor, but only directly (the conflict was the main factor)	1
3	15	Border conflicts between Lao PDR and Thailand	These conflicts increases the complexities of the negotiations for the routes between the countries	5

<i>Stage</i>	<i>Code</i>	<i>Factor</i>	<i>Impact</i>	<i>Weight</i>
4	1	Governments lacked trust on each other	A major concern for their ability to develop proposals through inter-governmental negotiations. The involvement of external consultants was required to increase the neutrality of the studies and proposals.	3
4	2	Countries had very different national regulations	Another major factor for the negotiations of the CBTA as well as for its implementation	3
4	5	Demand for corridors had been increasing rapidly	Although it was important, its impact was indirect in this case (it was more important in order to mobilize the political will at the beginning)	1
4	11	Regulations involving different ministries and authorities	In order to overcome the issues derived from it, the set up was needed to adapt through the creation of the NTFCs	5
4	14	Countries gave different relative importance to each connection	Such differences were relevant not only for the adoption of the two plus (as explained before) but also for the initial implementation	3
4	18	Removal of non-physical barriers would include national strategic issues	National strategic issues like enforcement of national regulations was necessarily taken into consideration during the negotiations	3

6. Case study 2, Regional Power Sector integration in Central America

This chapter includes the description and the analysis of the power sector cooperation program in Central America. This chapter has benefited extensively from the previous master study of the author (immediate predecessor of this doctoral research). Nevertheless, the analysis has been newly conducted in order to fit the needs of this research.

6.1. Central America Power sector trade and cooperation

The “*Sistema de Interconexión Regional de los Países de América Central*²⁴” (SIEPAC) is a long time sought dream for the creation of a regional electricity market in the Central America²⁵. The project includes the construction of trunk transmission line and the related infrastructure for connecting to each country as well as the creation of regional bodies for the construction and management of the assets and operation and regulation of a superposed 7th market, the “*Mercado Eléctrico Regional*²⁶” (MER). The project has been funded with resources from the Inter-American Development Bank, Spanish cooperation and contributions from each of the members of the market (including the member countries, and the companies that have become also shareholders, that is Endesa from Spain, ISA from Colombia and CFE from Mexico). The ultimate objective is to promote a gradual process of integration under which a faster growing regional market will finally replacing the six national electricity markets.

²⁴ System for the Electrical Interconnection of the Central American countries (translation by the author)

²⁵ In this thesis Central America refers to Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama. Although Belize is physically part of Central America is not target of this study. Also even Panama is not considered as culturally Central America but South America (for that reason the term Mesoamerica is getting wider acceptance), Central America is utilized for easier reference to the name of the project (SIEPAC)

²⁶ Regional Electricity Market (translation by the author)



Figure 18 - SIEPAC transmission line (source CRIE)

6.2. Background for the regional power sector integration in Central America:

Central American national power systems are commonly characterized for their small size. This has led to a number of inefficiencies in their operation, like difficulties to create effective competition between market actors and/or attract investment to large and more efficient power plants. Greater interconnection was therefore always seen as a possibility to overcome those difficulties. As a reference, considering the entire Central America as a single system, this would have a size (in terms of population) similar to Colombia.

6.2.1. Main agreements and institutions:

- *Empresa Propietaria de la Red*²⁷ (EPR): A special purpose enterprise whose tasks are the design, construction, maintenance and ownership of the SIEPAC infrastructure. The estate-owned companies firstly created the Empresa Propietaria de la Línea (EPL) as a private company in which they were equal shareholders. With the incorporation of Endesa as another equal shareholder, the company was transformed into the EPR and settled the headquarters in San Jose (Costa Rica). They also have offices in every country for supervising the construction.

²⁷ Owner of the Network, the regional transmission company, translated by the author

- *Ente Operador Regional*²⁸ (EOR): It is the regional entity in charge of the operation of the regional market. Its headquarters are sited in San Salvador (El Salvador), it was created by the Framework Treaty in 1996 and it's ascribed to the SICA. The Body of Directors of the EOR is constituted by 2 directors from each country named by their respective countries. Its objectives are²⁹:
 - (1) Develop and implement the system for the planning of the regional transmission and generation following the RMER.
 - (2) Harmonize the integration of the extra-regional markets with the MER.
 - (3) Support the regulatory harmonization between the national electricity markets and the regional electricity markets

- *Comisión Reguladora de la Interconexión Eléctrica*³⁰ (CRIE): It is the regional regulator of the MER, constituted by one commissioner from each country and with the headquarters at Ciudad de Guatemala (Guatemala). Its main role is the supervision the appropriate operation of the MER according to the Framework Treaty principles (gradualism, reciprocity, and competition). It also approves the tariffs for the use of the infrastructure and solves any dispute between the agents of the market. It has recently strengthened with the creation of 3 managerial departments: legal, market and technical. Each of these is composed by one specialist and one analyst; being in total 6, each of them has been pointed by each country (in order to maintain an equal representation of nationalities).

- *Executive Unit*: It is a small technical unit inside the CEAC³¹ whose have been in charge to realize the technical cooperation for the execution of the project³².

- *Steering group*: It was the representation of the governments during the construction of the infrastructure, the creation of the regional institutions and preparation of the regional regulation.

Governing board: Created by the II Protocol (explained below), it has replaced the Steering group. Its members are directly appointed by the ministers of energy of each country and have representative power. Its main objective to ensure that the Framework Treaty and the Protocols are respected, it also supervises that CRIE and EOR operate correctly, guarantee the respect of the

²⁸ Regional Operator Entity, translated by the author

²⁹ Source: <http://www.enteoperador.org/>, translated by the author

³⁰ Electric Interconnection Regulatory Commission, translated by the author

³¹ A regional association created by the Central American state-owned companies

³² Source: Mesoamerica Project, translation by the author

national sovereignties and report to the national presidents in case any action must be done. This pretends to increase the implication of the national governments with the development of the regional market with the full operation of this.

6.3. Overview of individual countries' situation and incentives

6.3.1. Guatemala:

The Guatemalan national power sector was reformed from 1996, opening generation, transmission, and distribution to private initiative. Despite that, the state-owned utility INDE still a large proportion of the hydro generation capacity and dominates the transmission business.

Hydro is the main energy source, with capacity sufficient for export. In fact, Guatemala has become a major supporter of the regional electricity market with the objective of increasing the private investment in hydro (facilitated by the access to the other national power markets).

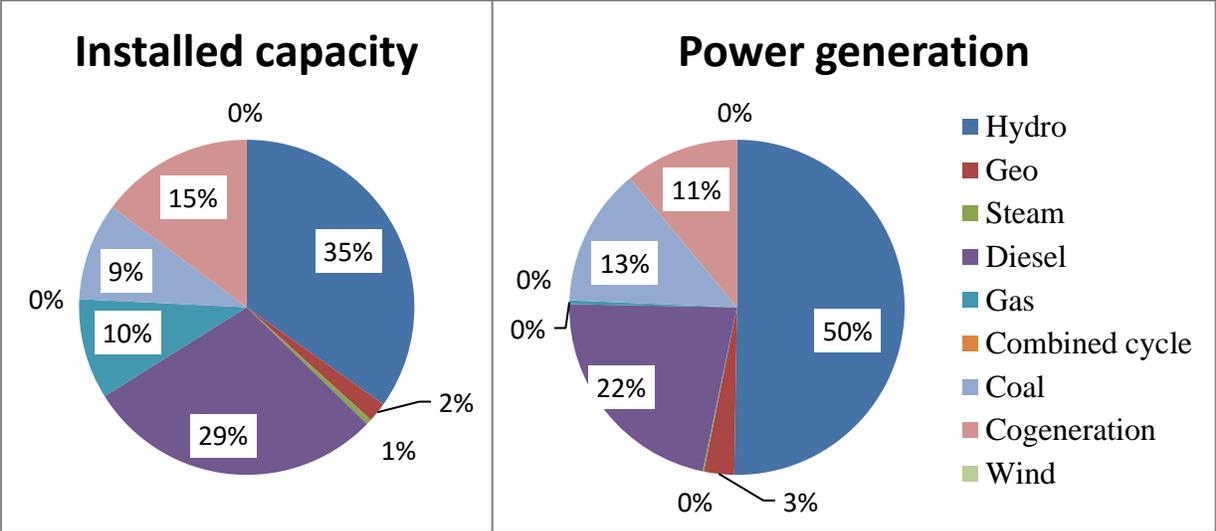


Figure 19 - Installed capacity and power generation in Guatemala (ECLAC, 2011)

6.3.2. El Salvador:

The sector in El Salvador is divided into generation, transmission, distribution, and commercialization. The state-owned company CEL remains as the national TSO (through its subsidiary ETESAL) as well as with a dominant position in the generation of hydro and geothermal. El Salvador energy resources are scarce, making it highly dependent on imported electricity (traditionally from Guatemala)

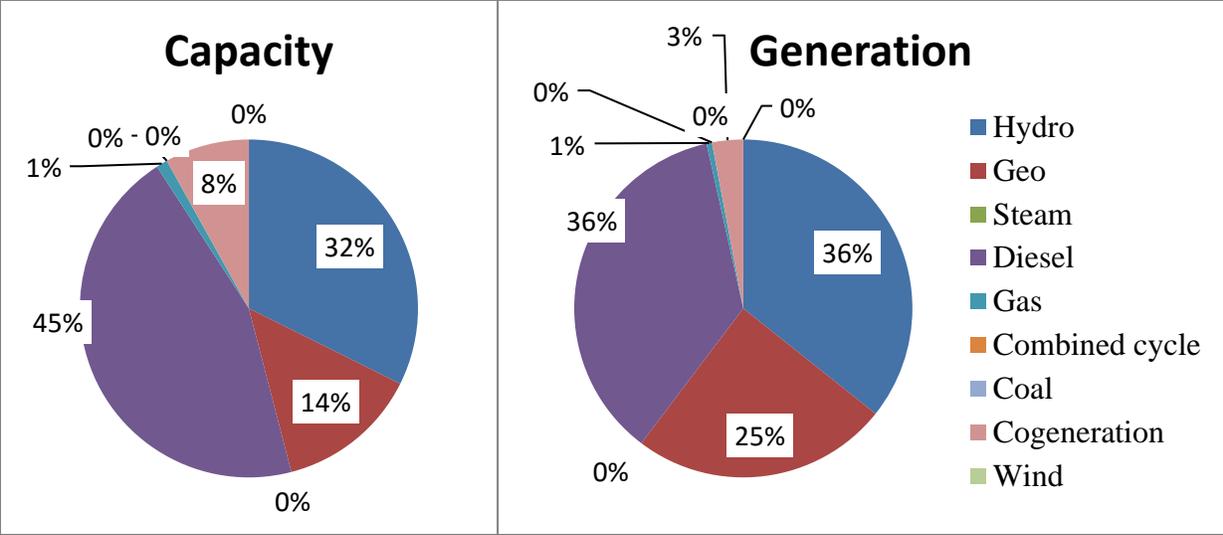


Figure 20 - Installed capacity and power generation in El Salvador (ECLAC, 2011)

6.3.3. Honduras:

Honduras electricity sector suffers due to the unsuccessful power reform. Although formally totally opened to private initiative, Honduras de facto remains as a single-buyer system. The energy crisis suffered in the 1990s led the state-owned company, ENEE, to sign numerous IPPs with thermal generation. This has affected its financial sustainability in the long term. Currently, Honduras is looking to both reduce its dependency on expensive thermal through the import of cheaper electricity from the MER and to attract private investment in generation. In particular, during the interview survey, it was mentioned the potential interest of developing LNG thermal plant with regional scale in Honduras.

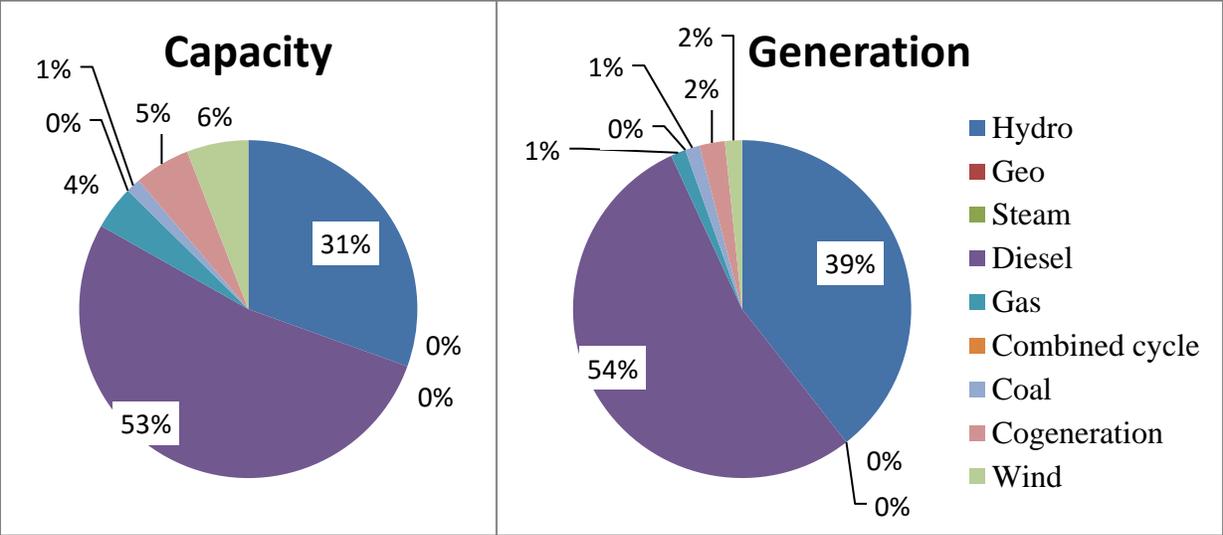


Figure 21 - Installed capacity and power generation in Honduras (ECLAC, 2011)

6.3.4. Nicaragua:

The sector is divided into generation, transmission, and distribution. Only the transmission sector remains under the public ownership of the state-owned company, ENATREL. Generation is mostly thermal. The participation in the regional electricity market can allow Nicaragua to get import cheaper hydro, and export thermal at times when rest of the countries cannot generate sufficient electricity.

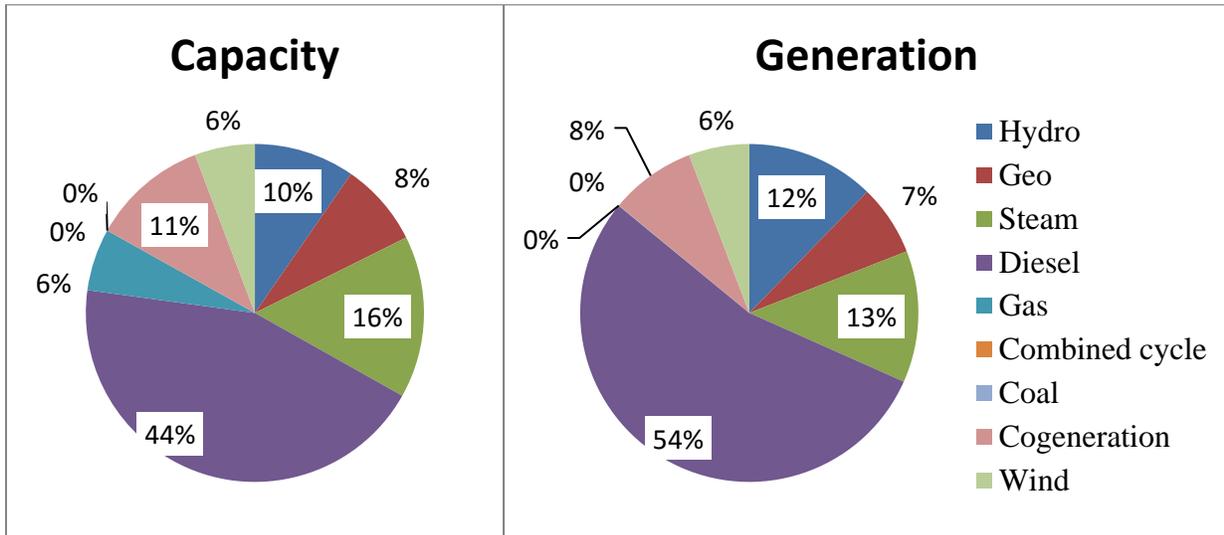


Figure 22- Installed capacity and power generation in Nicaragua (ECLAC, 2011)

6.3.5. Costa Rica:

The electricity sector in Costa Rica still remains as a single-buyer model and fully dominated by the state-owned company ICE. Although some attempts have been done towards increasing the private participation, this still remains legally limited to 35% of the generation of the country. Costa Rica is rich in renewable resources, particularly hydro. The regional electricity market is an opportunity for ICE to find the required funding for developing large-scale hydro, which otherwise would not be able to invest (and of which large capacity would not be currently utilized). Costa Rica has also the national target of becoming carbon neutral country, for which large investment in other renewable resources is needed (particularly wind energy). The regional electricity market can serve also as grantee of backup energy.

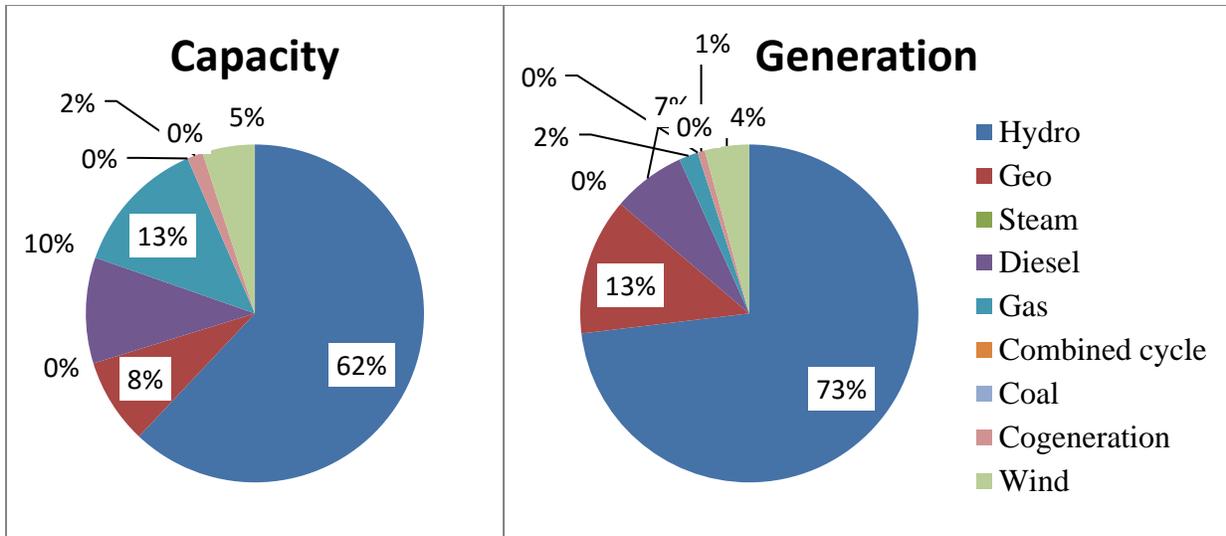


Figure 23- Installed capacity and power generation in Costa Rica (ECLAC, 2011)

6.3.6. Panama:

Panama national electricity sector is fully unbundled. The transmission remains under to control of the state-owned company ETESA. In generation, hydro remains 51% government-owned. Electricity demand is fast growing, and the difficulties to develop new hydro projects due to environmental concerns is making more complex to ensure the security of supply. The national sector is weak against drought, so the regional electricity market provides an opportunity to overcome such circumstances (as the electricity crisis of 2013 showed).

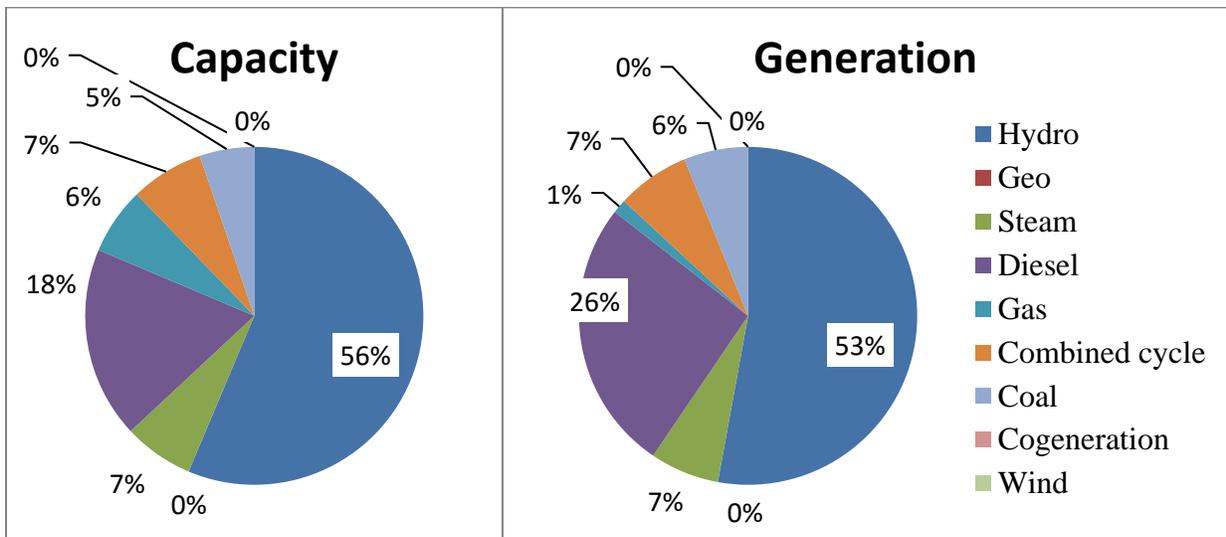


Figure 24- Installed capacity and power generation in Panama (ECLAC, 2011)

6.4. The Development Process of SIEPAC project

6.4.1. Timeline - Events:

<u>Date</u>	<u>Description</u>	<u>Stage</u>
1940	State-owned company created in Guatemala: - Department of National Electrification (INDE)	-
1941	State-owned company created in Nicaragua	-
1945	State-owned company created in El Salvador - CEL	-
1949	State-owned company created in Costa Rica - Instituto Costarricense de Electricidad (ICE)	-
1951	Creation of the Organization of the Central America States (ODECA)	-
1957	State-owned company created in Honduras: - ENEE	-
1960, Dec. 13	Managua Treaty: - General Treaty of Central American Economic Integration - Creation of the Central American Common Market (MCCA) and the Central American Bank for the Economic Integration (CABEI) - Costa would join in 1963	-
1962	Establishment of Regional Organism for policy coordination	-
1969	Football War between Honduras and El Salvador	-
1972	Vicente Iglesias became Executive Secretary of ECLAC	-
1973	ODECA stopped operations	-
1976	Electric interconnection between Honduras and Nicaragua	1
1979	VI Summit of Presidents and Managers of the national utilities Agreement for the creation of Council for the Electrification of Central America (CEAC)	1
1979	Arenal – Corodbici Dam in Costa Rica	1
1980	Construction of El Cajon started in Honduras	1
1982	Electric interconnection between Nicaragua and Costa Rica	1
1982	Vicente Iglesias awarded with Principe de Asturias Prize for International Cooperation	-
1983	Contadora group for the promotion of the pacification of Central America	2
1984	Contadora group awarded with Principe de Asturias prize for International Cooperation	2

1984	Construction of the Fortuna dam in Panama: - 300 MW	1
1984	San Jose Dialogue for pacification of Central America: - Contadora Group + EU + Spain + Portugal	2
1985	Constitution of the Central American Electrification Council (CEAC) - ERICA study by ECLAC for regional interconnection	1
1985	Approval of the V Centenario Funds	1
1985	Construction of Chixoy hydraulic power plant in Guatemala: - 300 MW	1
1985	Construction of El Cajon hydraulic power plant in Honduras: - 300 MW	1
1986	Spain became member of the European Union	-
1986	First draft for the Peace Agreements, Esquipulas I	-
1986	Electric interconnection between Costa Rica and Panama	1
1986	Nicaragua ratified CEAC treaty	1
1987	Electric interconnection between Guatemala and El Salvador	1
1987	Final draft for the Peace Agreements, Esquipulas II	-
1987	Costa Rica's President, Arias awarded with Nobel Peace Price	-
1987	Protocol for agreement for SIEPAC project in Madrid (Spain): - Endesa + presidents of utilities - Spain agreed to fund the technical studies	1
1988	Guatemala, El Salvador, Honduras and Panama ratified CEAC treaty	1
1988	Spain created V Centenario trust fund at IADB	1
1988	Vicente Iglesias became President of IADB (until 2005)	-
1989	First meeting of CEAC was held	1
1989	Publication of "What Washington Means by Policy Reform"	-
1989	Democracy in Panama	-
1989, July	IV Presidential Summit: - reformulation of the project	1
1990	Peace agreements signed in Nicaragua	-
1990	Costa Rica approved reform of electric sector (Law 7200): - Authorization of private generation	-
1990	V Centenario Patronage meeting: - "Latin America needs cooperation"	1
1991	Tuxtla Mechanism is created:	-

	<ul style="list-style-type: none"> - For discussion about regional issues - Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Mexico were the members 	
1991, Dec. 13	<ul style="list-style-type: none"> Tegucigalpa Protocol to ODECA Charter - System for the Integration of Central America (SICA) was created 	-
1992	Costa Rica ratified CEAC treaty	1
1992	Pace Agreements signed in El Salvador	-
1992	Ibero-American summit in Seville (Spain)	-
1992	Mexico became member of CABEI	-
1993, Oct. 29	<ul style="list-style-type: none"> XIV Central America presidents' summit held in Guatemala: - Signature of the Treaty for the Economic Integration of Central America - Agreement for the progressive constitution of the Central American Economic Union (Protocol of Guatemala to the General Treaty of Central American Economic Integration) 	-
1993	SIEPAC Inc. created in Madrid (Spain) by ENDESA and the Central American state-owned companies	1
1994	<ul style="list-style-type: none"> Honduras reformed national electric sector: - Although still continue as single-buyer model 	-
1994	Mexico approved new electric sector law	-
1994	<ul style="list-style-type: none"> Spain started privatization of Endesa: - 66,89% state-owned 	-
1994	<ul style="list-style-type: none"> Internationalization of Endesa in Peru: - Compañía Peruana de Electricidad and Distrilima 	-
1995	SIEPAC Preliminary studies concluded	1
1995	IADB approved new technical assistance funds for the preparation of the Framework Treaty	1, 2
1995	CEAC created Unidad Ejecutora for the management of the technical assistance funds	1, 2
1995	Costa Rica approved new law for increasing authorization of private generation (Law 7508)	-
1996	Peace agreements signed in Guatemala	-
1996	<ul style="list-style-type: none"> Framework Treaty signed: - Regional operator (EOR) and regulator (CRIE) were approved 	2
1996	Electric sector reforms in Guatemala and El Salvador	-
1997	<ul style="list-style-type: none"> Mexico and Guatemala approved energy cooperation: - Electric interconnection between both countries was approved 	2

1997	Agreement for the funding of the project in meeting in Barcelona (Spain): - Spain, IADB, and Central American governments	2
1997	I Protocol	2
1998	Privation of the distribution sector in Guatemala, El Salvador, and Panama	-
1998	Electric sector reform approved in Nicaragua	-
1998	Framework Treaty and I Protocol ratified by all the member countries	2
1999	EPR created in Panama for the construction and management of the physical assets: - Endesa was not included as shareholder - Replace SIEPAC Inc. created before	3
1999	Creation of the Steering Group (Grupo Director) as a unit inside the CEAC	1, 3, 4
2000	Approval of the Market Design rules	4
2000	Combo ICE protests in Costa Rica: - Against major reform of electric sector and ICE	5
2000	Political change in Mexico, Vicente Fox acceded to the presidency	2, 3, 4
2000	Mexico proposed Puebla-Panama Plan: - For development of Southern neighbors (and southern part of Mexico)	2
2001, March	Constitution of Spanish General Cooperation Fund at IADB	3
2001	Endesa became shareholder of EPR: - Equal ownership and voting rights granted to all the shareholders (majority remains “Central American”) - Endesa appointed executive director - EPR became economic and managerial independent - Headquarters sited in San Jose (Costa Rica)	3, 4
2001	Preliminary design of the line	3
2001, June 15	Puebla – Panama Plan officially launched	2
2002	EPR officially started operations	3
2002	Completion of the interconnection between Honduras and El Salvador: - The Northern and Southern “Electric blocks” became interconnected	3
2002	CRIE approved enforcement of transitory regulation (RTMER): - MER started operations	4

2003	MOU for the electric interconnection between Guatemala and Mexico	4
2004	Spain became member of CABEL	-
2004	Colombia became observer at Puebla-Panama Plan	-
2005	Cancun Declaration: - Program for the Mesoamerican Energy Integration approved	2
2005	Vicente Iglesias became General Secretary of the Iberoamerican General Secretary (SEGIB)	-
2005, Feb. 17	ISA Colombia became shareholder of EPR	3
2005	Approval of the final design of the infrastructure	3
2005	CRIE approved the regulation code of the MER (RMER)	4
2006	Construction of SIEPAC line started	3
2006	Colombia became full member of Puebla-Panama Plan	-
2006	EOR started operation and took the responsibility for MER: - Before, El Salvador Dispatch Center	4
2006	SICA created the Unit for Energy Coordination	4
2007	II Protocol was signed	4
2007	El Salvador ratified II Protocol	5
2007	EPR created REDCA: - Company for the operation and management of a regional fiber optic built across the SIEPAC line - The Highway for telecommunications	3
2008	Agreement signed between Grupo Terra and CAESS (El Salvador) for 30MW from Hidro Xacbal (Guatemala)	4, 5
2008	II Protocol ratified by Honduras, Panama, Guatemala and Nicaragua: - All countries had ratified except Costa Rica	5
2008	Mesoamerica Project replaced Puebla-Panama-Plan	-
2009	Interconnection between Mexico and Guatemala completed	4, 5
2009	CFE Mexico became shareholder of EPR	3
2009, August 28	CRIE approved Mexico – Guatemala interconnection	3, 4
2009	Costa Rica authorized private concessions for hydro, Law 8723	-
2009	ETESA Panama and ISA Colombia created ICP for the interconnection between Colombia and SIEPAC	3, 4
2010	EOR approved operation of Mexico – Guatemala interconnection	4

2010	Creation of Board of Directors, replacing the Steering Group	4, 5
2010, August 24	Inauguration of Hidroxacbal (Grupo Terra) in Guatemala: - Total of 94 MW - 30 MW for exporting to El Salvador	4, 5
2010 Nov. 25	Electrification of the first part of SIEPAC line: - Interconnection of Costa Rica and Panama between the substations of Rio Claro and Veladero	3
2010, Dec. 3	Commercial operation of Rio Claro – Veladero	3
2010, Dec. 31	Commercial operation of Ticuantepe - Cañas	3
2011	Costa Rica ratified II Protocol	4, 5
2011, March 14	Commercial operation of Aguacapa – Ahuachapán	3
2011, July 15	Commercial operation of 15 Sept – Agua Caliente	3
2011, August 15	Commercial operation of Auchapán – Nejapa	3
2011, August 31	Commercial operation of San Buenaventura – T43	3
2011, Oct. 31	Commercial operation of Nejapa – 15 Sept.	3
2012	CRIE approved gradual implementation of RMER	5
2012, Feb. 10	Commercial operation of Cañas – Parrita	3
2012, March 30	Commercial operation of Panaluya – San Buenaventura	3
2012, April	Sixth Summit of the Americas in Cartagena (Colombia) - Support for Connect 2022 Initiative from Colombia - SIEPAC as key component of the Pan-American connectivity	-
2012, June 29	Commercial operation of Guate Norte – Panaluya	3
2012, August 31	Commercial operation of Palmar Norte – Río Claro	3
2012, Dec. 19	Commercial operation of Agua Caliente – Sandino	3
2012, Dec. 19	Commercial operation of Sandino – Ticuantepe	3

2013, January 1	Commencement of gradual implementation of RMER	5
2013, June 1	RMER fully enforced	5
2014, October 1	Commercial operation of Parrita – Palmar Norte - SIEPAC transmission line completed	3
2014	Regional power transactions reached 1500 GWh - 300% over MER transactions in 2012	-

6.4.2. Stage 1: National stakeholders’ agreement

The development of large hydropower dams in several Central American countries had brought seasonal surpluses to many national. With the national transmission grids growth until the borders of the countries, state-owned companies, at that time in charge of the entire power sector management, saw the opportunity that deployment of bilateral interconnections could bring into their mutual interest.

Although the limitation of these bilateral interconnections, state-owned companies were benefited of transitory transmissions for the management of emergency situations and even for the operation of hydro-power dams situated in the same river but in a different country. The small scale of these projects made them appear without any “sovereignty risk” to the central governments and, as a consequence, granted greater independence to the state-owned companies for the operation of the international transmissions.

These increasing relations between the state-owned companies facilitated the development of relations between the general managers. And, although the region was divided into two electric blocks, a regional forum/association for the discussion of the issues affecting the operation of the electricity systems in the region and the better management of the bilateral interconnections was established, the “*Consejo de Electrificación de América Central*” (CEAC).

This was a contrast with the political context of a polarized region during the Cold War times. Central American countries were facing large political and economic instability. The triggering of the Latin American debt crisis brought new challenges to the national power sectors due to the reduction in public funding. The state-owned companies based on the positive experiences from the bilateral trade carried out studies to analyze the possibilities of increasing the utilization of those interconnections (and even expand them). The ERICA project developed with the support of the Economic Commission for Latin America and the Caribbean (ECLAC) was the most ambitious of those. Nevertheless, when this was presented to the presidents of the countries, these didn’t accept to increase the inter-dependency. It was mentioned that governments considered the project as a threat of national security issue.

In this context, the project was initially removed, and sector reforms started across the region. Meanwhile, in Spain, Endesa, the state-owned company at that time, was starting to look for international business opportunities in preparation for the privatization of the Spanish power sector.

Having knowledge about the interest of the Central American utilities for a greater interconnection in the region, and with the experience of the development of large transmission networks from Spain, Endesa prepared a proposal for the Central American countries. At the same time, the Spanish government was preparing a major ODA program from the LAC region in commemoration of the fifth hundred anniversary of the arrival of Columbus to America. In this sense, Endesa project was able to obtain part of the funding from this program.

The proposal presented this time to the Central American countries consisted of the development of a new regional trunk transmission line connected to each of the countries in the major cities. Construction of large power plants in every country was included as part of the project, with the purpose of providing sufficient supply to the new system. The project was rejected, but this time was by the state-owned companies, which considered that a project of that size, and owned by an extra-regional company could pose a risk to the stability of the national systems, as well as to a sovereignty threat.

The project was presented also to the IADB, which got interested. As a result, the IADB approved a technical assistance for the development of new independent studies to assess the possibilities and benefits of a regional power market. These studies were contracted to two independent institutions in Spain and Canada. Also, this time, the Central American state-owned companies were involved through the CEAC. The results showed that the largest benefits would be obtained from a full regional electricity market with centralized dispatch. Nevertheless, the state-owned companies expressed that such approach would not have been accepted by any of the governments. At that meeting, the second best option was identified as a potentially successful. This combined the creation of regional infrastructures (main interest of the state-owned companies) with the creation of a superposed electricity market.

6.4.3. Stage 2: High level political agreement

After finding the consensus vision of a superposed regional electricity market, the next step was to achieve a written commitment from all the governments that would guarantee the development of the regional project. This was a pre-requisite because the regional electricity market would require numerous changes in the countries in order to be able to operate. At that time, there was also a need to adapt the project to different institutional structures in the countries, since some of them had already started reforming their national sectors with different levels of success. The first action was to change the initial concept of a regional cooperation program between countries to the creation of a regional market of actors (which include also private investors in the definition), incorporating the concept of competition to the design.

Another important issue to solve would have been to reduce the national security concerns that had prevented the initial studies from ECLAC to move forward. Due to the participation of the state-owned companies initially, those were already overcome because of the superposed nature of the MER (which should not affect the development of the national sectors). Nevertheless, the regional market was kept as a target, introducing in this manner the concept of gradualism.

There were also concerns due to asymmetries between countries and the possibility of free-rider behaviors. Those were overcome by introducing the concept of reciprocity. In this manner, any country could apply to other the same rules that would be being imposed on it.

IADB also facilitated another technical assistance for the writing of a draft agreement. Due to their active involvement in the entire process, state-owned companies through CEAC were the first to receive such draft. Immediately they realized that it included several clauses that would only create disputes and opposition from the governments. It was an extensive document that gave strong protections to the regional market institutions. In order to make it easier to be approved, the state-owned companies designed a new one incorporating only those essential elements to allow the creation of the regional market.

Partly due to this modifications, partly due to the direct influence from the presidents of the state-owned companies with the presidents of the countries, that agreement was signed and became the Framework Treaty of the MER.

6.4.4. Stage 3: Physical construction

One of the key aspects of the Framework Treaty was the constitution of a special-purpose company for the construction and ownership of the regional assets (a measure to reduce the concerns of countries of being dominated by another member). Although initially, Endesa had created a company for that purpose including the Central American countries (SIEPAC Inc.), there was some reluctance from some members to have also an extra-regional shareholder and a new company was created under Panama law including only the Central American state-owned companies, EPR. The initial years of operation were following a similar structure as CEAC, based on regular meetings covered by each of the companies. Nevertheless, this was proved to not be sufficiently effective for the operation of the company and little progress was made. At that moment, Endesa offered new funding resources for covering the initial operations of an autonomous EPR (with full-time employees and headquarters in Costa Rica and offices across the region). The condition was to become an equal shareholder and to control the top position of the company for the first period. Finally, the agreement was possible and Endesa became a shareholder of the EPR in 2001. This represented a major change in the management style of the company, becoming more corporate and objective-oriented. EPR also gained independence from governments, while retaining a double personality of a private company with state-owned shareholders. This became very important in the negotiation process of the rights of way. The successful new management of EPR increased the value of the regional project. With the progress, neighboring countries (Mexico and Colombia) also requested, and were accepted, membership as equal shareholders.

6.4.5. Stage 4: Institutional construction

The other two important institutions created from the Framework Treaty were the regional operator (EOR) and the regional regulator (CRIE). Although both constitutes what the Inter-American Development Bank calls the software of the integration, they followed different process.

Since the power sector had been traditionally controlled by the state-owned companies and it was considered as a technical issue by the governments, the EOR was created composed of representatives of these companies. The first challenge for the EOR came very soon, once El Salvador and Honduras decided to develop a bilateral interconnection between them. This was the remaining missing link in the region; so, in a sense, this new interconnection physically allowed the transmission of electricity across the region. Nevertheless, the regional regulation for it was not ready. In order to not delay the process, and based on a very pragmatic approach, EOR was able to set a temporal regulation, the RTMER, to enable the commencement of operations of the MER (although in an interim manner). In parallel, the regional regulation (RMER) was been negotiated. State-owned companies were the main persons involved in these negotiations, and understanding the potential benefits of the regional market and the vision for it, the RMER was designed so it would be also applicable to a fully integrated regional electricity market. This process also potentially contributed to the interest of neighboring countries to develop interconnections with the MER (the interest of Mexico and Colombia would be either to export to different countries of the region or even to the other hemisphere).

Against this background, CRIE struggled to make progress. This was said to have occurred because it once became a “political arena” to discuss issues no related to the regional electricity market. These difficulties faced stimulated the state-owned companies to include new aspects to ensure CRIE independence at the Second Protocol (which was for the approval of the RMER). The main aspect was the strengthening of the independence and capabilities of the CRIE. The price to pay for this autonomy was the creation of a new political body to supervise the development of the regional market (CDMER). It is still unclear whether this CDMER will contribute to a smooth implementation of the regional market or not.

6.4.6. Stage 5: Harmonization

The sign of the II Protocol started the process for the harmonization of national and regional systems. For that, each country was required to ratify that agreement on their respective national parliaments. This process was relatively smooth in all the countries, except in Costa Rica. There, it was reported that the government aimed to include a reform of the state-owned company together with the ratification of the II Protocol. This has traditionally been a very sensitive issue in Costa Rica society and immediately created strong opposition at the parliament to the continuation of the process. It was needed the active involvement of the state-owned company management and some reforms to it to be passed and to ensure Costa Rica fulfill the requirements of the Framework Treaty. For example, ICE was vertically divided in business units and was explicitly appointed as the only allowed exporter in Costa Rica.

6.5. Causality analysis

6.5.1. Stage 1: National stakeholders' support

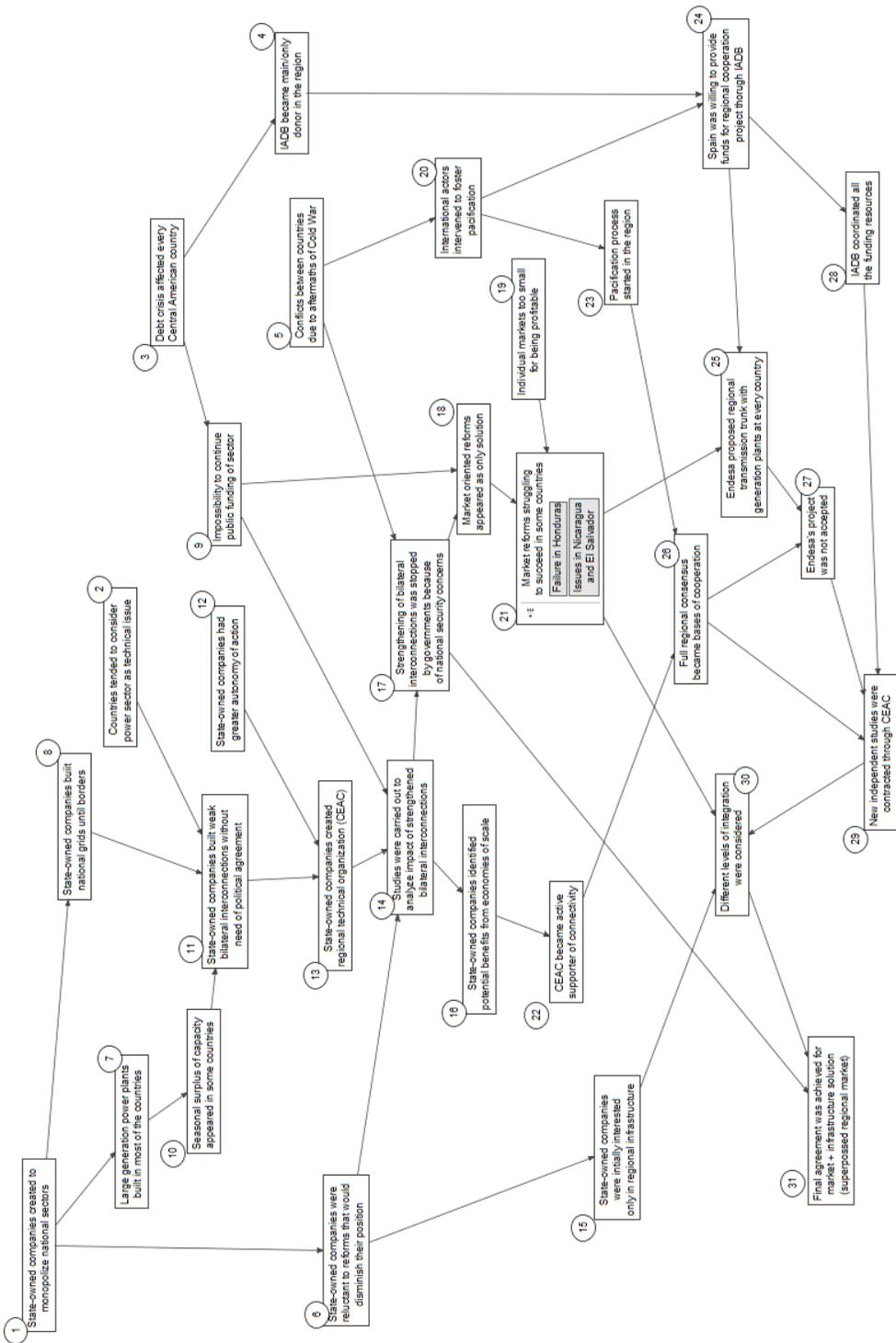


Figure 25 - SIEPAC Causality Analysis. Stage 1

6.5.1.1. Analysis of causality diagram

<i>Code</i>	<i>Factor</i>	<i>Description / Source</i>	<i>[Cat.]</i>
1	State-owned companies created to monopolize national sectors	<p>Those companies were created during the 1940s:</p> <ul style="list-style-type: none"> - Guatemala created “Departamento de Electrificación Nacional” in 1940 [INDE website] - El Salvador created “Comisión Ejecutiva Hidroeléctrica del Rio Lempa” (CEL) in 1945 [CEL website] - Honduras created “Empresa Nacional de Energia Electrica” (ENEE) in 1957 [ENEE website] - Nicaragua created “Empresa de Luz y Fuerza de Managua” in 1941 [ENATREL website] - Costa Rica created “Instituto Costarricense de Electricidad” (ICE) in 1949 [ICE website] - Panama created “Instituto de Recursos Hidraulicos y Electrificacion” (IRHE) in 1961 <p>[websites on state-owned utilities] “Finally the state-owned companies became monopolies” [SIEPAC I.2.10]</p>	Factor
2	Countries tended to consider power sector as technical issue	<p>“Every company was in charge of their whole national sectors. INDE, CEL, ENEEL, INE, ICE and IRE. They were gods” “The president of each company used to have more relevance than any minister” “Since they were directly elected by the presidents of each country, they had a strong representation” [SIEPAC. III.59-61]</p>	Output
3	Debt crisis affected every Central American country	<p>“During the 80s the debt crisis in Latin America. International financing is closed for them” [SIEPAC XX.12]</p>	Factor
4	IADB became main/only donor in the region	<p>“IADB is the main financier of the region” [SIEPAC I.58]</p>	Factor

5	Conflicts between countries due to aftermaths of Cold War	“Nowadays there are several fears because of differences in political ideologies” “The region is politically unstable” [SIEPAC.VIII.14-15]	Factor
6	State-owned companies were reluctant to reforms that would diminish their position	State-owned companies initial interest in reducing their operational costs and being able to grasp international funding seems to be explained by their willingness to try to protect their status quo at that time	Factor
7	Large generation power plants built in most of the countries	“During this time large hydropower plants were built and the countries started to sell lot of electricity from these power plants.” [SIEPAC II. 19]	Factor
8	State-owned companies built national grids until borders	“By late 70s, each country had an interconnected electric system and reached to the borders” [SIEPAC.XX.12]	Factor
9	Impossibility to continue public funding of sector	“They didn’t have enough money for buying the fuel for thermal plant” “They were not able to expand the generation capacity” [SIEPAC.XXI.13-14]	Factor
10	Seasonal surplus of capacity appeared in some countries	“We made in a bilateral way and we agreed how to sell / purchase power between two countries, or better said, between two companies. That allowed us to sell / purchase surplus power from some countries to another.” [SIEPAC.XX.22]	Factor
11	State-owned companies built weak bilateral interconnections without need of political agreement	“Technically, no market wise, large electric systems have more strength. And it’s the best way for having better cost. That was made by the national companies and it didn’t require in all the situation government treaties.” [SIEPAC.XX.23]	Factor
12	State-owned companies had greater autonomy of action	“Every company was in charge of their whole national sectors. INDE, CEL, ENEEL, INE, ICE and IRE. They were gods” [SIEPAC. III.59]	Factor
13	State-owned companies created regional technical organization (CEAC)	“During the VI Meeting of Presidents and Manager of the State-owned electric utilities of Central America, held in Panama between 29-30 March 1979, it was decided the	Factor

		creation of the Consejo de Electrificación de América Central (CEAC)” [CEAC website]	
14	Studies were carried out to analyze impact of strengthened bilateral interconnections	“Several coordination organisms were created” [SIEPAC I.2.18] “Technical studies were made for finding the best way to create interconnections” [SIEPAC I.2.20]	Action
15	State-owned companies were initially interested only in regional infrastructure	“The region only wanted the interconnection” [SIEPAC.XXI.38]	Factor
16	State-owned companies identified potential benefits from economies of scale	“During this time large hydro power plants were built and the countries started to sell lot of electricity from these power plants. Therefore the benefits from greater interconnection appear naturally” [SIEPAC.II.19] “Technically, no market wise, large electric systems have more strength. And it’s the best way for having better cost.” [SIEPAC.XX.23]	Factor
17	Strengthening of bilateral interconnections was stopped by governments because of national security concerns	“In 1965, with ECLAC, the ERICA study was created” [SIEPAC.II.20] The outcomes of that study were never implemented	Factor
18	Market oriented reforms appeared as only solution	“The electric companies, government owned, started to have a lot of difficulties in order to finance future generation projects. Because governments will not permit them to finance, because it is debt, or the electric rates were controlled politically. Companies started to deteriorate at the end of 80s. In general the whole region started to have blackouts, payment problems, no continue the expansion of new projects. And the demand continued to grow. The solution started to be, take a look at the electric competitive markets. Chile and England have done that, there were some experiences. Suggestions appear that part of the solution was to have electric markets, at least until the wholesale market.”	Output

		[SIEPAC.XX.25] “First the countries should reform their national systems” [SIEPAC.XXI.33]	
19	Individual markets too small for being profitable	“I have seen that large private generator are retiring from Central America [...]. It seems there is a trend of large energy companies to leave space in small countries and concentrate in larger markets” “Central America is not attractive. Large companies are losing interest in small countries” [SIEPAC.XX.104]	Factor
20	International actors intervened to foster pacification	“Grupo Contadora played an important role in Central America during the period 1983-86. Essentially, it started to articulate elements of what latterly would become a negotiated end of the Central American crisis” ³³ [Granados (1998), p114]	Factor
21	Market reforms struggling to succeed in some countries	“In Honduras and Costa Rica, politically it was not successful” [SIEPAC.XX.28]	Output
22	CEAC became active supporter of connectivity	“The important were agreements between the state-owned companies” [SIEPAC I.29] “The idea was since the creation of the CEAC” [SIEPAC.V.5]	Factor
23	Pacification process started in the region	“There was also a political decision motivated by the Peace Agreements. There was a favorable environment for the integration” [SIEPAC III.16]	Factor
24	Spain was willing to provide funds for regional cooperation project through IADB	“In 1987 Spain was preparing for celebrating in 1992 the 500 years since the arrival of Colom to America. That meant an increase in the political relations with Latin America. Spain offered to give money to the IADB for	Action

³³ Translated from Spanish by the author

		projects in Latin America. That created also a relation between Spain and the IADB” [SIEPAC XXI.20]	
25	Endesa proposed regional transmission trunk with generation plants at every country	“Endesa brought a new idea: create a unique interconnection between all the countries” “Endesa came with the solution, a single line of 5000 MW that would connect all the capitals” [SIEPAC II.24-25]	Action
26	Full regional consensus became bases of cooperation	“Success actions in SIEPAC:[...]consensus environment” [SIEPAC I.54]	Factor
27	Endesa’s project was not accepted	“Finally the project was no accepted” [SIEPAC II.28]	Output
28	IADB coordinated all the funding resources	“Thanks to the final incorporation of Endesa, the project could start. Endesa unblocked the financing of US\$170 million from IADB (Spain gave that money to IADB for this project)” [SIEPAC.V.37]	Action
29	New independent studies were contracted through CEAC	“Technical studies y PTI (Canada) and economic by University of Comillas (Spain)” [SIEPAC.II.32]	Action
30	Different levels of integration were considered	“Feasibility studies were made considering 6 possible scenarios” [SIEPAC II.34]	Action
31	Final agreement was achieved for market + infrastructure solution (superposed regional market)	“Those showed the “minimum cost of repentance”. That idea was very well accepted.” [SIEPAC.II.34] “It was needed to create an electricity market for getting the benefits” [SIEPAC.II.36] “The compromise solution was to do both aspects” [SIEPAC.XXI.39]	Output

6.5.1.2. Links:

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	8	As national monopolies, the main role of the state-owned companies was to expand the national interconnected systems
1	7	They also had the sufficient funding for the development of large power plants (mostly hydro) that would cover the growing energy demand
1	6	As national monopolies, it seems reasonable that they were looking for solutions that would keep their status-quo (even though their interest was also to attract private investment to the region)
7	10	The construction of these large hydro-power dams created season surpluses
10	11	After extending their national grids to the borders, the next logic step was to make connections with their neighboring countries. These were originally only to give mutual support to manage emergencies, taking advantage of the surplus capacity installed in some of them. The bilateral interconnections were therefore of low capacity (no designed for a robust system), and since they didn't represent a cession of sovereignty, governments didn't require the sign of explicit agreements.
8	11	
2	11	
11	13	With the growth in the utilization of the bilateral interconnections, several studies were carried out. In order to maximize the utilization of them, state-owned companies decided to form the <i>Consejo de Electrificación de America Central</i> (CEAC) as a regional technical forum.
12	13	
3	9	The reduction of public funding had a direct impact on the available resources of the state-owned companies. This was even greater with the freeze of electricity tariffs
9	14	A potential increasing of the utilization of the interconnections was then seen as a way to protect the financial situation of the state-owned companies. This optimization would mean a reduction in their costs. In order to quantify those benefits and to identify the mechanism for that, several studies were carried out. One of the most commonly mentioned was the ERICA study funded by ECLAC, which ultimately would also serve for Endesa to know about the interest of the region in increasing connectivity
13	14	
6	14	
3	4	One of the immediate consequences of the debt crisis was the closing of the windows of international financing for the member countries. In this context, only the Inter-American Development Bank (IADB) continued providing funding to the countries, making all, or at least most, of them depending on that.
5	20	The deterioration of the overall situation in Central America, with internal conflicts near to start major regional disputes, called the attention of international community. In particular, the Group of Contadora, with

		Colombia, Mexico, Panama and Venezuela, had an important role in the promotion of the peace in the region,
4	24	Spain showed strong support to Group of Contadora (even awarding them with the Principe de Asturias Award for international cooperation in 1984). Once, Spanish government started a new international cooperation program (V Centenario funds) for Latin American and Caribbean region, the regional cooperation program captured great attention.
20	24	
5	17	Once the technical studies carried out by the state-owned companies and CEAC were presented to their respective governments, these declined to continue based on national security concerns. No country was confident of depending on imported electricity from countries that might be perceived as enemies in some cases.
14	17	
17	18	Without the appropriate public funding and the discard of the option of regional interconnections, the only remaining was to move towards the creation of national electricity markets following the examples of Chile and England
9	18	
18	21	Nevertheless, these reforms were found to be more complex to implement than expected. One of the reasons for that was the small size of the countries (and therefore of the national systems and the aggregated demand). This small size increased the difficulty in fostering effective competition in the power sector, bringing to high concentration in some countries (like El Salvador where all the major distribution companies ended belonging to the same international investor, AES)
19	21	
21	25	Knowing about the interest of the state-owned companies about the transmission project, the difficulties for the reforms, as well as about the possible financing from the Spanish government, Endesa decided to propose their own regional transmission system as an option for the region
24	25	
14	16	The studies served to the state-owned companies to gain knowledge about the potential benefits they could get from increasing interconnectivity. Furthermore, some other interesting results were obtained, like the potential operational benefits for Costa Rica from power transmission between Panama and Nicaragua
16	22	With larger knowledge about those potential benefits, CEAC became to main advocacy group in the region for the increasing interconnectivity
22	26	CEAC operation was based on creating consensus. This organization can be understood as having strong concerns about fostering cooperation in the region. In order to grasp momentum from the pacification process
23	26	
24	28	Without strong the sufficient experience to manage such kind of program, Spain approached the IADB to fulfill that role and created the V Centenario Trust Fund to be operated by the multilateral development bank.
25	27	

26	27	The initial proposal from Endesa was rejected by the state-owned companies. The reluctance to be potentially dependent on an extra-regional company seems to be behind of that opposition.
26	29	After that rejection, new studies were carried out. This time, CEAC was involved and the technical and economic studies were done by independent organizations.
27	29	
28	29	
6	15	It was reported that the state-owned companies were interested in the infrastructure rather than the market reforms. The initial interest in fostering the role of the state-owned companies seems to explain this behavior
15	30	In order to find the appropriate level of market and infrastructure needed, the new technical and economic studies evaluated 6 different levels of integration
21	30	
29	30	
17	31	The final solution agreed was a combination of market and infrastructure. Although the solution with the largest benefits was the full integration, the understanding of the reluctance from governments, a vision of a superposed regional electricity market was proposed
30	31	

6.5.2. Stage 2: High level political support and commitment

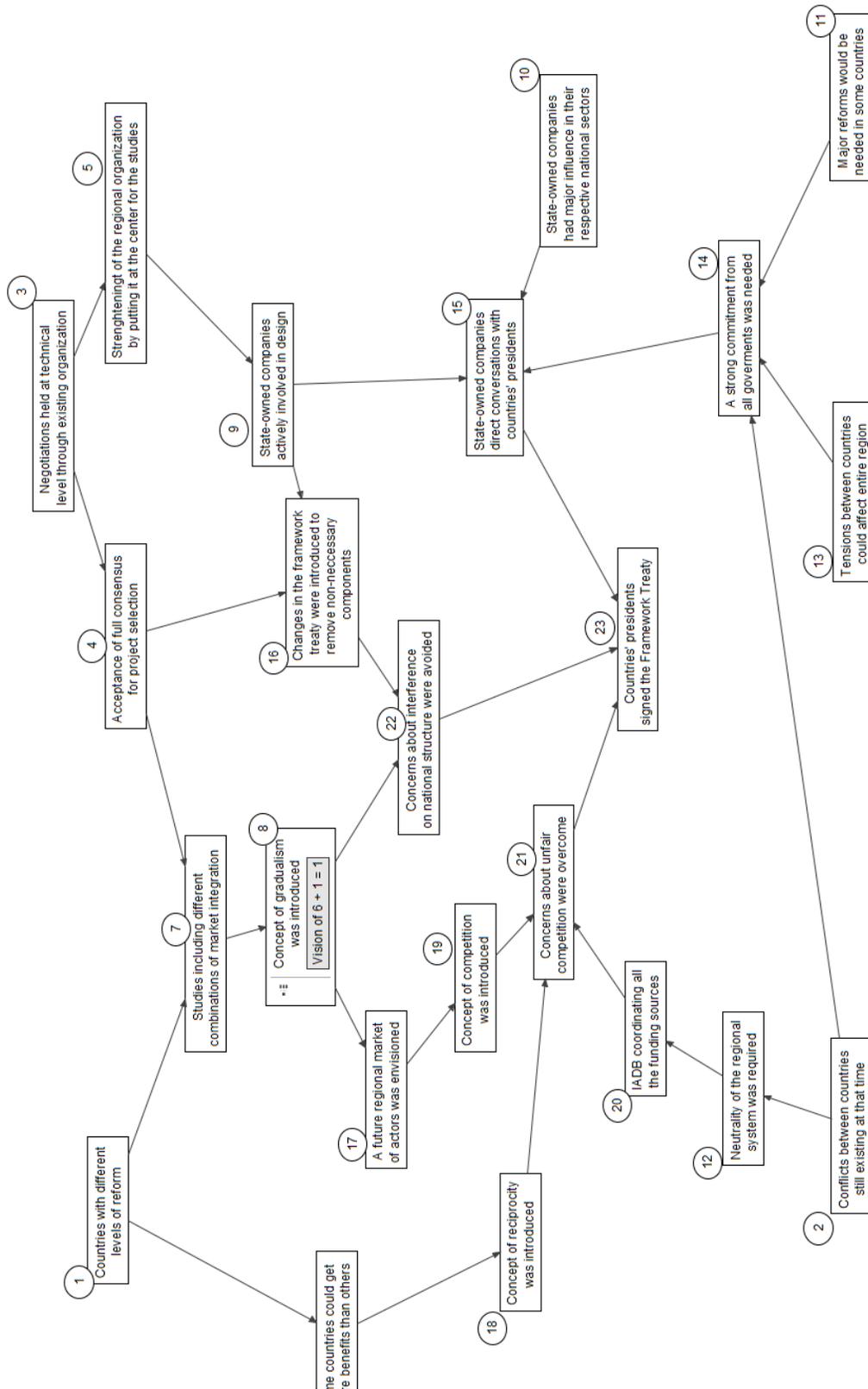
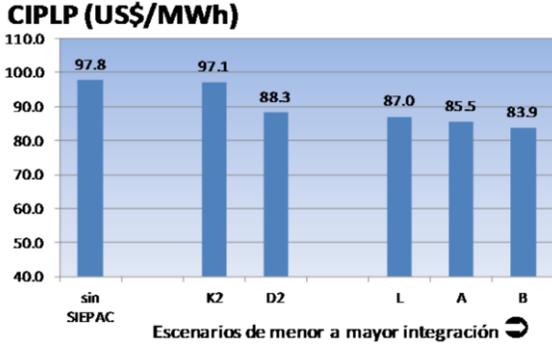


Figure 26 - SIEPAC Causality Analysis. Stage 2

6.5.2.1. Analysis of causality diagram

<u>Code</u>	<u>Factor</u>	<u>Description / Source</u>	<u>[Cat.]</u>
1	Countries with different levels of reform	<p>At the time of these negotiations, some of the countries had already embarked in the process of reforming their national sectors. The region was therefore divided between those with single-buyer model (Costa Rica, and Honduras) and those already reformed (Guatemala, El Salvador, Nicaragua, and Panama).</p> <p>“The other possibility would have continued through CEAC, but that was good only for vertically integrated systems and many countries started to create national electricity markets” [SIEPAC II.37]</p>	Factor
2	Conflicts between countries still existing at that time	<p>Neighboring relations were mentioned to be still facing tough times. Some of the ones mentioned more frequently during the survey were the disputes between El Salvador and Honduras. The position of Nicaragua as an ally of Chaves’ government in Venezuela was also a potential source of disputes</p> <p>“The region is politically unstable. When the coup d’etat in Honduras; Guatemala, El Salvador and Nicaragua closed the borders, isolating Honduras” [SIEPAC.VIII.15]</p>	Factor
3	Negotiations held at technical level through existing organization	<p>As mentioned in the previous stage, the CEAC was in charge on the new technical and economic studies contracted through IADB Technical Assistance</p> <p>“The important were agreements between the state-owned companies, right below the governments” [SIEPAC.II.29] “When the idea is defined, it is brought to the Presidents’ Summits at SICA. From there, the idea of the Framework Treaty appears” [SIEPAC.II.38]</p>	Action

4	Acceptance of full consensus for project selection	<p>During the interview survey it was mentioned the need of full consensus for moving forward the project at any stage</p> <p>“Endesa was not included since the beginning because some members (like Costa Rica or El Salvador) opposed to it. There were nationalist feelings; they considered Endesa wanted to take the control. Panama had no problems with the incorporation but finally the regional consensus prevailed.” [SIEPAC.V.32]</p> <p>“Usually this commissioner is from the national regulatory bodies. That makes that there are many national political pressures, because they want to go slower in the regulatory integration. Since the agreements are made by consensus, the decisions are slow.” [SIEPAC.VII.13]</p> <p>“Decisions are always by consensus. At least, that’s the main goal” [SIEPAC.VII.19]</p>	Action
5	Strengthening of the regional organization by putting it at the center for the studies	<p>While previous studies had been presented by Endesa, these new studies were organized actively involving the CEAC</p> <p>“The Executive Unit is formed by very high level persons, both technicians and top managers”</p> <p>“There is the risk to get lost during the decision-making process. For that is important to have a “bedside consultant”. In SIEPAC three “gurus” were contracted, three global consultants”</p> <p>“The consultant has no big power. In other regions consultants lead the process and impose the philosophy of the project. That scheme creates big problems”</p> <p>“Every step was approved by the Executive Unit” [SIEPAC.II.66-70]</p>	Action
6	Some countries could get more benefits than others	In particular, Costa Rica’s ICE was able to develop projects in other countries and/or sell their surplus electricity to other markets	Factor

		<p>(through open bidding systems), while others (in particular Guatemala’s private generators) may face difficulties to access to Costa Rica’s market because of different regulatory systems</p> <p>“There are problems of reciprocity: ICE can make contracts with distribution companies or invest in Guatemala, while the private generators in Guatemala cannot make it freely (only through ICE)” [SIEPAC.VI.21]</p>	
7	Studies including different combinations of market integration	<p>Pre-feasibility studies included 7 possible scenarios considering different levels of integration. From existing bilateral interconnections to regional electricity market with single dispatch</p> <p>“</p>  <p>“</p> <p>[Sustainable Energy Policy and Technology, 2013]</p>	Action
8	Concept of gradualism was introduced	<p>The concept of gradualism appears in the Framework Treaty as: “Forecast for the progressive evolution of the market, through the incorporation of new participants, the progressive increase of coordinated operation, the development of interconnection networks and the strengthening of the regional entities.”³⁴ [Framework Treaty, Article 3]</p>	Action

³⁴ Tratado Marco (Translated from Spanish by the author)

9	State-owned companies actively involved in design	<p>Not only the CEAC was at the center of the technical and economic studies but also for the negotiation of the draft version of the Framework Treaty</p> <p>“Every step was approved by the Executive Unit” [SIEPAC.II.70]</p> <p>“Everything was made by the state-owned companies” [SIEPAC.V.22]</p>	Action
10	State-owned companies had major influence in their respective national sectors	<p>Even in the countries with reform in the national sectors (where the state-owned companies had become national TSOs) still were a major stakeholder in their respective country due to their expertise</p> <p>“Every company was in charge of their whole national sectors. INDE, CEL, ENEEL, INE, ICE and IRE. They were gods” “The president of each company used to have more relevance than any minister” “Since they were directly elected by the presidents of each country, they had a strong representation” [SIEPAC. III.59-61]</p>	Factor
11	Major reforms would be needed in some countries	<p>In particular, it was assumed by all that Costa Rica would need to implement major reforms (unbundling and openness to private participation)</p> <p>“Integration was not made since the beginning because politically was impossible. It was impossible to make such big reforms in each country” [SIEPAC.II.57-60]</p> <p>“We are still vertical integrated but with the division in business units we commit with the Tratado Marco. Logic is that we will arrive to the same situation as other countries” [SIEPAC.XX.111]</p>	Factor

		<p>“We are very socialistic country. It is very difficult to privatize or unbundling or increase the amount of private generation” [SIEPAC.XX.113]</p>	
12	Neutrality of the regional system was required	<p>For example, avoiding situations in which the regional transmission could be utilized to undermine a particular country</p> <p>“I proposed a single company with equal ownership of every country. Then, no one could dominate the project” [SIEPAC.XXI.46]</p>	Action
13	Tensions between countries could affect entire region	<p>Being an integrated system, an interruption in the infrastructure could cause a major regional blackout. This interruption could be both unintended and intended</p> <p>“The national systems were, and are, weak. They can resist that kind of interconnection in a single point; there were possibility to total blackouts in case of failure.” [SIEPAC.II.26]</p>	Factor
14	A strong commitment from all governments was needed	<p>Not only the involvement of the state-owned companies, but the written binding agreement of the heads of state (that is a treaty) was required for granting the funding</p> <p>“IADB conditioned the financing to a clear and firm commitment of the countries” [SIEPAC.XXI.28]</p>	Action
15	State-owned companies direct conversations with countries’ presidents	<p>During the interview survey it was mentioned how the state-owned companies became “champions” of the project</p> <p>“For the ratification of the Framework Treaty we explained and defended the project in the national parliaments in El Salvador, Costa Rica...” [SIEPAC.V.23]</p>	Action
16	Changes in the framework treaty were introduced to remove non-necessary components	<p>During the interview survey some were mentioned, like the diplomatic status of the employees at the regional institutions (CRIE, EOR and EPR)</p>	Action

		<p>“The first Tratado was very large and we went to directors and they stated to have many objections. After several meetings we found we will never agree” [SIEPAC.XX.202]</p> <p>“We only put there what we believed that the 6 countries were going to accept. If we would have continued discussing the full Tratado we would have never finished” [SIEPAC.XX.208]</p>	
17	A future regional market of actors was envisioned	<p>In comparison with previous projects, the MER is a market of actors rather than of countries, what opens the door for future smoother integration and transition</p> <p>“The goal is to use one single electric sector law. There are several interphases for that” “From 2002 there are trading between the 7 countries, but the Framework Treaty is not only for exchanges, it has bigger targets. If not, it would have been much simpler” Process will end with the full integration because national resources for national dispatch will finish” “Integration was not made since the beginning because politically was impossible. It was impossible to make such big reforms in each country” [SIEPAC.II.57-60]</p>	Action
18	Concept of reciprocity was introduced	<p>“Right of each state to apply to another state the same rules and norms that the second state applies temporally, in accordance with the principle of Gradualism” [Framework Treaty, Article 3]</p>	Action
19	Concept of competition was introduced	<p>“Freedom in the development of the service provision activities according the objective, transparent and no discriminatory rules” [Framework Treaty, Article 3]</p>	Action
20	IADB coordinating all the funding sources	<p>While there have been different donors. Particularly at the initial stages, the funding from Spain was channeled through the IADB in the form of a trust-fund (V Centenario)</p>	Action

		<p>“In 1987, Spain was preparing for celebrating in 1992, the 500 years from the arrival of Colon to America. That meant an increase in the political relations with Latin America. That created also a relation between Spain and the IADB”</p> <p>[SIEPAC.XXI.20]</p>	
21	Concerns about unfair competition were overcome	<p>Although issues still exist, it is commonly accepted that a system of rules was created</p> <p>“Also it is difficult to take too many advantages or reduce the commitment; that doesn’t work because “your neighbor can be kind because has other interests with you, but others will not allow you”</p> <p>[SIEPAC.II.50]</p>	Output
22	Concerns about interference on national structure were avoided	<p>National markets were fully independent, the only condition is to prevent interference with the operation of the regional infrastructure (SIEPAC) and market (MER)</p> <p>“In simple. The Tratado Marco we respect what you do in your country (it’s on your loss), but if you are going to sell / purchasing cross border there are new rules”</p> <p>[SIEPAC.XX.28]</p>	Output
23	Countries’ president signed the Framework Treaty	<p>Framework Treaty (Tratado Marco) signed by the Presidents of the Central American countries in Guatemala City on December 30, 1996</p> <p>Costa Rica: Jose María Figueres Olsen El Salvador: Armando Calderon Sol Guatemala: Alvaro Arzu Irigoyen Honduras: Carlos Roberto Reina Nicaragua: Violeta de Chamorro Panama: Ernesto Pérez Balladares</p> <p>[Framework Treaty]</p>	Output

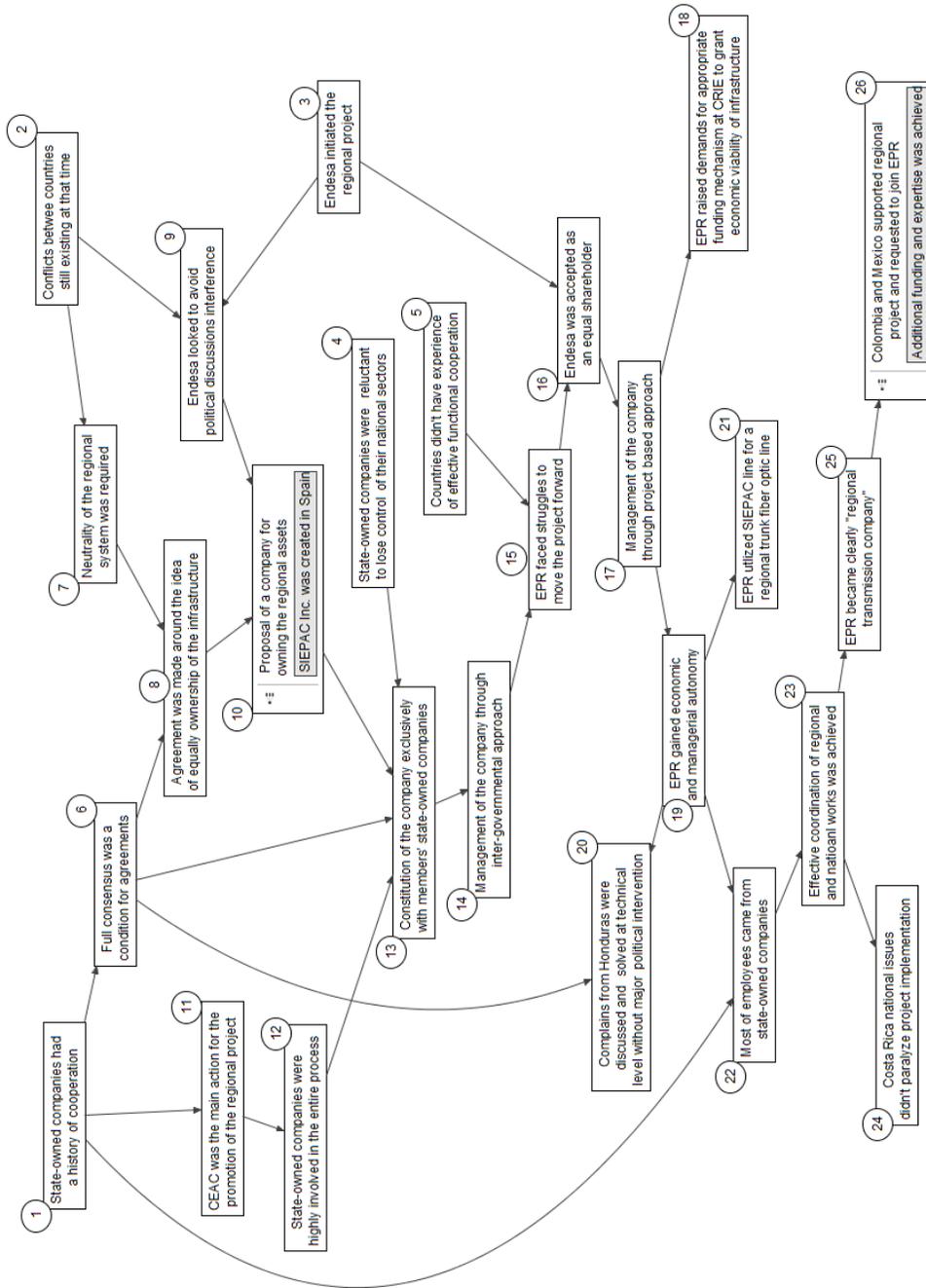
6.5.2.2. *Links:*

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	6	In particular some countries/companies perceived that the dominant position of the still public monopolies (like ICE) could become dominant in the region due to their largest size
3	4	It was mentioned by different stakeholders that the shared value of consensus based negotiations had grown at the interactions at CEAC
4	7	In order to balance the level of changes that would be needed (that is the level of integration) and the benefits that could be derived, different possibilities were included in the studies
1	7	
3	5	The decision of keeping active discussions at the technical level, and, in particular, through the CEAC, end strengthening their position (for example it increased their knowledge and capabilities)
5	9	It seems reasonable to consider that this protagonism had an influence in getting on board the state-owned companies
9	16	It was mentioned that there were a number of clauses included in the initial draft which was not acceptable for some members, while other clauses were also not acceptable for other members. In this process, the involvement of the state-owned companies was relevant to be able to remove those elements without diminishing the final objective of the project (the creation of regional electricity market)
4	16	
7	8	As an output of the preliminary studies, the selection was the second best option, the superposed regional market. It was chosen also because it continues allowing further integration while not suppose a threat to national governments
8	22	The structure of the superposed market, as well as removing elements that could be perceived as challenges to national sovereignty, helped to avoid such claims at the political negotiations stage
16	22	
8	17	The superposed market brought what is was called as “6+1=1”. This is meant to allow a future transition towards a fully integrated regional electricity market
17	19	Considering the process of privatization occurring in every country, it was envisioned that the regional market should not be any more a market of countries, but of “actors” (that is companies, either public or private). It was also agreed, that the market rules would select the best “actors”. For that competition was enhanced as a fundamental value of the Framework Treaty

6	18	As a measure to reduce the concerns from countries to be dominated by others, reciprocity principle was considered relevant. In that sense, each country could impose similar barriers to another member country
2	12	Conflicts between countries seem to have influenced a strong requirement of appearance of neutrality
12	20	The role of IADB as a neutral partner was several times mentioned (in the form of honest broker)
20	21	One of the expressions commonly repeated was that the ones who would better work on the competitive market would get the most benefits. In that sense, it can be understood that a common understanding that a fair system for competition was being achieved
19	21	
18	21	
2	14	The signature of the Framework Treaty was said to be a condition from the IADB. The reasons for that can be understood due to the existing conflicts, the potential effects those could have and the complexities of the reforms expected to be implemented
13	14	
11	14	
14	15	Getting this involvement from the presidents was triggered due to the involvement of the state-owned companies, and also due to their direct talks.
10	15	
9	15	
15	23	It was after avoiding the potential concerns and direct talks with countries' presidents that a strong written commitment was possible
22	23	
21	23	

Figure 27 - SIEPAC Causality Analysis. Stage 3Stage 3: Physical construction



6.5.2.3. Analysis of causality diagram

<u>Code</u>	<u>Factor</u>	<u>Description / Source</u>	<u>[Cat.]</u>
1	State-owned companies had a history of cooperation	<p>State-owned companies had been actively cooperating at CEAC as well as through the bilateral interconnections, which in some cases were operated in an informal manner</p> <p>“From 1976, there were meetings between the countries” “During the 80s, bilateral interconnections” [SIEPAC.I.2-3]</p> <p>“Teofilo de la Torre proposed the creation of CEAC as an institution for the cooperation and integration through the communication between the different parties” ‘Before CEAC there were several coordination groups. CEAC was the mechanism for institutionalizing that’ [SIEPAC.I.6-7]</p>	Factor
2	Conflicts between countries still existing at that time	<p>Even after the pacification process, conflicts and ideological differences in the region still existed</p> <p>“July 14, 1969: Honduras and El Salvador clash in the four-day ‘Football War’ [BT, 2015]</p> <p>“At present times, no one country really accepts to depend on the others. Only El Salvador and Panama accepts relatively” [SIEPAC.XI.9]</p>	Factor
3	Endesa initiated the regional project	<p>Project was started after the interest of Endesa</p> <p>“Endesa was founder of the project. They have the idea of having a strong transmission line crossing Central America” [SIEPAC.XX.121]</p> <p>“Endesa was interested to start a internationalization process. Ignacio Larranzabal, the director of the international</p>	Output

		<p>department of Endesa, has worked previously in ECLAC, where he heard about the interest of the Central American countries about creating regional interconnection. He reported to Mr. Tora Galvan, his boss and an expert in transmission projects. Tora Galvan showed great interest in the project and offered the support of Endesa to Central America.”</p> <p>[SIEPAC.XXI.21]</p>	
4	State-owned companies were reluctant to lose control of their national sectors	<p>This could be perceived from their preference over the strengthening of the bilateral interconnections rather than the privatization of the national sectors</p> <p>“At the beginning, Central American countries felt that this is a project that only Central American should be the owners of the transmission line”</p> <p>[SIEPAC.XX.122]</p>	Factor
5	Countries didn't have experience of effective functional cooperation	<p>The only cooperation at political level was the pacification process. Regional institutions created later, like SICA, were still young</p> <p>[SICA was created in 1991, after the sign of the Tegucigalpa Protocol to the ODECA]</p>	Factor
6	Full consensus was a condition for agreements	<p>During the interview survey it was mentioned the need of full consensus for moving forward the project at any stage</p> <p>“Success actions in SIEPAC:[...]consensus environment”</p> <p>[SIEPAC I.54]</p>	Action
7	Neutrality of the regional system was required	<p>For example, avoiding situations in which the regional transmission could be utilized to undermine a particular country</p> <p>“I proposed a single company with equal ownership of every country. Then, no one could dominate the project”</p> <p>[SIEPAC.XXI.46]</p>	Output
8	Agreement was made around the idea of equally	<p>It was mentioned that it was also considered that the infrastructure could be owned by each country in their own national borders,</p>	Action

	ownership of the infrastructure	but, since the project should benefit equally of the parties, the ownership would be also equal “The ownership of the EPR is agreed to be shared equally. No company can control more than a 15% of the total shares” [SIEPAC.V.30]	
9	Endesa looked to avoid political discussions interference	From the proposals of Endesa it can be seen that they tried to avoid previous political discussions (for example by offering the construction of large power plants at every country). Endesa proposal was also to make an regional trunk system connecting only to one point at each country (in that sense it would be independent from national systems) “Endesa brought a new idea: create a unique interconnection between all the countries” “Endesa came with the solution, a single line of 500Mw that would connect all the capitals” [SIEPAC.II.24]	Output
10	Proposal of a company for owning the regional assets	Initial proposal was SIEPAC Inc., which was effectively constituted in Spain for the project, including also Endesa as shareholder. “They created a company in Spain named SIEPC corporation with the state as shareholders” [SIEPAC V.4]	Action
11	CEAC was the main actor for the promotion of the regional project	CEAC was effectively created for that purpose, to improve and increase the utilization of the interconnections in the region “CEAC wrote the Framework Treaty” [SIEPAC.I.8]	Factor
12	State-owned companies were highly involved in the entire process	Since the beginning it can be observed their involvement in all the discussions “CEAC wrote the Framework Treaty” [SIEPAC.I.8]	Action

		<p>“For the ratification of the Framework Treaty we explained and defended the project in the national parliaments in El Salvador, Costa Rica...”</p> <p>[SIEPAC.V.23]</p>	
13	Constitution of the company exclusively with members’ state-owned companies	<p>Incorporation of Endesa was initially not accepted for the EPR. It was mentioned that some members were not comfortable including non-regional members</p> <p>“Endesa was not included since the beginning because some members opposed to it”</p> <p>[SIEPAC.V.32]</p>	Action
14	Management of the company through inter-governmental approach	<p>Operation of EPR was done through regular meetings with representatives from each countries in a rotating location</p> <p>“From 1999 to 2002, the company operated very bad with meeting every 4 months with each company paying its own expenses and the studies financed by IADB and realized by the executive Unit”</p> <p>[SIEPAC.V.36]</p>	Action
15	EPR faced struggles to move the project forward	<p>It was reported that during that time, progress was limited</p> <p>“From 1999 to 2002, the company operated very bad with meeting every 4 months with each company paying its own expenses and the studies financed by IADB and realized by the executive Unit”</p> <p>[SIEPAC.V.36]</p>	Output
16	Endesa was accepted as an equal shareholder	<p>Endesa incorporated to the EPR in 2011</p> <p>“Endesa to take 14.3% SIEPAC stake”</p> <p>[BN Americas, 2001]</p>	Action
17	Management of the company through project based approach	<p>It was mentioned that the incorporation of Endesa helped to set a more corporate strategy (with independent budget, own personnel and permanent offices)</p> <p>“EPR is very executing. It gives explications only to its shareholders, not to the governments”</p> <p>[SIEPAC XXI.50]</p>	Action

18	EPR raised demand for appropriate funding mechanism at CRIE to grant economic viability of infrastructure	<p>“There are problems for approving the needs for repayment to EPR, through the Annual Transmission Costs for the operation and maintenance. Law allows only 3%, EPR studies said they need 4%, while CRIE has only approved 1.9%. Despite it doesn’t need to make a big business, EPR should be financially independent from the countries”. [SIEPAC. VI.27]</p> <p>“SIEPAC charges criticized” [Prensa Libre, 2012]</p>	Output
19	EPR gained economic and managerial autonomy	<p>“Thanks to the final incorporation of Endesa, the project could start. Endesa unblocked the financing of US\$170 million from IADB (Spain gave that money to IADB for this project)” [SIEPAC.V.37]</p>	Action
20	Complains from Honduras were discussed and solved at technical level without major political intervention	<p>During the survey in Central America, it was mentioned that there were some initial reluctances from Honduras because of the route. These issues were overcome thanks to agreement at technical level</p>	Output
21	EPR utilized SIEPAC line for a regional trunk fiber optic line	<p>“For appointing the executive director of REDCA³⁵ three candidates were proposed. One from Honduras, one from Spain and another from Colombia. The Honduran candidate was the favorite but he decided to withdraw. Finally, no one was chosen and REDCA is still inside the EPR structure. There were concerns to choose the most neutral, and there is confidence on EPR work.” [SIEPAC.VIII.34]</p>	Output
22	Most of employees came from state-owned companies	<p>Being the state-owned companies the shareholders of the EPR, it seems reasonable to think that many of the employees were originally coming from the state-owned companies (as it was the case of the people interviewed)</p>	Action

³⁵ REDCA is a new project developed by EPR for creating a regional optical fiber using the route of the SIEPAC line

23	Effective coordination of regional and national works was achieved	During the survey it was mentioned that for the construction works the EPR acted with a double nature. Sometimes as a private company, others through its public shareholders	Output
24	Costa Rica national issues didn't paralyze project implementation	"ICA has been cooperating always; despite some don't want to see that point. During the period of the ratification, ICE committed with the payments despite it was not accepted by the country" [SIEPAC.VIII.51]	Output
25	EPR became clearly "regional transmission company"	"EPR made a good job obtaining the financing and new investors" [SIEPAC.XX.35]	Output
26	Colombia and Mexico supported regional project and requested to join EPR	"CFE and ISA entered later. They requested invitation. Each one of them have interest of being part the SIEPAC development expecting that they will be ble to interconnect their systems with SIEPAC [...]Colombia and Mexico have also given strong political support" [SIEPAC.XX.129] "External political support is very important for national government support" [SIEPAC.XX.131]	Output

6.5.2.4. Links:

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	6	From the experience of cooperating at CEAC, the reaching of full consensus between all the members became the norm
1	11	The background of the benefits from the bilateral interconnections and the studies carried out by CEAC, this became the main actor for the promotion of the regional project
11	12	From their position at CEAC, the state-owned companies got involved in the entire process
2	7	Because of the conflicts between countries, looking for neutrality was key during the entire process. For example, at every stage, it has been important that no country could dominate the project.

2	9	The proposal of Endesa seems to have tried to avoid the interference of political conflicts. By being an independent regional grid and proposing the construction of large power plants at every country would have reduced such concerns.
3	9	
7	8	In order to avoid reluctances that one country would dominate the regional project, by dividing the shares of the regional company between all the member countries created the idea of regional ownership. This approach was different to the originally thought of each country building their own section.
6	8	
9	10	The original company created by the initiative of Endesa was SIEPAC Inc. combining the two aspects: relative independence from political influence and equal ownership
8	10	
10	13	The reluctance of some member to the inclusion of extra-regional parties, combined with the look for full consensus among the state-owned companies ended in the no-incorporation of Endesa in the establishment of EPR
6	13	
12	13	
4	13	
13	14	It was mentioned that the initial operations of EPR were based on regular meetings without a permanent structure. This would be similar to the operations of CEAC, and therefore without including Endesa the same approach continued
14	15	The issue was that following this system, the real implementation of the regional project was more challenging
5	15	
15	16	Endesa still continued showing its willingness to be part of EPR. After granting that Endesa would not be dominant in the company (same ownership as each of the state-owned companies), it was accepted as a new shareholder.
3	16	
16	17	Endesa brought a more corporate management style. It provided the initial funding needed for the establishment of the headquarters and the initial operations with full-time employees.
17	18	This more corporate approach to the company can be observed in the demands from EPR for an increasing in the revenue to be collected from the utilization of the regional infrastructure against the initial will of the countries
17	19	In that sense, EPR gained its economic and managerial independence, fostering a regional vision in its employees
19	20	The independence of EPR also fostered a more low-profile approach, limiting the impacts of the potential conflicts and looking to their resolution initially at a technical level. The complaints from Honduras and modification of the initial route of the infrastructures is one example of it
6	20	

19	21	Another example of its independence was the incorporation of REDCA (the regional trunk fiber optic line) as an ad-hoc project that would increase its revenue
19	22	With the experience of working on the regional project, and the funding provided initially by Endesa, several employees from the state-owned companies with experience with the project became full-time employees or representatives of EPR
1	22	
22	23	This double role of private corporation and fluent relations with the state-owned companies, allowed EPR to find the best approached to each of the issues needed to solve for the construction of the line.
23	24	For example, even though the acquiring of the rights of way in Costa Rica was delayed, there was a clear understanding in the rest of the state-owned companies of the difficulties being faced and the efforts being realized. Reducing the conflicts between member countries (at least at technical level)
23	25	In that sense, EPR continued increasing its role as a transmission company, in this case of regional dimension
25	26	This could give a more pragmatic vision to the project and increase its reliability, contributing to the willingness of neighboring countries (Mexico and Colombia) to participate in the project

6.5.3. Stage 4: Institutional construction

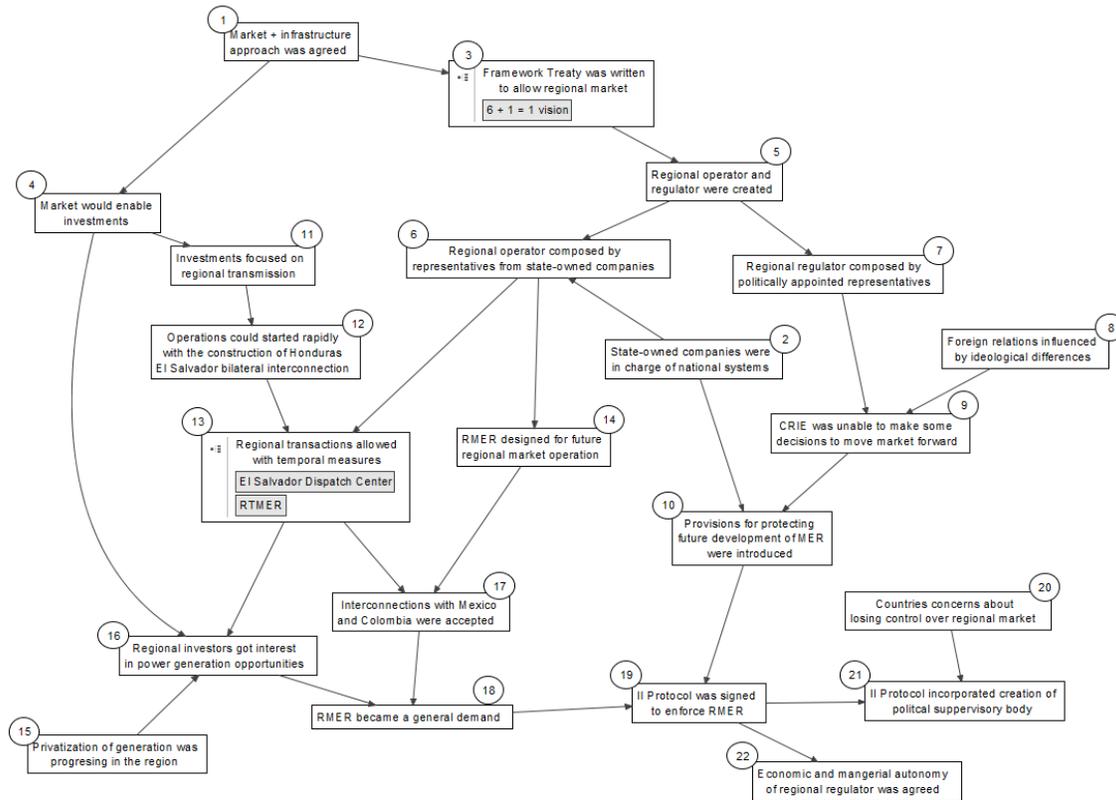


Figure 28 - SIEPAC Causality Analysis. Stage 4

6.5.3.1. Analysis of causality diagram

<u>Code</u>	<u>Factor</u>	<u>Description / Source</u>	<u>[Cat.]</u>
1	Market + infrastructure approach was agreed	“The compromise solution was to do both aspects” [SIEPAC.XXI.40]	Action
2	State-owned companies were in charge of national systems	“Every company was in charge their whole national sectors. INDE, CEL, ENEEL, INE, ICE and IRE. They were “gods” [SIEPAC.III.60] “The national reforms changed drastically. Nevertheless, the state-owned companies are still very large. Only in Panama they don’t control the generation, despite the	Factor

		government owns the 49% of the power plants” [SIEPAC.III.63]	
3	Framework Treaty was written to allow regional market	<p>“Integration was not made since the beginning because politically was impossible” [SIEPAC.II.60]</p> <p>“Considering that under the framework of the Sistema de Integracion Centroamericana, SICA, the member states have shown their interest in the starting a gradual process of electric integration, through the development of a regional competitive power market, by transmission line that interconnect their national grids and the promotion of regional power generation projects” [Framework Treaty, preamble]</p> <p>“The present Treaty has for objective the creation and gradual growth of a regional competitive power market” [Framework Treaty, Article 1]</p>	Action
4	Market would enable investments	<p>“The creative idea was to create a 7th market apart of the nationals. The regional organisms will push to the integration” [SIEPAC.III.15]</p>	Output
5	Regional operator and regulator were created	<p>[Framework Treaty]</p> <p>“The idea was not only to build the line or make exchanges. For that a regional administration is created: CRIEC, EOR, EPR” [SIEPAC.III.18]</p>	Action
6	Regional operator composed by representatives from state-owned companies	<p>The Board of Directors of EOR is formed by 12 directors appointed by each of the governments [EOR website]</p> <p>It was mentioned that those come from the national operators of each country</p>	Action
7	Regional regulator composed by politically appointed representatives	<p>“The maximum authority in CRIE is the Board of Directors, constituted by 1 representative (or commissioner) from each country”</p>	Action

		“Usually the commissioner is from the national regulatory bodies. That makes that there are many national political pressures” [SIEPAC.VII.12-13]	
8	Foreign relations influenced by ideological differences	“The region is politically instable” [SIEPAC.VIII.15]	Factor
9	CRIE was unable to make some decisions to move market forward	“Usually the commissioner is from the national regulatory bodies. That makes that there are many national political pressures, because they want to go slower in the regulatory integration. Since the agreements are made by consensus, the decisions are slow” [SIEPAC.VII.12-13]	Output
10	Provisions for protecting future development of MER were introduced	“RMER is very complex, designed for allowing a full integration of the region” [SIEPAC.III.22]	Output
11	Investments focused on regional transmission	All the international donors funding have been channeled to the EPR, so to the construction of the regional transmission system, and to the strengthening of the national transmission systems to allow no interference. “The development of the infrastructure was going to promote the exchanges in a better way” [SIEPAC.XXI.34]	Action
12	Operations could start rapidly with the construction of Honduras El Salvador bilateral interconnection	“Despite the efforts, the projects was not feasible due to the absence of physical interconnection between El Salvador and Honduras, that was foresaw for 2002; for that, in 2001 was critical in the process since all the Central American national dispatch centers started to work in a transitory regulation” [EOR website, History] “In 2002, all the bilateral agreements were canceled and replaced by RTMER. A very simple regulation because the transactions capacity was very limited. A Pilot code for 1 or 2 years, but finally during a longer time.	Output

		RMER and line. It has been enforcing for 10 years. It is a very weak regulation, cannot operate with several transmission lines connecting countries. It is very important to start using the RMER and stop using the RTMER. A lot of new problems.” [SIEPAC.XX.65]	
13	Regional transactions allowed with temporal measures	“With the finalization of the interconnection El Salvador – Honduras and, the test on July 21 st 2002, the process was accelerated, so it was needed to implement a transitory period before the setting of EOR” [EOR website, History]	Action
14	RMER designed for future regional market operation	“RMER is very complex, designed for allowing a full integration of the region” [SIEPAC.III.22]	Action
15	Privatization of generation was progressing in the region	“We started to see in parallel that these electric companies were disintegrating, dividing in different companies. Four companies moved from purchasing power to a wholesale electricity market, unbundling generation, transmission, and distribution, and large consumers appear: Guatemala, El Salvador, Nicaragua, and Panama. In Honduras and Costa Rica, politically it was not successful”. [SIEPAC.XX.28]	Factor
16	Regional investors got interested in power generation opportunities	“Inauguration of hydroelectric Hydroxacbal” [Central America Data, 2010] “Grupo Terra looks to expand to all Central America” [Central America Data, 2010]	Action
17	Interconnections with Mexico and Colombia were accepted	“Electric interconnection with Mexico becomes priority: Guatemala” [El Economista, 2012] “Mexico willing to export electricity to Central America” [Central America Data, 2014]	Action
18	RMER became a general demand	The impossibility of granting line access for long term contracts became a challenge for Grupo Terra to commit with its contract with El Salvador distribution company “Lack of regulation prevents power delivery”	Output

		<p>[Central America Data, 2012]</p> <p>“Lack of regulation prevents power delivery (2)”</p> <p>[Central America Data, 2013]</p> <p>“Lack of regulation prevents power delivery (3)”</p> <p>[Central America Data, 2014]</p>	
19	II Protocol was signed to enforce RMER	<p>“II Protocol and RMER give sanctioning power of the CRIE. Without enforcement of RMER, CRIE cannot force because it cannot punish any action”</p> <p>[SIEPAC.VII.24]</p>	Action
20	Countries concerns about losing control over regional market	<p>“For solving disputes CRIE works well, but we don’t feel comfortable that there is no regional institution over CRIE. Costa Rica has not accepted Parlacen nad Panama will soon quit. The Central American Court works better, but it is still not enough</p> <p>[SIEPAC.VIII.21]</p> <p>“Develop CRIE is more complicated than EOR because governments are reluctant to give power to it”</p> <p>[SIEPAC.XX.164]</p>	Factor
21	II Protocol incorporated creation of political supervisory body	<p>“Governments felt they have given too much power to the regional institutions, thaty’s why the created the Governing Board (CDMER)”</p> <p>[SIEPAC.II.49]</p> <p>“CDMER is composed mainly by ministers of energy”</p> <p>[SIEPAC.VIII.43]</p> <p>“The idea is that CDMER reduces reluctances from governments”</p> <p>“CDMER is the place for involving the governments”</p> <p>[SIEPAC.XX.168-169]</p>	Action
22	Economic and managerial autonomy of regional regulator was agreed	<p>“It is growing. Until very recently they didn’t have own budget, they were living with donations from IADB. Now they are more than 20, they used to be only 3”</p>	Action

		[SIEPAC.XX.163]	
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6.5.3.2. *Links:*

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	3	After the acceptance of a combination of market and infrastructure, the common agreement was that this should be an intermediate step in the achievement of a single regional electricity market. That’s the principle behind the 6+1=1, which was also expressed in the Framework Treaty with the term “gradual”.
1	4	The idea behind the market + infrastructure was that the creation of the market attract foreign investments, one of the main incentives for the project, and the infrastructure was needed for that.
3	5	In order to allow the integration process to continue until becoming a plenty regional market, the creation of institutions that would replicate the national systems was required. For that, the regional operator and the regulator were included in the Treaty.
5	7	The regulator was created therefore including political representatives (originally from the national regulators).
7	9	This politicization was said to be behind the difficulties to move forward some decisions.
8	9	
2	6	Contrary, the regional operator board of directors’ members came from state-owned companies (the operators at the national level).
5	6	
6	14	Being them the main promoters of the full integration, that was kept in the development of the RMER, which is more ambitious than for the current superposed electricity market.
4	11	Since the target was to attract investments, rather than replace them, the focus was on the construction of the required infrastructure, that is the regional transmission system.
11	12	After the rapid construction of the interconnection between El Salvador and Honduras, the starting of operations (and therefore the attraction of private investment) was possible.
12	13	Being technically strong institution with determination for the success of the regional market, EOR was able to rapidly develop a transitory regulation that would allow the operation of the regional market (although under several limitations).
6	13	

13	16	This was successful in the sense that interest appeared in the region. Private investors like Grupo Terra started to realize investments in order to get the benefits from the future implementation of the market.
4	16	
15	16	
13	17	The rapid starting of operations was a signal of reliability to the project. That combined with the objective of the full integration was an incentive to the neighboring countries to support the project, because of their interest in the interconnection between North and South America
14	17	
2	10	After the problems faced by CRIE, the state-owned companies accepted to incorporate provisions in the Second Protocol to protect its independence
9	10	
16	18	With the incorporation of the neighboring countries and the increasing attention by private investors, the need for the RMER became larger
17	18	
18	19	In order to unblock the situation, the Second Protocol was introduced and signed by the member countries
10	19	
19	21	Nevertheless, since the CRIE would be more independent, and in order to reduce the concerns from governments, a new institution was created, the CDMER
20	21	
19	22	With the RMER being introduced, the CRIE gained control over the operations of the regional market

6.5.4. Stage 5: Harmonization

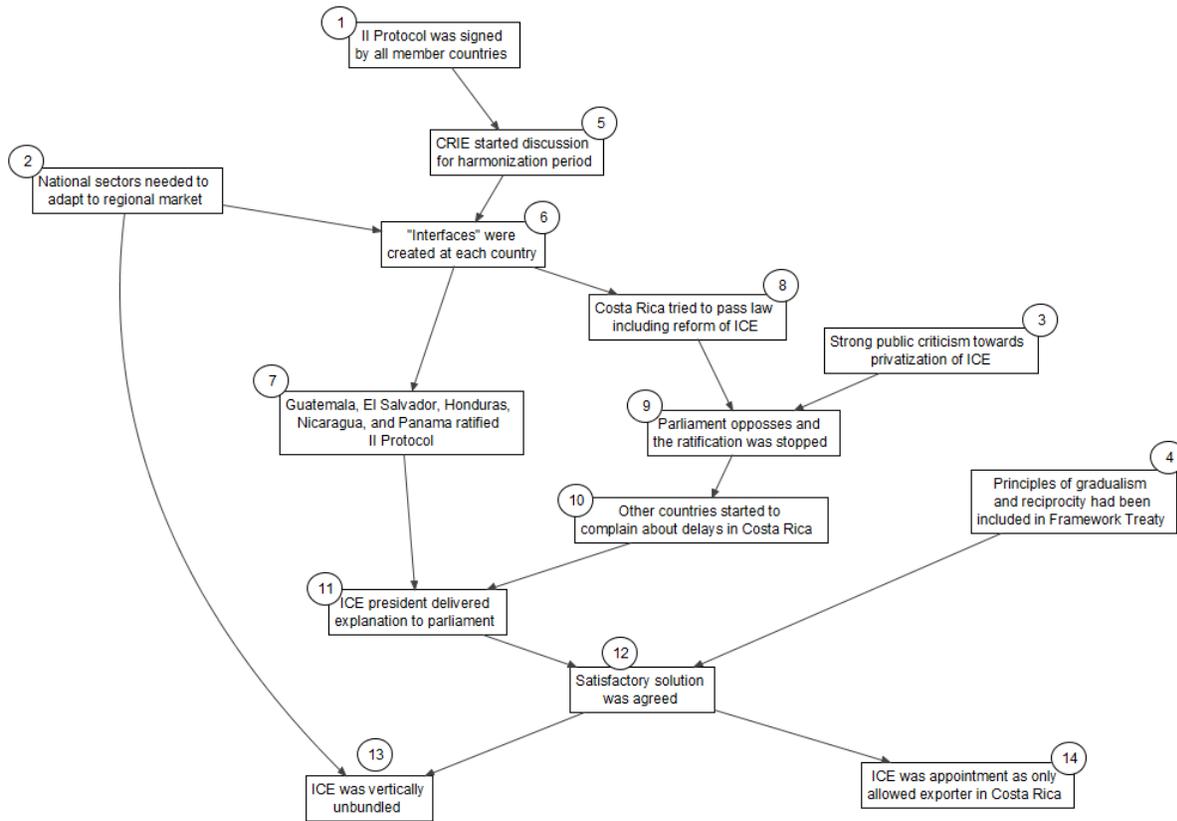


Figure 29 - SIEPAC Causality Analysis. Stage 5

6.5.4.1. Analysis of causality diagram

<u>Code</u>	<u>Factor</u>	<u>Description / Source</u>	<u>[Cat.]</u>
1	II Protocol was signed by all member countries	Signed on 10 April, 2007 in Campeche (Mexico) by foreign affairs ministers [EOR website, II Protocol]	Action
2	National sectors needed to adapt to regional market	<p>“Now the problem is the harmonization in the regional and national level” [SIEPAC.XX.150]</p> <p>“Harmonization has been a slow process”</p> <p>“CRIE made a proposal to each country, what CRIE considered a valid way to making the harmonization. Maintain the regional regulation and tide the local regulation to the regional. Plugging both together. CRIE did that by contracting consulting companies.”</p>	Factor

		[SIEPAC.XX.155-156]	
3	Strong public criticism towards privatization of ICE	“Report from Costa Rica on mass protests against privatization of state-owned utilities” [WSWS,2000]	Factor
4	Principles of gradualism and reciprocity had been included in Framework Treaty	“Forecast for the progressive evolution of the market, through the incorporation of new participants, the progressive increase of coordinated operation, the development of interconnection networks and the strengthening of the regional entities.” ³⁶ “Right of each state to apply to another state the same rules and norms that the second state applies temporally, in accordance with the principle of Gradualism” [Framework Treaty, Article 3]	Action
5	CRIE started discussion for harmonization period	“CRIE made a proposal to each country, what CRIE considered a valid way to making the harmonization. Maintain the regional regulation and tie the local regulation to the regional. Plugging both together. CRIE did that by contracting consulting companies. Panama did by them.” [SIEPAC.XX.156]	Action
6	“Interfaces” were created at each country	“Then each national regulator has used this information for taking more time of study and decided how to do it. How they will take resolution in order to have the RMER in operation in January, under preliminary phase.” [SIEPAC.XX.157]	Action
7	Guatemala, El Salvador, Honduras, Nicaragua, and Panama ratified II Protocol	All the countries except Costa Rica were reported to have ratified the II Protocol	Action
8	Costa Rica tried to pass law including reform of ICE	“When II Protocol went to the parliament, government found the opportunity to make slightly changes” [SIEPAC.XX.185]	Action

³⁶ Tratado Marco (Translated from Spanish by the author)

9	Parliament opposed and the ratification was stopped	“It took three years to the government to understand that was not going to happen” “It is a very sensitive issue” [SIEPAC.XX.188-189]	Output
10	Other countries started to complain about delays in Costa Rica	Some complains were heard about the delay of the project due to Costa Rica national issues	Output
11	ICE president delivered explanation to parliament	“Interview: Teofilo de la Torre: Our Project protects the role of ICE” [CR Hoy, 2011]	Action
12	Satisfactory solution was agreed	Finally, Costa Rica ratified the II Protocol	Output
13	ICE was vertically unbundled	“We are still vertical integrated but with the division in business units we commit with the Tratado Marco” [SIEPAC.XX.111]	Action
14	ICE was appointed as only allowed exporter in Costa Rica	“Costa Rica: one single power exporter” [Central America data, 2011]	Action

6.5.4.2. Links:

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	5	The ratification of the Second Protocol started the process for the full implementation of the RMER. In order to avoid problems because of interferences, the CRIE approved a period for the harmonization.
2	6	Some changes were needed in the regulations of the countries. For that interfaces were created during the harmonization period.
5	6	
6	7	With the work of the interfaces, all the member countries except Costa Rica ratified the II Protocol and were ready to implement the RMER
6	8	During this process, the government of Costa Rica tried to introduce some reforms in their national sector
8	9	Nevertheless, the public perception in Costa Rica is very critic against reform of ICE. With a very active parliament, opposition parties stopped the ratification of the protocol until getting security that ICE was not going to be reformed
3	9	
9	10	These delays in the ratification by Costa Rica prevented the implementation of RMER, impeding other countries to get the benefits of the regional market

10	11	In order to unblock the situation, the president of ICE talked to the parliament explaining the benefits of the regional market for ICE and Costa Rica
7	11	
11	12	Utilizing the principles of gradualism and reciprocity, ICE was able to find a solution that would be acceptable to all the parties
4	12	
12	13	This solution was the separation of ICE into business units
2	13	
12	14	The second part of this solution was to explicitly appoint ICE as the only exported in Costa Rica

6.6. Analysis of factors:

The factors are evaluated as follows:

- 5: Critical factor that overruns others
- 3: Factor part the core process but equally important to others
- 1: Without a direct, or lower, influence in the core process

<i>Stage</i>	<i>Code</i>	<i>Factor</i>	<i>Impact</i>	<i>Weight</i>
1	1	State-owned companies created to monopolize national sectors	Although it is true that their initial status as monopolies was important for the initial bilateral interconnections, they were not anymore all national monopolies at the time of the SIEPAC project was being studied.	1
1	2	Countries tended to consider power sector as technical issue	It granted autonomy to the state-owned companies for the elaboration of the feasibility studies, as well as the drafts of the agreements	3
1	3	Debt crisis affected every Central American country	It added urgency to the need of reforming national power systems	1
1	4	IADB became main/only donor in the region	Indirect impact since IADB was not the initiator of the project, it later phases IADB played a bigger role	1
1	5	Conflicts between countries due to aftermaths of Cold War	The process was successfully separated from other major conflicts in the region	1
1	8	State-owned companies built national grids until borders	That made possible the bilateral interconnections, which are the starting point of the regional project	3

1	9	Impossibility to continue public funding of sector	Without proper funding, the demand for changes was bigger	1
1	10	Seasonal surplus of capacity appeared in some countries	It gave an initial understand the benefit of being interconnected	1
1	11	State-owned companies built weak bilateral interconnections without need of political agreement	It showed to the state-owned companies the possibility of creating interconnections	1
1	12	State-owned companies had great autonomy of action	Due to their independence, they were able to: - Start bilateral interconnections - Carry out initial studies - Oppose to Endesa's first proposal - Join the new studies Make preliminary agreement	5
1	13	State-owned companies created regional technical organization (CEAC)	It served as a platform for the initial discussions	1
1	15	State-owned companies were initially interested only in regional infrastructure	It was a strong influence in the decision of combining infrastructure and market	3
1	16	State-owned companies identified potential benefits from economies of scale	This understanding has been the main driver of the cooperation during the entire process	5
1	17	Strengthening of bilateral interconnections was stopped by governments because of national security concerns	The national security concerns stopped first proposals by state-owned companies and latterly were also key in selecting the superposed market alternative	3
1	19	Individual markets too small for being profitable	One of the drivers for the regional market has been to "gain size"	3
1	20	International actors intervened to foster pacification	That process put Central American regional cooperation on the agenda of international donors (like Spain)	1

1	22	CEAC became active supporter of connectivity	CEAC was the regional institution that served for channeling the funding and coordinating the works, through the Executive Unit	3
1	26	Full regional consensus became bases of cooperation	Although consensus got increasing importance in later phases, for the initial the views from state-owned companies were similar	1

<i>Stage</i>	<i>Code</i>	<i>Factor</i>	<i>Impact</i>	<i>Weight</i>
2	1	Countries with different levels of reform	It didn't become a major issue during the discussions for the framework treaty because private investors didn't participate in these negotiations	1
2	2	Conflicts between countries still existing at that time	Those conflicts were the major obstacle to getting the support from the governments	5
2	6	Some countries could get more benefits than others	At that time it was not a major issue in the negotiations	1
2	10	State-owned companies had major influence in their respective national sectors	It was critical in the development of the studies, the draft of the treaty and in getting the political support	5
2	11	Major reforms would be needed in some countries	Since there was an initial commitment from the countries for the reform, this was not an issue of disagreement	1
2	13	Tensions between countries could affect entire region	It created fears in the countries to be not willing to depend on imported electricity	3

<i>Stage</i>	<i>Code</i>	<i>Factor</i>	<i>Impact</i>	<i>Weight</i>
3	1	State-owned companies had a history of cooperation	Initially created the will for the regional cooperation and latterly was key in the rapid development of EPR	3
3	2	Conflicts between countries still existing at that time	Looking for neutrality and shared ownership was one the main components of the process	3
3	4	State-owned companies were reluctant to lose	Although initially important, those fears disappeared rapidly	1

		control of their national sectors		
3	5	Countries didn't have experience of effective functional cooperation	Lack of experience in developing common projects of that dimension was the main reason of the difficulties faced in the initial phases of EPR	5
3	11	CEAC was the main actor for the promotion of the regional project	CEAC, in particular, the Executive Unit, was essential in moving the project forward	5

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Impact</u>	<u>Weight</u>
4	2	State-owned companies were in charge of national systems	Their experience and influence in the national processes were the main drivers for the institutional processes between the Framework Treaty and the II Protocol	5
4	8	Foreign relations influenced by ideological differences	Ideological differences had been playing a role in the discussions at CRIE, where, for example, countries openness to private investments was a major issue.	3
4	15	Privatization of generation was progressing in the region	Some of the new private actors had some influence in the demands for the regional regulation	1
4	20	Countries' concerns about losing control over regional market	Major concern of the countries, partly behind the difficulties faced by CRIE and a clear issue for the need of the creation of the CDMER	5

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Impact</u>	<u>Weight</u>
5	2	National sectors needed to adapt to regional market	There was a recognition of the need to modify the national system with a dominant ICE in order to accommodate the regional market	3
5	3	Strong public criticism towards privatization of ICE	The remember of the protests of Combo ICE had a direct influence in the government	3

7. Case study 3, GMS Power Sector cooperation program

7.1. GMS Power sector trade and cooperation

Energy sector and intra-regional power trade have been at the core of the GMS objectives since its commencement. In fact, the development of the 45 MW Xeset hydropower plant in Lao PDR, and an associated power purchase agreement with Thailand can be considered as the forerunner project of the entire program.

The success of this project triggered a series of consultations by the ADB with the governments of Cambodia, PRC (at this time including only the Autonomous Province of Yunnan), Lao PDR, Myanmar, Thailand and Viet Nam, which ultimately led to the First GMS Ministerial Conference held on 21-22 October 1992 in the headquarters of the ADB in Manila (Philippines).

After that, additional studies were conducted so to identify priority projects and to evaluate the potential impact, feasibility and barriers to the development of a regional electricity market in the GMS. ADB funded the first subregional energy sector study, commissioned in 1995. This was complemented by a Power Trade Strategy for the GMS conducted by the World Bank in 1999. In 2002, during the First GMS Summit of Leaders in Phnom Penh (Cambodia), the Inter-Governmental Agreement on Regional Power Trade (IGA) was signed by all the member countries. A Regional Power Trade Coordination Committee (RPTCC) was created to supervise the further developments. In particular, the design of the Regional Power Trade Operating Agreement whose final report was submitted in 2004 at the 3rd meeting of the RPTCC. This included a gradual process (ADB, 2008):

- Stage 1: One-way power sales under a power purchase agreement from an independent power producer in one country to a power utility in a second country, using dedicated transmission lines established;
- Stage 2: Trading between two countries, initially using spare capacity in dedicated stage 1 transmission lines, and eventually using other third country transmission facilities;
- Stage 3: All countries interconnected with 230-500 kilovolt lines will introduce centralized operations with a regional system operator that would facilitate third-party participation in trading (entities other than generators/sellers and utilities/purchasers); and
- Stage 4: All countries accept legal and regulatory changes to enable a free and competitive electricity market, with independent third party participation.

Since the commencement of the power sector cooperation in the GMS, the ADB, and other international donors, as the World Bank, have funded several technical assistances:

Code	Year	Title
RETA 5535	1995	Subregional Energy Sector Study for the Greater Mekong Subregion
(World Bank)	1999	Power Trade Strategy Study
TAR: REG 34092	2000	Technical Assistance for Regional Indicative Master Plan on Power Interconnection in the GMS
TA5920-REG	2000	Regional Indicative Master Plan on Power Interconnection in the Greater Mekong Subregion
RETA 5920	2002	Regional Indicative Master Plan on Power Interconnection
TA-6100-REG	2003-2005	Study for a Regional Power Trade Operating Agreement in GMS
TA 6304-REG	2006-2008	GMS Power Trade Coordination and Development
TA 6440-REG (Package 1)	2008 - 2010	Facilitating Regional Power Trading and Environmentally Sustainable Development of Electricity Infrastructure in the Greater Mekong Subregion (2008-2010)
TA 6440-REG (Package 1-Cont)	2008 - 2010	Facilitating Regional Power Trading and Environmentally Sustainable Development of Electricity Infrastructure in the Greater Mekong Subregion (2011) – Setting Up a Regional Organization for GMS Power Trade
(ADB)	2009	Building a Sustainable Energy Future: the Greater Mekong Subregion
RETA 6440	2010	Update of the Regional Indicative Master Plan on Power Interconnection
RETA 7764	2011	Ensuring Sustainability of GMS Regional Power Development

Table 16 - List of main technical assistance to GMS Power Coop. / RPTCC (Source: ADB, 2012; Lefevre, 2012)

During this time, numerous power plants have been developed and the amount of power trade bilaterally has increased dramatically. In particular, Thailand has been the most active member country, in particular for the import of power from Lao PDR. The latest Power Development Plan (PDP) of the Electricity Generating Authority of Thailand (EGAT) includes an objective to cover between 15 and 20% of the power demand with imported hydropower by 2036. PRC has also supported the development of different hydropower generation plants in Myanmar. Meanwhile, Viet Nam has been exporting electricity to Cambodia from its Southern grid, while importing from China at the North. In summary, although these bilateral interconnections are still far from the 2002's regional indicative master plan, the generation and transmission capacities for regional power trade have been continuously growing.

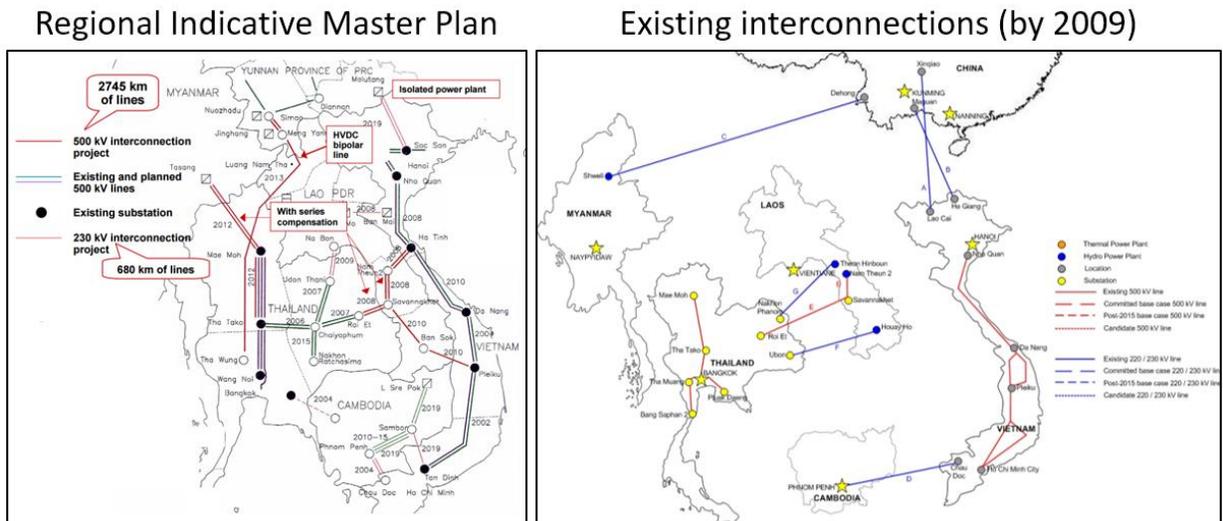
<i>Country</i>	<i>Imports</i>	<i>Exports</i>	<i>Total trade</i>	<i>Net imports</i>
Cambodia	1,546	-	1,546	1,546
Lao PDR	1,265	6,944	8,210	(5,679)
Myanmar	-	1,720	1,720	(1,720)
Thailand	6,938	1,427	8,366	5,511
Viet Nam	5,599	1,318	6,917	4,281
China	1,720	5,659	7,379	(3,939)
Total	17,069	17,069	34,139	

Table 17 - GMS Power Trade and Net Imports, 2010 [GWh] (source: Chi Nai, 2015)

To	From						Total
	Cambodia	Lao PDR	Myanmar	PRC	Thailand	Viet Nam	
Cambodia	---	13.77			396	1,219	1,628.77
Lao PDR		---		221	1,286	35	1,542
Myanmar			---				
PRC			1,496	---			1,496
Thailand		11,936			---		11,936
Viet Nam		small		1,976		---	1,976
Total		11,949.77	1,496	2,197	1,682	1,254	18,578.77

Table 18 - Exchanges of Electricity within the GMS in 2014 (GWh) (source: ADB, 2016)

Figure 30 - Planned and existing interconnections in the GMS



Source: UNDESA (2005) and ADB (2010)

On the other hand, similar progress has not yet been achieved in terms of developing the institutional capacity to move beyond the stage 1. For example, the constraints for third party access to the dedicated transmission lines developed for the PPAs is becoming a challenge for new projects (Antikainen, Gbert, Moller, 2011). Similarly, the lack of agreement in wheeling charges for the use of a third country transmission network appears to be the impossibility for the development of the MOU signed between PRC and Thailand for the export of electricity from Yunnan Province (PRC).

This unbalances between the developments of the physical infrastructures (hardware) and institutional aspects (software) has been pointed out by different studies. It is included, for example, the ADB's 2013 Assessment of the GMS Energy Sector Development:

“There has been remarkable progress in the GMS energy sector over the past 2 decades. Considerable success was also achieved in rolling out rural electrification in member countries. Rapid provision of large-scale, high-volume national grid systems; successful mobilization of indigenous resources; and the beginnings of cross-country trade also took place. These successes have been achieved mainly at the national level. Despite considerable political pronouncements that recognize the imperatives of regional cooperation, progress has not matched national achievements. The high-volume trans-boundary connections that have been made to date within the GMS do not achieve a true interconnection of systems with synchronous operations, but are simply an extension of the national grids of the large- consuming countries into the territories of producers of (mainly) hydropower”

ADB (2013), “Assessment of the GMS Energy Sector Development”

Against this background, recent developments seem to be bringing a new impulse to the regional power cooperation program. The power trade agreement between Lao PDR and Singapore, going through Thailand and Malaysia, is a promising development that could have some implications for third country access agreements. In addition, the updating of the regional master plan and the negotiations for the establishment of the Regional Power Coordination Center seem to indicate a renewed effort for strengthening the institutional structure of the program. Finally, projects including neighboring countries, like the ASEAN Power Grid and the China's supported Global Energy Interconnection project, could facilitate the negotiation processes between the member countries.

The Greater Mekong region is rich in energy resources, although these are unevenly distributed, Myanmar, Lao PDR, and Yunnan have surplus energy sources (particularly hydro), while Thailand and Cambodia are in deficit, Viet Nam remains in an intermediate position.

Energy resource	Cambodia	Lao PDR	Myanmar	Thailand	Viet Nam	Guangxi	Yunnan	Total GMS
Hydro (MW)	9,703	17,979	39,669	4,566	35,103	17,640	104,370	229,031
Coal (million ton)	10	503	2	1,239	150	2,167	23,994	28/065
Natural Gas (billion cubic meters)	n.a.	-	590	340	217	n.a.	n.a.	1,179
Crude oil and national gas liquids (million ton)	n.a.	-	7	50	626	173	n.a.	819

Table 19 - GMS Energy Resources (2009/latest) (source: ADB, 2012)

7.1.1. Institutions

Sub-regional Electric Power Forum (EPF)	Established in 1994 serves as advisory body to the GMS Ministerial Meeting
Experts Groups on Power Interconnection and Trade (EGP)	Established in January 1998 to provide recommendations on regional power issues to the EPF
Regional Power Trade Coordinating Committee (RPTCC)	Established by the IGA, replacing the EPF, with the objective to “actively coordinate for successful implementation of regional trade and to represent the countries involved in regional power trade”
Focal Group (FG)	Established under the RPTCC to coordinate implementation of activities in each GMS country
Planning Working Group	Established under the RPTCC to fulfill the functions of the operational and system planning working groups identified in the RPTOA

Table 20 - GMS Power Cooperation, Main Institutions (source: ECA, 2010)

7.2. Overview of individual countries' situation and incentives

7.2.1. Cambodia:

Cambodia is mainly characterized by the low energy independence and the high prices of the electricity (highest in the region and higher even when comparing with international standards). This is because of its low capacity and its strong dependence on fossil fuels. Cambodia has also

been looking towards the development of some hydropower capacity. It is currently importing electricity from the South of Viet Nam.

7.2.2. China:

The provincial grid is operated by two subsidiaries of the China Southern Power Grid: Yunnan Power Grid and Guangxi Power Grid. Although Yunnan Province is rich in hydro resources, many of these are being developed so to transfer the power to the energy demanding Guangdong Province through the Southern Corridor of the West to East electricity transfer project [Wilson Center]. Therefore, the motivation of China to involve in the regional power trade combine the possibility of exporting to the region (mainly through the MOU signed with Thailand), as well as importing additional power, as current projects developed in Myanmar.

7.2.3. Lao PDR:

Lao PDR has been sometimes referred as the “battery of Southeast Asia” [International Rivers]. Although rich in hydro resources, these remain highly untapped. This presents an opportunity for the development of power generation to export, bringing back the economic resources much needed for the development of the country. These are done through IPPs in which the state-owned utility, EDL, participates.

Rural electrification and supplying the rapidly increasing energy demand are the main challenges for the power sector in Lao PDR. The government set ambitious goals of achieving an electrification rate of 90% by 2020 through both on-grid and off-grid electrification. The development of interconnections with neighboring Thailand Viet Nam is also an important part of the national strategies

7.2.4. Myanmar:

Myanmar is rich in energy resources, particularly hydro and natural gas, bringing also opportunities for the development of generation projects oriented towards the export of electricity, both to China and to Thailand. The institutional structure of the sector has been reformed in several occasions, changing also the national priorities. Currently, the entire country is again reforming itself. Nevertheless, even with those changes, the two priorities for the power sector in Myanmar are to match the rapidly increasing energy demand and to extend the electrification rate

7.2.5. Thailand:

The power sector in Thailand is dominated by the state-owned company EGAT. The creation of the Energy Policy and Planning Office (EPPO) in 2002 got the policy making responsibility from EGAT and move it into the ministry. Nevertheless, EGAT remains as the single buyer in the

national market. Thailand is also very active in the promotion of regional power trade, having signed MOUs with Myanmar, Lao PDR, Cambodia, China, and Malaysia.

7.2.6. Viet Nam:

The power subsector of Viet Nam has experienced major changes during the last two decades since the beginning of the GMS program. Before 1995, the power sector was fully government-owned through three companies in charge of generation, transmission and distribution in their respective territories. A process for gradual reform was initiated in 1995 with the creation of a single monopoly power company, Electricity of Viet Nam (EVN). This was implemented in parallel with a massive investment plan to increase electricity access, moving from roughly half of Viet Nam's population in 1995 to 93% by 2004. Expansion of generation capacity was also undertaken, highlighting the rapid increase in thermal generation.

The sector has been under major structural reform since July 2005, when the Electricity Law of 2004 was enforced. This aims for the establishment of wholesale market by 2017 and a competitive retail market by 2023. Vertical unbundling of EVN as well as creation of new institutions to grant independence have been carried out, including:

- "Equitization" of EVN through the identification of several generation and distribution assets of EVN for partial privatization (in 2003).
- Establishment of the National Power Transmission Corporation (NPT) in 2008. Fully owned by EVN and responsible of the management of the power transmission grid. It was created from the merging to EVN's four transmission companies and three power grid management boards.
- Establishment of Electricity Power Trading Company within EVN in 2008, with the role of being the single buyer in the power generation market.
- Establishment of the National Load Dispatch Center (NLDC) as system operator, also part of EVN.
- EVN's legally unbundling in January 2009. The name was changed to Viet Nam Electricity, although the acronym remains as EVN
- Reorganization of the distribution system from the existing 11 regional power distribution into power distribution corporations under EVN. Those are responsible for supplying power and for the maintenance of the distribution grid up to 110kV over the areas of North, Central, South, Ha Noi, and Ho Chi Minh City.

7.2.7. Summary, GMS countries incentives towards power sector cooperation:

Greater Mekong Sub-region (GMS) countries³⁷, primary energy demand is rapidly growing, faster than the 1.5% average annual growth predicted for the world (Doi et al, 2010). According to ADB (2016), by 2035, it is expected to grow nearly 80% of the current levels, and in some cases, like Myanmar and Viet Nam will double them. Meanwhile, member countries are expected to become increasingly dependent on imported fossil fuels (ADB, 2009). Addressing those needs while considering the environmental and social sustainability will be a major challenge for all the countries.

Table 21 - Forecast of Primary Energy Demand in GMS countries

	mtoe					Average Annual Growth Rate [%]			
	1990	2009	2015	2020	2035	1990-2009	2009-2020	2020-2035	2009-2035
Cambodia	-	5	6	7	11	...	3.0	3.0	3.0
Lao PDR	1.2	3	5	5	9	4.5	6.1	3.4	4.5
Myanmar	10.7	15	17	21	35	1.8	3.3	3.3	3.3
Thailand	41.9	103	121	140	215	4.9	2.8	2.9	2.9
Viet Nam	24.3	64	83	99	185	5.2	4.0	4.3	4.2
PRC	863	2,257	2,798	3,156	4,034	5.2	3.1	1.6	2.3
Total	941	2,447	3,030	3,429	4,489	5.2	3.1	1.8	2.4
Total without PRC	78	190	232	273	455	4.8	3.3	3.5	3.4

Source: ADB, 2016

Against this background, regional power cooperation in the Greater Mekong Sub-region has been found to be a promising alternative. In the Greater Mekong Sub-region (GMS) exists high complementarity between national systems. Whereas energy resources, particularly hydro, are concentrated in Upper Mekong countries, like Lao PDR and Myanmar, demand is stronger in Thailand and Viet Nam. Interconnecting them would bring investment to Lao PDR and Myanmar, and supply cheap and clean electricity to Thailand and Viet Nam. Cambodia could get benefited by importing cheaper hydro, as well as to a certain level of investment in developing its potential hydro capacity. Yunnan and Guangxi provinces can get also benefited from importing and exporting.

³⁷ The countries covered by the GMS program are Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and the People's Republic of China (PRC, specifically Yunnan Province and the Guangxi Zhuang Autonomous Region)

Table 22 - GMS energy resources (2009)

	Cambodia	Lao PDR	Myanmar	PRC, Guangxi	PRC, Yunnan	Thailand	Viet Nam	Total
Hydro (MW)	9,703	17,979	39,669	17,640	104,370	4,566	35,103	229,031
Coal (million ton)	10	503	2	2,167	23,994	1,239	150	28,065
Natural gas (billion cubic meter)	n.a.	-	590	n.a.	n.a.	340	217	1,179
Crude oil and natural gas liquids (million ton)	n.a.	-	7	173	n.a.	50	626	819

Source: ADB, 2012

Table 23 - Drivers for regional power cooperation for GMS member countries

Country	Drivers for regional power cooperation
Cambodia	<ul style="list-style-type: none"> • Import of cheaper power from Southern Viet Nam and Lao PDR • Development of hydropower plants for export
Lao PDR	<ul style="list-style-type: none"> • Attraction on FDI for Development of hydro capacity for export • Attraction of investments
Myanmar	<ul style="list-style-type: none"> • Attraction of investments • Export of hydro and natural gas
PRC	<ul style="list-style-type: none"> • Development of cost effective projects in neighboring countries (mainly Myanmar) to import electricity for Guangdong Province • Export of electricity (mainly to Northern Viet Nam and potentially Thailand) • Promotion of Global Energy Interconnection project
Thailand	<ul style="list-style-type: none"> • Import of electricity from neighboring countries (especially Lao PDR and Myanmar) • Increase diversification of energy mix, so to reduce dependence on imported natural gas • Reduce the need for development of coal-fired power plants
Viet Nam	<ul style="list-style-type: none"> • Import of hydropower for Northern Viet Nam grid

	<ul style="list-style-type: none"> • Export of surpluses due to capacity and/or differences in peak times from Southern Viet Nam
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Different studies have shown how the entire region could benefit from greater energy sector integration in the region. In particular, ADB, 2009, identified:

- (i) reduction of overall energy costs by 19% compared to business as usual scenario up to 2030,
- (ii) reduction in overall dependence on imported resources by 5.5% of total energy consumption,
- (iii) 40% lower coal-based power generation capacity, and (iv) greater integration of renewable energy sources and other off-grid solutions by 11 GW.

7.3. The Development Process of GMS Power Sector Integration

As mentioned at the beginning of this chapter, regional power sector development has been one of the key sectors from the starting of the GMS and the actual starting project of the entire program.

7.3.1. Timeline - Events:

<i>Date</i>	<i>Description</i>	<i>Stage</i>
1971	Thailand and Lao PDR power purchase agreement for export power from the Nam Ngum hydropower plant in Lao PDR to northeast Thailand: [ADB, 2008] - First power trade agreement in Indochina	1
1984	Xeset hydropower dam in Lao PDR financed by ADB for export electricity to Thailand: - Project identified through Mr. Morita's initiative	1
1986	Viet Nam Doi Moi	-
1991, October	Memorandum of Understanding (MOU) signed between the Petroleum Authority of Thailand and the Heavy Industry Ministry of Viet Nam to develop jointly the White Tiger and Big Bear natural gas fields in the South China: - If more than 500 million cubic feet of natural gas are found, some will be transferred from Viet Nam to Thailand directly along an 800 km pipeline (costing estimated \$ 1 billion or more)	-
1992, Oct. 20-21	First Conference on Subregional Economic Cooperation: - To discuss the results of	1
1993	Lao PDR opened up the power sector to private and foreign investment [ECA]	-

1993, June	<p>First MOU between Thailand and Lao PDR for the import of 1,500 MW of power by 2000 [ECA]</p> <ul style="list-style-type: none"> - Theun-Hinboun Power Project joint venture form of equity financing - Other projects include Nam Song, Houay Ho - Thai delegation submitted to the Myanmar Delegation a “Draft of Memorandum of Understanding between the Government of the Union of Myanmar and the Government of Thailand on Joint Development of Water Resources on the Salween River” for consideration by the Myanmar Government 	1, 3
1993, June 10	ADB approval of Phase II	1
1993, Aug 30-31	<p>Second Ministerial Conference in Manila (Philippines):</p> <ul style="list-style-type: none"> - Subregional energy sector study elaborated by NORCONSULT was presented 	1
1994, April	<p>Third Conference on Subregional Economic Cooperation in Ha Noi City (Viet Nam): [ADB 2 decades]</p> <ul style="list-style-type: none"> - Several of the proposals under study of the Subregional Energy Sector Study were discussed and accorded high priority 	1
1994, September	<p>Fourth Conference on Subregional Economic Cooperation in Chiang Mai (Thailand): [ECA]</p> <ul style="list-style-type: none"> - Agreement for the establishment of the EPF - Revised list of projects was presented and reconfirmed [2decades] 	1, 2
1994	“The 3 rd and 4 th Ministerial Meetings in Ha Noi and Chiang Mai endorse subregional priority projects, which include eight hydro and transmission line projects, two oil and natural gas projects, and one institutional project, as recommended by the subregional energy sector study”	
1994, November	<p>Subregional Energy Sector Study [Yamamura, ESCAP, ADB 2 decades – Appendix 3]:</p> <ul style="list-style-type: none"> - Earliest energy study with a GMS-wide focus - Initiated in 1993, prepared by Norconsult under ADB RETA 5535 - Helped to define the parameters for the development of the energy sector in the subregion, build consensus on the initial shortlist of priority subregional energy projects, and provide the initial based for pursuing detailed feasibility and design studies for these subregional projects 	1
1995	<p>Mekong River Commission (MRC) funded:</p> <ul style="list-style-type: none"> - With the aim of ensuring that the Mekong is developed in the most efficient manner, one that mutually benefits all member countries and minimizes harmful effects on people and the environment in the Lower Mekong Basin. - Cambodia, Lao PDR, Thailand, and Viet Nam members - Myanmar and China dialogue partners 	-

1995, April 25	<p>EPF 1: Subregional Electric Power Forum (EPF) formally inaugurated in Yangon (Myanmar):</p> <ul style="list-style-type: none"> - EPF under the overall GMS governance structure - To lead the development of the regional power market - Each GMS member has two representatives: a senior official from the government agency dealing with policy and planning in the power sector and another from a key power utility [ADB two decades] - Met at least once a year - helped to provide a broad framework for subregional power sector coordination as well as an ongoing mechanism for knowledge sharing and collaboration among GMS members and their development partners - EPF adopted a two-pronged approach to developing the GMS power market: one focused on the policy and institutional framework for promoting power trade and another focused on facilitating physical interconnections to facilitate cross-border dispatch of power [ADB, two decades] 	1
1995, December	<p>EPF 2 in Vientiane</p> <ul style="list-style-type: none"> - Aimed to strengthen the subregional consultative process with a view to facilitating preparation and implementation of priority power projects 	1
1996	<p>Second MOU between Thailand and Lao PDR for the import of a total of 3,000 MW by 2006 [ECA]</p>	1, 3
1996, September	<p>Mekong integrated transmission system study started:</p> <ul style="list-style-type: none"> - Financed by the Government of Japan - Conducted by the Mekong River Commission Secretariat - Focused primarily on the lower Mekong Basin countries - Myanmar and Yunnan Province were included in an overall assessment of the situation and a proposal for an interconnected network in the GMS - Started in 1995, June 	1, 2
1996, December	<p>EPF 3 - Third Electric Power Forum in Kunming (China)</p> <ul style="list-style-type: none"> - Endorsement of the World Bank Power study 	1, 2
1997, July	<p>Initial MOU between Thailand and Myanmar for the purchase of 1,500 MW of hydro capacity by 2010 [ECA]</p>	1, 3
1997, October	<p>EPF 4 - Fourth Electric Power Forum in Hanoi (Viet Nam):</p> <ul style="list-style-type: none"> - Interim report of World Bank study presented - Discussed and agreed to the establishment of an experts group (EGP) within the EPF that would now focus on promoting cross-border trade in electricity and the attendant requirement of developing a regional power grid 	2, 4
1997	<p>China's State Power Corporation (SPC) established following the abolition of the former Ministry of Electric Power</p>	-
1997	<p>Establishment of the Ministry of Electric Power (MEP) in Myanmar:</p> <ul style="list-style-type: none"> - Policymaker and owner for the power sector 	-

1998, January (June)	Establishment of the Expert's Group on Power Interconnection and Trade (EGP) - To provide recommendations on regional power issues in the GMS - Established by the EPF, drawn from utilities and GMS member governments	2, 4
1998, June	ESMAP-funded Regional Workshop held in Thailand: - Final draft of World Bank study discussed with GMS countries - Hosted by National Energy Policy Office (NEPO) of Thailand	2, 4
1998, December	EPF 5 in Bangkok (Thailand) Second EGP and fifth Subregional Electric Power Forum (EPF) meetings: - GMS countries requested ADB to provide technical assistance to update a 1996 power transmission study and prepare an indicative master plan for subregional transmission development up to 2020 [ADB, 2008]	2, 4
1998	Theun Hinboun hydropower in Lao PDR interconnection with Sakhonnakhon (Thailand) [Hasnie] - 230 kV, 200 MW, 176 km	1, 3
1998	MOU between Thailand and China for the import of 3,000 MW by 2017 [ECA] - Interconnectors passing through Lao PDR - Need to agree to transit payments to be made to Lao PDR	2, 4
1998	Intergovernmental MOU between Viet Nam and Lao PDR for the import of 2,000 MW of power	2, 4
1999	Houayho hydropower in Lao PDR interconnection with Ubon 2 (Thailand) [Hasnie] - 230 kV, 150 MW, 230 km	2, 3, 4
1999, March	World Bank's Power Trade Strategy for the Greater Mekong Sub-Region: -	3, 4
1999, October	EPF 6 in Phnom Penh - Third meeting of the Experts Groups on Power Interconnection and Trade (EGP): - Detailed terms of reference for the TA for the regional indicative master plan discussed and endorsed	1, 2
1999, Oct. 28	Sixth Electric Power Forum Meeting in Phnom Penh (Cambodia) - Adoption of a Policy Statement on Regional Power Trade in the GMS	1, 2
2000, January	Ninth GMS Ministerial meeting in Manila (Philippines) [ECA], - Endorsement of the Policy Statement on regional power trade in GMS by GMS Ministers: - First key milestone of the GMS regional power trade - Established the objectives and principles for power trade - Endorsement of the regional indicative master plan	2

2000, December	EPF 7 held in Vientiane	
2001	Seventh meeting of the Experts Group on Power Interconnection and Trade (EGP): [ADB, 2003] - Countries requested ADB for technical assistance to prepare the RPTOA	4
2001, December	EPF 8 held in Ha Noi	
2002	China Southern Power Grid Co. Ltd (CSG) formed as part of the reorganization of the former State Power Corporation (SPC)	-
2002, May	Completion and adoption of the Regional Indicative Master Plan on Power Interconnection in the GMS [e7]: - Confirmation of the economic benefits of regional harmonization in development of power systems in GMS - Recommendation the interconnection grid capable of providing the power transfer capacities to fully benefit from the pooling of resources with a least-cost solution - Prepared by Norconsult, under ADB RETA 5920 - First indicated master plan developed for regional power interconnection in the GMS - Included two main power development scenarios: Scenario 1 – Limited Power Cooperation and Scenario 2 – Extended Power Cooperation, with a few alternative scenarios (2A, 2B, and 2C) based on varying degrees of power cooperation	2
2002, October	EPF 9 held in Yangon (Myanmar)	
2002, Nov. 3	Signing of the Inter-governmental Agreement at the Phnom Penh 1 st GMS Summit - Establishment of the Regional Power Trade Coordinating Committee (RPTCC) - RPTCC assigned with the responsibility for preparing a Regional Power Trade Operating Agreement (RPTOA) and establishing actions required to achieve the objectives for power trade	2
2003, November	EPF 10 - Ninth Meeting of Experts Group on Power Interconnection and Trade Tenth meeting of the Subregional Electric Power Forum in Guangzhou (China)	4
2003, November	EGP 9 held in Guangzhou - Last EGP meeting, following the constitution of the RPTCC and its taking over of EGP functions	4
2004	The IGA on regional power trade is ratified by all six GMS countries	2, 3, 4

2004, July	RPTCC 1 First meeting of the RPTCC [ADB, 2008, e7] held in Guilin: - To coordinate implementation of regional power trade To draft the RPTOA - Guidelines for RPTCC adopted	4
2004, December	Guangxi Zhuang Autonomous Regional formally included as GMS member	-
2004, December	EPF 11 held in Bangkok (Thailand): - Last meeting of the EPF before its function was subsumed under the new Subregional Energy Forum (SEF)	4
2004, December	RPTCC 2 held in Bangkok (Thailand)	4
2005, April	Approval of NT2 hydroelectric project [ADB, 2008]	3
2005, April	RPTCC 3 - Third RPTCC meeting held in Vientiane - Draft RPTOA submitted (to be approved in July) - Draft initial Regional Power Trade Operating Agreement (RPTOA) completed	4
2005, May	New MOU between Thailand and Myanmar for the development of five hydro projects on the Salween River [ECA] - Myanmar government proposed two initial projects with a combined capacity of 8,200 MW	4
2005, September	RPTCC 4 held in Yangon	4
2005, July 1	Viet Nam's Electricity Law came into effect	-
2005, July	First Memorandum of Understanding on the Guidelines for the Implementation of Stage 1 of the RPTOA (MOU #1) signed in Kunming (China) [Sida, ADB 2012, ESMAP, ECA] - To set the guidelines for power trade to achieve the Stage 1 - Establishment of the Focal Group (FG), for coordination implementation activities; and the Planning Working Group (WG), for identifying priority interconnection projects and establishing common regional performance standards, under the RPTCC	3, 4
2005	IGA ratified by all respective parliaments	2, 4
2006	Third MOU between Thailand and Lao PDR which increased the purchase amount to 5,000 MW by 2015	3
2006	Viet Nam Prime Minister Decision #26/2006/QĐ-TTg, a roadmap for the introduction of the competitive power market has been approved [ECA]	-
2006	Commencement of the development of a regional energy sector strategy (ESS) [ADB, 2008]	4

2006, May	Split of Myanmar's MEP into Ministry of electric Power (1) and Ministry of Electric Power (2)	-
2006, June	RPTCC 5 held in Siem Reap	4
2006	Xinquao in Yunnan (China) interconnection with Lao Cai (Viet Nam) [Hasnie] - 220 kV, 250-300 MW, 56 km (in China)	3
2007, May	RPTCC 6 held in Sanya	4
2007, June	Dr. Piyasavasti, Thai energy minister in the then military-installed government, reported to have said Thailand was not looking to buy power from Myanmar [ECA] (didn't happen)	2, 4
2007, October	World Bank's Strategy Note on World Bank Regional Support for the Greater Mekong Sub-Region	4
2007	Maguan in Yunnan (China) interconnection with Ha Giang (Viet Nam) [Hasnie] - 220 kV, 200 MW, 51 km (in China)	3
2007	Transmission line connecting Thailand to Bantey Meanchay, Siem Reap and Battambang [ECA] - 115 kV northwestern grid of 203 km in length - Financed and operated by Cambodia Power Transmission Co Ltd (CPTL) - Under a 30-year BOT agreement with EDC - Import capacity of 80 MW	3
2007	Midterm review of the GMS Strategic Framework: - "Very good progress in the 'hardware' aspects of cooperation, but less so in the 'software' components of cooperation"	3, 4
2008	Shewli I hydropower in Myanmar interconnection with Dehong (Yunnan, China) [Hasnie] - 220 kV double circuit, 600 MW, 2 x 120 km	3
2008 June	Draft of the ESS presented at a regional workshop [ADB, 2008]	4
2008, November	RPTCC 7 held in Ho Chi Minh (Viet Nam)	4
2008, November	Roadmap based on the draft ESS suggestions actions up until 2012 presented to the GMS governments for consideration [ADB, 2008]	3, 4
2008	MOU on the Road Map for Implementing the GMS Cross-Border Power Trading (MOU #2) Second MOU (MOU #2) prescribing measures to fully achieve Stage 1 during the period 2008 – 2010 - Update of the regional master plan on power interconnection completed	4
2009	Nam Theun 2 hydropower in Lao PDR interconnection with Roi Et 2 sub (Thailand) [Hasnie]	3

	- 500 kV double circuit, 1000 MW, 304 km	
2009, March	EGAT hopeful of shortly signing an MOU for the Hutgyi project on the Salween River, one of the plants covered under the second MOU [ECA]	3
2009	Chau Doc in Viet Nam interconnection with Phnom Penh (Cambodia) [Hasnie] - 220 kV (Viet Nam), 230 kV (Cambodia) double circuit, 200 MW, 111 km	3
2009	Study on building a sustainable energy future in the GMS was published (ADB RETA 6301)	4
2010	Ban Nabong hydropower in Lao PDR interconnection with Udon 3 sub (Thailand) [Hasnie] - 500 kV (opr at 230 kV), 615 MW, 100 km	3
2010	Second update of the GMS regional master was completed by RTE International (ADB RETA 6440)	3, 4
2010, March	Power production began at Nam Theun 2 (NT2). A 1075 MW hydropower dam in central Lao PDR for export to Thailand (90%, 1000MW) [International Rivers, 2010] [ADB, 2008] The first high voltage cross-border transmission line within the	3
2011, May 19-25	67 th Session of the UN-ESCAP held in Bangkok: - Adoption of the resolution 67/2 for Promoting regional cooperation for enhanced energy security and the sustainable use of energy in Asia and the Pacific	-
2011	Discussions on the establishment of the Regional Power Coordination Center (RPCC) initiated - RPCC to be the dedicated coordination center for regional power trade	4
2012, March	Special 12th RPTCC meeting (RPTCC-12-A) was held mainly to continue discussions on the inter-governmental MOU to establish the Regional Power Coordination Center (RPCC), which will oversee the evolution of the GMS power market toward a more open, but appropriately regulated competitive market http://www.adb.org/sites/default/files/publication/29824/gms-rptcc12a.pdf	4
2012, May 17-23	68 th Session of the Economic and Social Commission for Asia and the Pacific: <i>Growing Together; Economic Integration for an Inclusive and Sustainable Asia-Pacific Century</i> - Adoption the resolution Connectivity for energy security - Request for conceptualization of the Asian Energy Highway	-
2012, December	Ministerial meeting endorsed MOU for establishment of the Regional Power Coordination Center (RPCC)	4

2012	Two working groups set up for (i) performance standard and grid code, and (ii) regulatory issues - Intergovernmental MOU initiated by all members	4
2013, June 6	MOU on Power Purchase Program from China to Thailand [Hasnie]	4
2013	Completion (?) of 1,878 MW Hongsa power plant in Laos nearing completion [Bangkok Post]	
2014, December	Fifth GMS Summit held in Bangkok (Thailand) - All the GMS countries signed the MOU for the Establishment of the Regional Power Coordination Center (RPCC), - intended to be a permanent institution owned by all GMS countries to enhance regional power trade and implement regional power interconnection projects - With this agreement coming into force, the process for selecting the RPCC host country is ongoing - new studies on “Strategic Environment Assessment for the GMS Regional Power Development Planning” and “GMS Renewable Energy and Energy Efficiency Development” would provide useful guidelines for power development planning and identify opportunities to promote renewable energy and energy efficiency in the GMS . - and ensure that the RPCC serves as a forum for addressing GMS power challenges and opportunities in the coming years.	

Table 24 - Timeline of events at GMS Power Cooperation

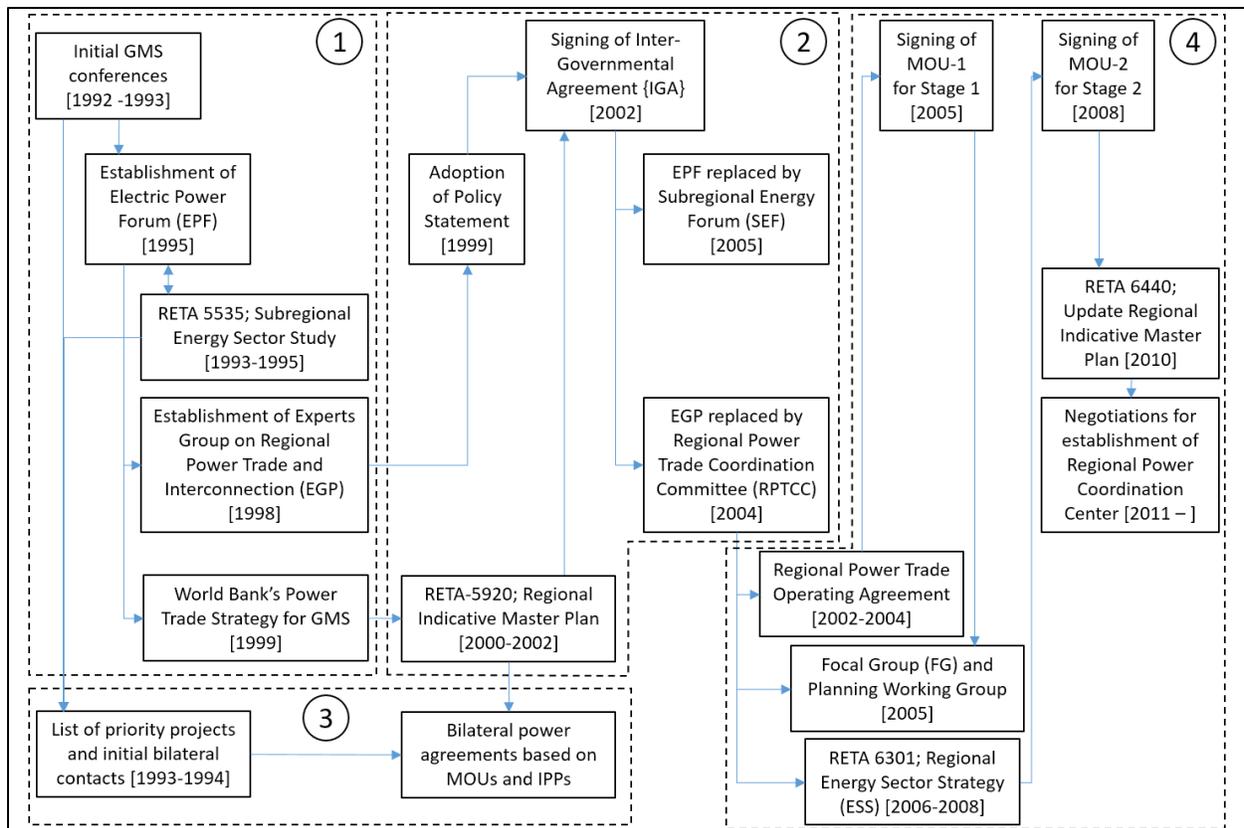


Figure 31 - Overall view of the GMS Power Cooperation process (stages)

7.3.2. Stage 1: National stakeholders' agreement

Before the GMS program started there was only one precedent of cross-border power exchanges. The Nant-Theun hydropower, which had been founded by international donors before the Laotian political change, had been in operation without disruption even though the political and military tensions between Thailand and Lao PDR. So, when Laotian representative asked Mr. Morita for support for funding small hydropower development in the country and that was found to be too small to be bankable even for the ADB, Mr. Morita suggested to target into a larger hydropower development and exporting to Thailand.

Thanks to his fluent relation with EGAT, Mr. Morita was able to explore the potential interest from EGAT in such project.

The process followed a similar structure to that of the transport sector. The ADB technical cooperation works were divided in two phase, concluding each with one of the two firsts Ministerial Conferences.

Projects identified during Phase I

- Salween River Hydropower Project, known in Myanmar as the Thanlwin Hydropower Project

- Development of eight Mekong River (Lancang river) hydropower projects in Yunnan Province with surplus electricity to be exported to Myanmar and Thailand
- The Martaban Gas Project, known as the Mottama Gas Project in Myanmar, which call for a gas pipeline from the Gulf of Murtaban to link with markets in Thailand

The list of projects discussed during the country consultations with the Bank Study:

<i>Energy resource</i>	<i>Origin</i>	<i>Market</i>	<i>Projects</i>
Hydro	Lao PDR	Thailand, Myanmar, PRC	Namtha, Nam Khan and Nam Ou
Hydro	Lao PDR	Thailand	Nam Ngum, Nam Ngiep
Hydro	Lao PDR	Thailand, Viet Nam	Nam Theun
Hydro	Lao PDR	Thailand, Viet Nam, Cambodia	Bolovenus
Hydro	Lao PDR	Viet Nam	Sekong
Hydro	Myanmar	Thailand	Salween River Hydro Project: including the diversion of water from the Salween River to the Chao Phraya River in Thailand
Hydro	Viet Nam	Cambodia	Development of the Pleikrong and Yali Fall sites on the Upper Se San River in Viet Nam. This would provide energy for the central and southern portions of the country. A grid system could also serve portions of Cambodia
Hydro	Yunnan	Thailand, Myanmar	Development of eight hydropower stations on the middle and lower sections of the Lancang (Mekong) River in Yunnan, with an installed capacity of 14,810 MW. Four of these projects (Manwan, Xiaowan, Dachaoshan, Nuozhadu), accounting for more than 90 percent of the new capacity, are scheduled to be completed by 2015. Surplus electricity would be exported to Thailand and Myanmar.
Gas	Myanmar	Thailand	Gas pipeline linking reserves in Gulf of Martaban with markets in Thailand
Gas and oil	Viet Nam	Thailand	Gas and oil pipelines linking reserves in southern Viet Nam with markets in Thailand

Table 25 - Energy projects discussed during Phase I (source: ADB, February 1993)

In between the first and the second conference, Thailand and Lao PDR signed a Memorandum of Understandings concerning the financing, construction, and operation of the Theun-Hinboun Power Project

At the Second Conference, the subregional energy sector study elaborated by NORCONSULT was presented

- (i) Desirability of a possible grid system, covering sections of the subregion or possibly the whole of the subregion,
- (ii) Pricing issues,
- (iii) Involvement of the private sector; and
- (iv) The environmental impact of proposed energy projects.

There was also a general agreement on the small and medium scale projects to ease the funding and reduce the implementation periods.

The priority projects from the proceedings of the Second Conference included those identified in Phase I as well as some additions. At the end of this, the ones selected as priority were:

- Development of a subregional grid system: which would allow countries to better manage their peak loads.
- Establishment of development criteria for project selection based on hydropower, gas, and oil thermal power generation potential, area services, project cost, environmental impact, and project timing.
- Development of a demand-supply pricing system. Comparing the location and cost structure of hydropower plants with thermal plants.
- The Salween (Thanlwin) River Hydropower Project which would produce substantial economic and social benefits to Myanmar and Thailand. It is also mentioned that the large size of this project would require also substantial investment financing. Therefore, private sector, as well as multilateral and bilateral financing, would be acceptable
- The Gulf of Martaban (Mottama) Gas Project: already in progress. The French multinational operator Total had already drilled four appraisal wells.

7.3.3. Stage 2: High level political agreement

After the initial support for the regional cooperation in the power sector (with the approval of the priority projects at the Second Conference), the project entered the phase of achieving higher level political agreement. Initially, two studies were carried out. A Regional Indicative Master Plan on Power Interconnection by the ADB, between 2000 and 2002, to “identify levels of energy demand the priority interconnection projects up to 2020 necessary to support regional power trade” [ADB, 2012]. World Bank carried out a study on power trade strategy. The identification of the main barriers was a key output of that study. It identified (i) policy barriers, (ii) technical barriers, (iii) institutional barriers, and (iv) commercial and financial barriers.

Another important event was the establishment of the Experts Groups on Power Interconnection and Trade (EGP) in 1998 by the EPF. One of the first tasks for the EGP was to oversee the Regional Master Plan previously mentioned. It was also in charge of preparing the policy statement for the support of the regional power trade. After the Policy Statement on regional power trade was signed by the GMS Ministers in January 2000, the heads of summit backed up at the First GMS Summit in November 2002 with the signing of the Intergovernmental Agreement (IGA). The objectives of this were: (i) coordinate and cooperate in the planning and operation of their systems, (ii) fully recover costs and share equitably the resulting benefits, and (iii) provide reliable and economic electricity services to the customers [Hasnie]

7.3.4. Stage 3: Physical construction

In parallel to the process towards the formation of the high level political will, the physical construction of the project started, or more specifically continued, based on bilateral MOUs signed between governments. These agreements have been following the same scheme as the one initiated by Thailand and Lao PDR. First a signature of a MOU between the two governments indicating an agreement of the maximum capacity to be traded; and then, the preparation of frameworks and identification of suitable projects by the state-owned companies. This pragmatic approach has been proven to forge solid agreements, which can resist political differences between countries as was the case of Thailand and Myanmar. On the other hand, the emphasis on the bilateral agreements have made more complex the power trade through third countries (as the case of the MOU between China and Thailand).

Several cross-border connections have been constructed and are planned for the near future:

<i>Project</i>	<i>Location</i>	<i>Market</i>	<i>Type</i>	<i>Capacity (MW)</i>	<i>Completion Date</i>
Nam Ngum 1	Lao PDR	Lao PDR / Thailand	Hydro	155	1971
Se Xet 1	Lao PDR	Lao PDR / Thailand	Hydro	45	1990
Theun-Hinboun (IPP)	Lao PDR	Lao PDR / Thailand	Hydro	210	1998
Houay Ho (IPP)	Lao PDR	Thailand	Hydro	152	1999
Nam Leuk	Lao PDR	Lao PDR / Thailand	Hydro	60	2000
Nam Mang 3	Lao PDR	Lao PDR / Thailand	Hydro	40	2004
Se Xet 2	Lao PDR	Lao PDR / Thailand	Hydro	76	2009
Nam Theun 2 (IPP)	Lao PDR	Lao PDR / Thailand	Hydro	1,075	2010

Nam Ngum 2 (IPP)	Lao PDR	Thailand	Hydro	615	2011
Shweli-1 (IPP)	Myanmar	Myanmar/Yunnan Province, PRC	Hydro	600	2009
Dapein-1 (IPP)	Myanmar	Myanmar/Yunnan Province, PRC	Hydro	240	2011
<i>Ongoing</i>					
Xekaman 3 (IPP)	Lao PDR	Lao PDR / Viet Nam	Hydro	250	2012
Theun-Hinboun Expansion (IPP)	Lao PDR	Lao PDR / Thailand	Hydro	220 + 60	2012
Xekaman 1 (IPP)	Lao PDR	Lao PDR / Viet Nam	Hydro	322	2014
Sekong 3	Lao PDR	Lao PDR / Viet Nam	Hydro	205	2014
Xekaman 4	Lao PDR	Viet Nam	Hydro	80	2016
Hongsa Lignite (IPP_)	Lao PDR	Lao PDR / Thailand	Coal	1,878	2015
Nam Ngum 3 (IPP)	Lao PDR	Lao PDR / Thailand	Hydro	460	2017

Table 26 - Cross-border power connections in GMS

<u>From</u>	<u>To</u>	<u>Voltage</u>	<u>Capacity</u>	<u>Year</u>
Theun Hinboun HPP, Lao PDR	Sakhonnakhon, Thailand	230 kV	200 MW	1998
Houayho HPP, Lao PDR	Ubon 2, Thailand	230 kV	150 MW	1999
Xinquao, Yunnan, PRC	Lao Cai, Viet Nam	220 kV	250 – 300 MW	2006
Maguan, Yunnan, PRC	Ha Giang, Viet Nam	220 kV	200 MW	2007
Shewli I HPP, Myanmar	Delhong, Yunnan, China	220 kV double circuit	600 MW	2008
Chau Doc, Viet Nam	Phnom Penh, Cambodia	220 kV (Viet Nam), 230 kV (Cambodia) double circuit	200 MW	2009

Ban Nabong, Lao PDR	Udon Thani, Thailand	500 kV (operated at 230 kV)	615 MW	2010
Xekaman 3, HPP, Lao PDR	Thanh My, Viet Nam	220 kV double circuit	250 MW	2012
Hong Sa TPP, Lao PDR	Mae Moh, Thailand	500 kV	1,470 MW	201??

Source: ADB (2015), Power Interconnections in the Greater Mekong Subregion. Presentation by Chong Chi Nai

Source: ADB (2012), Greater Mekong Subregion Power Trade and Interconnection, 2 Decades of Cooperation

7.3.5. Stage 4: Institutional construction

The institutional construction has followed a different path. After the signature of IGA, a new institution was created for its implementation. The Regional Power Trade Coordination Committee (RPTCC) was then created, replacing the EPF. The objectives of the RPTCC have been: (i) preparing the Regional Power Trade Operating Agreement (RPTOA), (ii) recommending of overall policy and management of regional power trade, including bodies and coordination, (iii) establishing short, medium and long term initiatives to achieve the objectives of regional power trade within a specified timeframe, and (iv) identifying steps for implementation including means for financing. A key issue for the operation of the RPTCC has been its continuity with the approach of the EPF, which is regular meetings between state-owned companies’ representatives.

In this time two MOUs were prepared by the RPTCC to continue with the progress of the power cooperation program. The MOU#1 for the completion of stage 1, and the MOU#2 for moving the project to the next stage. The general assessment is that the progress in this matter has been slower than would have been desired:

“There has been remarkable progress in the GMS energy sector over the past 2 decades. Considerable success was also achieved in rolling out rural electrification in member countries. Rapid provision of large-scale, high-volume national grid systems; successful mobilization of indigenous resources; and the beginnings of cross-country trade also took place. These successes have been achieved mainly at the national level. Despite considerable political pronouncements that recognize the imperatives of regional cooperation, progress has not matched national achievements. The high-volume trans-boundary connections that have been made to date within the GMS do not achieve a true interconnection of systems with synchronous operations, but are simply an extension of the national grids of the large- consuming countries into the territories of producers of (mainly) hydropower”

ADB (2013), "Assessment of the GMS Energy Sector Development"

In order to give a new impulse, the RPTCC decided to establish a new Regional Power Trade Coordination Center (RPCC) to oversee GMS power trade development at the 5th GMS Summit in 2014. Nevertheless, probably because of the lack of experience in cooperating and the custom of utilizing inter-governmental approaches, countries are currently facing difficulties even for the election of place to settle the headquarters.

7.3.6. Stage 5: Harmonization

- Without real improvement in stage 4, the process has not reached a point of harmonization

7.4.1.1. Analysis of causality diagram

<i>Code</i>	<i>Factor</i>	<i>Description / Source</i>	<i>[Cat.]</i>
1	Indochina was divided into three groups after II World War	<p>The region was divided into: soviet communism (Lao PDR and Viet Nam), Chinese communism (China and part of Cambodia), Western capitalism (Thailand) and nationally instable countries (Myanmar and Cambodia)</p> <p>“In the 1980s, the countries through which the Mekong River flowed were separate nation-states that were divided not only by administrative and political boundaries, but, more importantly, by ideological ones” [Cruz-del Rosario, pp. 141]</p>	Factor
2	Inter-governmental relations freeze	<p>Countries kept their foreign relations in terms of defense and agreements were minimal</p> <p>“Apart from a history of differing ideological alignments, the four counties were also the site of numerous border disputes” “Preah Vihar temple dispute between Thailand and Cambodia” “Other border disputes involved Thailand and Laos particularly in northern Thailand” “Thailand closed down its borders in November 1975” [Cruz-del Rosario, pp. 141]</p>	Output
3	Military and defense concerns were priority over technical issues	<p>Considering the borders’ conflicts mentioned before, the military concerns became dominant in the entire process. For later on stage was mentioned:</p> <p>“One is Route 9, Da Nang – Savannakhet and Thai side is Mukdajan. That was to me to me the most difficult routing. It took almost three years, because military groups were against” “In Thai side, Mukdahan, near to the river, there was a cantonment” “And if you have ever come from Da Nag to Laos and connect to the existing road. Savannakhet – Mukadahan was very</p>	Factor

		beneficial, but the Laotian side didn't agree because the Thai side had a military base" [GMS.II.EC-205-208]	
4	Thailand alliance got support from international community	Thailand's so called "bamboo diplomacy" of "bending with the prevailing wind" [Asia sentinel] "Prior to the end of the Cold War, Thailand's foreign policy had a passive attitude: in response to international issues, it focused on accommodating foreign countries by either taking sides or balancing powerful countries against one another" [Carle, 2015, p. 40] "Western side was always siding to Thai side" [GMS.EC.II-18]	Output
5	Previous cooperation institutions paralyzed	The Mekong Committee, only existing forum for regional cooperation, was not able to make decisions. International donors were not able to intermediate Mekong Committee even moved to interim status "Then, the meeting I attended was of the Mekong River Commission. Instead of people talking about the agenda, both countries started criticizing the other size" [GMS.EC.II-17]	Factor
6	Trading between countries reduced to minimum	Without formal relations, and lacking the infrastructure formal trading was reduced to minimum. Even the transport of merchandises from Lao PDR to Bangkok, granted by international agreement, was commonly difficult "In case of the port, they have to rely on Thailand." "We have to plan everything to Bangkok. Trucking company is Thai. And they inspect everything. So they know very well where we are, and what we are carrying. Everything is under their military observation"	Factor

		[GMS-EC.II.165-166]	
7	Foreign relations based on mistrust	Tensions between countries had moved towards. As mentioned during the interview survey, even media was critic with regional dialogue as it could be considered to	Output
8	Transport and trade involved several different departments and authorities	Cambodia through state-run enterprises under the control of Ministry Thailand division across authorities Myanmar atomized	Factor
9	No talks between technical bodies on regional transportation	No agreement between countries in building infrastructure for connecting countries at that time. Even not to build bridges across the Mekong river	Factor
10	Civil servants didn't appreciate how closer regional cooperation could benefit the GMS	"Civil servants back then didn't really appreciate how closer regional cooperation could benefit the GMS," [The Phnom Penh Plan For Development Management: A Retrospective, p. 4]	Output
11	Avoiding foreign ministries involvement was considered needed for agreement	Mr Morita requested to countries to not include foreign affairs ministries because if so, building the agreements would have been more difficult "The reason why in the GMS I refused that is represented by the ministries of foreign affairs is because the nature of foreign affairs. They are not guided to put priority for the international cooperation" "So when I started the sub-regional cooperation, GMS, I asked all the leaders "please do not put minister of foreign affairs s the coordination office, please remove them from the scheme" [GMS-EC.II.2-3]	Action
12	Road development in the countries didn't include regional connectivity	Absence of infrastructures connecting countries and of plans for developing	Output
13	Lao request for financial support for development	After the meeting of the Mekong Committee, during which Mr. Morita's hotel was attacked, Lao requested financial support from ADB expressing their concerns that no	Output

		<p>other international donor was supporting them</p> <p>“He said, I like to have ADB financing for us to construct a hydro power project” [GMS-P.I.28]</p>	
14	Transition towards market economies after Cold War	<p>Lao PDR Chintanakan Mai and Viet Nam’s Doi Moi introduced in 1986</p> <p>Reforms like the Doi Moi in Viet Nam and the New Economic Mechanism introduced in Lao PDR were with the intention to integrate into market economies [Interview]</p> <p>“The collapse of the Soviet Union in 1989 necessarily changed the dynamic in Indochina. Without the Soviet Union’s support for Vietnam and Laos, both countries faced the distinct possibility of economic collapse” [Cruz-del Rosario, p.142]</p> <p>“Furthermore, the prime minister of a free market country, Thailand, Mr. Chartchai Chunhavan advocated ‘the conversion of Indochina from a battlefield to a market’ in 1998” [Ishida, 2013, p.9]</p>	Factor
15	Reduction of political tensions in the region	<p>The Peace Accords signed in October 23 in 1991 represented the official end of the military tensions</p> <p>Cooperation started to be sought again in the region</p> <p>Establishment of the Mekong River Commission in 1995, replacing the interim Mekong Committee</p> <p>“It was probably because of the Peace Accord for Cambodia, that was possible in 1991-91” [GMS-EC.III.20]</p> <p>“Furthermore, the prime minister of a free market country, Thailand, Mr. Chartchai Chunhavan advocated ‘the conversion of</p>	Factor

		Indochina from a battlefield to a market’ in 1998” [Ishida, 2013, p.9]	
16	ADB interested in establishing relations between countries for consolidation of the peace	In the aftermaths of the conflicts in the region, Mr. Morita’s concerns were more focused on how the peace was going to be maintained after the signing of the Peace Accords “Thailand is our shareholder, but your country is also our shareholder. For us, as long as you are our member country, whether country A or country B is correct is not my issue. My issue is how to create the peace” [GMS-EC.II.27] “What continues to make this possible after nearly two decades of uninterrupted economic exchange is what ADB refers to as the peace dividend” [Cruz-del Rosario, p.147]	Output
17	Idea of ADB project to promote friendship appeared	“Mr. Morita thought of the possibility, if any, to undertake project that would benefit Laos, yet would also promote cooperation rather than enmity among the countries” [Cruz-del Rosario, p.140]	Output
18	Commitment from EGAT and EDL with existing hydro power purchase agreement	“The Laotian was saying that during our difficult times with Thailand we never cut off the power, we always sent the power. And Thai side they never get delayed in paying us” [GMS-P.I.42] “Constructed and completed in 1971, the Nam Ngun hydropower plant continued to operate even during the period of socialist economy in Laos” [Cruz-del Rosario, p. 143]	Factor
19	Relative autonomy of EGAT and EDL	“Thai government I don’t know, but their electric authority has said ‘as long is power, whether it has yellow color or red color, we buy” [GMS-P.I.36] “They have some level of autonomy” [GMS-P.II.66]	Factor

20	ADB selected hydropower as pilot project of regional economic cooperation	“You are right that Xeset hydro-project was a frontrunner, a good pilot. In fact, once Xeset hydropower started, I was able to start discussion, look, even Thai and Lao was shooting to each other, they are now doing joint project.” [GMS-P.I.157]	Action
21	EGAT and EDL direct talks with governments for closing a deal	“Mr. Morita no more you negotiate the price. It is beyond your capacity. I promise in a few months of time, our prime minister might be in Vientiane and your issue will be in his priority agenda” [GMS-P.I.44]	Action
22	Xeset hydropower project became ex	“Xeset hydro-project was a frontrunner, a good pilot project. In fact, once Xeset hydropower started, I was able to start discussion” [GMS-P.I.157]	Output
23	ADB established a Bank Study Team for bilateral conversation with each country / government	“A draft Framework Report, prepared after the bilateral consultations between the Bank Study Team and each of the participating governments, was the basic working document for the round table conference” [ADB, First Conference Proceedings, Preface]	Action
24	First Ministerial Conference held at ADB headquarters	“In late 1992, the ADB organized the first ever ministerial conference in Manila at the ADB Headquarters” [Cruz-del Rosario, p.146]	Action
25	Intra-regional IPP agreements gained interest of national utilities	Right after the initiation of the GMS program, several MOUs were being signed “Thai has met with Lao PDR and has signed a memorandum of understanding (MOU) for cooperation on energy projects” [ADB, 1993, Second Conference Proceedings, p. 35] Thailand for example has signed MOU with Lao PDR, Myanmar, China and Cambodia [GMS-P.III.3-21]	Output
26	Increasing cooperation gained international support	The change in the foreign policies from Thailand can had	Output

		<p>In fact, US embargo over Viet Nam was removed a bit later, in 1991.</p> <p>Other international donors have been supporting the development and implementation of GMS projects “Australia joins Friendship Bridge anniversary celebrations” [Australian Embassy, 2009]</p>	
27	Discussions were complex and projects focused on national approaches	<p>It was reported that initially there were complexities (countries didn’t talk to each other)</p> <p>“They didn’t talk each other in the meeting” [Morita]</p> <p>When looking to the projects discussed, a strong focus on national needs rather than regional optimisation can be observed [proceedings, Ishida]</p>	Output
28	Adoption of Two Plus principle	<p>For a project to be approved to be classified as GMS project need to include at least two member countries, keeping it open to the rest to join if they want</p> <p>“2+ principle: there is no need for the 6 countries to agree for a project” [GMS-EC.I.17]</p> <p>“I said as long as two countries agree to do that, whether you have a third or fourth country I said, it doesn’t matter” [GMS-EC.II.106]</p>	Action
29	Focus on implementation	<p>Mr Morita immediate objective was to develop the connections between the countries. As he mentioned, if there is money only for bamboo, bamboo bridge is ok</p> <p>“I said, if you are really to decide about the road network, which is very important. Everybody lets come together to one place and compare your map and my map and see at to the border what are the missing links. And connect these missing links, once the</p>	Action

		<p>road is upgrade or not, if the missing link is due to absence of bridge, whether the bridge is wood or concrete or even bamboo, let's accept it. Once you start designing, new road takes the time. And let's no create new route. Initially let's connect existing road by filling the missing links and ask your village people which road should connect. Whether is straight line or not, it doesn't matter. If you want to make it straight line, you make latter on. When you make the tunnel, you make later on. If you want concrete bridge you make when you country become rich"</p> <p>[GMS-EC.II.108]</p>	
32	Energy projects proposed and developed mostly based on bilateral MOUs	<p>Only bilateral interconnections are being agreed. These are being done based on MOUs that set the maximum capacity of power to be transmitted from one country to the another</p>	Action
33	GMS projects opened to other donors' financing	<p>"Ownership belongs to countries: in fact ADBs approval is not needed for a project to be done. Countries propose project and then there is a call for donors. ADB can be donor, but it is not a requirement"</p> <p>[GMS-EC.I.21]</p>	Action
34	ADB becoming Secretariat while not program "owner"	<p>One of the key issues for the GMS program was to increase the ownership of the countries of it. In that sense, it was open to their agreements to decide which project to fund. So, GMS most critical role was to serve as a platform or forum for dialogue in the region.</p> <p>"No secretariat: to avoid again conflicts because of excessive formalism. Neither ADB is secretariat, it only gives administrative support"</p> <p>[GMS-EC.I.20]</p>	Action

7.4.1.2. *Links:*

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	2	The borders' conflicts and the ideological differences between countries members clearly affecting the inter-governmental relations
1	3	The military concerns were said to come from fears of possible invasions (e.g. Laos and Thailand crossing-border issues)
1	4	As the only capitalist country in the region, Thailand remained as the only ally of Western countries (in particular the US)
2	7	During the interview survey it was mentioned the need of removing foreign ministries from the scheme in order to overcome less than optimal agreements. This could be due to the mistrust between the parties, which would be more concerned about protecting national interests rather than in creating economies of scale from the regional cooperation
3	5	The raise of military conflicts affected the operation of the technical forums (like the Mekong Committee). It was also reported how the international community, by siding on Thailand's support, was aggravating such circumstances
4	5	
5	13	The request from Lao for financing came from its feeling of isolation from international community and neighbouring countries. This could be perceived at the paralyzation of the existing forums
14	15	The movement of the socialist and communist countries into the international community was key to reduce the level of conflicts. For example, for the case of Viet Nam, it was essential in the lifting of the international sanctions and the possibility for the ADB to start funding projects there.
15	16	After years of conflicts, Mr. Morita was concerned that the peace would not be possible if countries didn't learn how to cooperate
13	17	The request from Lao PDR was the opportunity to put in practice such vision by the implementation of cross-border projects that would benefit all member countries
16	17	
17	20	The selection of the hydropower project was based on the understanding that similar agreement had been maintained during Indochina War times
18	20	
19	21	During negotiations, it was mentioned that active involvement of ADB (Mr. Morita) was creating some concerns from media (of cooperation with "enemies"). The autonomy of EGAT and EDL allowed them to conduct the negotiations more discretely
20	21	

21	22	As a consequence of those negotiations, the project was successfully implemented and became a “front-runner”
7	11	Because of this mistrust, avoidance of ministries of foreign affairs was a condition since the first conference.
5	23	After the success of the Xeset hydropower dam, ADB had an existing case of effective cooperation which could serve for attracting the interest of the member countries. Without operational technical forums, ADB created a Bank Study Team that could convey that message to each of the countries individually. In order to grab the cooperation, the talks were directly at prime ministers level. It was understood that only by having them onboard the risk of second round national discussions would be avoided (needed discussions after reporting from countries’ representatives)
10	23	
11	23	
14	23	
22	23	
10	27	It was mentioned that the initial discussions were not easy: “at beginning countries didn’t talk to each other” [interview]. In the case of the transport it is possible to see how the road projects proposed initially had more of national routes rather than regional optimization.
7	27	
23	24	With that, ADB prepared a regional conference at its headquarters. This was not innocent but to find a neutral venue where the representatives would be able to discuss freely. In order to reduce the possible tensions, it was sought to have a low profile meeting. For example, no official statements were done, only a meeting note from the secretariat (ADB).
24	28	Although the program had a regional membership and objective, it was found that it was needed to have all the countries participant at every project (some of them would have no special interest in a road link between China and Thailand for example). It was also found that for some particular cases some countries might be ready to move towards deeper integration rather than others (for example, Thailand and Lao PDR in energy agreements). In that sense, the final agreement was to accept as GMS project any that would involve at least two countries and leave them open to the incorporation of other countries if they would like [interview] This would also help to better focus the large number of projects initially proposed.
27	28	
24	29	Against this background, the focus from the ADB was to connect the missing links, to get results as soon as possible, therefore to focus on implementation. It was mentioned that “if bridge must be of bamboo, bamboo will be good”. [interview]
27	29	
22	25	The success of Xeset hydropower triggered the interest in realizing larger projects following similar approach
25	32	Based on the two plus principle and the IPPs’ approach, the projects in the power sector were developed in a bilateral manner, based on MOUs signed between the two countries involved.
29	32	

4	26	With the pacification and the support from Thailand, other international donors could feel more incentivized towards increasing support of regional cooperation
14	26	
26	33	Under the need of getting the momentum for the cooperation and to bring as many partners as possible, the ADB accepted to leave the GMS opened to funding from other donors (which by the way are in their majority shareholders of the ADB)
29	33	
16	34	With that action, ADB fulfilled another key objective, to increase the ownership of their own development to the member countries.
33	34	

7.4.2. Stage 2: High level political support and commitment

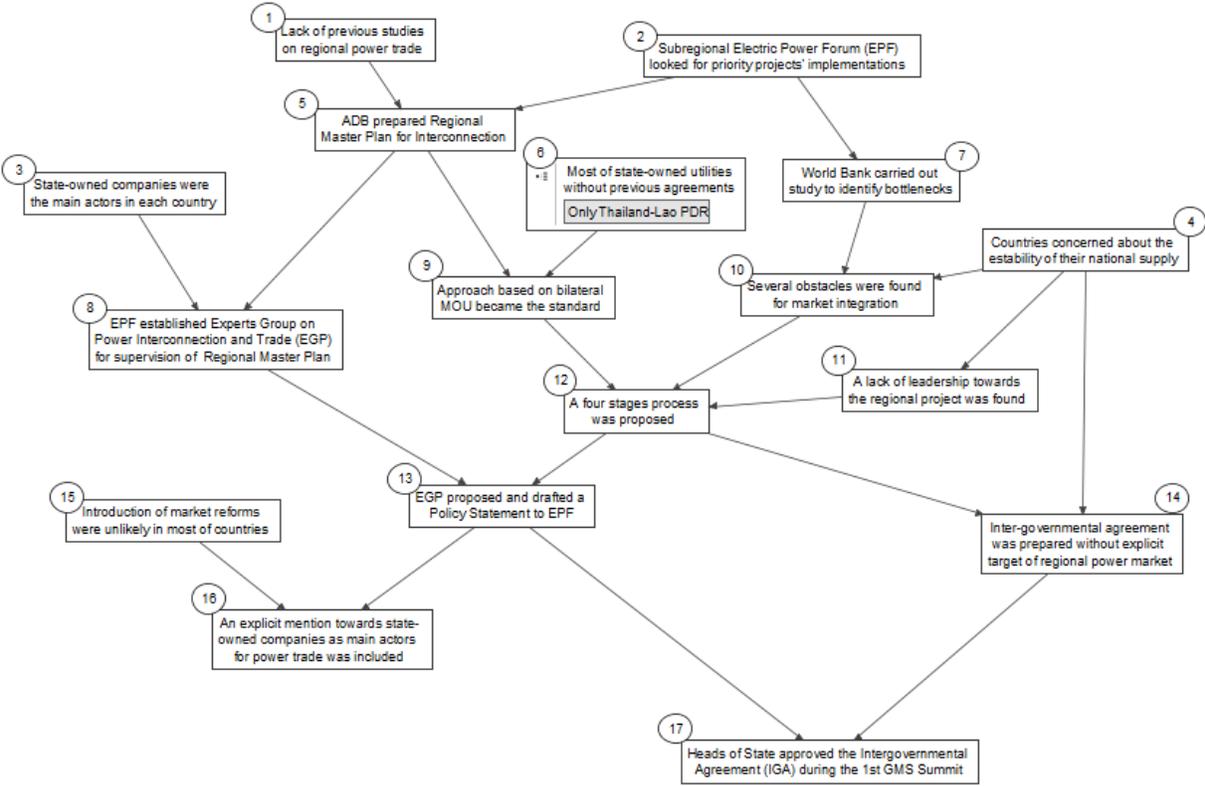


Figure 33 - GMS Power cooperation causality analysis, Stage 2

7.4.2.1. Analysis of causality diagram

<u>Code</u>	<u>Factor</u>	<u>Description / Source</u>	<u>[Cat.]</u>
1	Lack of previous studies on regional power trade	It was the Bank Study Team the first to identify the potential energy projects during the country consultations “Phase II of the cooperation initiative will include research and consultation on an energy master plan for the subregion” [ADB, 1993, Second conference, p. 96]	Factor
2	Subregional Electric Power Forum (EPF) looked for priority projects’ implementations	One of the key objectives of the EPR is to “identify and promote opportunities for mutually beneficial subregional cooperation projects in the power sector” [ECA, 2010, p. 34]	Output
3	State-owned companies were the main actors in each country	As explained in the previous section. State-owned companies dominated the power sector of the member countries EGAT in Thailand, EDL in Lao PDR, EVN in Viet Nam...	Factor
4	Countries concerned about the stability of their national supply	Although it was not clear for that time, recent initiatives by importing governments of limiting the supply from a single country seems to indicate those concerns “(Viet Nam) in particular would like to set limits to import from China to no more than 5 or 10%” [GMS-P.II.15] “Thailand looking to 25-30% of power import in the PDP” “Limit to max of 15% from a single country” [GMS-P.III.23-23]	Factor
5	ADB prepared Regional Master Plan for Interconnection	“The earliest energy study with a GMS-wide focus, the Subregional Energy Sector Study initiated in 1993 with ADB assistance and completed in November 1994, was especially important in furthering the process of identifying the scope, opportunities, and mechanisms for energy cooperation among GMS members” [ADB, 2012, p.4]	Action

6	Most of state-owned utilities without previous agreements	At the time of the First GMS Conference only Thailand and Lao PDR had some experience of cooperation (coming from Xeset power plant)	Factor
7	World Bank carried out study to identify bottlenecks	“The main objectives of the present study are to: (a) assess options and formulate a strategy for power trade among the Greater Mekong countries, paying special attention to the barriers to trade and the policy, institutional and commercial framework required to develop and operate efficiently a regional power network; and (b) establish the rationale and options for donors’ support to power trading and transmission network investment needs within the region” [World Bank, 1999]	Action
8	EPF established Experts Group on Power Interconnection and Trade (EGP) for supervision of Regional Master Plan	“Recognizing that a more focused approach involving key personnel associated with transmission development was needed to promote regional power trade, the EPF established the Experts Group on Power Interconnection and Trade (EGP) in 1998. The EGP oversaw the preparation of the Regional Master Plan for Interconnection in the GMS. It was also tasked to help determine the institutional, legal, and other arrangements to develop and manage the interconnected power network.” [ADB (2012), p. 6]	Action
9	Approach based on bilateral MOU became the standard	Only bilateral interconnections are being agreed. These are being done based on MOUs that set the maximum capacity of power to be transmitted from one country to the another	Output
10	Several obstacles were found for market integration	The study mentioned the existence of important barriers, citing as most crucial: - Policy barriers: National Priorities, Regional Protocol, Flexibility in Laws, Regulations and Contracts; Environmental Impact - Technical barriers: Planning, Transmission Facilities, Operations Protocol - Institutional Barriers: Leadership, Independent Regulators - Commercial and Financial Barriers: Generation Tariffs, Transmission Tariffs, Financing [World Bank, p2]	

11	A lack of leadership towards the regional project was found	No country is moving the project to a next stage	Output
12	A four stages process was proposed	<p>“In furthering regional power trade, the GMS members, since their 1999 Policy Statement on Regional Power Trade, have thus consistently affirmed the principles of cooperation, gradualism, and respect for the environment. All of them recognize that regional power trade will develop in phases”</p> <p>[ADB, 2012]</p> <p>“Stage 1: bilateral cross-border connections through power purchase agreements (PPAs)</p> <p>Stage 2: Grid-to-grid power trading between any pair of GMS countries, eventually using transmission facilities of a third regional country</p> <p>Stage 3: Development of transmission links dedicated to cross-border trading</p> <p>Stage 4: Most GMS countries with multiple seller-buyer regulatory frameworks, towards the implementation of a wholly competitive regional market”</p> <p>[Jude, 2013]</p>	Action
13	EGP proposed and drafted a Policy Statement to EPF	<p>“At the Ninth GMS Ministerial Meeting in Manila, ministers endorsed the Policy Statement on Regional Power Trade in the Greater Mekong Subregion”</p> <p>[ECA, 2010]</p>	Action
14	Inter-governmental agreement was prepared without explicit target of regional power market	<p>Although promotion of regional power trade is a clear objective, the final foal of a market is not that clear</p> <p>“The objective of regional power trade under this IGA are for all participants to</p> <p>i) coordinate and cooperation in the planning and operation of their systems to minimize costs while maintaining satisfactory reliability; and</p> <p>ii) fully recover their costs and share equitably in the resulting benefits, including reductions in required generation and transmission capacity, reductions in fuel costs and improved use of low-cost electricity sources; and</p> <p>iii) provide reliable and economic electric service to the customers of each Party”</p>	Action

		[IGA, 1999]	
15	Introduction of market reforms were unlikely in most of countries	<p>Only Viet Nam has started a reform process. Thailand has also committed with some level of reform, although still remains as a single buyer model</p> <p>“In 2007 Thailand began, but did not complete, the process of liberalizing its power sector. Originally intending to move to a competitive power pool model, Thailand has instead implemented what it refers to as the “enhanced single buyer model”. In addition to owning approximately 50% of Thai generation and the high-voltage transmission network, EGAT also acts as the country’s central dispatcher of generation. The remaining generation is purchased from privately owned independent power producers (IPPs) located both within Thailand and in neighbouring countries. The possibility of moving to a power pool model remains under discussion, but at the time of writing no firm decision had been taken”</p> <p>[IEA, 2016]</p>	Factor
16	An explicit mention towards state-owned companies as main actors for power trade was included	<p>“The Parties shall support and assist their respective appropriate national authorities and government-designated electric utilities in the performance and execution of their obligations in terms of any agreement entered into between the respective utilities pursuant to this IGA and consistent with the Policy Statement”</p> <p>[IGA, 2002, 4.4]</p>	Action
17	Heads of State approved the Intergovernmental Agreement (IGA) during the 1 st GMS Summit	<p>The IGA was signed at Phnom Penh on 3 November 2002 by respective ministers</p> <p>[IGA, 2002]</p>	Action

7.4.2.2. *Links:*

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	5	ADB's Regional Master Plan for Interconnection came from a demand by the member countries as well as need in the absence of existing studies that would guide state-owned utilities.
2	5	
5	8	In order to get the most from the Regional Master Plan, the creation of a group of experts from the state-owned companies was a logical step.
3	8	
5	9	The Regional Master Plan was mostly utilized for the identification of generation projects rather than for the development of the regional power grid. This was influenced because the first projects developed in the region was the IPPs between Lao PDR and Thailand. As a direct consequence, other countries followed that approach.
6	9	
2	7	The World Bank study came as a demand from the EPF for the promotion of regional power trade.
7	10	This study helped to identify the different obstacles. The first one mentioned was "National Priorities: Regional issues are secondary to domestic needs" [World Bank, 1999]
4	10	
4	11	That ended in another of the barriers identified by the study of the World Bank: "No recognized leadership has been established within the region to facilitate and promote greater regional trade"
9	12	With the actual interest in promoting regional power trade through IPPs, and considering the barriers for the development of a regional electricity market. In fact the World Bank's study proposed "a process" [World Bank, 1999] including the need for "public partnership to develop power trade in the region". In that sense the four stages proposed follow those recommendations.
10	12	
11	12	
8	13	In order to start that process, state-owned utilities required high level support to start negotiations, those preparatory works (the Policy Statement) was therefore prepared by the EGP and submitted to EPF
12	13	
13	16	One of the elements of the Policy Statement is the explicit mention to the state-owned utilities rather than talking about the creation of a market of agents (the terminology utilized in SIEPAC). The unlikely of reforms in the countries would be an important factor on that.
15	16	
4	14	In the four stages process, the regional power market appears to be an aspiration rather than a concrete objective, which is influenced by the strong emphasis of countries on their national supply.
12	14	
13	17	

14	17	The elimination of a specific path for the regional power market and the preparation of the Policy Statement by their state-owned companies, and ratified by at ministry level, eased the approval by the heads of state.
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7.4.3. Stage 3: Physical construction

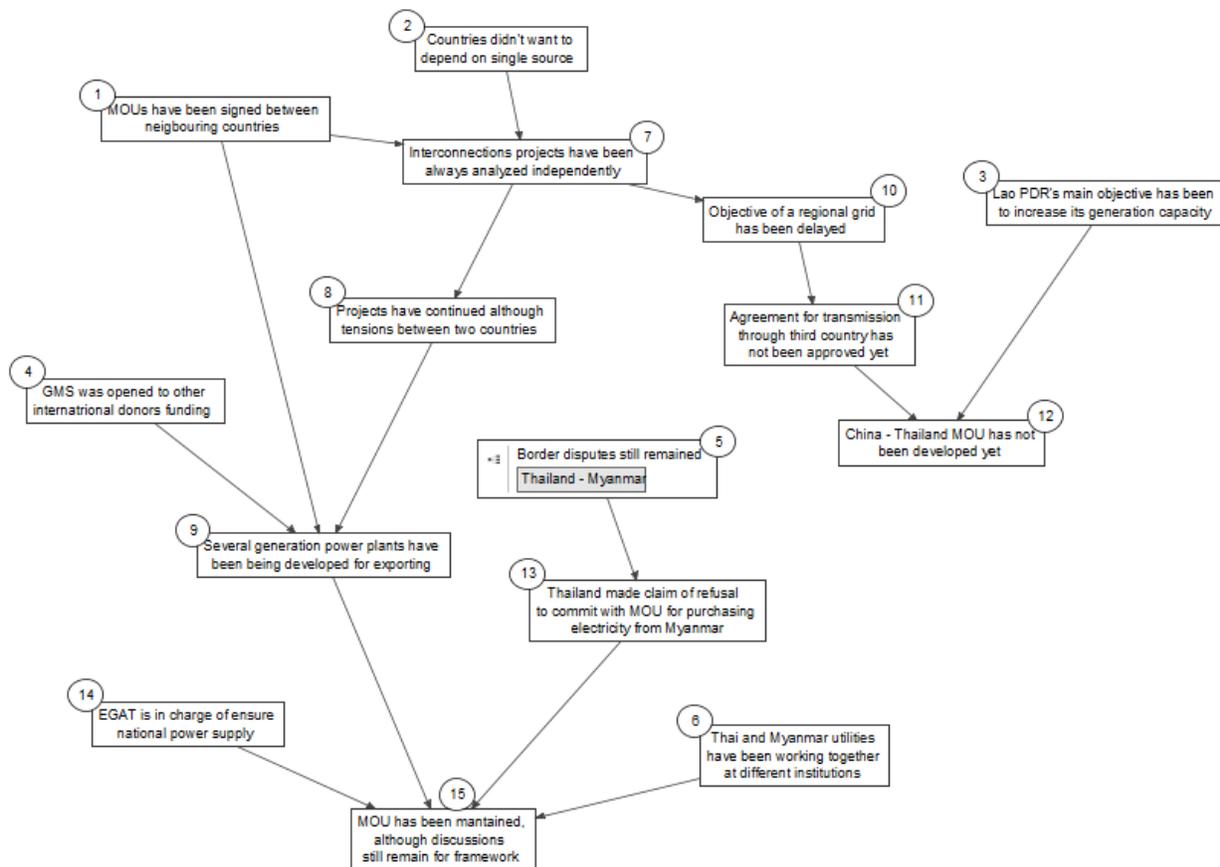


Figure 34 - GMS Power cooperation causality analysis, Stage 3

7.4.3.1. Analysis of causality diagram

<i>Code</i>	<i>Factor</i>	<i>Description / Source</i>	<i>[Cat.]</i>
1	MOUs have been signed between neighbouring countries	<ul style="list-style-type: none"> • Pending agreements between China and Myanmar: 16 to 20 GW by 2030 • MOU between Thailand and Myanmar: 1.9 GW • MOU between Thailand and Lao PDR: 7GW 	Factor

		<ul style="list-style-type: none"> MOU between Vietnam and Lao PDR: 5 GW <p>”</p> <p>[Lefevre, 2012]</p>	
2	Countries didn't want to depend on single source	<p>“</p> <ul style="list-style-type: none"> Thailand “acceptable max” import = level equivalent to already signed MoUs Vietnam “acceptable max import = 10% of peak demand <p>”</p> <p>[Lefevre, 2012]</p>	Factor
3	Lao PDR's main objective has been to increase its generation capacity	<p>“The Lao PDR's vast hydropower potential, fortuitously located in the center of the GMS, provides the opportunity for it to be a “battery” for energy-deficit neighboring countries. Pursuit of this opportunity requires optimal development of the country's hydropower resources, retaining ample electricity for rural electrification and harnessing the potential on a sustainable basis. The energy sector, in short, is very much dominated by interest in hydropower. “</p> <p>[ADB, 2013]</p>	Factor
4	GMS was opened to other international donors funding	<p>ADB decision to open the funding scheme to other international donors</p> <p>“Ownership belongs to countries: in fact ADBs approval is not needed for a project to be done. Countries propose project and then there is a call for donors. ADB can be donor, but it is not a requirement”</p> <p>[GMS-EC.I.21]</p>	Action
5	Border disputes still remained	<p>Several border conflicts were reported between Lao PDR and Thailand, and these having implications for the other member countries (particularly Viet Nam and China) [New York Times, 1988]</p> <p>“Other border disputes involved Thailand and Laos particularly in northern Thailand where the Meo tribespeople from Laos took refuge after the Pathet Lao seized power in 1975”</p> <p>[Cruz-del Rosario, p.141]</p>	Factor
6	Thai and Myanmar utilities have been working together at different institutions	<p>Regional groups like SPF and EGP are composed mainly by representatives from state-owned companies, which are also in charge of ensuring the energy supply in their respective countries</p>	Factor

7	Interconnections projects have been always analyzed independently	Projects are being developed through IPPs, requiring for that project-based analysis	Action
8	Projects have continued although tensions between two countries	There has not been found project cancelled due to political disputes	Output
9	Several generation power plants have been being developed for exporting (mostly in Lao PDR for Thailand)	“In the GMS, power has been traded on a bilateral basis, mainly through long-term power purchase agreements.” [ADB, 2000, p.2]	Action
10	Objective of a regional grid has been delayed	“Still at bilateral agreement phase” “Still not a multilateral trade” [GMS-P.III.27-28]	Output
11	Agreement for transmission through third country has not been approved yet	“China and Thailand would be 2nd stage because it goes through Lao PDR” “Need for China and Lao PDR to make an arrangement” [GMS-P.III.29-30]	Output
12	China – Thailand MOU has not been developed yet	“China and Thailand would be 2nd stage because it goes through Lao PDR” “Need for China and Lao PDR to make an arrangement” [GMS-P.III.29-30] “In 1998, Thailand signed an MOU with China for the import of 3,000 MW by 2017. Imports would be by interconnectors passing through Lao PDR, making it necessary to agree to transit payments to be made to Lao PDR. At present, no agreement has been reached on these payments, and progress on developing export projects under the MOU remains stalled.” [ECA, 2010]	Output
13	Thailand made claim of refusal to commit with MOU for purchasing electricity from Myanmar	“An initial MOU was signed in July 1997 for the purchase of 1,500 MW of hydro capacity by 2010. In May 2005, a new MOU was signed for the development of five hydro power projects on the Salween River for which the Myanmar government	Output

		<p>proposed two initial projects with a combined capacity of 8,200 MW</p> <p>There appears to be some ambivalence in the Thai government’s attitude toward this MOU. In June 2007 the energy minister in the then military-installed government, Dr Piyasavasti Amarand, was reported to have said that Thailand was not looking to buy any power from Myanmar. In part this appears to have been a response to concerns that the MOU resulted from what were seen as excessively close links between the former prime minister, Thaksin Shinawatra, and the Myanmar government. However, in March 2009, EGAT was hopeful of shortly signing an MOU for the Hutgyi project on the Salween River, one of the plants covered under the second intergovernmental MOU.”</p> <p>[ECA, 2010]</p>	
14	EGAT is in charge of ensure national power supply	<p>Thailand follows the so-called enhanced single buyer model where</p> <p>“EGAT operates as a single buyer, purchasing all output from IPPs and SPPs and onselling this, together with output from its own generators, to MEA and PEA at a bulk supply tariff.”</p> <p>[ECA, 2010]</p>	Factor
15	MOU has been maintained, although discussions still remain for framework	<p>“However, in March 2009, EGAT was hopeful of shortly signing an MOU for the Hutgyi project on the Salween River, one of the plants covered under the second intergovernmental MOU.”</p> <p>[ECA, 2010]</p>	Output

7.4.3.2. *Links:*

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	7	Active importing countries (especially Thailand and at a lower level Viet Nam), who are the main buyers have been well concerned about relying excessively from a single country or even from imports. For that, all the negotiations have been implemented in bilateral manner, and looking to ensure the projects to develop.
2	7	

7	10	This project-based approach has resulted in numerous IPPs signed and specific transmission lines being built. For example, SIDA study mentions “The main issue here is that private investors, generally in consortiums, are starting to create an energy landscape in Laos, Cambodia and Myanmar that is based on IPPs with dedicated transmission lines to export power based on long term PPAs to neighbouring countries. Such arrangements then become part of the list of barriers noted above, as there ends up being no third party access to the transmission system (not even by the host country’s utility)” [SIDA, 2011]
10	11	The focusing on bilateral transmission lines has delayed the agreement for utilizing third countries grid.
11	12	Without such agreement, there is no reason for Lao PDR to approve the utilization by China for the exporting to Thailand (considering that such agreement could compete with its owned power plants).
3	12	
7	8	The positive outcome of the project-based approach has prevented that those were stopped because of other conflicts (since every project has very solid economic viability).
1	9	The combination of MOUs between countries, project-based approach and sufficient financing (also from international donors) has created a positive climate to increase the generation capacity for regional power trade.
4	9	
8	9	
5	13	The border disputes seems to have been influencing the governments will, as the case of Thailand and Myanmar.
6	15	Although these conflicts have affected the political will, it seems that the strong involvement from state-owned companies as well as the relations developed and the clear understanding of the benefits (even though it’d be only for single project) have weighted more in the overall process
9	15	
13	15	
14	15	

7.4.4. Stage 4: Institutional construction

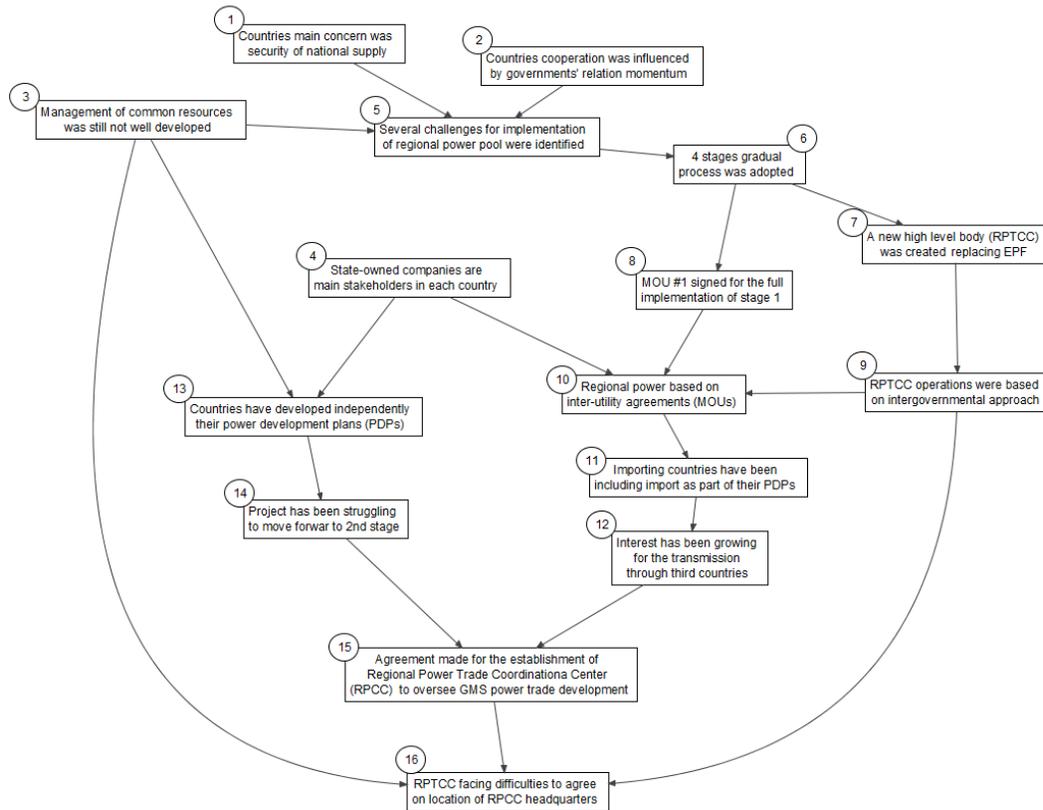


Figure 35 - GMS Power cooperation causality analysis Stage 4

7.4.4.1. Analysis of causality diagram

<i>Code</i>	<i>Factor</i>	<i>Description / Source</i>	<i>[Cat.]</i>
1	Countries main concern was security of national supply	The introduction of caps in the imported electricity seems to indicate an emphasis in the diversification of the energy mix	Factor
2	Countries cooperation was influenced by governments' relations momentum	As the case of the MOU between Myanmar and Thailand showed, although the projects were not cancelled, those could potentially influence the process	Factor
3	Management of common resources was still not well developed	Countries do not have experience in dealing with regional issues. ASEAN is the only regional organization that includes most of them (China is not member).	Factor

4	State-owned companies are main stakeholders in each country	National power reforms have not been implemented. Only Viet Nam is in the process, but still the national utility is in a dominant position in the system	Factor
5	Several challenges for implementation of regional power pool were identified	The study mentioned the existence of important barriers, citing as most crucial: - Policy barriers: National Priorities, Regional Protocol, Flexibility in Laws, Regulations and Contracts; Environmental Impact - Technical barriers: Planning, Transmission Facilities, Operations Protocol - Institutional Barriers: Leadership, Independent Regulators - Commercial and Financial Barriers: Generation Tariffs, Transmission Tariffs, Financing [World Bank, p2]	Output
6	4 stages gradual process was adopted	“Stage 1: bilateral cross-border connections through power purchase agreements (PPAs) Stage 2: Grid-to-grid power trading between any pair of GMS countries, eventually using transmission facilities of a third regional country Stage 3: Development of transmission links dedicated to cross-border trading Stage 4: Most GMS countries with multiple seller-buyer regulatory frameworks, towards the implementation of a wholly competitive regional market” [Jude, 2013]	Action
7	A new high level body (RPTCC) was created replacing EGP	“EGP 9 was the last EGP meeting, following the constitution of the RPTCC and its taking over of EGP functions” [ADB, 2012]	Action
8	MOU #1 signed for the full implementation of stage 1	“Formally, MOU #1 approved guidelines for the implementation of the RPTOA.” [ECA, 2010]	Action
9	RPTCC operations were based on intergovernmental approach	“The membership of the RPTCC is the same as that of the EPF” “Each GMS country is represented on the EPF by two members. One is a senior official from the ministry or other government agency responsible for power sector policy and	Output

		<p>planning and the other is a senior manager from the key power utility in the country.” [ECA, 2010]</p> <p>“</p> <p>RPTCC operations are based on meetings, without permanent headquarters and/or managerial and economic independence “As of the end of 2011, the RPTCC created under the IGA has met 12 times since its establishment in 2004 and has helped provide strategic direction and overall management of the interim stage of GMS power trade “ [ADB, 2012]</p> <p>“ it was recognised by the 9 th RPTCC meeting that there is a strong need for a permanent secretariat to facilitate regional power trade on a daily basis” [SIDA, 2011]</p>	
10	Regional power based on inter-utility agreements (MOUs)	<p>“</p> <ul style="list-style-type: none"> · Pending agreements between China and Myanmar: 16 to 20 GW by 2030 · MOU between Thailand and Myanmar: 1.9 GW · MOU between Thailand and Lao PDR: 7GW · MOU between Vietnam and Lao PDR: 5 GW <p>”</p> <p>[Lefevre, 2012]</p> <p>IGA also specifies that the regional power trade is based on inter-utility agreements</p> <p>“The Parties shall support and assist their respective appropriate national authorities and government-designated electric utilities in the performance and execution of their obligations in terms of any agreement entered into between the respective utilities pursuant to this IGA and consistent with the Policy Statement” [IGA, 2002, 4.4]</p>	Action

11	Importing countries have been including import as part of their PDPs	PDPs of both Thailand and Viet Nam already include targets of import electricity in the near future.	Output
12	Interest has been growing for the transmission through third countries	“Lao-Singapore transmission line can save billions” [The Nation, 2014]	Output
13	Countries have developed independently their power development plans (PDPs)	“Currently all the countries’ PDP are done independently” [GMS-P.III.54]	Output
14	Project has been struggling to move forward to 2 nd stage	“The first issue that arises in analysing the general progress in establishing the RPT is that none of the instruments have adequately defined a time frame for the establishment of a regional power market. This is partly to do with the underlying principle of “gradualism”” [SIDA, 2011] “GMS is in Stage 1 transitioning to Stage 2” [Chong Chi, 2015]	Output
15	Agreement made for the establishment of Regional Power Trade Coordination Center (RPCC) to oversee GMS power trade development	“The gradualist approach is expected to continue even while agreement on the establishment of the Regional Power Coordination Center (RPCC), the permanent dedicated center envisioned to coordinate power trade in the GMS, reached an advanced stage of discussions by early-2012” [ADB, 2012]	Action
16	RPCC facing difficulties to agree on location of RPCC headquarters	“Current discussions for the location of the RPCC” “China and Thailand bidding” “No agreement was possible, ADB is setting the criteria for re-bidding process” [GMS-P.III.51-53]	Output

7.4.4.2. *Links:*

Below, the logic of all the links is provided:

<i>From</i>	<i>To</i>	<i>Description [source]</i>
1	5	The background of lack of experience of cooperation between the countries and the favoring of national objectives much over regional-wide perspectives were an important input for the evaluation of the challenges for the implementation of regional power pool.
2	5	
3	5	
5	6	The number and magnitude of the barriers identified were sufficient for favoring a gradual implementation process.
6	7	With the agreement for a gradual implementation in stages, a new institution (the RPTCC) was created in order to prepare this process
7	9	RPTCC was a replace of the EPF with a new mandate, therefore it followed similar approach (inter-governmental with meetings between representatives)
6	8	Similarly, a new MOU was signed to complete the implementation of the first stage.
4	10	The signed of the MOU#1 focused the incentives of the increasing of power generation for regional power trade. This has been carried out by state-owned utilities (main players in each country) which focused on bilateral agreements. The RPTCC, due to the inter-governmental approach, was not capable of making agreements that would have moved the project in a more regional approach or vision.
8	10	
9	10	
10	11	The growth of regional power capacity granted through MOUs for exporting has motivated importing countries to start to rely on them as another source of electricity.
11	12	The normalization of relying on imported electricity has triggered countries to start to consider the most options they could approach. Similar to the agreement between China and Thailand.
3	13	With the state-owned companies as main responsible for each country and without experience of regional resources, there was a lack of regional vision and consequently the PDPs for each country have been developed independently.
4	13	
13	14	Without a regional PDP or coordination between countries' PDPs, creating more complex agreements involving third countries have not been created.
14	15	In order to overcome those difficulties and to continue with the process, the regional institution will be strengthen to the creation of an independent RPCC.
12	15	
3	16	Nevertheless, without previous experience and still relying on an inter-governmental approach, initial negotiations are being proved to be more
9	16	

15	16	difficult that should. The lack of agreement for selecting the place for the headquarters of the RPCC is a clear example of that.
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7.5. Evaluation of factors' weight:

<i>Stage</i>	<i>Code</i>	<i>Factor</i>	<i>Impact</i>	<i>Weight</i>
1	1	Indochina was divided into three groups after II World War	The ideological differences were one the factors that continuously influenced the process from the beginning, making more complex the project (for example, the acquisition of the written agreement between governments for the pilot project).	3
1	3	Military and defense concerns were priority over technical issues	More importantly, the military conflicts were affecting any possible collaboration at any level, as the attack to Mr. Morita during the Mekong Committee meeting showed	5
1	5	Previous cooperation institutions paralyzed	The paralyzation of these bodies was an important component, but since those were not directly related to transport, the influence had not been direct	1
1	14	Transition towards market economies after Cold War	The process towards opening to international market was one of the drivers for the socialist and communist countries to join the program, as well as an incentive for Thailand to cooperate with them	3
1	15	Reduction of political tensions in the region	The perspective of pacification of the region helped the process to be moved, nevertheless, this pacification didn't finish the conflicts between countries.	1
1	18	Commitment from EGAT and EDL with existing hydro power purchase agreement	Without this existing scheme, all the process of building trust would have been much more complicated, both at technical and political level	5
1	19	Relative autonomy of EGAT and EDL	Autonomy of action of EGAT and EDL allowed seeing the project from a more pragmatic perspective, as well as probably officials from EGAT, considered the cooperation with Lao PDR more favorably (not only for the	5

			direct gains but also for its contribution to the pacification of the region). It was also critical in the process of convincing governments of the merit of the project in both countries	
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<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Impact</u>	<u>Weight</u>
2	1	Lack of previous studies on regional power trade	The lack of existing studies had an influence in the pace of the project but didn't become a major issue in mobilizing the willingness for regional power trade	1
2	3	State-owned companies were the main actors in each country	State-owned companies became the main actors also for the regional power trade process	3
2	4	Countries concerned about the stability of their national supply	Guarantees of national energy security, particularly in the supply, had been main concern and therefore totally determined the process	5
2	6	Most of state-owned utilities without previous agreements	As with the lack of existing studies, the lack of previous agreements had influence but never became a major issue	1
2	15	Introduction of market reforms were unlikely in most of countries	The lack of private distributors and/or independent system operators have been an important factor since those have not been able to play an important role	3

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Impact</u>	<u>Weight</u>
3	1	MOUs have been signed between neighbouring countries	Such agreements were an important factor during the entire process, for example in the preference towards the development of generation capacity rather than focusing on regional transmission	3
3	2	Countries didn't want to depend on single source	Importers willingness for granting access to different sources (particularly Thailand) became fundamental in the development of several MOUs	5

3	3	Lao PDR's main objective has been to increase its generation capacity	As well as with importers, exporters countries (particularly Lao PDR) have been also moved the projects towards the development of generation capacity (as a mean to attract FDI)	3
3	5	Border disputes still remained	The disputes have some influence, although, since the projects remain at technical level in a pragmatic way, this has been minimal	1
3	5	Thai and Myanmar utilities have been working together at different institutions	The cooperation at technical has created some relations, but still not sufficient as for development regional perspectives of countries/state owned companies' plans	1
3	14	EGAT is in charge of ensure national power supply	The role of EGAT as the guarantor of the national supply has put it as the main actor from Thailand (which is also the most active country in the project)	3

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Impact</u>	<u>Weight</u>
4	1	Countries main concern was security of national supply	Ensuring the security of supply is being an important factor for the agreement of the four stages process	3
4	2	Countries cooperation was influenced by governments' relations momentum	As mentioned before, the influence of these conflicts have been indirect and decreasing	1
4	3	Management of common resources was still not well developed	Without the experience of developing mechanisms for management of common resources (as would be the Mekong river itself), the coordination between countries has not been as effective as should have	3
4	4	State-owned companies are main stakeholders in each country	The involvement of the state-owned companies has been the major factor in this process affecting every negotiation	5

8. Comparative analysis, identification of contextual variables

This chapter identifies the appropriate contextual variables for building the comparative framework in the next chapter. Therefore, this chapter looks to fulfill the first of the sub-objectives of the research. For that, the first section summarizes the factors identified for each of the projects. The second section initially broadly classifies them into regional or sectorial, and next into more comprehensive categories. Finally relationship between main stakeholders are proposed as a method for the evaluation of the categories, and therefore to be the contextual variables of the comparative framework.

8.1. Factors identified in the three case studies

This section summarizes the factors identified in the previous chapters for each of the projects. This serves as background data for the chapter. The factors presented by project and by stage are as below:

<i>Stage</i>	<i>Factor</i>
Stage 1	Indochina was divided into three groups after II World War
	Military and defense concerns were priority over technical issues
	Previous cooperation institutions paralyzed
	Trading between countries reduced to minimum
	Transport and trade involved several different departments and authorities
	No talks between technical bodies on regional transportation
	Civil servants didn't appreciate how closer regional cooperation could benefit the GMS
	Road development in the countries didn't include regional connectivity
	Transition towards market economies after Cold War
	Reduction of political tensions in the region
Stage 2	History of conflicts
	Different national authorities in charge of transport, trade, and border crossing procedures
	National budgets constrained by the Asian Financial Crisis
	Absence of trust between countries
	Numerous non-physical trade barriers still remained
	Market transition in socialist and communist countries increased importance of international trade
	Transport operators complained about difficulties for crossing borders
	Countries looked forward deepening regional economic cooperation in ASEAN
	Major countries (Thailand) looked for new trading opportunities more intensively
5 1	Ideologically rivalry between countries (divided in 3)

	No technical bodies for regional transport/trade
	Minimal formal trading between countries
	No studies from Lao authorities about potential positive impact of increasing China – Thailand trade
	Roads to be utilized by private operators
	Asymmetry in the value of Thailand-China trade over Lao-Thailand and Lao-China
	Thai military base near expected crossing border bridge
	Border conflicts between Lao PDR and Thailand
Stage 4	Governments lacked trust on each other
	Countries had very different national regulations
	Demand for corridors had been increasing rapidly
	Regulations involving different ministries and authorities
	Countries gave different relative importance to each connection
	Removal of non-physical barriers would include national strategic issues

Table 27 - Factors identified, GMS Economic Corridors

<u>Stage</u>	<u>Factor</u>
Stage 1	State-owned companies created to monopolize national sectors
	Countries tended to consider power sector as technical issue
	Debt crisis affected every Central American country
	IADB became main/only donor in the region
	Conflicts between countries due to aftermaths of Cold War
	State-owned companies built national grids until borders
	Impossibility to continue public funding of sector
	Seasonal surplus of capacity appeared in some countries
	State-owned companies built weak bilateral interconnections without need of political agreement
	State-owned companies had great autonomy of action
	State-owned companies created regional technical organization (CEAC)
	State-owned companies were initially interested only in regional infrastructure
	State-owned companies identified potential benefits from economies of scale
	Strengthening of bilateral interconnections was stopped by governments because of national security concerns
	Individual markets too small for being profitable
International actors intervened to foster pacification	

	CEAC became active supporter of connectivity
	Full regional consensus became bases of cooperation
Stage 2	Countries with different levels of reform
	Conflicts between countries still existing at that time
	Some countries could get more benefits than others
	State-owned companies had major influence in their respective national sectors
	Major reforms would be needed in some countries
Stage 3	Tensions between countries could affect entire region
	State-owned companies had a history of cooperation
	Conflicts between countries still existing at that time
	State-owned companies were reluctant to lose control of their national sectors
	Countries didn't have experience of effective functional cooperation
	CEAC was the main actor for the promotion of the regional project
Stage 4	State-owned companies were in charge of national systems
	Foreign relations influenced by ideological differences
	Privatization of generation was progressing in the region
	Countries' concerns about losing control over regional market

Table 28 - Factors identified, SIEPAC

<u>Stage</u>	<u>Factor</u>
Stage 1	Indochina was divided into three groups after II World War
	Military and defense concerns were priority over technical issues
	Previous cooperation institutions paralyzed
	Transition towards market economies after Cold War
	Reduction of political tensions in the region
	Commitment from EGAT and EDL, with existing hydro power purchase agreement
	Relative autonomy of EGAT and EDL
Stage 2	Lack of previous studies on regional power trade
	State-owned companies were the main actors in each country
	Countries concerned about the stability of their national supply
	Most of state-owned utilities without previous agreements
	Introduction of market reforms were unlikely in most of countries
Stage 3	MOUs have been signed between neighbouring countries
	Countries didn't want to depend on single source
	Lao PDR's main objective has been to increase its generation capacity
	Border disputes still remained
	Thai and Myanmar utilities have been working together at different institutions

	EGAT is in charge of ensure national power supply
Stage 4	Countries main concern was security of national supply
	Countries cooperation was influenced by governments' relations momentum
	Management of common resources was still not well developed
	State-owned companies are main stakeholders in each country

Table 29 - Factors identified, GMS Power Cooperation

In total, 88 factors were identified for the three projects:

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total
GMS Economic Corridors	10	9	8	6	-	33
SIEPAC	18	6	5	4		33
GMS Power Cooperation	7	5	6	4	-	22
Total	35	20	19	14		88

Table 30 - Number of factors identified at every stage of each case studied

8.2. Factor's classification and categories

Those factors were found to be either regional or sectorial (as expected).

- Regional factors: are those related to those aspects that would affect to any regional cooperation program that would be proposed. In that, those are more related to the overall regional political situation.
- Sectorial factors: are those particular for the sector under which the regional projects falls into. In that sense, there are no necessarily intrinsically to a particular sector (that is, there could be differences between regions), but the sector characteristics are dominant over the regional political situation.

More interestingly, all the factors were found to be able to group into categories as follows

8.2.1. Regional categories:

8.2.1.1. Rivalry between countries:

Possible competition or enmity between countries. It can be grounded on many different issues, from ideological differences to personal antagonism between countries' leaders. It also includes aspects like trust and confidence between countries.

Case	Stage	Code	Factor
GMS EC	1	1	Indochina was divided into three groups after II World War
GMS EC	1	15	Reduction of political tensions in the region
GMS EC	2	1	History of conflicts
GMS EC	2	6	Absence of trust between countries
GMS EC	3	1	Ideologically rivalry between countries (divided in 3)
GMS EC	3	15	Border conflicts between Lao PDR and Thailand
GMS EC	3	13	Thai military base near expected crossing border bridge
GMS EC	4	1	Governments lacked trust on each other
GMS EC	4	14	Countries gave different relative importance to each connection
GMS EC	2	24	Countries looked forward deepening regional economic cooperation in ASEAN
GMS P	1	1	Indochina was divided into three groups after II World War
GMS P	1	15	Reduction of political tensions in the region
GMS P	3	5	Border disputes still remained
GMS P	4	2	Countries cooperation was influenced by governments' relations momentum
GMS P	4	3	Management of common resources was still not well developed
SIEPAC	1	5	Conflicts between countries due to aftermaths of Cold War
SIEPAC	1	20	International actors intervened to foster pacification
SIEPAC	2	2	Conflicts between countries still existing at that time
SIEPAC	3	2	Conflicts between countries still existing at that time
SIEPAC	3	5	Countries didn't have experience of effective functional cooperation
SIEPAC	4	8	Foreign relations influenced by ideological differences

Table 31 - Summary of factors: rivalry between countries

8.2.1.2. Power imbalances:

Differences in countries' ability to exercise influence over other members and/or capture more benefits from projects. This derives in asymmetries in the relations. Those can come from military and/or economic differences, technological level, and geographical location among the member countries.

Case	Stage	Code	Factor
GMS EC	3	11	Asymmetry in the value of Thailand-China trade over Lao-Thailand and Lao-China
SIEPAC	1	4	IADB became main/only donor in the region
SIEPAC	2	6	Some countries could get more benefits than others

Table 32 - Summary of factors: Power imbalances

8.2.1.3. National institutional structure:

Countries decision-making process for the internalization of regional level issues. It considers the pragmatism with those issues are considered. While in some cases, regional dimension is considered as a potential threat, in others, technical cooperation at regional level has some degree of autonomy. In that sense, it also includes the relative autonomy of state/public authorities, composed by bureaucrats, technocrats, and other public workers, respective to political power.

Case	Stage	Code	Factor
GMS EC	1	3	Military and defense concerns were priority over technical issues
GMS EC	2	18	Market transition in socialist and communist countries increased importance of international trade
GMS P	1	3	Military and defense concerns were priority over technical issues
GMS P	2	15	Introduction of market reforms were unlikely in most of countries
SIEPAC	1	2	Countries tended to consider power sector as technical issue

Table 33 - Summary of factors: National institutional structure

8.2.1.4. Overall stability of the countries:

Level of influence that relevant national actors, like civil society groups or private investors, can exercise on government decision making process. In that sense, it includes also factors affecting the stability of the governments as well as new strategic positions of the countries, in consideration with regional cooperation.

Case	Stage	Code	Factor
GMS EC	1	14	Transition towards market economies after Cold War
GMS EC	2	5	National budgets constrained by the Asian Financial Crisis
GMS P	1	14	Transition towards market economies after Cold War
SIEPAC	1	3	Debt crisis affected every Central American country

Table 34 - Summary of factors: Overall stability of the countries

8.2.2. Sectorial categories:

Particular characteristics of the sectors also play an important role in defining the context that influence the regional cooperation process.

8.2.2.1. National security concerns:

Strategic importance of the sector for the governments involved.

Case	Stage	Code	Factor
GMS EC	2	29	Major countries (Thailand) looked for new trading opportunities more intensively
GMS EC	4	18	Removal of non-physical barriers would include national strategic issues
GMS P	2	4	Countries concerned about the stability of their national supply
GMS P	3	2	Countries didn't want to depend on single source
GMS P	4	1	Countries main concern was security of national supply
SIEPAC	1	17	Strengthening of bilateral interconnections was stopped by governments because of national security concerns
SIEPAC	2	13	Tensions between countries could affect entire region
SIEPAC	4	20	Countries' concerns about losing control over regional market

Table 35 - Summary of factors: National security concerns

8.2.2.2. Institutional integration:

Level of concentration of the decision-making over a sector in particular. These responsibilities can be shared across different departments, with different level of influence, or tend to be unified under an umbrella authority (or state-owned company)

Case	Stage	Code	Factor
GMS EC	1	8	Transport and trade involved several different departments and authorities
GMS EC	2	4	Different national authorities in charge of transport, trade, and border crossing procedures
GMS EC	4	11	Regulations involving different ministries and authorities
GMS P	1	19	Relative autonomy of EGAT and EDL
GMS P	2	3	State-owned companies were the main actors in each country
GMS P	3	14	EGAT is in charge of ensure national power supply
GMS P	4	4	State-owned companies are main stakeholders in each country
SIEPAC	1	8	State-owned companies built national grids until borders

SIEPAC	1	12	State-owned companies had great autonomy of action
SIEPAC	2	10	State-owned companies had major influence in their respective national sectors
SIEPAC	4	2	State-owned companies were in charge of national systems

Table 36 - Summary of factors: Institutional integration

8.2.2.3. Existing cooperation:

Level of technical cooperation pre-existing to the project

Case	Stage	Code	Factor
GMS EC	1	9	No talks between technical bodies on regional transportation
GMS EC	1	5	Previous cooperation institutions paralyzed
GMS EC	1	6	Trading between countries reduced to minimum
GMS EC	2	7	Numerous non-physical trade barriers still remained
GMS EC	3	2	No technical bodies for regional transport/trade
GMS EC	3	4	Minimal formal trading between countries
GMS EC	3	7	No studies from Lao authorities about potential positive impact of increasing China – Thailand trade
GMS P	1	5	Previous cooperation institutions paralyzed
GMS P	1	18	Commitment from EGAT and EDL, with existing hydro power purchase agreement
GMS P	2	6	Most of state-owned utilities without previous agreements
GMS P	3	1	MOUs have been signed between neighbouring countries
GMS P	3	6	Thai and Myanmar utilities have been working together at different institutions
SIEPAC	1	11	State-owned companies built weak bilateral interconnections without need of political agreement
SIEPAC	1	13	State-owned companies created regional technical organization (CEAC)
SIEPAC	1	26	Full regional consensus became bases of cooperation
SIEPAC	3	1	State-owned companies had a history of cooperation
SIEPAC	3	11	CEAC was the main actor for the promotion of the regional project

Table 37 - Summary of factors: Existing cooperation

8.2.2.4. Shared value of regional economies of scale:

Commonly understanding of the potential complementarities between countries

Case	Stage	Code	Factor
GMS EC	1	10	Civil servants didn't appreciate how closer regional cooperation could benefit the GMS
GMS EC	1	12	Road development in the countries didn't include regional connectivity
GMS EC	4	2	Countries had very different national regulations
GMS P	2	1	Lack of previous studies on regional power trade
GMS P	3	3	Lao PDR's main objective has been to increase its generation capacity
SIEPAC	1	9	Impossibility to continue public funding of sector
SIEPAC	1	10	Seasonal surplus of capacity appeared in some countries
SIEPAC	1	15	State-owned companies were initially interested only in regional infrastructure
SIEPAC	1	16	State-owned companies identified potential benefits from economies of scale
SIEPAC	1	19	Individual markets too small for being profitable
SIEPAC	1	22	CEAC became active supporter of connectivity
SIEPAC	2	1	Countries with different levels of reform
SIEPAC	2	11	Major reforms would be needed in some countries
SIEPAC	1	15	State-owned companies were initially interested only in regional infrastructure

Table 38 - Summary of factors: Shared value of regional economies of scale

8.2.2.5. Publicness:

Overall level of public ownership, or control executed by the central government or public authorities over the development of the particular sector.

Case	Stage	Code	Factor
GMS EC	2	19	Transport operators complained about difficulties for crossing borders
GMS EC	3	9	Roads to be utilized by private operators
GMS EC	4	5	Demand for corridors had been increasing rapidly
SIEPAC	1	1	State-owned companies created to monopolize national sectors
SIEPAC	3	4	State-owned companies were reluctant to lose control of their national sectors
SIEPAC	4	15	Privatization of generation was progressing in the region

Table 39 - Summary of factors: Publicness

8.3. Identification of contextual variables

The categories identified in the previous section were found to correspond to relationships between stakeholders. This equivalence is explained below:

<i>Category of factors</i>	<i>Stakeholders' relation</i>	<i>Description</i>
Rivalry between countries	Government ↔ Government	Rivalries between countries affect the will of countries to cooperate with each other
Power imbalances	Government ↔ Government	Strong asymmetries in the relations between countries can make governments (of less powerful countries) reluctant to cooperate, so to protect their independence from the major power
National institutional structure	Government ↔ Technical body	Countries with governments centralizing decision-making at the highest level (like authoritarian regimes) have a strong control of technical bodies, giving them less autonomy of operation
Overall stability of the countries	Government ↔ National actors	Countries with low stability will have strongly influence national actors can have strong influence on governments' policy decisions. And vice versa, when national actors are very strong, their influence over government can play against the overall stability
National security concerns	Government ↔ Government	Governments will be reluctant to cooperate in those areas that they consider of strategic importance
Institutional integration	Government ↔ Technical body	In sectors where the responsibilities are accumulated under a single institution, that technical body tend to enjoy a larger autonomy from government
Existing cooperation	Technical body ↔ Technical body	The existence of technical cooperation between technical bodies represent a better mutual understanding between them.
Shared value of regional economies of scale	Technical body ↔ Technical body	Technical bodies with fluent relation will better understand the mutual benefits that

		the regional cooperation can bring (the regional economies of scale)
Publicness	Government ↔ National actors	In sectors with a larger private participation, the position of the government would be more impressionable by national actors

Figure 36 - Relationships between stakeholders corresponding to categories of factors

The differences in these relations therefore represent differences in the contexts of the projects.

- Government ↔ Government (Gov. ↔ Gov.): It indicates the will for cooperation across the member countries.
- Government ↔ Technical body (Gov. ↔ T.B.): It indicates the autonomy and capacity of influence of the technical body over government’s decision making.
- Technical body ↔ Technical body (T.B. ↔ T.B.): Trust between technical bodies indicates their ability to establish effective cooperation.
- Government ↔ National actors (Gov. ↔ N.A.): It indicates the ability of central government to implement its agenda.

The type of relations established between these stakeholders affects directly or indirectly the decision-making of each central government, determining their final behavior regarding the regional cooperation. In that sense, by looking to similarities in these relations between different projects, it is possible to assess the contextual similarities. A schematic diagram of this is provided below:

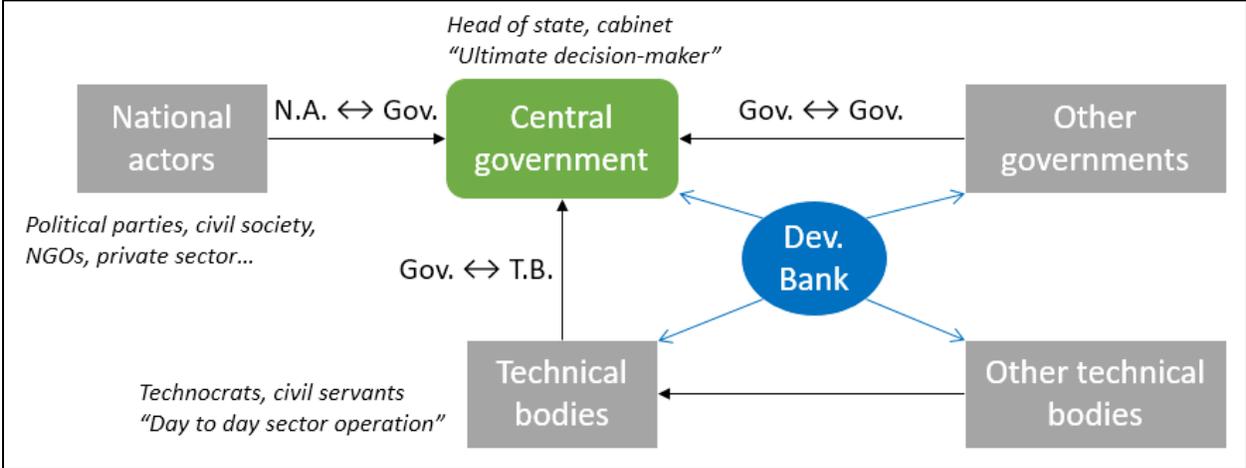


Figure 37 - - Overview of the contextual variables (drawn by the author)

9. Building the Comparative framework

This chapter builds a Comparative Framework based on the outputs of the previous chapters. To do so, first the contextual variables relative importance is evaluated for each of the stages. Then, each of the cases are also analyzed

9.1. Contextual variables weight during the development process

The first section of the chapter evaluates the weight that each contextual variable has in each stage for every case study. This is done through the sum of the weight of the factors associated with each contextual variable (measured at chapter 5, 6 and 7). This is done in order to compare the relative weight³⁸ of each variable during the development process of the projects.

9.1.1. GMS Economic Corridors

9.1.1.1. Stage 1

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
1	1	Indochina was divided into three groups after II World War	3	Rivalry between countries	Gov. ↔ Gov.	4
1	16	Reduction of political tensions in the region	1	Rivalry between countries		
1	14	Transition towards market economies after Cold War	3	Overall stability of the countries	Gov. ↔ N.A.	3
1	3	Military and defense concerns were priority over technical issues	5	National institutional structure	Gov. ↔ T.B.	8
1	8	Transport and trade involved several different departments and authorities	3	Institutional integration		
1	9	No talks between technical bodies on regional transportation	5	Existing cooperation	T.B. ↔ T.B.	9
1	5	Previous cooperation institutions paralyzed	1	Existing cooperation		
1	6	Trading between countries reduced to minimum	3	Existing cooperation		

Table 40 - GMS EC, evaluation of contextual variables Stage 1

³⁸ The explanation for the weigh of each factor is provided in the chapters 5.7, 6.6, and 7.5 respectively for the cases of GMS Economic Corridors, SIEPAC, and GSms Power Sector Cooperation

9.1.1.2. Stage 2

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
2	1	History of conflicts	1	Rivalry between countries	Gov. ↔ Gov.	14
2	6	Absence of trust between countries	3	Rivalry between countries		
2	24	Countries looked forward deepening regional economic cooperation in ASEAN	5	Rivalry between countries		
2	29	Major countries (Thailand) looked for new trading opportunities more intensively	5	National security concerns		
2	5	National budgets constrained by the Asian Financial Crisis	1	Overall stability of the countries	Gov. ↔ N.A.	4
2	19	Transport operators complained about difficulties for crossing borders	3	Publicness		
2	18	Market transition in socialist and communist countries increased importance of international trade	3	National institutional structure	Gov. ↔ T.B.	8
2	4	Different national authorities in charge of transport, trade, and border crossing procedures	5	Institutional integration		
2	7	Numerous non-physical trade barriers still remained	3	Existing cooperation	T.B. ↔ T.B.	3

Table 41 - GMS EC, evaluation of contextual variables Stage 2

9.1.1.3. Stage 3

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
3	1	Ideologically rivalry between countries (divided in 3)	1	Rivalry between countries	Gov. ↔ Gov.	12
3	15	Border conflicts between Lao PDR and Thailand	5	Rivalry between countries		
3	13	Thai military base near expected crossing border bridge	1	Rivalry between countries		
3	11	Asymmetry in the value of Thailand-China trade over Lao-Thailand and Lao-China	5	Power imbalances		
3	9	Roads to be utilized by private operators	3	Publicness	Gov. ↔ N.A.	3
3	2	No technical bodies for regional transport/trade	3	Existing cooperation	T.B. ↔ T.B.	7
3	4	Minimal formal trading between countries	1	Existing cooperation		

3	7	No studies from Lao authorities about potential positive impact of increasing China – Thailand trade	3	Existing cooperation		
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Table 42 - GMS EC, evaluation of contextual variables Stage 3

9.1.1.4. Stage 4

Stage	Code	Factor	Weight	Category	Contextual variable	Total
4	1	Governments lacked trust on each other	3	Rivalry between countries	Gov. ↔ Gov.	9
4	14	Countries gave different relative importance to each connection	3	Rivalry between countries		
4	18	Removal of non-physical barriers would include national strategic issues	3	National security concerns		
4	5	Demand for corridors had been increasing rapidly	1	Publicness	Gov. ↔ N.A.	1
4	11	Regulations involving different ministries and authorities	5	Institutional integration	Gov. ↔ T.B.	5
4	2	Countries had very different national regulations	3	Shared value of regional economies of scale	T.B. ↔ T.B.	3

Table 43 - GMS EC, evaluation of contextual variables Stage 4

9.1.1.5. Summary

GMS EC	Stage 1	Stage 2	Stage 3	Stage 4
Gov. ↔ Gov.	4	14	12	9
Gov. ↔ T.B.	8	8	0	5
T.B. ↔ T.B.	9	3	7	3
Gov. ↔ N.A.	3	4	3	1

Table 44 - GMS EC, evaluation of contextual variables Summary

9.1.2. SIEPAC

9.1.2.1. Stage 1

Stage	Code	Factor	Weight	Category	Contextual variable	Total
1	4	IADB became main/only donor in the region	1	Power imbalances	Gov. ↔ Gov.	6
1	5	Conflicts between countries due to aftermaths of Cold War	1	Rivalry between countries		

1	17	Strengthening of bilateral interconnections was stopped by governments because of national security concerns	3	National security concerns		
1	20	International actors intervened to foster pacification	1	Rivalry between countries		
1	1	State-owned companies created to monopolize national sectors	1	Publicness	Gov. ↔ N.A.	2
1	3	Debt crisis affected every Central American country	1	Overall stability of the countries		
1	2	Countries tended to consider power sector as technical issue	3	National institutional structure	Gov. ↔ T.B.	11
1	8	State-owned companies built national grids until borders	3	Institutional integration		
1	12	State-owned companies had great autonomy of action	5	Institutional integration		
1	9	Impossibility to continue public funding of sector	1	Shared value of regional economies of scale	T.B. ↔ T.B.	19
1	10	Seasonal surplus of capacity appeared in some countries	1	Shared value of regional economies of scale		
1	11	State-owned companies built weak bilateral interconnections without need of political agreement	1	Existing cooperation		
1	13	State-owned companies created regional technical organization (CEAC)	1	Existing cooperation		
1	15	State-owned companies were initially interested only in regional infrastructure	3	Shared value of regional economies of scale		
1	16	State-owned companies identified potential benefits from economies of scale	5	Shared value of regional economies of scale		
1	19	Individual markets too small for being profitable	3	Shared value of regional economies of scale		
1	22	CEAC became active supporter of connectivity	3	Shared value of regional economies of scale		
1	26	Full regional consensus became bases of cooperation	1	Existing cooperation		

Table 45 - SIEPAC, evaluation of contextual variables Stage 1

9.1.2.2. Stage 2

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
2	2	Conflicts between countries still existing at that time	5	Rivalry between countries	Gov. ↔ Gov.	9
2	6	Some countries could get more benefits than others	1	Power imbalances		
2	13	Tensions between countries could affect entire region	3	National security concerns		
2	10	State-owned companies had major influence in their respective national sectors	5	Institutional integration	Gov. ↔ T.B.	5
2	1	Countries with different levels of reform	1	Shared value of regional economies of scale	T.B. ↔ T.B.	2
2	11	Major reforms would be needed in some countries	1	Shared value of regional economies of scale		

Table 46 - SIEPAC, evaluation of contextual variables Stage 2

9.1.2.3. Stage 3

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
3	2	Conflicts between countries still existing at that time	3	Rivalry between countries	Gov. ↔ Gov.	8
3	5	Countries didn't have experience of effective functional cooperation	5	Rivalry between countries		
3	4	State-owned companies were reluctant to lose control of their national sectors	1	Publicness	Gov. ↔ N.A.	1
3	1	State-owned companies had a history of cooperation	3	Existing cooperation	T.B. ↔ T.B.	8
3	11	CEAC was the main actor for the promotion of the regional project	5	Existing cooperation		

Table 47 - SIEPAC, evaluation of contextual variables Stage 3

9.1.2.4. Stage 4

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
4	8	Foreign relations influenced by ideological differences	3	Rivalry between countries	Gov. ↔ Gov.	8
4	20	Countries' concerns about losing control over regional market	5	National security concerns		
4	15	Privatization of generation was progressing in the region	1	Publicness	Gov. ↔ N.A.	1
4	2	State-owned companies were in charge of national systems	5	Institutional integration	Gov. ↔ T.B.	5

Table 48 - SIEPAC, evaluation of contextual variables Stage 4

9.1.2.5. Summary

SIEPAC	<u>Stage 1</u>	<u>Stage 2</u>	<u>Stage 3</u>	<u>Stage 4</u>
Gov. ↔ Gov.	6	9	8	8
Gov. ↔ T.B.	11	5	0	5
T.B. ↔ T.B.	19	2	8	0
Gov. ↔ N.A.	2	0	1	1

Table 49 - SIEPAC, evaluation of contextual variables Summary

9.1.3. GMS Power Cooperation

9.1.3.1. Stage 1

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
1	1	Indochina was divided into three groups after II World War	3	Rivalry between countries	Gov. ↔ Gov.	4
1	15	Reduction of political tensions in the region	1	Rivalry between countries		
1	14	Transition towards market economies after Cold War	3	Overall stability of the countries	Gov. ↔ N.A.	3
1	3	Military and defense concerns were priority over technical issues	5	National institutional structure	Gov. ↔ T.B.	10
1	19	Relative autonomy of EGAT and EDL	5	Institutional integration		
1	5	Previous cooperation institutions paralyzed	1	Existing cooperation	T.B. ↔	6

1	18	Commitment from EGAT and EDL, with existing hydro power purchase agreement	5	Existing cooperation	T.B.	
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Table 50 - GMS Power Cooperation, evaluation of contextual variables Stage 1

9.1.3.2. Stage 2

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
2	4	Countries concerned about the stability of their national supply	5	National security concerns	Gov. ↔ Gov.	5
2	3	State-owned companies were the main actors in each country	3	Institutional integration	Gov. ↔ T.B.	6
2	15	Introduction of market reforms were unlikely in most of countries	3	National institutional structure		
2	1	Lack of previous studies on regional power trade	1	Shared value of regional economies of scale	T.B. ↔ T.B.	2
2	6	Most of state-owned utilities without previous agreements	1	Existing cooperation		

Table 51 - GMS Power Cooperation, evaluation of contextual variables Stage 2

9.1.3.3. Stage 3

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
3	2	Countries didn't want to depend on single source	5	National security concerns	Gov. ↔ Gov.	6
3	5	Border disputes still remained	1	Rivalry between countries		
3	14	EGAT is in charge of ensure national power supply	3	Institutional integration	Gov. ↔ T.B.	3
3	1	MOUs have been signed between neighbouring countries	3	Existing cooperation	T.B. ↔ T.B.	7
3	3	Lao PDR's main objective has been to increase its generation capacity	3	Shared value of regional economies of scale		
3	6	Thai and Myanmar utilities have been working together at different institutions	1	Existing cooperation		

Table 52 - GMS Power Cooperation, evaluation of contextual variables Stage 3

9.1.3.4. Stage 4

<u>Stage</u>	<u>Code</u>	<u>Factor</u>	<u>Weight</u>	<u>Category</u>	<u>Contextual variable</u>	<u>Total</u>
4	1	Countries main concern was security of national supply	3	National security concerns	Gov. ↔ Gov.	7
4	2	Countries cooperation was influenced by governments' relations momentum	1	Rivalry between countries		
4	3	Management of common resources was still not well developed	3	Rivalry between countries		
4	4	State-owned companies are main stakeholders in each country	5	Institutional integration	Gov. ↔ T.B.	5

Table 53 - GMS Power Cooperation, evaluation of contextual variables Stage 4

9.1.3.5. Summary

GMS P	<u>Stage 1</u>	<u>Stage 2</u>	<u>Stage 3</u>	<u>Stage 4</u>
Gov. ↔ Gov.	4	5	6	7
Gov. ↔ T.B.	10	6	3	5
T.B. ↔ T.B.	6	2	7	0
Gov. ↔ N.A.	3	0	0	0

Table 54 - GMS Power Cooperation, evaluation of contextual variables Summary

9.1.4. Comparative analysis

The comparative analysis of the previous results find similarities between the three cases. In all of them, for each stage it was found that some contextual variables are dominant over the others. In that sense, the main contextual variables for each stage are:

- Stage 1: T.B. ↔ T.B.; Gov. ↔ T.B.
- Stage 2: Gov. ↔ Gov.; Gov. ↔ T.B.
- Stage 3: T.B. ↔ T.B.; Gov. ↔ Gov.
- Stage 4: Gov. ↔ Gov.; Gov. ↔ T.B.

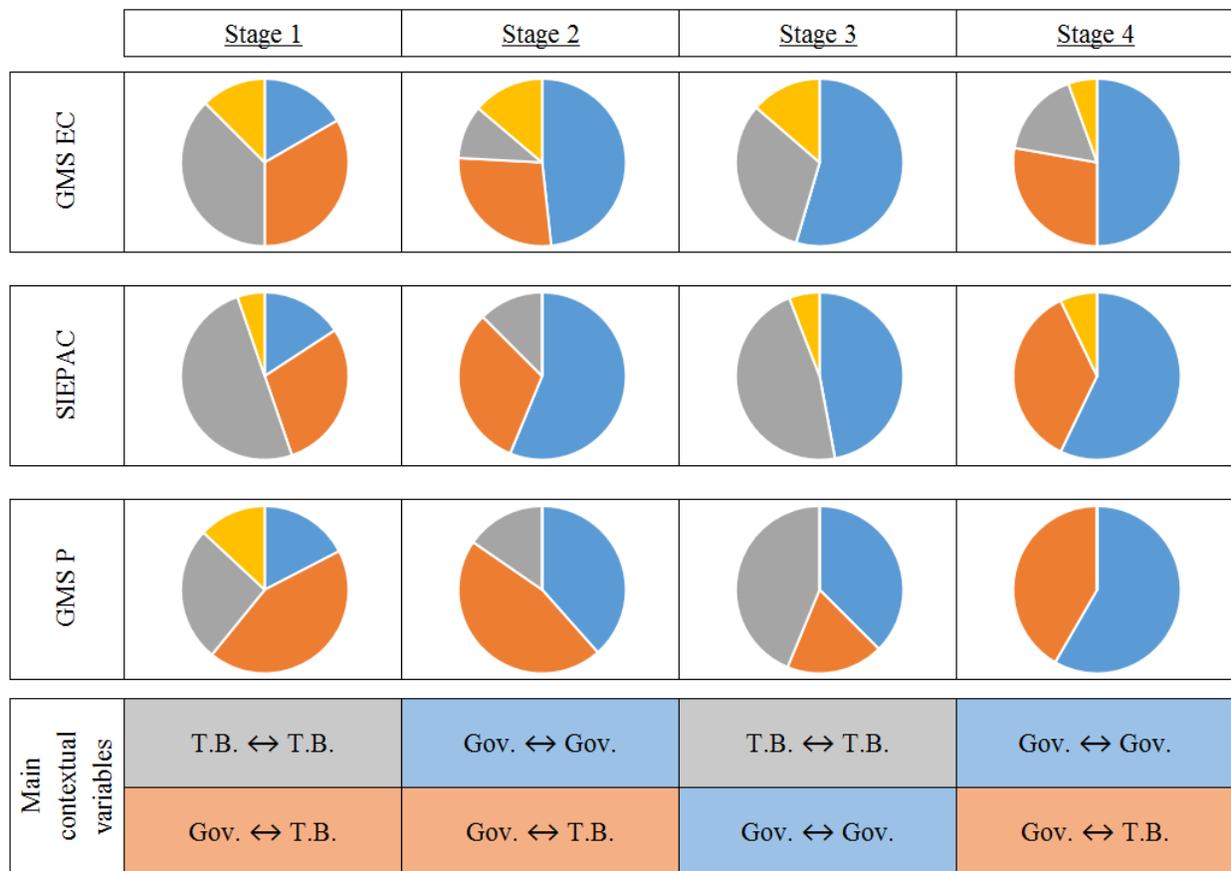


Figure 38 - Main contextual variables

9.2. Contextual variables evaluation

The contextual variables are evaluated for the three case studies based on the understanding derived from the analysis.

<i>Category</i>	<i>Cont. var.</i>	<i>Evaluation</i>	<i>GMS-EC</i>	<i>SIEPAC</i>	<i>GMS-P</i>
Rivalry between countries	Gov. ↔ Gov.	<u>Will for cooperation:</u> Common level of cooperation across the member countries	Reluctant	Reluctant	Reluctant
Power imbalances					
National security concerns					
National institutional structure	Gov. ↔		Weak T.B.	Strong T.B.	Strong T.B.

Institutional integration	T.B.	<u>Strength of T.B.:</u> Autonomy and capacity of influence			
Existing cooperation	T.B. ↔ T.B.	<u>Trust between T.B.:</u> Ability of T.B. to establish effective cooperation	Mistrust	Trust	Mistrust
Shared value of regional economies of scale					
Overall stability of the countries	Gov. ↔ N.A.	<u>Strength of Gov.:</u> Level of gov. ability to implement their agenda	Strong	Weak	Strong
Publicness					

9.3. The Comparative Framework

Combining the outputs of the two previous sections, the Comparative Framework is built including the main contextual variables for each stage, and their possible values. As it will be explained in the last chapter, no other options are considered at this moment because of the limitation of the cases analyzed to serve as “pool of cases”, nevertheless, the arrows included express the need to consider different variations and degrees on the evaluation of the variables, particularly for the future development of the mentioned pool of cases.

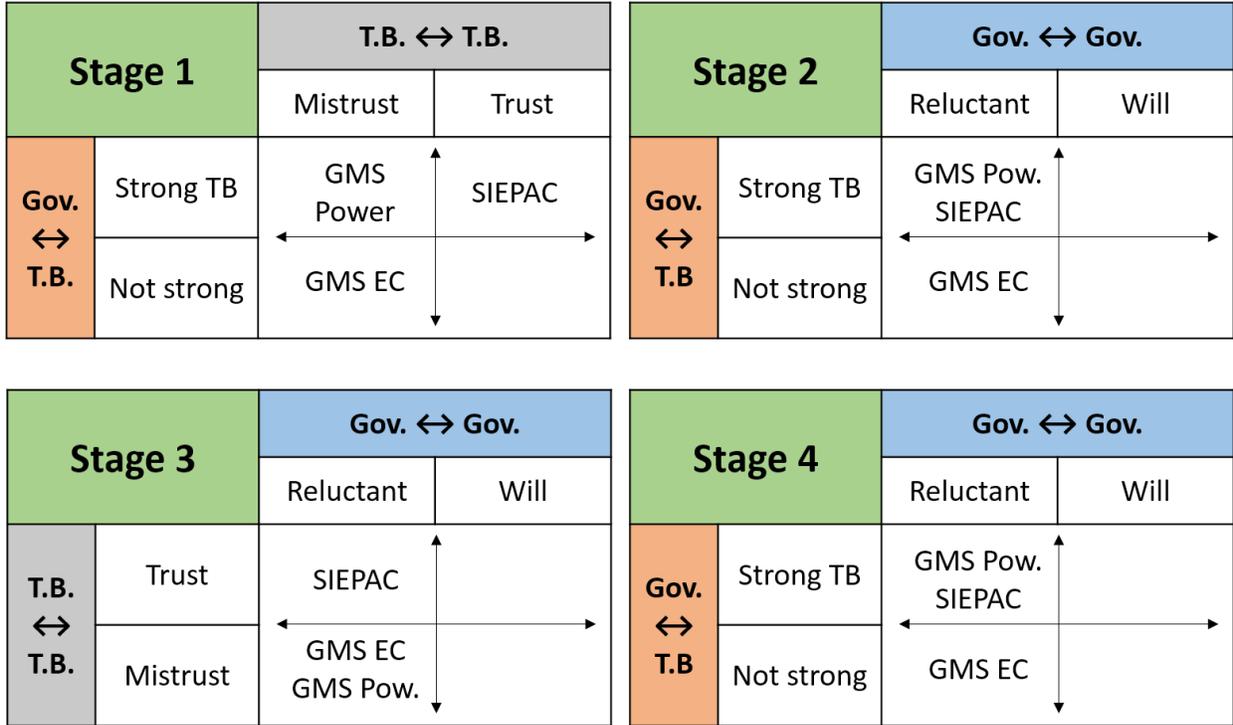


Figure 39 - The Comparative Framework, visualization

10. Utilization of the Comparative Framework

This chapter serves to provide an understanding of the methodology for the application of the comparative framework.

10.1. Practical case: Moving the GMS-Power cooperation to the stage 4

The Stage 4 of the GMS Power Cooperation program is selected as the practical case. As mentioned in chapter 7, currently the project is facing difficulties to progress in its institutional construction. The lack of progress, and its contrast with the progress in the construction of generation power plants has been mentioned in different studies. ADB (2013) describes this situation as follows:

“There has been remarkable progress in the GMS energy sector over the past 2 decades. Considerable success was also achieved in rolling out rural electrification in member countries. Rapid provision of large-scale, high-volume national grid systems; successful mobilization of indigenous resources; and the beginnings of cross-country trade also took place. These successes have been achieved mainly at the national level. Despite considerable political pronouncements that recognize the imperatives of regional cooperation, progress has not matched national achievements. The high-volume trans-boundary connections that have been made to date within the GMS do not achieve a true interconnection of systems with synchronous operations, but are simply an extension of the national grids of the large- consuming countries into the territories of producers of (mainly) hydropower”

ADB (2013), “Assessment of the GMS Energy Sector Development”

In this sense, this chapter has two objectives. First one is to serve as an example of utilization and therefore serve as a guideline for future users. The second objective is to provide a small example of how the policy implications can be derived even from a limited number of cases.

10.1.1. Overview of the utilization

The utilization of the Comparative Framework is divided into 5 steps:

- Step 1, Input of information into comparative framework: Incorporation of the existing cases according to the evaluation of the contextual variables and the stage, or stages, of interest.
- Step 2, Identification of most relevant cases: Through the evaluation of the target project, the most relevant cases are identified based on contextual similarities.

- Step 3, Comparison of actions: Actions realized, if any, in target project are compared with those realized in the similar cases identified in the previous step. This would help to discover alternative approaches not yet attempted.
- Step 4, Identification of actions: Based on the particular understanding of the target project, experts from Multilateral Development Bank are able to realize an evaluation of the feasibility and potential impact of the alternative approached identified in Step 3.
- Step 5, Policy implications: Finally, experts from Multilateral Development Bank will adapt the actions to the target project. This process for transfer of lessons can be conducted in collaboration with the experts from the relevant source cases as well as with local and/or regional stakeholders.

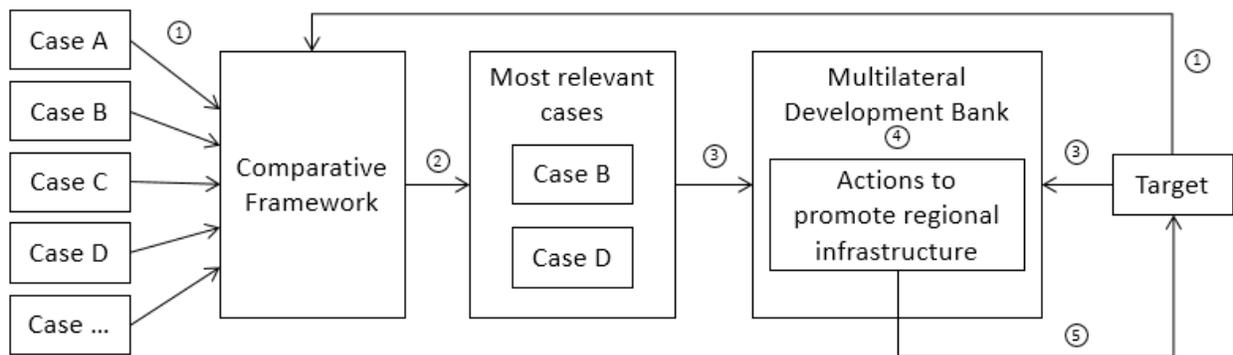


Figure 40 - Comparative Framework, overview of utilization

10.1.1.1. Step 1: Input of information into the comparative framework

The pool of cases would contain at this moment the two cases studies of GMS Economic Corridors (GMS-EC) and SIEPAC, the GMS Power Cooperation (GMS Pow.) is also introduced as “Target”.

Since for this practical case, only the Stage 4 is of interest, only which is considered here.

Stage 4		Gov. ↔ Gov.	
		Reluctant	Will
Gov. ↔ T.B	Strong TB	GMS Pow. SIEPAC	↕
	Not strong	GMS EC	

10.1.1.2. Step 2: Identification of most relevant cases

By looking into the Comparative Framework Stage 4 with the input of the available cases and the Target case, it is identified that the most relevant case for this practice is SIEPAC.

Stage 4		Gov. ↔ Gov.	
		Reluctant	Will
Gov. ↔ T.B	Strong TB	GMS Pow. SIEPAC	↕
	Not strong	GMS EC	

10.1.1.3. Step 3, Comparison of actions

The actions identified for the Stage 4 of SIEPAC are contrasted with those tried at the Target (GMS-Power).

Action	Tried
Market + infrastructure approach was agreed	X
Framework Treaty was written to allow regional market	X
Regional operator and regulator were created	X

Regional operator composed by representatives from state-owned companies	X
Regional regulator composed of politically appointed representatives	X
Investments focused on regional transmission	X
Regional transactions allowed with temporal measures	X
RMER designed for future regional market operation	X
Regional investors got interested in power generation opportunities	O
Interconnections with Mexico and Colombia were accepted	Δ
II Protocol was signed to enforce RMER	X
II Protocol incorporated creation of political supervisory body	Δ
Economic and managerial autonomy of regional regulator was agreed	X

10.1.1.4. Step 4, Identification/evaluation of actions

The actions with a positive impact in SIEPAC (+) were identified (the evaluation is made base on the causality analysis by looking their influence in the process). The actions with a positive impact (in SIEPAC) are then evaluated for feasibility in GMS Power. At this moment is when the expertise of the MDB officials is required.

Action	Likely	
Market + infrastructure approach was agreed	X	Governments and technical bodies have already expressed a lack of interest in the development of a regional power market (at least at this moment). Even at national level, countries lack market structures
Framework Treaty was written to allow regional market	Δ	Although the actual IGA does not explicitly mention the regional power market, it does not deny it. In fact, the last stage of the GMS gradual plan includes such possibility. Therefore including it in a more formal agreement would be possible (although due to the lack of interest in the market approach, could be considered complicated)
Regional operator and regulator were created	Δ	A regional operator, or close institution, could be possible (in fact RPCC is supposed to fulfill such

		role in the near future). A regional regulator seems more unlikely
Regional operator composed by representatives from state-owned companies	○	The constitution of the regional operator with personnel coming from state-owned companies should be possible
Regional regulator composed by politically appointed representatives	△	There are no negative indications that a regional regulator would be impossible, nevertheless, there are also no positive signals about its likeliness
Investments focused on regional transmission	△	Although it could be possible to increase the investments on regional transmission lines, it seems unlikely that would be strongly supported by state-owned companies. A more active involvement of ADB or an approach looking for the strengthening of national grids (particularly important in Lao PDR, Myanmar, and Cambodia) could be possible
Regional transactions allowed with temporal measures	○	The agreement for the Lao – Singapore transmission has proved the possibility of this (although it is needed to note the low capacity agreed). In any case, there seems to be no obstacle among countries for the creation of a prototype agreement
RMER designed for future regional market operation	△	The agreement on a common regulation seems to be further in time. Before it, there would be a need to harmonize systems and procedures among state-owned companies
Regional investors got interest in power generation opportunities	○	That action has already been in place from the early beginning
Interconnections with Mexico and Colombia were accepted	○	Neighboring countries, as Singapore, have shown some interest, and from member countries, no voice has been raised against this
II Protocol was signed to enforce RMER	X	The enforcement of a regional regulation at this moment seems impossible
II Protocol incorporated creation of political supervisory body	△	Although possible, it doesn't seem to be a demand for it
Economic and managerial autonomy of regional regulator was agreed	△	The establishment of a regional regulator seems complicated, even more to consider it with large autonomy

Action	Tried	Impact	Likely
Market + infrastructure approach was agreed	X	+	X
Framework Treaty was written to allow regional market	X	+	△
Regional operator and regulator were created	X	+	△
Regional operator composed by representatives from state-owned companies	X	+	○
Regional regulator composed by politically appointed representatives	X	-	△
Investments focused on regional transmission	X	+	△
Regional transactions allowed with temporal measures	X	+	○
RMER designed for future regional market operation	X	+	△
Regional investors got interest in power generation opportunities	○	+	
Interconnections with Mexico and Colombia were accepted	△	+	○
II Protocol was signed to enforce RMER	X	+	X
II Protocol incorporated creation of political supervisory body	△	+	△
Economic and managerial autonomy of regional regulator was agreed	X	+	△

10.1.1.5. Step 5, Proposal of policy implications / action plan to implement

Based on the previous analyses, and in the deep understanding of the target case, policy proposals can be developed.

Action	Policy proposal
Regional operator composed by representatives from state-owned companies	Establish RPCC as a permanent institution with representatives from national TSOs
Regional transactions allowed with temporal measures	Develop a prototypal agreement for utilization of third country grid
Interconnections with Mexico and Colombia were accepted	Actively promote interconnections with ASEAN countries (Singapore) as well as look for connections with South Asia (Bangladesh, India) and rest of China
Economic and managerial autonomy of regional regulator was agreed	Secure the independence of RPCC to be able to mediate in disputes

11. Conclusion

This research first objective is the identification of variables to explain contextual influence on the development of regional infrastructures. This has been done through the comparative analysis of three case studies which combine a large level of integration and differences in sectors (road and power) and region (South East Asia or Indochina Peninsula, and Central America). The level of integration was evaluated based on a development process proposed through the combination of related research. The five stages are (i) national stakeholders' agreement, (ii) high level political agreement, (iii) physical construction, (iv) institutional construction, and (v) harmonization. The cases selected are GMS Economic Corridors, Power Sector Integration in Central America (SIEPAC), and GMS Power Cooperation Program.

Input information has been obtained for each case from interview surveys, official reports, external research, and media sources. For the three projects, each of the stages has been analyzed through causality analysis in order to identify the relevant factors and actions. For each factor identified has been found its relative impact or weight. Except for the stage (v), which has been found with insufficient evidence, numerous factors have been obtained across nine categories, including both sectorial and regional aspects. These categories had been found to correspond to relations between stakeholders, namely governments, technical bodies and national actors. Hence, the contextual variables identified are a relation between governments (Gov. ↔ Gov.), governments and technical bodies (Gov. ↔ T.B.), technical bodies among them (T.B. ↔ T.B.) and governments and national actors (Gov. ↔ N.A.). The difference on these contextual variables serves for explaining the differences in context.

The second part of the research builds a Comparative Framework for regional infrastructures projects. This was initially done by identifying the dominant contextual variables for each stage. For that, the relative weight of each of them was calculated accordingly to the weight of their related factors. It was found that the dominant contextual variables were not the same throughout the process for any of the three cases. Nevertheless, the comparison between projects showed similar patterns for each stage. Based on that, the most dominant contextual variables were selected for each stage. For stage 1, (Gov. ↔ T.B.) and (T.B. ↔ T.B.); stage 2, (Gov. ↔ Gov.) and (Gov. ↔ T.B.); stage 3, (Gov. ↔ Gov.) and (T.B. ↔ T.B.); and stage 4, (Gov. ↔ Gov.) and (Gov. ↔ T.B.).

The third part provides a practical example for the utilization of the Comparative Framework for the stage (iv) of the GMS Power Cooperation program. The analysis has helped to identify the SIEPAC project as a relevant case study for that particular stage. Through the comparison and the understanding of the target case, four policy implications are derived: (a) establish RPCC as a permanent institution with representatives from national TSOs, (b) develop a prototypal agreement for utilization of third country grid, (c) actively promote interconnections with ASEAN countries (like Singapore) as well as look for connections with South Asia (Bangladesh, India) and rest of China, and (d) secure the independence of RPCC to be able to mediate in disputes.

11.1. Discussion and further work

This research proposes a model that allows the identification of relevant existing regional infrastructures cases from which identify potential actions. Although using only three cases as a source of information, the Comparative Framework has been developed in order to be scalable, that is to be applicable to other regions and/or sectors. In fact, from its own design, the framework will increase its accuracy by the incorporation of more cases to the pool of cases.

To test the possibility for its general application, the tentative results were discussed with officials from the Asian Development Bank (ADB). A positive feedback was received at that meeting. The note of the conversation can be found at [GMS-EC.III]. Novelty and relevance of the method were the two main aspects discussed, and

- Relevance:

- a. The methodology proposed would be beneficial for them to extract lessons from most advanced programs (GMS) to their other programs (CAREC, SASEC)
 - i. *“This would be quite useful for us, for probably to look back and try to extract lessons from our past engagement with the member countries in the GMS”*
- b. The contextual variables selected are relevant for the understanding of the processes
 - i. *“I think that your analysis is quite relevant, this framework of looking at government to government and technical body to technical body relationships”*
- c. The division of the framework in different stages is useful
 - i. *“I think it would be useful, particularly these tentative results, you have the framework to analyze for different stages”*

- Novelty:

- a. Methodology proposed will help to implement new systems for the
 - i. *How the parties interact and so what would be the relevant cases to look at”*
- b. Currently, there is no systematic approach for the transfer of lessons, even inside the institution:
 - i. *Actually, some staff move from one region into another and do basically the same stuff, so regional cooperation*
 - ii. *But I would say that still this cross-learning is still not really happening at the level that is desirable*

The positive feedback from the experts, and real practitioners, about the relevance of the methodology and, especially, about the appropriateness of the components selected, provide an initial validation of the approach followed and of the results obtained. But for a more general utilization, the feasibility of its expansion beyond the limits of this research need to be also tested with practical cases. For that, we suggest the possibility of conducting similar case studies in other

regions (like other parts of Latin America and the Caribbean, and Asia; then also Africa and Europe would provide valuable knowledge) as well as sectors (like aviation, telecommunications, and transboundary rivers). This will serve not only to identify the limits of the comparative framework, but also to (i) evaluate if the contextual variables are sufficient, or others would need to be included, as possible influence from extra-regional actors, or by regional organizations with own agenda; (ii) identify the limits of its possible utilization; (iii) increase the number of sources cases; and (iv) develop a more precise scale of values of the contextual variables, to allow a more accurate classification. The development of appropriate evaluation method would be an important element for this continuation. A possible suggestion would be to conduct this evaluation by multiple reviewers (two at minimum).

References

Chapter 1:

ADB (2006). “Regional Cooperation and Integration Strategy”. Accessed on: <http://www.adb.org/sites/default/files/institutional-document/32091/final-rci-strategy-paper.pdf>

ADB (2009). “Infrastructure for a Seamless Asia”. Accessed on: <http://adb.org/sites/default/files/pub/2009/2009.08.31.book.infrastructure.seamless.asia.pdf>

ADB (2013). “Regional cooperation and integration in a changing world”. Mandaluyong City, Philippines, Asian Development Bank, 2013. Accessed on: <http://www.adb.org/sites/default/files/publication/30224/regional-cooperation-changing-world.pdf>

APEC (2002). “The Greater Mekong Subregion (GMS) Interconnection Project”. Appendix 2 in *APEC (2002), Cross-border Power: A report addressing the barriers to the interconnection of power grids in APEC member economies 2002*. Accessed on April 23rd 2016 on: http://www.sari-energy.org/PageFiles/What_We_Do/activities/Cross_Border_Conference_Feb_2012/ResourcesLaw_APEC_Cross-Border_Power_Rpt_2002.pdf

Estevadeordal, Frantz, Nguyen (2003). “Regional Public Goods, From Theory to Practice”. Accessed on: <http://www.iadb.org/wmsfiles/products/publications/documents/419943.pdf>

G-20 (2010), “Multi-year action plan on development”. Annex II, G20 Seoul Summit 2010.

IADB (2010), “Competitive Global and Regional Integration Strategy”. Office of the Vice President for sectors and knowledge integration and trade sector. Accessed: http://www.un.org/esa/ffd/msc/regionalcooperation/IDB_Integration.pdf

IADB (2011). “Investing in integration: the returns from Software-Hardware Complementarities” Fourth Meeting of Finance Ministers of the Americas and the Caribbean”. Policy Discussion Brief. Calgary, Canada, March 26, 2011. Accessed on: <https://publications.iadb.org/bitstream/handle/11319/1376/Investing%20in%20Integration%20%20%20.pdf?sequence=1>

Kuroda, Kawai, Nangia (2008). “Infrastructure and Regional Cooperation”. In World Bank “Rethinking Infrastructure for Development”. Annual World Bank Conference on Development Economics – Global 2007. Accessed on: <https://openknowledge.worldbank.org/bitstream/handle/10986/6834/414460ABCDE020101OFFICIAL0USE0ONLY1.pdf?sequence=1>

Noda (2011), “Statement by Mr. Yoshihiko NODA, Minister of Finance of Japan”. Forty-Fourth Annual Meeting of the Board of Governors of the Asian Development Bank. Hanoi, Viet Nam, May 5, 2011. Accessed on: http://www.mof.go.jp/english/international_policy/mdbs/adb/2011st.pdf

Schiff and Winters (2002). “Regional Cooperation, and the role of international organizations and regional integration”

UN (2015). “Transforming our world: the 2030 agenda for sustainable development”. Summit for the adoption of the post-2015 development agenda. Accessed on: http://www.un.org/pga/wp-content/uploads/sites/3/2015/08/120815_outcome-document-of-Summit-for-adoption-of-the-post-2015-development-agenda.pdf

Wentworth (2013). “The Complexities of Regional Infrastructure Planning”. In Political Economy of Regional Integration in Southern Africa Series, European Centre for Development Policy Management (ecdpm), August 2013. Accessed on: <http://www.saiia.org.za/special-publications-series/455-political-economy-of-regional-integration-in-southern-africa-series-the-complexities-of-regional-infrastructure-planning/file>

World Bank (2010). “Africa’s Infrastructure. A time for transformation”. Edited by Vivien Foster and Cecilia Briceño-Garmendia. Accessed on: http://siteresources.worldbank.org/INTAFRICA/Resources/aicd_overview_english_no-embargo.pdf

World Bank (2013). “Challenges, Lessons and Prospects for Operationalizing Regional Projects in Asia: Legal and Institutional Aspects”. Kishor Uprety. Accessed on: <http://siteresources.worldbank.org/INTLAWJUSTICE/Resources/OperationalizingRegionalProjects.pdf>

Chapter 2

Acharya, Johnston (2007), “Crafting Cooperation: Regional International Institutions in Comparative Perspective”. Cambridge University Press.

Axline (1994), “The political economy of regional cooperation: comparative case studies”. Edited by W. Andrew Axline. Pinter Publishers.

Cespedes, Agostinis (2014), “Constructing South America through regional cooperation: the cases of infrastructure and energy within UNASUR. Accessed on: http://globalgovernanceprogramme.eui.eu/wp-content/uploads/2014/05/Constructing-South-America-through-regional-cooperation_GGP_May_2014.pdf

Del Barrio-Alvarez (2013), “Identification of the governing mechanism of regional power systems integration: A case study of Central America”. Master thesis. The University of Tokyo

De Lombaerde, Soderbaum, Langehove, Baert (2009). “The Problem of Comparison in Comparative Regionalism”. Jean Monnet/Robert Schuman Paper Series, Vol. 9 No. 7, April 2009. Accessed on: <http://aei.pitt.edu/14995/1/CompReg.pdf>

IADB (2002), “Beyond Borders: The New Regionalism in Latin America”. Accessed on: http://www.iadb.org/res/publications/pubfiles/pubB-2002E_1486.pdf

IADB (2011), “Sector Strategy to Support Competitive Global and Regional Integration”. March 22, 2011. Accessed on: <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35824823>

JICA (2009), “The Research on the Cross-Border Transport Infrastructure: Phase 3. Final Report”. Elaborated by PADECO Co., Ltd. And Mitsubishi UFJ Research and Consulting Co., Ltd. Japan International Cooperation Agency. Accessed on: http://www.jica.go.jp/english/our_work/thematic_issues/transportation/pdf/research_cross-border01.pdf

Krongkaew (2004), “The development of the Greater Mekong Subregion (GMS): real promise or false hope?”. Journal of Asian Economics, Volume 15, Issue 5, October 2004, pp 977-998. Accessed on: <http://www.sciencedirect.com/science/article/pii/S1049007804001253>

Matsui (2016), “南米のインフラ統合プロジェクトの推進を左右する主要因の分析：ペルー・ブラジル間大陸横断道路を例にして”. Master thesis. The University of Tokyo

Mattli (1999), “The logic of regional integration: Europe and beyond”. Cambridge University Press.

Nishibayashi (2016), “An analysis on the formation process of India-Bangladesh interconnection project for the regional integration in South Asia: Critical factors of aid policy contributing to regional integration in South Asia”. Master thesis. The University of Tokyo

Onga (2013), “An approach for the assessment of potential decision-making of the political leader in Kazakhstan and Uzbekistan regarding regional power sector cooperation in Central Asia”. PhD thesis. The University of Tokyo

Soderbaum (2008). "Consolidating Comparative Regionalism: From Euro-centrism to Global Comparison". Paper for the GARNETT 2008 Annual Conference, Sciences Po Bordeaux, University of Bordeaux 17-19 September. Panel: "New Approaches in the Study of Regional Integration: Comparing the EU with Other Regional Integration Mechanism". Accessed on: <http://gup.ub.gu.se/records/fulltext/87499/87499.pdf>

World Bank (2010), "Regional Power Sector Integration: Lessons from Global Case Studies and a Literature Review. Energy Sector Management Assistance Program (ESMAP). Accessed on: <https://openknowledge.worldbank.org/handle/10986/17507>

Chapter 6:

ADB (1993), “Subregional Economic Cooperation: Initial Possibilities for Cambodia, Lao PDR, Myanmar, Thailand, Vietnam and Yunnan Province of People’s Republic of China. Accessed on: <http://www.voced.edu.au/content/ngv%3A41292>

ADB (1993). “Economic cooperation in the greater Mekong subregion: proceedings of the Second Conference on Subregional Economic Cooperation among Cambodia, Lao People’s Democratic Republic, Myanmar, Thailand, Viet Nam and Province of the People’s Republic of China, 30-31 August 1993”. Accessed on: <http://www.voced.edu.au/content/ngv%3A6521>

ADB (1994). “Technical Assistance for the Study of the Lao-Thailand-Viet Nam East-West Transport Corridor”. June 1994. Accessed on: <http://www.adb.org/sites/default/files/project-document/72824/29249-stu-tar.pdf>

ADB (2002). “Building on Success: A Strategic Framework for the Next Ten Years of the Greater Mekong Subregion Economic Cooperation Program”. Accessed on: <http://www.adb.org/sites/default/files/publication/181405/building-success.pdf>

ADB (2002). “Joint Summit Declaration: 1st GMS Summit of Leaders”. November 2002. Accessed on: <http://www.adb.org/sites/default/files/page/42450/1st-summit-joint-declaration-greater-mekong-subregion-gms.pdf>

ADB (2002), “REG: Greater Mekong Subregion Economic Cooperation Program Joint Summit Declaration: 1st GMS Summit of Leaders”. November, 2002. <http://www.adb.org/sites/default/files/page/42450/1st-summit-joint-declaration-greater-mekong-subregion-gms.pdf>

ADB (2006). “People’s Republic of China: Preparing the Central Yunnan Roads Development Project”. Accessed on: <http://www.adb.org/sites/default/files/project-document/68431/36455-prc-tar.pdf>

ADB (2007), “Development Effectiveness Brief, Greater Mekong Subregion”. <http://www.adb.org/sites/default/files/publication/28783/greater-mekong-subregion.pdf>

ADB (2008). “Greater Mekong Subregion: Maturing and Moving Forward”. Reference Number: CAP; REG 2008-73, Regional Cooperation Assistance Program Evaluation. December 2008. Accessed on: <http://www.adb.org/sites/default/files/evaluation-document/35026/files/cap-reg-2008-73.pdf>

ADB (2008), “Transport and Trade Facilitation in the Greater Mekong Subregion – Time to Shift Gears”. Reference Number: SAP: REG 2008-86 Sector Assistance Program Evaluation December 2008. Accessed on January 25th, 2016 on http://www.gms-cbta.org/uploads/resources/15/attachment/Evaluation_Study_Transpor_and_Trade_Facilitation.pdf

ADB (2010). “Strategy and Action Plan for the Greater Mekong Subregion North-South Economic Corridor”.

ADB (2010). “Strategy and Action Plan for the Greater Mekong Subregion Southern Economic Corridor”.

ADB (2010). “Strategy and Action Plan for the Greater Mekong Subregion East West Economic Corridor”. Accessed on: <http://www.adb.org/sites/default/files/publication/27496/gms-action-plan-east-west.pdf>

ADB (2011). “Greater Mekong Subregion Cross-Border Transport Facilitation Agreement: Instruments and drafting history”.

ADB (2011). “Thailand Transport Sector Assessment, Strategy, and Road Map”

ADB (2011). “Lao People’s Democratic Republic: Transport Sector Assessment, Strategy, and Road Map”. Mandaluyong City, Philippines: Asian Development Bank, 2011.

<http://www.gms-cbta.org/uploads/resources/15/attachment/transport-assessment-Lao.pdf>

ADB (2011). “GMS Strategic Framework 2012-2022”

ADB (2011). “Thailand: Transport sector assessment, strategy, and road map”. Mandaluyong City, Philippines: Asian Development Bank, 2011.

ADB (2011). “The Greater Mekong Subregion Economic Cooperation Program Strategic Framework 2012 – 2022”. Mandaluyong City, Philippines; Asian Development Bank, 2011. Accessed on April 11, 2016 on: <http://www.adb.org/sites/default/files/institutional-document/33422/files/gms-ec-framework-2012-2022.pdf>

ADB (2012). “Regional Cooperation and Integration: Experiences in Asia and the Pacific”. <http://www.adb.org/sites/default/files/publication/30215/regional-cooperation-conference-2012.pdf>

ADB (2012). “Lao People’s Democratic Republic: Transport Sector Assessment, Strategy, and Road map”.

ADB (2012). “Myanmar Transport Sector Initial Assessment”.

ADB (2012). “Viet Nam Transport Sector Assessment, Strategy, and Road Map”

ADB (2014). “The Phnom Penh Plan for Development Management, A Retrospective”. <http://www.adb.org/sites/default/files/institutional-document/150664/phnom-penh-plan-development-management.pdf>

ADB (2015). “Initial Review of the Greater Mekong Subregion Transport Sector Strategy 2006 – 2015. Accessed on: <http://www.adb.org/sites/default/files/institutional-document/150656/initial-review-gms-transport-sector-strategy-2006-2015.pdf>

ALMEC / JICA (2007), “The Research on the Cross-border Transportation Infrastructure: Phase 2”, Final Report, Japan International Cooperation Agency (JICA). Japan. Accessed on: http://open_jicareport.jica.go.jp/710/710/710_000_11870938.html

Australian Government, Department of Foreign Affairs – Development Assistance in Laos. Accessed on April 7th, 2016 on: <http://dfat.gov.au/geo/laos/development-assistance/Pages/development-assistance-in-laos.aspx>

Bangkok Post. Thai-Lao Friendship Bridge. Travel. Accessed on: <http://www.bangkokpost.com/travel/sightseeing/26996/thai%E2%80%93lao-friendship-bridge>

Cruz-del Rosario (). “The State and the Advocate: Case Studies on Development Policy in Asia”.

Feng (2010). “Implementation of GMS Cross-Border Transport Agreement (CBTA)”. Asian Development Bank, 27 May 2010. Accessed on: [http://cleanairasia.org/wp-content/uploads/portal/files/presentations/ADB_Yushu_Feng - CBTA Implementation.pdf](http://cleanairasia.org/wp-content/uploads/portal/files/presentations/ADB_Yushu_Feng_-_CBTA_Implementation.pdf)

Feng (2014). “Transport and Trade Facilitation for Connectivity in the GMS Regional Cooperation”. Asian Development Bank, February 2014. Accessed on: http://www.unescap.org/sites/default/files/2.3.ADB_.pdf

Ishida (2005), “Effectiveness and Challenges of Three Economic Corridors of the Greater Mekong Sub-region”. Institutions of Developing Economies, Discussion Paper No. 35. August 31, 2005.

Ishida, M. (2008), “GMS Economic Cooperation and Its Impact on CLMV Development”, in Sotharith, C. (ed.), Development Strategy for CLMV in the Age of Economic Integration, ERIA Research Project Report 2007-4, Chiba: IDE-JETRO, pp. 115-140.

Ishida (2012). “Emerging Economic Corridors in the Mekong Region”. BRC Research Report No. 8. Bangkok Research Center IDE-JETRO. Bangkok, Thailand

Ishida, Isono (2012). “Old, New and Potential Economic Corridors in the Mekong Region”, in emerging Economic Corridors in the Mekong Region, edited by Masami Ishida, BRC Research Report No 8, Bangkok Research Center, IDE-JETRO, Bangkok, Thailand

http://www.ide.go.jp/English/Publish/Download/Brc/pdf/08_chapter1.pdf

Nolintha (2012). “Economic Sub-corridors and Potentials for Regional Development in Lao PDR”

Giang (2012). “Potential Economic Corridors between Vietnam and Lao PDR: Roles Played by Vietnam”.

Sisovanna (2012). “A Study on Cross-Border Trade Facilitation and Regional Development along Economic Corridors in Cambodia”.

Vinh Tuong (2012). “Regional Development Along Economic Corridors” Southern Coastal And Northern Sub-Corridors In Vietnam”.

Supatn (2012). “A Study on Cross-Border Trade Facilitation and Regional Development

Ishida (2013). “Border Economies in the Greater Mekong Subregion”. IDE-JETRO 2013. Palgrave Macmillan. I.S.B.N. 978-1-137-30289-2.

Kyozaki (2016), “Thailand to Vietnam, one delivery’s journey”. Nikkei Asia: <http://video.asia.nikkei.com/detail/videos/business-clip/video/4664894928001/thailand-to-vietnam-one-delivery-s-journey?autoStart=true&page=2>

Minh (2009). “Towards better understanding of the political economy of regional integration in the GMS: Stakeholder coordination and consultation for subregional trade facilitation in Viet Nam”. ARTNeT Greater Mekong Subregion (GMS) Initiative Discussion Paper Series, No. 3, July 2009. Accessed on January 27th on <http://artnet.unescap.org/mtg/GMSPaper3.pdf>

NESDB (2011), “Mainstreaming Regional Cooperation in the National Development: The Case of Thailand in the GMS”. Dr. Porametee Vilmolsiri, Deputy Secretary-General, Office of the National Economic and Social Development Board (NESDB), Thailand. Seminar on CAREC 2020, 7 June 2011, Baku, Azerbaijan. Accessed on <http://www.carecprogram.org/uploads/events/2011/CAREC2020-Seminar/Mainstreaming-Regional-Cooperation-Thailand-Case.pdf>

Omkar L.Shrestha, Aekapol Chongvilaivan (2013). “Greater Mekong subregion from geographical to socio-economic integration”. Institute of Southeast Asian Studies, Singapore. ISBN: 9789814379687

Phandanouvong (UNESCAP) (2014). “Comparative study on the transport facilitation provisions of GMS CBTA and ASEAN Agreements (AFAFGIT and AFAFIST)”. UNESCAP Seminar on Legal Aspects of Inter-subregional Connectivity, 10-11 Feb. 2014, Phuket, Thailand. Accessed on January 30th, 2016 on: http://www.unescap.org/sites/default/files/3.2.Comparative_study_on_ATG-CBTA.pdf

Saikia, P. (2012). “Connecting South Asia: Experimenting with the Greater Mekong Sub-Regional Model”. IPCS Issue Brief, No. 189, April 2012. Accessed on March 25, 2015: http://www.ipcs.org/pdf_file/issue/IB189-Panchali-GMS.pdf

Selvarajah (2014). “Foreign Aid Imperatives in the Greater Mekong Subregion: Case Studies of Australian and Japanese and Thai Aid Coordination”. Asia-Pacific Development Journal, Vol. 21, No. 1, June 2014. Accessed on January 22, 2016 on <http://www.unescap.org/sites/default/files/3-Part2-Selvarajah.pdf>

Shiraishi (2009). “Japan Towards the Indochina Sub-Region”. Journal of Asia Pacific Studies (Waseda University), No. 13, October 2009. Access on January 31st on https://dspace.wul.waseda.ac.jp/dspace/bitstream/2065/29759/1/AjiaTaiheiyoTokyu_13_Shiraishi.pdf

Souvannavong (2010). “GMS Cross Border Transport Agreement (CBTA) and logistic network in the GMS: procedures and initial implementation”. GMS BIZ Network Forum, 6-10 September 2010, Mekong Institute Khon Kaen, Thailand. Accessed on April 11, 2016 on:

https://view.officeapps.live.com/op/view.aspx?src=http://www.intra-mekong.com/doc/GMS-SME-Biz-Forum_revised_Oudet.ppt

Wei Jingfu, Hu Ang (2010). “A Study On Economic Cooperation Mechanism in Greater Mekong Subregion: an Analyzing Framework of Transaction Cost”. Meiji University. Accessed on 2015 March 19 from: <https://www.meijigakuin.ac.jp/econ/academics/publications/research/PDF/143-6.pdf>

Wongsuksiridacha (2012). “GMS Cross-Border Transport Agreement Implementation along the East-West Corridor”. Accessed on: http://www.carecprogram.org/uploads/events/2012/NFPs-Study-Tour/010_112_209_GMS-Cross-Border-Transport-Agreement-Implementation.pdf

Tan (2014), “The Greater Mekong Subregion programme: reflections for a renewed paradigm on regionalism”. Asia Europe Journal, Studies on Common Policies Challenges, Vol. 12, No. 4, 2014. Accessed on January 21, 2016 on

Tsuneishi (2009). “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

UN (2003). “Transit Transport Issues in Landlocked and Transit Developing Countries”. Economic and social commission for Asia and the Pacific, Landlocked Developing Countries Series, No. 1. United Nations, New York, 2003. Accessed on: <http://siteresources.worldbank.org/INTRANETTRADE/Resources/WBI-Training/UN-Landlocked.pdf>

UNESCAP: -> Towards a better understanding of the political economy of regional integration in the GMS. ARTNeT GMS Initiative on Improving the Competitiveness of Selected Priority Sectors in Cambodia, Lao People’s Democratic Republic and Viet Nam

Cheewatrakoolpong (2009). “Towards a better understanding of the political economy of regional integration in the GMS: Stakeholder coordination and consultation for subregional trade facilitation in Thailand” <http://artnet.unescap.org/mtg/GMSpaper4.pdf>

Norasingh (2009). “Towards a better understanding of the political economy of regional integration in the GMS: Stakeholder coordination and consultation for subregional trade facilitation in Lao PDR” <http://artnet.unescap.org/mtg/GMSpaper6.pdf>

Bin, Shuhui (2009). “Towards a better understanding of the political economy of regional integration in the GMS: Stakeholder coordination and consultation for subregional trade facilitation in China” <http://artnet.unescap.org/mtg/GMSpaper7.pdf>

Minh, Manh (2009). “Towards a better understanding of the political economy of regional integration in the GMS: Stakeholder coordination and consultation for subregional trade facilitation in Viet Nam”. <http://artnet.unescap.org/mtg/GMSpaper3.pdf>

Khieng (2009). “Towards a better understanding of the political economy of regional integration in the GMS: Stakeholder coordination and consultation for subregional trade

facilitation

in

Cambodia

<http://www.unescap.org/sites/default/files/AWP%20No.%2075.pdf>

UN-ESCAP resolution 48/11 on road and rail transport modes in relation to facilitation measures.

Accessed

on:

<http://www.iru-nelti.org/index/cms-filesystem-action?file=efforts/ESCAP%20resolution%2048-11%20ENG.pdf>

Chapter 7:

Castalia Strategic advisors (2009), “International Experience with Cross-border Power Trading”

Cayo (2011), “Power integration in Central America: From Hope to Mirage”. Included in Lopez, J. Humberto; Shankar, Rashmi (2011), “Getting the Most Out of Free Trade Agreements in Central America”. The World Bank. Available at: <https://openknowledge.worldbank.org/handle/10986/2322>

Del Barrio-Alvarez, Komatsuzaki, Horii (2014). “Regional Power Sector Integration: Critical Success Factors in the Central American Electricity Market. OIDA International Journal of Sustainable Development, 7 (12), p. 119-36. Accessed on: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2573105

Economic Consulting Associates (2010), “Central American Electric Interconnection System (SIEPAC), Transmission and Trading Case Study”

EPR (2014). “Antecedentes, estado actual y perspectivas del Sistema de Interconexión Eléctrica para los Países de América Central (SIPAC)”. Accessed on: http://www.eprsiepac.com/pdf/informe_general_linea_siepac_dic13.pdf

ESMAP (2010), “Regional Power Sector Integration: Lessons from Global Case Studies and a Literature Review”. The World Bank. Available at: http://www.esmap.org/sites/esmap.org/files/REISP-Lessons_BN004-10.pdf

IADB (). “La integración energética: el caso exitoso del Sistema de Interconexión Eléctrica para América Central (SIEPAC)”. Accessed on: http://www19.iadb.org/intal/interactivo/site/?p=792#_ftn1

Martin (2011), "Out of Challenge, Opportunity: Central America's Electric Sector & Key Issues and Recommendations for Enhanced Regional Electric Integration". Western Hemisphere Security Analysis Center. Paper 48. <http://digitalcommons.fiu.edu/whemsac/48>

Robinson (2009), “Regional Power Integration: Early Findings from an ESMAP Regional Power Study”. Economic Consulting Associates Limited

Ruiz Caro (2010). “Puntos de conflicto de la cooperación e integración energética en América Latina y el Caribe”. Serie Recursos naturales e infraestructuras N 148. Naciones Unidas, Cepal, División de Recursos Naturales e Infraestructura. Accessed on: <http://www19.iadb.org/intal/intalcdi/PE/2010/05595.pdf>

World Bank (2011), “Regional Power Integration: Structural and Regulatory Challenges.”

Yepez-Garcia, Johnson and Andres (2010), “Meeting the Electricity Supply/Demand Balance in Latin America and the Caribbean”. The World Bank

Chapter 8:

ADB (1993). “Economic Cooperation in the Greater Mekong Subregion, Proceedings of the Second Conference on Subregional Economic Cooperation Among Cambodia, Lao People’s Democratic Republic, Myanmar, Thailand, Viet Nam and Yunnan Province of the People’s Republic of China, 30-31 August 1993”.

ADB (2000). “Technical Assistance for Regional Indicative Master Plan on Power Interconnection in the Greater Mekong Subregion”. Accessed on: <http://www.adb.org/sites/default/files/project-document/71838/tar-reg34092.pdf>

ADB (2003). “Technical assistance for the study for a regional power trade operating agreement in the Greater Mekong Subregion”. Accessed on April 19th 2016 on: <http://www.adb.org/sites/default/files/project-document/70641/tar-reg-36035.pdf>

ADB (2008). “Energy Sector in the Greater Mekong Subregion”. <https://www.oecd.org/countries/mongolia/42222387.pdf>

ADB (2009). “Building a sustainable energy future”. Accessed on: <http://www.adb.org/sites/default/files/publication/29307/building-sustainable-energy-future.pdf>

ADB (2011). “The Greater Mekong Subregion Economic Cooperation Program Strategic Framework 2012 – 2022”. Mandaluyong City, Philippines; Asian Development Bank, 2011. Accessed on April 11, 2016 on: <http://www.adb.org/sites/default/files/institutional-document/33422/files/gms-ec-framework-2012-2022.pdf>

ADB (2012). “Greater Mekong Subregion Power Trade and Interconnection: 2 Decades of Cooperation”. Manila. September. Accessed on April 13th on: <http://adb.org/sites/default/files/pub/2012/gms-power-trade-interconnection.pdf>

ADB (2012). “Myanmar Energy Sector Initial Assessment”. Accessed on: <http://www.adb.org/sites/default/files/institutional-document/33719/files/myanmar-energy-sector-assessment.pdf>

**ADB (2013). “Assessment of the Greater Mekong Subregion energy sector development: Progress, prospects, and regional investment priorities”. Mandaluyong City, Philippines, Asian Development Bank, 2013. Accessed on: <http://www.adb.org/sites/default/files/institutional-document/33872/files/assessment-gms-subregion-energy-sector-development.pdf>

ADB (2014). “Energy Security in Asia: Prospects for Regional Cooperation”. Accessed on: <http://www.adb.org/publications/energy-security-asia-prospects-regional-cooperation>

ADB (2015), Power Interconnections in the Greater Mekong Subregion. Presentation by Chong Chi Nai at Sustainable Hydropower and Regional Cooperation in Myanmar, Nay Pyi Taw, 19-20 January 2015. Accessed on April 18th on: <http://www.ifc.org/wps/wcm/connect/82489e80471ba8f9afd5ef57143498e5/1.1.Chi+Nai+C.pdf?MOD=AJPERES>

ADB (2015). “Viet Nam Energy sector assessment, strategy, and road map”.
<http://www.adb.org/sites/default/files/institutional-document/178616/vie-energy-road-map.pdf>

APEC (2002). “The Greater Mekong Subregion (GMS) Interconnection Project”. Appendix 2 in APEC (2002), *Cross-border Power: A report addressing the barriers to the interconnection of power grids in APEC member economies 2002*. Accessed on April 23rd 2016 on: http://www.sari-energy.org/PageFiles/What_We_Do/activities/Cross_Border_Conference_Feb_2012/ResourcesLaw_APEC_Cross-Border_Power_Rpt_2002.pdf

CleanED (2016), “Vietnam revises its Power Development Plan: much greener”. Accessed on: <http://news.cleand-usth.com/post/2016/03/31/Vietnam-revises-its-Power-Development-Plan-much-greener>

Chong-Chi Nai (2015), “Power Interconnections in the Greater Mekong Subregion”. Sustainable Hydropower and Regional Cooperation in Myanmar, Nay Pyi Taw, 19-20 January 2015.

ECA (2010). “The Potential of Regional Power Sector Integration: Greater Mekong Subregion (GMS) Transmission & Trading Case Study”. Economic Consulting Associates Limited, January 2010. Accessed on April 13th on: http://www.esmap.org/sites/esmap.org/files/BN004-10_REISP-CD_Greater%20Mekong%20Subregion-Transmission%20&%20Trading.pdf

e7 (2005). “The Interconnection of Power Systems in the Greater Mekong Subregion”. Presentation at UNDESA Seminar on Electricity Interconnection, June 2005. Accessed on April 4, 2016 on: https://sustainabledevelopment.un.org/content/documents/3220interconnection_gms.pdf

Hasnie (2014). “GMS Regional Power Cooperation”. Sohail Hasnie Regional Energy Trade Workshop 8-9 September 2014 ADB, Manila. Accessed on April 14th, 2016 on: http://www.carecprogram.org/uploads/events/2014/Regional-Energy-Trade-Workshop/Presentation-Materials/009_104_209_Session2-3.pdf

IEA (2015). “Development Prospects of the ASEAN Power Sector

IEA (2015). Presentation at SIEW: [http://www.siew.sg/newsroom/slides/siew-2015/matthew-wittenstein-energy-analyst-\(power\)-international-energy-agency-\(iea\)](http://www.siew.sg/newsroom/slides/siew-2015/matthew-wittenstein-energy-analyst-(power)-international-energy-agency-(iea))

IEA (2016)

International Rivers Network (2004). “Sizing up the grid: How the Mekong Power Grid Compares against the Policies of the Asian Development Bank”. (Good overview and critic) <https://www.internationalrivers.org/files/attached-files/sizingupthegrid.pdf>

International Rivers (2010). “Nam Thein 2 Hydropower Project. The real cost of a controversial dam”. December 2010. Accessed on April 12th on: https://www.internationalrivers.org/files/attached-files/nt2_factsheet_dec10.pdf

The Inter-governmental agreement (2002) and the Policy Statement (1999)[Khmer and English]. Accessed on: Law 21_0605: http://www.bakc.org.kh/attachments/article/391/Law_021_0605_KH.pdf

- Jude (2013). “Greater Mekong Subregion (GMS) Market Coordination”. Accessed on April 13th on: http://www.iea.org/media/training/bangkoknov13/session_9a_adb_gms_regional_market.pdf
- Kutani (2012). “Study on effective investment of power infrastructure in East Asia through power grid interconnection”. ERIA Research Project Report 2012, No. 23, June 2013. Accessed on April 13th on: <http://www.eria.org/RPR-FY2012-23.pdf>
- Sida (2011). “Review of the Greater Mekong Sub-Region Regional Power Trade”. http://www.sida.se/contentassets/06d048321a0541d0967eebeeaf5a79f8/review-of-the-greater-mekong-sub-region-regional-power-trade_3238.pdf
- Ostojic (2014). “Scaling-up electricity Trade in the GMS Power Market”. Presentation at GMS Power Summit 2014, Hanoi, March 28, 2014. Accessed on April 19th, 2016 on: https://www.esmap.org/sites/esmap.org/files/ESMAP_SAR_EAP_Renewable_Energy_Resource_Mapping_GMS_Ostojic.pdf
- World Bank (1999). “Power Trade Strategy for the Greater Mekong Sub-Region”. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/1999/03/439619/power-trade-strategy-greater-mekong-sub-region>
- World Bank (2007). “Power Trade in Greater Mekong Subregion”. https://view.officeapps.live.com/op/view.aspx?src=http://siteresources.worldbank.org/INTTHAILAND/Resources/333200-1089943634036/475256-1151398858396/2007mar_gms_power-trade.ppt
- World Bank (2007). “Strategy Note on World Regional Support for the Greater Mekong Sub-region”. Accessed on: <http://siteresources.worldbank.org/INTTHAILAND/Resources/333200-1211794042917/gms-wb-strategy.pdf>
- Yamamura (). “Greater Mekong Sub-region Power Trade and Interconnection, Mongolia Grid Interconnection Perspectives”. Accessed on April 23rd 2016 on: http://www.unescap.org/sites/default/files/3.3Shigeru_Yamamura_1.pdf
- Yu (2006). “Regional cooperation and energy development in the Greater Mekong Sub-region”. Energy Policy Volume 31, Issue 12, September 2003, Pages 1221-1234. Accessed on: <http://www.sciencedirect.com/science/article/pii/S0301421502001829>
- Zhai (2010). “Energy Sector Integration for Low Carbon Development in Greater Mekong Sub-region: Towards a Model of South-South Cooperation”. At 21st World Energy Congress, Montreal 2010. Accessed on April 13th on: <http://www.indiaenergycongress.in/montreal/library/pdf/52.pdf>

Appendixes:

The following three appendixes include part of the source information utilized for the casual analysis of the three case studies. For each of them, meeting notes and/or transcriptions of the interviews conducted are included, similarly a summary of relevant news is provided for each project.

This interviews followed a semi-structured format. The author collected the information discussed during the interview, and, based on that, wrote the interview notes. Therefore they should not be considered as direct transcriptions as a whole. In order to keep the privacy, some of them have been anonymized. Nevertheless, the relevant information has been kept in order to understand the typology of stakeholder interviewee.

It is also needed to have in consideration that the **views provided by the interviewees do not represent the official views of each their respective organization.**

A. Appendix on GMS Economic Corridors

A.I. Interview notes on GMS-Economic Corridors

A.I.I. GMS-EC.I

Interviewee Masami Ishida

Affiliation IDE-JETRO, Director General, Development Studies Center

Date February 5th, 2016

1	<u>Centralized versus decentralized countries:</u>
2	There is a first difference between the countries:
3	<ul style="list-style-type: none"> • Viet Nam and Lao PDR are decentralized countries
4	<ul style="list-style-type: none"> • Thailand and Cambodia centralized
5	<ul style="list-style-type: none"> • Myanmar originally centralized although now is changing
6	In fact this has had influence in the relations between Thailand and Lao PDR for example
7	Although, at the beginning of the GMS they were not that different.
8	
9	<u>Key persons in the GMS:</u>
10	Two persons have been important:
11	<ul style="list-style-type: none"> • Mr. Morita who was the person that started the GMS program
12	<ul style="list-style-type: none"> • Mr. Ronald Butiong, who started working for the GMS as consultant and then joined the ADB as staff. Currently working on CAREC. He was referred as the “database of GMS”
13	
14	<u>Principles for GMS:</u>
15	At the beginning of the program, ADB visited all the countries.
16	<ul style="list-style-type: none"> • <u>Avoid ministers of foreign affairs:</u> in order to avoid discussions too focus on sovereignty, or that poor relations between countries. At the very beginning, the persons involved were the ministries of economy
17	<ul style="list-style-type: none"> • <u>“2+1” principle:</u> there is no need for the 6 countries to agree for a project
18	<ul style="list-style-type: none"> • <u>National projects</u> with subregional impact should also be considered
19	<ul style="list-style-type: none"> • <u>No written agreement or protocol:</u> to avoid discussion about details or “how things were written”. In fact, there is no need to sign written agreements and with record of proceedings would be sufficient.
20	<ul style="list-style-type: none"> • <u>No secretariat:</u> to avoid again conflicts because of excessive formalism. Neither ADB is secretariat, it only gives administrative support
21	<ul style="list-style-type: none"> • <u>Ownership belongs to countries:</u> in fact ADB’s approval is not needed for a project to be done. Countries propose project and then there is a call for donors. ADB can be donor, but it is not a requirement. For example Australia funded the First Friendship Bridge over the Mekong or Japan has also give a lot of cooperation to the region, not only though JICA but also through special funds allocated at the ADB (trust fund?)

22	
23	<u>Preliminary works to the GMS:</u>
24	At the time before the GMS, the ADB had problems to lend money to Viet Nam and Lao PDR
25	<ul style="list-style-type: none"> • <u>Viet Nam</u>: Until 1986 it was linked to agreement with the Soviet Union. Then, due to low oil prices, Soviet Union couldn't support anymore Viet Nam, so this started to look for other sources. There was a change in Viet Nam's foreign policy to normalize relations with ASEAN and China.
26	<ul style="list-style-type: none"> • <u>Cambodia</u>: Unexpectedly for Mr. Morita, Cambodia's Mr. Hun Sen well received the idea of regional cooperation. He considered that regional cooperation could help to reduce the conflicts with the neighbouring countries and therefore the cost of allocating military would be reduced.
27	<ul style="list-style-type: none"> ○ It is important to note, that at that time the Vietnamese troops had left Cambodia.
28	<ul style="list-style-type: none"> ○ This is an important reason why USA didn't oppose the ADB helping to Viet Nam
29	<ul style="list-style-type: none"> ○ ASEAN was also important at that time. At the end of the 80s, their economy was booming, so the next was to extend that to Indochina. Leaders from major countries like Indonesia, Malaysia and Thailand were looking for opportunities to invest (Thai PM: "from battlefield into market place")
30	<ul style="list-style-type: none"> • <u>Myanmar</u>: ADB couldn't support Myanmar after the 1988's affairs. All developed countries stopped assistance to Myanmar, and ADB had to follow that.
31	<ul style="list-style-type: none"> ○ Against this background, Mr. Morita considered that, although ADB cannot assist Myanmar, it was important to have also Myanmar in the GMS programme (even though the strong opposition from the USA)
32	<ul style="list-style-type: none"> ○ Other member countries didn't oppose the incorporation of Myanmar
33	<ul style="list-style-type: none"> ▪ Ministries of foreign affairs were not there -> all the members were positive
34	<ul style="list-style-type: none"> ▪ Mr. Morita and ADB afraid Myanmar and Thailand cannot get each other, but nothing happened.
35	
36	<u>Agreement on the roads and corridors</u>
37	<ul style="list-style-type: none"> • <u>Roadmap after the 1st ministerial conference</u>
38	<ul style="list-style-type: none"> ○ After the 1st ministerial meeting a large number of projects were proposed. They were simply listed, after consultations, prioritization was done later based in principles agreed in the second meeting
39	<ul style="list-style-type: none"> ○ There were many based on national interest, not regional benefit.
40	<ul style="list-style-type: none"> ○ But that was not rational. During the second meeting some principles were agreed to prioritize projects.
41	<ul style="list-style-type: none"> ▪ For example Phona Saly is not a regional project, and it has not been done.
42	
43	<ul style="list-style-type: none"> • <u>North-South Economic Corridor:</u>
44	<ul style="list-style-type: none"> ○ Opposition from Lao PDR because of

45	<ul style="list-style-type: none"> ▪ Low national merit of a road without crossing to Vientiane
46	<ul style="list-style-type: none"> ▪ Fears of possible military actions from Thailand using the Second Mekong bridge to be constructed
47	<ul style="list-style-type: none"> ○ ADB asked Japan, not Thailand, to support the Second Mekong Bridge to Thailand
48	<ul style="list-style-type: none"> ○ It took long time to convince Lao PDR. Mr. Morita directly tried to persuade Lao
49	<ul style="list-style-type: none"> ▪ Even after retired he worked for the coordination
50	<ul style="list-style-type: none"> ○ Chang Rai province influence:
51	<ul style="list-style-type: none"> ▪ There were interest in the elimination of the opium cultivation
52	<ul style="list-style-type: none"> ▪ But the province itself didn't influence that much central government
53	<ul style="list-style-type: none"> ▪ Organizations like United Nations Office on Drugs and Crime (UNDOC)
54	<ul style="list-style-type: none"> ▪ The king himself, actually his mother, directly supported free-drug area.
55	<ul style="list-style-type: none"> • Doi Chaang coffee
56	<ul style="list-style-type: none"> ○ Link through Myanmar
57	<ul style="list-style-type: none"> ▪ There were issues because of military group -> East Shan Army (Shan State Army)
58	<ul style="list-style-type: none"> • At beginning crossing through Myanmar was not possible because of that
59	<ul style="list-style-type: none"> ▪ That link was actually built by "Asia World", which is blacklisted company by the USA
60	
61	<ul style="list-style-type: none"> • <u>East-West Economic Corridor (EWEC):</u>
62	<ul style="list-style-type: none"> ○ There were three road candidates: R12, R8 and R9
63	<ul style="list-style-type: none"> ○ At the beginning of the 1990s, because of Thai politics (strong Senate), the decision was the R9.
64	
65	<ul style="list-style-type: none"> • <u>Southern Economic Corridor (SEC):</u>
66	<ul style="list-style-type: none"> ○ At the beginning this was the one that created more interest because the economic benefits are larger.
67	<ul style="list-style-type: none"> ○ It's the one with less issues for the agreement on the route
68	<ul style="list-style-type: none"> ▪ It connects three metropolitan areas: Ho Chi Minh, Phnom Penh and Bangkok
69	<ul style="list-style-type: none"> ▪ It is a flat area
70	
71	<ul style="list-style-type: none"> • <u>Economic corridors:</u>
72	<ul style="list-style-type: none"> ○ It was created by ADB
73	<ul style="list-style-type: none"> ○ In 1998 all the countries liked the concept
74	<ul style="list-style-type: none"> ○ It is important the belt-shape to represent that the effect can be broguth to other sectors
75	<ul style="list-style-type: none"> ▪ To industries, trade and also people's living standars by employment

76	
77	CBTA:
78	<ul style="list-style-type: none"> • Consultants proposed the agreement to Thailand, Lao PDR and Viet Nam
79	<ul style="list-style-type: none"> ○ The name was basic framework (check in the book, p. 57)
80	<ul style="list-style-type: none"> ○ Ministries of transport was in charge of the negotiation
81	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ National Trade Facilitation Committees (NTFC) were created to coordinate with other ministries involved like finance, police & military, agriculture
82	<ul style="list-style-type: none"> ○ CBTA was negotiated at the Subregional Transport Forum (STF)
83	<ul style="list-style-type: none"> • Ratification:
84	<ul style="list-style-type: none"> ○ Annex 4 has been the more difficult to ratify
85	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ Thailand and Myanmar agreed last year
86	<ul style="list-style-type: none"> • Initial Implementation of the CBTA program (IICBTA)
87	<ul style="list-style-type: none"> ○ Lao Bao (Vietnam) – Dansavanh (Lao PDR)
88	<ul style="list-style-type: none"> • Triangle Areas:
89	<ul style="list-style-type: none"> ○ They are schemes of cooperation between provincial governments
90	<ul style="list-style-type: none"> ○ They can influence central governments

A.I.II. GMS-EC.II

Interviewee Noritada Morita
 Affiliation Former ADB official
 Date March 30th, 2016
 Place Bangkok, Thailand

This interview also corresponds to GMS-P.I

1	<u>Idea of technical level cooperation:</u>
2	The reason why in the GMS I refuse that is represented by the ministries of foreign affairs is because the nature of foreign affairs. They are not guided to put priority for the international cooperation. Collectively not.
3	So when I started the sub-regional cooperation, GMS, I asked all the leaders “please do not put minister of foreign affairs as the coordination office, please remove them from the scheme”.
4	It was very drastic. Any of the international affair or foreign affairs minister, any diplomatic aspects people just simply think without ta
5	My view is different. If ministry of foreign affairs make the decision without looking at the benefit of the neighbor. The man like the president of Uruguay will never come out in that country. That is the point
6	Now your be your benefit how its fits on my benefit, a bit of engineering is necessarily for what we call Broad minding approach is needed.
7	And foreign affairs people are not allowed initially to have such mind. They can exercise the flexibility only when they find that the things will not move. If they are flexible, they are at the end of the road. And then they look at what my neighbor needs, but that is too late. In that particular process of competition, you lose so many things and you can reach a point where there is not return.
8	This was one of my philosophical principles, because this statement alone does not stand by itself. It works only in the foreign situation.
9	When I started this region was in the middle of the Indochina war. My concern was when the Indochina sign the peace contract (peace accord or whatever), can they work together or not?
10	My philosophy is that signing the paper for the peace is easy, but signing the peace of paper does not guarantee any peace at all. Next day you can bring out your gun and I can bring out my bread and we can start shooting each other. What I had to think was what assurance can we give among all these countries that are enemy today, tomorrow can they work together? Can they sleep together in the same bed?

11	No, because each insist on their own benefit of blaming each other about what happened in the war, not necessarily accepting others' reasons and problems that other has to face because of me (it is happening between Japan and Korea).
12	Now, in order to mitigate or neutralize such an behavior of the man that intend to insist that you are right and he is wrong we have to put the people into the peaceful stage of the mid. Means, in this particularly case, I have the following history that you may want to know:
13	
14	<u>Origins of the idea for the GMS:</u>
15	I held very uncomfortable in Laos. Laos is the other side of the Mekong River, just over there. I went there from Bangkok for an agreement. I went by plane, only one per day. And I stayed in the other side of the Mekong River, in the Laotian side.
16	In the meeting, when the meeting finished when I came back to my hotel, I found that machine guns from the other side was hitting the next room of my hotel. Three artilleries went above over the hotel, fortunately. That artillery missed the hotel, but blasted behind the hotel. That was when I was the manager of this region. I was stretching my head, what area I have under my responsibility? How can I manage it?
17	Then, that meeting I attended was of the Mekong River Commission. Instead of people talking about the agenda, both countries started criticizing the other size. Thai said oh yes, we shot Laotians because it was Laotians first who came to our size, so we just responded. Laotians said, no it is not true that we attacked, you attacked us first.
18	The Thai delegation was there and all the international community members was there, and I was there representing the ADB. So, the entire meeting didn't function blaming each other. And Western side was always siding to Thai side.
19	Now, meeting was miserable and Western community was looking at the Laotians like they were the guilty of this incident. Nobody knows which side.
20	When the meeting was over we went all to the airport and Laos, the hosting country and the chairman: "Nobody from Western side spoke to me because Thai delegation was there, they don't want to be seen by Thai side that they were talking to Laos side".
21	Laotian side they have Laos and Viet Nam. Cambodia was unable to send their delegation because they were fighting with Pol Pot. So Laotians were in a way isolated.
22	After the airport, this chairman from Laos' side: Mr. Morita, you have seen, Laos is nobody is nobody in this world, everybody is siding to Western side, can you see how poor we are?
23	We don't have any sea, we have to rely on seaport from Thailand, who are not friendly at all. At that time they are exchanging the fire almost every day at the Mekong river.
24	And Thai they were also under attention, because once they make a mistake, collectively they felt that soviet Russian together with its partners countries across the Mekong river. So I can also sympathize with the Thai side.
25	<u>The story of the Xeset hydropower dam</u>
26	But anyway, he said we are isolated, nobody is helping us, maybe it's only ADB who can understand us.
27	Now, we are international, Thailand is our shareholder, but your country is also our shareholder. For us, as long as you are our member country, whether than country A or country B is correct is not my issues. My issues is how to create the peace. So whatever I can do, please let me know.

28	He said, I like to have ADB financing for us to construct a hydro power project. I asked, what is the size? He said 1.5MW. Wow, so minor. 1.5 Mw I think if you have 1.5 MW is just good enough to give the lights for the Shangri-La hotel. They said after Laos revolution, 30-40 years, we are not heard by anybody.
29	Even small hydropower, this one we need it. So that was the start point of GMS.
30	I clearly remembered about that 40 years ago. He was almost crying I had to say yes or not. So I said sincerely, 1.5 Mw is too small. Your request is 1.5 MW is too small, it cannot produce economy.
31	Unless you proof that it is financeable, it is very difficult for ADB to use the money that is donated by all the donors.
32	To make the solution, answering to his question, what should we do then? Only way is you make this project at least 40-50 MW, then you might find some economy, Then he said: No Mr. Morita we don't use such a big power station because we don't have any industry to use the electricity so 1.5 is enough. So, how can we make this 40 50 MW when we don't have no money?
33	My question was very sympathetically frank, you sell the power to Thailand. His face was at least today we had a fight with Thailand, how can we sell. I know it, but if you want to make the project viable, you have to find the market. Whether this side of the river of the other it doesn't matter, market is market. I was stupidly simple.
34	Then I went back to Manila, my headquarters. I spoke to my boss, vice-president. He was laughing, he is an Indian. Do you know out board is reading English newspaper every day, they are not stupid, they know what is happening between two countries across the river. Every day they are shooting each other, how can you go to the board asking for the approval to expend the money when two countries are fighting. He was right, I was stupid, I knew it.
35	But against that background, whether the country is smaller or big, they are our member countries, east or west doesn't matter, they are member countries. So, we need to support.
36	I said that according to my quick conversation with Thai government on the way back. They Thai government I don't know but their electric authority: as long is power, whether it has yellow colour or red colour we buy it. Of course he know the problem involved. I feel pity of the other guys of the river, so small country.
37	I talked with my boss that EGAT was sying, they can buy it. My boss said you don't understand the situation, what I'm saying is that I need a written paper from Thai side that they will buy. You produce the official paper from Thai side that they will buy and then I can go to the board. But I cannot guarantee you that the board will say yes, because they are every day fighting.
38	But Asians sometimes they can be illogical. Indians are very logical. What he said is true. When I was almost going out of his room, he said Mr. Morita come back. Are you sure that is what Thai electric authority said? Yes. Whatver you say I will try to get the written form from Thai government. I knew that I was going to be kick out of ADB if I failed. At least my vice president was watching me, because eit was my first year in the country department. Iwas in agriculture side. This was my first difficult case. Vice president said, good luck.
39	I started talking to Laotians. We had almost 0 chances if you really convince Thai side. Thai side was seeing colour of electricity doesn't matter, only price, how much do you need? How much do you like to charge?

40	After that we started doing all the calculations. I mobilized all my team and started the calculations.
41	What Laotian side proposed I move back and for, 6 months I think to find the price that is attractive enough for Thailand to buy. The reason I was doing that, in a very hopeless situation was because before Laotian went into the eastern group. Late 1960s. Before Laotian revolution, western community have created SEATO (Southeast Asia Treaty Organization) just to settle down political tension from eastern side, they have given Laotians one hydropower project that is called Nan Theun 1. But that was before revolution, so it is really a different country. New Laos I was dealing with is a new Laos.
42	The Laotian was saying that during our difficult times with Thailand we never cut off the power, we always sent the power. And Thai side they never get delayed in paying us. End of the month, in our New York account, the money was already there. That means between the two electric companies they have some trust. So, as long as this transmission line continue being active, I somehow feeling that we can re-activate. So many months back and for talking about the price.
43	First thing I need was feasibility studies, and money for that. The first I need was a written form from Thai. That's not easy. Our salary is always performance based. If you don't perform your salary might go down. My Thai friend, gave a recommendation. Mr. Morita your name is always appearing in this newspaper.
44	Mr. Morita no more you negotiate the price. It is beyond your capacity. I promise in a few months of time, our prime minister might be in Vientiane and your issue will be in his priority agenda. It is only prime minister who can decide the price. If you accept the price, whatever we agree I can do that, I can ask the prime minister to negotiate. I asked, do I have to follow the price two of you agree? Economical or not? If not economical I cannot agree. He said, shut up, that's not important, important for us is to agree something for you, for ADB and for Asia. I said ok. Thank you, I will never try to intervene in the negotiation and I will try to persuade headquarters whatever the figure.
45	
46	<i>Moving forward after the Xeset hydropower</i>
47	Somehow things went ok. Xeset hydropower. Countries shooting each other, make a common hydropower dam. I felt at that time two things:
48	(i) Unless we grab this opportunity, the Mekong countries will continue to fall apart
49	(ii) Unless we do something similar to this, the countries which shooting until last night, can really become friendly tomorrow morning? Even if they sign a paper
50	So I thought we have to do something
51	That was the first motivation that I started thinking about the present form of GMS.
52	I knew under the situation these two countries into one. And eventually all the countries of the Mekong that are divided into East and West is beyond to what I'm required to do.
53	So I thought it was needed to create or provide a forum or platform where you can peacefully sit down and peacefully talk, and have a coffee together and smoke together
54	This is how I was motivated. This is how to maintain the peace, once the peace comes to this region.
55	That is all the purpose for ADB in Asia.
56	

57	If I do it in a very transparent way, simple being transparent would make the things fall done because I would have been a target of the both sides. I did it very quietly, and by that time I said China please come if the platform is ready.
58	Thanks to the cooperation of my close friends I was able to do certain things. Friends from all the countries, although they are not officially friends, but through the ADB we are friends. This is what we called honest broker, goodwill broker. We are coordinator. Whether ADB can be trusted or not.
59	
60	Why we included China that is out of issue. It was my invitation, not the request from China. The condition was that it should be Yunnan province. Yunnan province is large enough just to counterbalance all entire Mekong region population-wise. Moreover 67% of the water is through the Yunnan province. Large of Yunnan province used to be Tibet. Tibet is Mekong River.
61	
62	We are trying to achieve the regional cooperation as a possible means to lead this region stability, political stability despite of East and West.
63	
64	Now Thailand is the center of what is overseas investment today, prosperous. But during the Indochina war nobody paid any attention other than American army. You can see very prosperous Thailand. I think reason number (i) is Majesty and number (ii) regional stability.
65	No more to China one, although people might not recall
66	Thailand has proved that peace and leadership are important
67	I was waiting among all the Indochina countries that Cambodia which is, still fighting to Pol Pot and Hun Sen. I was waiting until the peace come in Cambodia I present the entire project to the ADB as an official proposal to the board.
68	Once the Cambodia peace was signed (that was 1991, October 23) Peace Accord was signed in Paris. Among the four parties – or four governments: Pol Pot group, Hun Sen, Song San, Prince Sijamuk
69	Incidentally Prince Sijamuk sold itself to China. He was captured of the Pol Pot group and he was forced to agreed to stay in Beijing.
70	Son San group was another group
71	Hun Sen group. Mr. Hun Sen used to be under Pol Pot but he didn't like Pol Pot. When he was said by Pol Pot to invade Viet Nam. He thought he was crazy, even Americans cannot defeat Viet Nam, how can I do that. So Hun Sen refused to use his army. Rather he crossed the border and make cese fire agreement with Viet Nam and he came back with the Viet Nam soldiers. What people didn't like it, but he was at that time the strongest man.
72	I had to deal with all these groups before I finalize GMS. I said everybody, all other countries have agreed, we are now waiting for Cambodia to get your settle peace, I am now here to ask you if you are interested in joining the GMS. That was my first visit to Cambodia after the peace accord in Paris.
73	Among all the four representatives of the different parties. One thing that you may like to know is that the Paris Peace Accord which was agreed by all four parties and international community, for the first three years the country would be under the supervision of the OCDCD, representative of the United Nations. After that there will be national elections.

	And chairman of that four group committee was prince Sinajuk and other three are members.
74	For the first three years I have to see all the group. So anyway, the first time I met with them only one topic in the agenda: would you like to join the GMS? Other countries have already agreed, now we are waiting for you to come. Congratulations, you become now peace and we welcome you to join if you like.
75	Everyone said yes, that is good idea. Even Pol Pot group said yes. The last man was Hun Sen, since then my relation with him was ok. He said oh, what you are saying are you proposing connecting the road and transmission line connected and communication aspects also interconnected and integrated?
76	Yes, that is what we are proposed
77	He said, ohh, this is very good.
78	The reason he thought it was very good. He said this is good if I can be really friendly. If six countries worked together I don't have to expend any budget on my defense, I can reduce the number of soldiers, I can move my soldiers from the border and I can reduce money from the budget, and that money I can spend on the poor people and on education of the young generation, they have suffered during the war time. So if peace comes, money is there for me to do this.
79	Very impressive, young man, military man, no education but very clever. Other people were college graduate, they didn't touch about that aspect. They are so tired about. But Hun Sen beyond that he mentioned this.
80	Now Hun Sen is not popular among Western community. Maybe the reason is he is still close to Viet Nam what Americans and French dislike.
81	This can be one of the reasons for value of the man. If peace comes I can save money and spend on the good of people.
82	I thought this gentleman can become a good leader of the country.
83	So at this moment GMS was ready
84	
85	<i>First conference in Manila:</i>
86	The first meeting in Manila, in 1992. It was not a big event at all. People didn't understand what was naturally. To me it was a dream, countries shooting each other now coming to the Philippines which is outside the Indochina, in a way neutral.
87	They didn't talk each other in the meeting, they cannot speak English in a way. Only few people. So first day of the meeting was very stiff.
88	The substance aspect after formality was discussed in the following manner. Because I didn't have time to discuss in the bank. Some of the guidelines which I presented in the meeting I made conclusion only on the day I attend the meeting. Only in 5 minutes walk in the ADB building.
89	(i) Greater Subregion Mekong, we have to give a name later on. If you pick up name first, there will be disagreement
90	
91	(ii) Can we make this group without any charter? No agreement? Just by trust? I think this is first and last international group without a charter. People just don't notice it, but it doesn't have it. Because I know, it's nicer to have but if you propose something among countries they are shooting each other until yesterday, nothing will be agreed. If country A said chapter 1 ok, country B

	will say no. Going back to parliament, to cabinet and 1 year 2 years 3 years disappear. So I said we have to skip this very critical and unnecessary thing to avoid any conflict. So when the Indochina war was ended, I didn't think I need to introduce new war that is battle. Because I knew they are all Buddhist countries and I think they are tired of fighting 30 years (they all have something in common, in this case religion / dimension, culture is very similar (Iberoamerica is culture through language, this is culture through religion).
92	Another reason is once you start drafting charter you have to deal with foreign affairs. Department of treaty or treaty department, ministry of foreign affairs. They all have their own approach and their own language. They have to quote all the previous agreement, previous battles and so on. I don't want to go back to all these previous things, which is useless.
93	ADB colleagues thought, Morita is crazy. I accept. But there is no other way, and this is still wisest, I still believe.
94	
95	The participants of each country were selected by each country. I only said please do not send minister of foreign affairs and the mission must be led by the office of prime minister because once the prime minister understand it, no argument latter on.
96	And each meeting has to be presented, led by the team of office of prime minister. Because if you try to make a road in this way, the minister of construction says one thing, then the minister of environment says different, ministry of industry says different, ministry of agriculture.... . So each country cannot decide where the road has to go through.
97	
98	ADB is not going to play a big role. You are the owners of the project. You decide everything. We are going to serve you as Secretariat.
99	No headquarters. This is very fantastic. Because once one country decide where the headquarters, then they start fighting. Then no headquarters, ADB will give you support as a secretariat.
100	Always ownership. Since then, word of ownership in the community started to grow. I have seen other donors' project, the donor always try to have the ownership, this is our project, this is Japan. That's wrong, that is their project. So don't call it ADB project, it is Mekong project.
101	Third reason is once you have a charter, always become a question of interpretation. And always when they have a problem of interpretation they look at my face, ADB what is your judgement, we follow your judgement.
102	That means ADB becomes important. Ownership comes to ADB decision. But ADB is not owner, ADB is not going to decide, don't look at us, you look at yourself. If we have a charter, always interpretation is key, wrong or right. Whether I like or not, as ADB I have to sit at the center. Incidentally I was so lucky, the head of our regional department.
103	(iii) Morita san if you say charter is needed, we are very happy to draft. I said, no thanks Peter, no need it. Why? Ok, no problem, agree. (1:06:00). He said, yes, I understand, no charter. So legal department has no role to play
104	(iv) Once court and legal department play a role, you have to go.
105	(v) Very lucky, we are very close friend

106	(vi) The next rule I introduce was a very sensitive issue. I don't want to have a vote. You may think it is very modern thing. But once you start voting you can have 51% versus 49%. And difference of 1 really decide everything. That is not our philosophy. Our philosophy should be that you really want to be democratic, not by country or number. But really democracy I believe is: if you really want to join us, you join, if you don't like to join, you don't join, if you want to come back, welcome. I said as long as two countries agree to do that, whether you have a third or fourth country I said, it doesn't matter. Country A and B please start, we support you. If country C and D really like to join later, please welcome them. If you would like to drop in between, ok, we don't count a vote.
107	(vii) Another thing I didn't say but in practice. In the meetings we don't keep minutes, once you keep the minutes, negotiation start. I said, if you don't mind, we make chairman statement. And chairman statement will incorporate all opinions. So you kindly leave it on our neutral position. And chairman statement is one, which they take as pipeline of the meeting. Because once you take the minutes, each delegation needs to take it back to their capital. And report to each cabinet. Then cabinet will reject, you will go back to the square one, nothing. So, all these things people agree, no complain. That's how we started.
108	(viii) In special guideline that I may was, this was incidental. I remember Asian highway which was push by United Nations group, no single inch was accomplished. Even now, what they call Asian highway is actually ADB project. But original Asian highway was never done, because they are applying international standard in their technology, this is you area. I said, if you are really to decide about the road network, which is very important. Everybody lets come together to one place and compare your map and my map and see at to the border what are the missing links. And connect these missing links, once the road is upgrade or not, if the missing link is due to absence of bridge, whether the bridge is wood or concrete or even bamboo, let's accept it. Once you start designing, new road takes the time. And let's no create new route. Initially let's connect existing road by filling the missing links and ask your village people which road should connect. Whether is straight line or not, it doesn't matter. If you want to make it straight line, you make latter on. When you make the tunnel, you make later on. If you want concrete bridge you make when you country become rich. We are just from the Indochina war. No money. So let's respect whatever you had in your hands and connect. This is very important because if you are going to provide a new line, each country will say we like this link, this corridor. Just lets them decide which line, which 20 m across the border they want. That is enough.
109	These are major parts of agreement. And we decided. Once these principle are ok we go into long term development plan meeting. The second meeting, we approved for the long term plan consisting of six sectors.
111 0	Some of which became useless, some of them very useful. I skip this now. Initially I didn't include agriculture, very questionable third party. But I have two reasons:

111 1	(i) Sub-regional cooperation basically should have the pillars consisting of the sector which require the other side also active. Unless two persons carry together, things don't move at regional cooperation. If one person can carry all the things, that is no need for regional cooperation. Agriculture is good example.
112	Your side of the border is forest, my side I want to cultivate it. I can do it by myself as long as I have water.
113	(ii) All the countries are communist or socialist, that means ownership of the land is not private sector. All the western side, they are very curious about what is regional cooperation. How this communist countries say, what is their policy for. We have change we have to teach them that land reform is needed and etc. Once you start land reform it takes 10, 20 years. Some countries cannot do land reform. So once you go to the board, they will give you the money, approve it with the condition of land reform has to be done. But completely stop the progress. Unless you do the homework, we cannot do the second round. That is not the desire.
114	(iii) Number 2, all the communist countries in the agriculture sector has the subsidy. And some countries still do like America or Japan. But developed countries they accept their own subsidies, but they don't accept yours. A lot of problems of the board that I have to negotiate with all the countries to remove all the subsidies. Then things get stuck. So I decide not to include agriculture.
115	(iv) This is not positive reason but self-defense reason. So that we don't have to deal with land reform issue which is never be acceptable. I use to call to the board, Hong Kong, Singapore they are successful but all the land belong to the government. And until many years ago, the Netherlands the land use to belong to the king. So I have to use the reasons. Nothing wrong to them to have their own system. So let's alone to them to have their own system until they established the economy. So it was later on that agriculture sector was added. Other than that, I'm not going to go to any sector. You may look at ADB literature.
116	
117	<i>Exceptional things: Civil aviation and tourism sector</i>
118	Civil aviation, is part of transport sector, and tourism sector went so well after two to three years counting after the completion of the master plan they have done all the homework, very quickly. But civil aviation group have made a very substantial contribution. Earlier, only capitals are connected. Connection between capital and secondary cities of the other side, and vice versa, or connections among the secondary or tertiary non existing, like Kunming. Nowadays every day you have all together 20 flights between Bangkok and so on. Less or more, more or less. This is the first product of GMS. There are so many, hundreds. And tourism. Naturally is motivated by private sector.
119	The other sectors you may like to use the rest of the time after wash your hands and take some rest. We can go to question if I can answer, if I cannot honestly I say I don't know how to answer.
120	Once my thinking was valid, yes it was valid. Once it was not valid, I tell you it was not valid. Useful, useless it depends.

121	
122	<i>View of countries at the incubation period</i>
123	GMS is becoming next year 25 years old and I was responsible from the official 1992 until my retirement in 1997. Unofficially this incubation starting 1983 . 10 years of preparation.
124	Two to three things that made my job easier: In a way, all the countries are so centrally planned, except for Thailand. That means, whatever the system they have, good or bad, they blindly follow. If the communist party says this is our guideline, they all follow. This tended to be strong point.
125	And another aspect, second point. They have been in closed economy, closed technology, and they didn't have any window to see through what is going on technology on the Western side. So whenever they met Thai group, which is only one from West. Thai is explaining this really fantastic and fresh, they all say: "this is so good", "ok, we agree". Thai leadership, with the knowledge the other five didn't have it.
126	In this case, other countries happened to be very slow. Thailand is not necessarily very fast, but ordinary. Whoever who have the knowledge
127	So when you choose the leader, you don't need to choose the leader. They naturally understand which country, who is going to be more updated knowledge.
128	So between the countries these are two aspects from communist or socialist side.
129	[Not for writing] From Thai side: Thailand was working against the Indochina. They were fighting against its neighbours. In a sense they were friends. When they were put together, they felt a bit guilty. So I think, they understand what they have done, so they didn't bound the table. They tried to understand the neighbours, how they have suffered from this war.
130	No country had a very sufficient infrastructure, other than Thailand. Thailand road standard is American. Again everybody was looking to Thai's development on roads and ports. Admiring eyes.
131	Thai provided in a way the modern standard. So, no difficult coordination is necessary. Technically all follow Thailand.
132	Only thing you may want to know, some countries go for inches, kilometres, dimension. Technical dimension.
133	I never tried to introduce that dimension unilaterally. That is something nations have to decide by themselves. Ownership to decide. If they like, it is ok, if they don't like it is ok.
134	This has worked very well, because this has not become a thing to fight. The reason to talk, can you tell me how you measure?
135	So, technically the standard I think good but they have the American standard here, and American standard is not different to British standard from Asian point of view.
136	These technical aspects. I have not been invited to United Nations concept of the Asian Highway except for two times. Where all this people. We are really looking towards.
137	
138	<i>GMS versus UN-ESCAP</i>
139	While ADB GMS was going on. UN-ESCAP proposal for Asian highway were discussed. They could compare different approach.
140	Ours was very modest, if it is one lane...ok, you make bigger when you become rich. If you need tunnel, you make tunnel later, but you first connect. Connection is first . That is important

141	How fast it is, is secondary. But United Nations always modern technology and strict. Everything has to be done according to what they want. Connect Singapore to Beijing and Europe.
142	But we are saying apply and use existing road, if you need to expand two meters...ok. But don't tell us full length or that kind of thing
143	That is relatively easy to adjust with Thai as leadership. If you go to Thailand, they have very nice highway. But if you go to the villages, they are also similar. That give them very comfortable feeling.
144	In Malaysia, even in the village, it's very nice.
145	But anyway, in a way, to me, question of the technical standard was achieved in a way by the basically before the WWII through British.
146	Even if you think that Thailand has not been under any colonial power, that doesn't mean they have not absorb western standards. They are very well educated. Similar or above the neighbours who have been educated by the British.
147	During 30 years of Indochina War, they have going to old style.
148	So, I think this type of experience may apply to African or Latin American countries.
149	But if you go beyond to what Thailand did, I think we failed. Maximum Thailand. Maximum that what they can digest, don't go beyond. The best evidence is as I said, try to connect the two borders by extending 10 meters from each side. Very simple. Digestible. So things...started.
150	
151	<i>Initial stage: getting national stakeholders' support</i>
152	The first meeting up to 2003, no heads of state meeting. Mostly deputy prime ministers or equivalent.
153	The status of the prime minister depending on the country, but the fact, that prime minister sent their deputies or very senior cabinet member, there are truly authorized.
154	Coming to the specific, maybe if you put zero, that is starting point, how to convince the country? Why you need the port? Why you need the road? And that is why you have to participate in GMS? This is the most difficult task for me to do, because it takes before you create a system.
155	Why do they need to be part of the system? Which, for the communist countries something uncomfortable, they like to have their own system, but they don't like to observe other system. So this area, I just give you example. If you look at the map, Laos is in the center. Fortunately or unfortunately.
156	To me is fortunately. Because if first hydropower project, Xeset. If it was not in Laos, and if it was in some other countries, Laos could not understood that they can do it, despite of the international situation.
157	You are right that Xeset hydro-project was a frontrunner, a good pilot. In fact, once Xeset hydropower started, I was able to start discussion, look, even Thai and Lao was shooting to each other, they are now doing joint project. So you are 100% right
158	To have a good example, positively front-runner, a pilot. You can get any of the
159	Secondly, all the countries had a suspicion over the neighbouring countries, they had a border issue. They had a trade issue. Throw of the labors, legal, illegal. I think more or less, you have to verify that issue.

160	If two to three countries agree, other countries fear to be left behind unless they join. So, which country you start talking is very important, and which country you select as the number two, you need a bit of analysis.
161	Now, in case of Laos, because of hydropower was successful, the next is how I convince the other countries. That means, not the government, the political bureau above that. That means I had 100% bureaucrats including ministers. That took time.
162	I thought it Laotians couldn't join, this GMS would not be there because is center.
163	Laotians always complaining two aspects: we are landlocked country, and therefore we are very poor, no power, no single country power. That was their complain.
164	Behind the scenery, always Morita-san, how we can do it? Very small, No power, no political influence. I started to put myself into Laotian shoes.
165	True, in case of the port, they have to rely on Thailand. So Thais, according to UN resolution, you are neighbouring to landlocked country, you have to keep at least one port open to them. Bangkok is the closes, and that is the only they can go. Road number 9.
166	They always complain. We have to plan everything to Bangkok. Trucking company is Thai government that only allow Thai company. And they inspect everything. So they know very well where we are, and what we are carrying. Everything is under their military observation.
167	That's tragedy that they are land-locked as Nepal
168	Answering to their questions, "oh, lucky, you are landlocked". This is always my remark. Very lucky, I think during two years I continued to say. Look at Switzerland, they are lucky. So small country like you, no natural resources. But because they are at the center of Europe and by providing the road to the other countries to come across, right to the left and center. They are always Switzerland. If Switzerland cut one of the roads, all the other big European countries, beg, please, what is your condition?
169	Then, you have
170	No matters small, you get the power
171	How we can cross our road, we don't have power. You can say, sorry, we have to go maintenance works for two months. So we close this road. Then they will tell you, what do you need? All the help will come. Then you say, yeas, we accept. That is the power
172	If Portugal and Spain were locked in the center, they could have been stronger in Europe. They have many ports, many coast lines. Switzerland has no port.
173	I tell you how you can exercise your power. Back and ford, back and ford.
174	Finally, my counterpart in Laos was able to convince the politburo
175	When they say, they will join. I really. Politically I think he was on tense situation. Are you coordinating with Thailand? Are you...? But he was very firm
176	I really like to explain to our government, that although you may don't know Mr. Kanpuy. Thanks to his efforts convincing the politburo.
177	The point is before you come to the stage 1. Point 0, how to convince.
178	In case of Viet Nam. Viet Nam was still under the international sanctions. They have lifted the bar. Only 1994. But nevertheless, I said. We will invite you. And they have so much pressure. Why Morita is keen to bring Viet Nam. We are still not welcoming them to the international community.
179	My answer was always, apart from the political issue. Only one factor, Viet Nam is our member country. That was my concern, my answer.

180	In case of Viet Nam, we are a bit complicated. While they are under the sanctions. Now country helps, because no external aid was allowed. So, the benefit however was that at least they could appear that they are part of the international community through the GMS. That was the strong point from me to convince them.
181	1990, when very difficult to go to the country. We started sending the missions to prepare for the projects. Because my concern was when the economic sanctions are lifted, if no project was not prepared, even if America would like to help, Viet Nam no project there.
182	So preparation of the project early was extremely important message for Viet Nam. For them to join.
183	And Cambodia, already Mr. Hun Sen position very clear. If we stands I don't have to spend any government money for soldiers. I can spend for more social aspects.
184	Now, in case of Thailand, no need to mention. They really like to become the center for the overseas investment.
185	I didn't need to discuss with them
186	Although I had lot of preparatory with Thailand because they use our common language. Market language
187	Myanmar, was really to me. I respect Myanmar, very strong mind. Because of the military group and Su Chi issue. Particularly military group. Su chi was not there before. I knew we could not give any money, but Myanmar was not the member of ASEAN. So unless we invite Myanmar, they would really left isolated. So this is opportunity that at least Western community, but GMS will welcome you. So you can be member group. And the water, Mekong comes from, 30% approx. comes from rainfall from Himalaya and similar from Myanmar, and the rest from Laotian mountains. So without Myanmar, this project doesn't mean anything
188	Myanmar was relatively easy.
189	This process, was very important. And each country has each own project. So going bilateral was important to understand before sub-regional cooperation
190	
191	<u>Next stage:</u>
192	This is when we formulated the group. There was already the Xeset hydropower was under preparation.
193	And luckily or unluckily, Thailand and Laos was still not in good term, almost fighting. Much more severe than India and Pakistan. Something like Pakistan and Afghanistan.
194	I think today all are looking to Xeset project.
195	Yes, basically although, economic corridors are modern. When they started looking at them, they were looking to where they can connect and where are the missing links.
196	I think, that process of internal discussion, domestic discussion with the communes in the communist counties, communes were there. They present interest like Cambodia and Thailand they were fighting about border. UNESCO gave the world heritage status to the Temple of Preah Vihear (temple of God). That is located almost at the border. And they started shooting each other, to claim position.
197	This was after GMS started. When Mr Thaksin issue came out. The government wanted to divert attention of people. Red and Yellow color collision.
198	There are so many incidences
199	Similar aspect, Myanmar and Thailand border issue

201	The point is, in fact, how to avoid these negotiations were to pass through was one of my headaches.
202	You touch upon it
203	
204	<u>Route number 9 (EWEC):</u>
205	Ones is Route 9 (EWEC). Da Nang – Savannakhet. And Thai side is Mukdahan. That was to me the most difficult routing. It took almost three years, because against military groups are there.
206	In Thai side, Mukdahan, near to the river, there was cantonment. Military base. Military camp.
207	That was the legacy of the Indochina war.
208	And if you have ever come from Da Nang to Laos and connect to the existing road. Savannakhet – Mukadahan was very beneficial, but the Laotian side didn't agree. Because the Thai side you have military base, and before in Vientiane we get any report, Thai tanks are already coming into our country
209	So, can you please change the route? Thai said no. This is almost completed.
210	So, I thought better thing is to cool down and let the economic necessity speak. Either support or not. It took three years, but compromise came, that is still Savannakhet but suburb of Savannakhet. More expensive than original.
211	That way we were able to avoid the situation
212	Negotiation stuck for three years and we didn't push
213	And another aspect that complicated there was when you are crossing the bridge what is the international border. It should be the deepest point of the river, because that is real river. Another said, that 50/50. The center, measuring from the banks.
214	They find that international bridge says it is in the center
215	Most difficult part is, who is going to be responsible for the management and administration of the bridge?
216	Three proposals were made:
217	1) A company, sponsor, 50/50, equity participation by two governments.
218	2) 50/50 and two departments of the bridge of both countries. Ministry of transports will form joint committee
219	3) I forgot
220	They selected the second option. Third time they agreed.
221	Very amicable solution on that
222	This is technical aspects which can happen any of the bridges
223	
224	<u>Route Number 3 (NSEC):</u>
225	The second point that you mentioned on that issues was the China route through Laos to Thailand.
226	Now, that route is called Route number 3, and actual length was from Kunming to Chiang Mai, but route part of Chinese side already done, and good part of Thailand already done before they started the missing link.
227	The missing link was from the china Laotian border (Boten) to this side of Mekong river.
228	All together, 400 km approx..., maybe?

229	I retired already at that time, this project should have been done much earlier. But because of reluctance of Laos and because of Laotians' mistake get delayed.
230	The mistake that Laos made was, at that time, international community there talking about World Bank, IMF, BOT by the private sector.
231	So, Laotians very happy to follow international community because the private sector build operate and after 20-30 years give it back. And they have done it without consulting us.
232	I couldn't complain, because that is what we told them. I am very happy as long as you decide by yourself.
233	They have awarded the road to the Thai group. And that group when to financial crisis.
234	And this private sector project didn't move at all, because none of the banks came to the rescue.
235	I was relaxing into the retirement, I was told to talk with them.
236	I found that the real reason was not the question of the need of financing. No legal aspects, or financial aspects. It was really Laotians that were saying this road which we are offering our land and participating the financing, that we have to borrow from outside, really benefits only Thailand and China, not us. It only benefits Thailand and China
237	That was the strong message that they told me.
238	To my surprise, they are not very fair balance explanation.
239	Laotians eventually would benefit from the increasing traffic
240	I mobilized so much my limited knowledge that without having disclose the initial power that we told, that Laotians do or are going to miss one of the very important ones. You cannot calculate economically viability with and without this road. And also looking at the economic benefits, what you want to do is
241	Without doing anything, people do illegal traffic
242	Better have the road and controlling if you have the capacity
243	Eventually they agreed, Laos was able to raise the money to buy back the right to construct the road to the private sector, who had that right. Although they were almost bankrupt, but they still had that certificate.
244	This negotiation was in a way very difficult. Again the question is you cannot ensure the economic benefit to Laotians.
245	By, in the form of ERR to the country as the whole. Ordinary rate of return was a bit short (9.5 or something less than 10%)
246	I think at that time the economic growth of China, it was very clear that they have to rely
247	Economic loss of China. It was very clear that they had to rely on this area: supply of food and supply of rubber and palm oil and so on
248	Very fortunate, all the sudden, the Malaysia and Thai they came up to here to continue the number one of rubber production because of the increase of labour cost.
249	So the rubber plantation starting moving to the Mekong area. And Laotians saw it
250	Lava plantaion started moving to Mekong area
251	And Laotians saw
252	Number 2: increase of China per capita income.
253	But most attractive was for the rubber. Because at that time massive investment by European, Japanese and Chinese automobile industry gave a shortage in the rubber.

254	But this came at the very last moment. Until then, they couldn't understand by figure, and I couldn't present concrete figure.
255	Later on, massive shortage of food itself. That was very decisive, because China offered Thailand, Cambodia, Laos the almost free import of agricultural products. They have selected 80, 85 to 90 items which the import tax of 1.5%
256	That convinced I think Laotians that is true that they can make the plantation around the highway, although I think that plantation is eventually done by Chinese. As long as money comes, money is money.
257	The next point in that project was a bit little extra things for you
258	The Mekong bridge at Lao approach
259	Chiang Kong bridge
260	Laotians wanted to ban to financing. Japan said no, for whatever the reason (that's very bad). Then China offered to pay. Finally the entire pay was divided into three. China financed their own. Thai side Thai government. Central side, Laotians financed by borrowing from ADB.
261	
262	<i>Mediation on NSEC</i>
263	When I was asked to mediate, or to convince the Laotian government.
264	This question about the Myanmar side I didn't question. To me, I sincerely felt, Laotians are going to lose their position if that road is not built, only philosophy that I had
265	And later on, I was told by one of the senior officials. Now Laos per capita income went up, it used to be income from hydro power, now its gold mine.
266	Thank you, without GMS road we could not get a hit on gold mine. How to develop, how to transport out. It was our headache. But now, thanks to this project, the gold mine give us more money than hydropower. It is very nice
267	This road will give another gold, which gold I don't know.
268	When I first visited Switzerland, unbelievable. I went left
269	The most eastern part life was so miserable. I even don't know if they have the heater ni winter. I couldn't see the electricity lines
270	I was given example to the deputy minister. Switzerland, where there is no main road there, the life is different
271	You can be as Switzerland
272	Don't joke
273	If you work with eastern part, life is still very low.
274	Matterhorn
275	Zermatt, is relatively the center. When I was young, I could see all the farmers, the houses were like the poor houses here. So I said, it must have taken Switzerland to today. Still some places are not so much different.
276	You could be like Switzerland. It will take time.
277	
278	
279	<i>ADB's neutrality role:</i>
280	Route N9, from Da Nang to Savannakhet. Japan was prepared to pay the cost and participate in the bridge and road. Laotians said, Morita san we cannot accept that. To me bridge is bridge, this is a bit sensitive (not for public knowledge)

281	If Japan do it. If Thailand and Japan shake hands, they twist our arm. Because Japan cannot say not to Thailand, but they can say no to us. Can you make sure that ADB is also part of the financing group, because we believe ADB is very fair to both sides. So you will come to meeting. ADB will sit there and ADB neutral position is very important for anything
282	Neutrality.
283	Neutral position, or fair position which is difficult to maintain. But if you have a honest broker they are all very happy. Finance only 70km, but Laotians are very happy.
284	So, this is out of the negotiations.
285	There could be so many things, but these are still in the memory
286	How you generalize it, is out to you
287	
288	<i>Other donors' support, Australia:</i>
289	Australia is one of the countries which is counted as the Asian member and for that reason in the board Australian constituency is looked together not with western countries. Joining the Asian countries
290	And one of the greatest contributions was they helped a lot Cambodia. Because Cambodia was the country under continuous wrong finale of Indochina because of Pol Pot. Cambodia was still with internal fights. Cambodia is in that sense, late comer.
291	Australia supported them
292	Cambodia. ADB is preparing the review of ADB's work, which will be for publication at the end of this year. Peter McColly. He was tough member of the board. He used to be the chief of the group or rather. He is really nice assigned him for this interesting task

A.I.III. GMS-EC.III

Interviewee ADB officials

Date June 16th, 2016

As a request by the interviewees, the following disclaimer is included:

“The views provided by the interviewees do not represent the views of ADB or the governments it represents”

1	<i>ADB support to GMS Economic Corridors</i>
2	
3	- Recently ADB approved a Technical assistance (TA) for transport and trade:
4	o To enhance trade facilitation across the region
5	o It is aimed at the implementation of Cross-border Trade Agreement (CBTA)
6	▪ CBTA is an umbrella agreement
7	▪ But when we look to each of the cross borders, they may have different procedures, for example:
8	• If they are single window cross-border or double window
9	o Currently, ADB provides TA to support the implementation
10	o Key cross-border points in the map of the GMS Economic Corridors
11	o Very active role
12	- Now in the process of reviewing the GMS Economic corridor
13	o Because the past version has been prepared for a long time
14	o Time change, situation change
15	o Need to review the economic corridor
16	o Now in the process and discussing with member countries what should be the new version (update and so on)
17	
18	- Key events that led to the launching of the GMS:
19	o In the early 90s
20	o It was probably because of the Peace Accord for Cambodia, that was possible in 1991-92
21	▪ That was the trigger probably for ADB to facilitate this kind of scheme
22	▪ If you go back to GMS publications in the early days, we must be talking about “peace dividends”
23	▪ Until the early 90s, these countries were fighting, even territory

24	<ul style="list-style-type: none"> ▪ They were not talking to each other
25	<ul style="list-style-type: none"> ▪ The GMS framework was to provide a forum for them to have meaningful dialogue about economic cooperation. That was the situation in the early 90s
26	<ul style="list-style-type: none"> ○ In that sense, I think that your analysis is quite relevant, this framework of looking at government to government and technical body to technical body relationships
27	- Initially, ADB activities in the transport sector were to create connectivity
28	<ul style="list-style-type: none"> ○ So, it was basically road corridors, building bridges or the missing links of the road network
29	<ul style="list-style-type: none"> ○ But then, 2006 or 7, the countries agreed that they should look at more comprehensive development along GMS transport corridors
30	<ul style="list-style-type: none"> ▪ At that time, economic corridor concept was brought in
31	<ul style="list-style-type: none"> ○ Early activities to create transport network but now there are many other activities
32	- From ADB point of view, we are now involved in many other sectors:
33	<ul style="list-style-type: none"> ○ Urban, agriculture, trade facilitation, energy power trade agreement
34	<ul style="list-style-type: none"> ○ To expand the scope of cooperation through the corridors, which were initially for transport purposes
35	
36	<i>How did the economic corridors evolve? Independently or coordinated?</i>
37	- The three corridors evolved more or less independently
38	- Because we have six members, there is always the intention of involving all the members
39	
40	
41	
42	
43	<i>CBTA:</i>
44	- When looking to transport corridors:
45	<ul style="list-style-type: none"> ○ Road transport is very different from other types of transport or other types of infrastructure
46	<ul style="list-style-type: none"> ▪ Public sector normally provides infrastructure and the actual use is left to the users
47	<ul style="list-style-type: none"> ▪ In the case of power/energy sector
48	<ul style="list-style-type: none"> • Generation to final consumption you are controlling everything, somebody is controlling the flow
49	<ul style="list-style-type: none"> ○ The road corridor was only to provide infrastructure, but there was a need to facilitate the usage of the provided infrastructures
50	<ul style="list-style-type: none"> ▪ That was the genesis of the pre-CBTA in the late 90s

51	▪ It took so long for countries to ratify all the protocols and annexes
52	▪ Only in 2015, all the annexes and protocols were ratified
53	
54	
55	
56	
57	
58	- In that process, in all these things, the ADB does not own any project
59	○ Projects are owned by the member countries
60	○ And are endorsed by member countries
61	○ ADB role is basically to provide technical inputs or to provide the mechanisms to facilitate agreement among the member countries
62	- For CBTA, what we basically did was to provide the both:
63	○ Technical inputs
64	○ And the forum for the countries to discuss and agree on measure to address issues
65	- But the rest was pretty much left to the member countries,
66	○ And that is why this delay happened
67	
68	<i>For CBTA negotiations, initially at ECF then to NTFCs, discussion ADB with each of the countries individually?</i>
69	
70	- Economic corridors evolve individually
71	○ ADB tried to solidify
72	○ And role of facilitator and technical assistance
73	- When we look to the implementation,
74	○ Different cross-border points
75	○ Those are the main issue
76	○ You cannot make umbrella that includes all the aspects of all the border points
77	▪ CBTA only umbrella to facilitate the trade/transport flow within the region
78	▪ But for the implementation, you need to go to the details for the cross-border point for the two countries
79	▪ For example, if we look at the border point between Myanmar and Thailand
80	• That might not be relevant to other countries

81	<ul style="list-style-type: none"> • Then, it might not be necessary to discuss at such GMS big meeting, but just with the two countries at ministry level or even agency level in order to implement
82	<ul style="list-style-type: none"> ○ To summary:
83	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ CBTA as umbrella
84	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ Then need of support for the materialization
85	
86	- Because full ratification of CBTA took so long
87	<ul style="list-style-type: none"> ○ Countries signed bilateral agreements and they started to implement
88	<ul style="list-style-type: none"> ○ Not fully under the umbrella of CBTA, because CBTA was not ratified by all member countries
89	<ul style="list-style-type: none"> ○ There are many bilateral agreements in the region
90	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ Even now countries concern that they don't have full picture, for example:
91	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> • Laos, their provinces agreed with the neighbouring provinces in Viet Nam and Thailand, and they are just operating on bilateral bases transport facilitation
92	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> • Under the TA, we are trying to collect all the information of these existing bilateral agreements
93	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> • We call them (these bilateral agreements), Initial Implementation of the CBTA
94	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> • Ideally, they should be brought under the CBTA, but
95	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> ○ Whether that is the best approach for the two countries concern, again we need to consult with those two countries
96	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> ○ Because the genesis of these bilateral agreements was not because CBTA delayed, but because the concerned party they thought that similar level of trade facilitation was possible through bilateral agreement and not only through CBTA
97	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> ○ It is case by case
98	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> ○ So CBTA fully implementation will be quite challenging in my personal view
99	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ Messy situation
100	- Another dimension is Mekong under GMS, except for China, are members of ASEAN
101	<ul style="list-style-type: none"> ○ And at the ASEAN level, they have similar agreements
102	<ul style="list-style-type: none"> ○ So, how we operate GMS level agreements and how the member countries want to align GMS agreements with ASEAN agreements, this is another issue that we need to look at.

103	○ This is probably on your slide, you seem to not have look at this aspect, but this is an important issue
104	○ Particularly relevant to trade or customs, those softer elements
105	▪ Because they are not location specific
106	○ It doesn't make sense to the countries to introduce two set or regulations to meet with two set of requirements coming from GMS and ASEAN
107	○ Infrastructure in a way is location specific
108	▪ Effectively, the Philippines or Indonesia are concerned on how Indochina countries interconnect themselves
109	
1110	<i>International and subnational level influence on the process:</i>
1111	
112	- On that issue, we have another team who are better position to respond to that question
113	- I will introduce to those people who are looking to alignment of ASEAN and GMS agreements, or other wider regional or global agreements to do with customs or trade, and those soft elements
114	- One important aspect is the quantity,
115	○ If you are looking at transport:
116	▪ What is the traffic volume crossing these borders?
117	○ And if you are talking about trade:
118	▪ What the value of the trade among these countries?
119	○ For example, Laos has lot of border crossing points, and in that sense is very important in the GMS, but if you to the traffic volume or the trade volume crossing these border points, they are not really significant for the neighbours
120	▪ I don't know for Cambodia, but for Thailand, Viet Nam or China, the trade with Laos may not be significant
121	- And then in each of the neighbouring countries, what priority they place in their, with Laos, that would be much more influenced by the significance of their relation with Laos to their economy
122	○ So it is very asymmetrical:
123	▪ For Laos, these agreements are very important
124	▪ But for the neighbouring countries, they may not be so
125	▪ And then, as you rightly pointed out, our role in there is basically to balance the asymmetries. That is what we are done, so probably for the case of Laos or Cambodia, and to some extend to Myanmar, we are playing that role.
126	▪ But for Thailand or China or even maybe Viet Nam, I am not that sure

127	
128	<i>Relevance of the study to development banks:</i>
129	
130	- In principle GMS as a program as facilitator, coordinator and to identify some projects or infrastructure investment that will support the development in the country
131	- GMS program also helps us to identify with the country what would be the priority projects that can help the development of the country
132	○ If we can identify these opportunities, then ADB we can help the finance of the projects
133	- This is how I see the use of the GMS program:
134	○ Not only facilitator or coordinator
135	○ But also to identify together with the member countries the likely priority, opportunity to help the development of the country to fulfill the role of developing bank
136	
137	- That is very honest view to individual staff to develop some projects for the ADB to finance
138	○ After all, ADB is structured as a bank to provide financial resources
139	- ADB has a unique mandate coming from our charter that this regional cooperation is one of the activities we should pursue without any regard to potential financing or any projects
140	○ So it could be a standard activity
141	○ But on the ground, all these facilitation, particularly in the initial phase of GMS, was benefiting us to identify projects which we financed
142	○ If you look at the list of projects that we finance, they all have GMS.
143	▪ GMS corridors
144	▪ and even now we finance urban infrastructure projects which have GMS titles (GMS corridor town development) or GMS agriculture.
145	- That's one view held by many ADB staff
146	- Coming back to your question of the utility of the framework you are trying to develop
147	○ Yeah, I think it would be useful, particularly these tentative results, you have the framework to analyze for different stages
148	▪ How the parties interact and so what would be the relevant cases to look at
149	▪ This would be quite useful for us, for probably to look back and try to extract lessons from our past engagement with the member countries in the GMS
150	▪ So we have other regional cooperation schemes, like CAREC in Central Asia and also South Asia, we have similar schemes.

151	<ul style="list-style-type: none"> ▪ Actually, GMS is the most advanced in many aspects
152	<ul style="list-style-type: none"> ▪ We are so advance that member countries that capable to stand on their own, like Thailand or Viet Nam or China. They depend less on ADB for resolving issues bilateral issues. And also in terms of project financing. Again, they have financing resources.
153	<ul style="list-style-type: none"> • Thailand can finance most of the infrastructure on their own
154	<ul style="list-style-type: none"> • China the same. China is providing assistance to neighbouring countries
155	<ul style="list-style-type: none"> ▪ So that is where we are, whereas in other regions, particularly in Central Asia we may have a more significant role.
156	<ul style="list-style-type: none"> • South Asia, that is a bit different because India is so so powerful. One very strong party and other not so strong parties.
157	<ul style="list-style-type: none"> ○ But there again, the role of ADB to rebalance the asymmetry would be useful and would be appreciated by those relatively weak countries like Bhutan or Nepal
158	<ul style="list-style-type: none"> ○ So for those two initiatives
159	<ul style="list-style-type: none"> ▪ Analysis of GMS and the lessons drawn from your research would be useful from my view
160	
161	<i>Transfer of knowledge inside the organization:</i>
162	
163	- I think there are both formal and informal setups
164	- Actually, some staff move from one region into another and do basically the same stuff, so regional cooperation
165	- But I would say that still this cross-learning is still not really happening at the level that is desirable
166	- So in that sense, somebody from the outside looks at what we are doing and recommend some measures to facilitate internal cross learning and extract some lessons. That would be useful
167	- I think if you directly talk with staff that is dealing with RCI (Regional Cooperation and Integration) they can give you direct feedback.
168	<ul style="list-style-type: none"> ○ Many of them have been dealing with this for a long time
169	<ul style="list-style-type: none"> ○ We could introduce with those units, teams
170	
171	<i>Other international donors</i>
172	- Actually this TA, KH mentioned is funded by Australia

173	- My suggestion is probably you look to how these organizations operation and how they are owned, and how they get financing from shareholders or donors and how they work with bilateral donors (or individual countries)
174	- We don't really have any specific framework in terms of our relations with our shareholders
175	- We don't have specific framework for the GMS
176	- Look to the overall set up
177	- ADB is owned by the member countries, including the GMS countries
178	o They are our shareholders
179	o World Bank is owned by many more countries
180	- ADB, WB say something is basically the collective views of the countries
181	o We are not independent of the member countries
182	- That applied to most of the bilaterals
183	o JICA, Australia
184	- But we don't really any specific framework
185	- Basically, the way we operate under the GMS framework is something endorsed by ADB's member countries
186	o On the surface, there might be differing approaches between ADB or JICA
187	▪ But JICA is owned by the Japanese government and Japanese government also owns ADB partially
188	▪ We have a common shareholder
189	▪ So we can't be so different
190	o But if you look at the phenomena
191	▪ JICA also has to identify project
192	▪ We have to identify projects
193	▪ WB has to identify projects
194	▪ JICA has to look for projects
195	▪ Australia government also should be funding some projects in financing some projects
196	▪ It is quite complex
197	o But we don't have a specific framework under the GMS

A.2. News on GMS Economic Corridors

Date	Highlight	Source	Link
05/04/2016	ADB President Affirms support for Lao PDR development, Regional Cooperation	The Financial	http://www.finchannel.com/index.php/business/56289-adb-president-affirms-support-for-lao-pdr-development-regional-cooperation
25/12/2015	ADB's Brief on Connecting South Asia with Southeast Asia	IndraStra	http://www.indrastra.com/2015/12/BE-ADB-brief-on-Connecting-South-Asia-with-SE-Asia-0573.html
27/11/2015	Thailand to Veitnam, one delivery's journey	Nikkei	http://video.asia.nikkei.com/detail/videos/business-clip/video/4664894928001/thailand-to-vietnam-one-delivery-s-journey?autoStart=true&page=2
11/09/2015	GMS cooperation's strategic role to ASEAN highlighted	Vietnam Breaking News	http://www.vietnambreakingnews.com/tag/gms-ministerial-conference/
02/09/2015	Construction of the Second Thai – Myanmar Friendship Bridge	Thai Gov. Public Relations Depart.	http://thailand.prd.go.th/ewt_news.php?nid=2110&filename=index
23/07/2015	Vietnam-Thailand Joint Trade Committee gathers for second meeting	Vietnam Breaking News	http://www.vietnambreakingnews.com/2015/07/vietnam-thailand-joint-trade-committee-gathers-for-second-meeting/
02/07/2015	Vietnam strongly asserts commitment in Mekong-Japan cooperation	Vietnam Breaking News	http://www.vietnambreakingnews.com/2015/07/vietnam-strongly-asserts-commitment-in-mekong-japan-cooperation/

11/06/2015	GMS Economic Corridors Forum looks to enhance cross-border trade	Vietnam Breaking News	http://www.vietnambreakingnews.com/tag/gms-cross-border-transport/
20/05/2015	VN attends EWEC in Thailand	Vietnam Breaking News	http://www.vietnambreakingnews.com/2015/05/vn-attends-ewec-in-thailand/
20/05/2015	Third East-West Economic Corridor seeks solutions for development	Vietnam Breaking News	http://www.vietnambreakingnews.com/2015/05/third-east-west-economic-corridor-seeks-solutions-for-development/
09/05/2015	Myanmar, Laos open first friendship bridge	Xinhuanet	http://news.xinhuanet.com/english/2015-05/09/c_134224520.htm
13/04/2015	Deputy PM inspects Moc Bai border gate	Vietnam Breaking News	http://www.vietnambreakingnews.com/2015/04/deputy-pm-inspects-moc-bai-border-gate/
12/03/2015	Laos at the center of Mekong action	Nikkei Asian Review	http://asia.nikkei.com/magazine/20150312-ASEAN-Linked-lands-meshed-markets/On-the-Cover/Laos-at-the-center-of-Mekong-action
06/02/2015	One-stop-shop customs piloted at Lao Bao - Densavan Border Gate	Vietnam Breaking News	http://www.vietnambreakingnews.com/2015/02/one-stop-shop-customs-piloted-at-lao-bao-densavan-border-gate/
08/01/2015	Laos hails OSS model for Laos-Vietnam border	Vietnam Breaking News	http://www.vietnambreakingnews.com/2015/01/laos-hails-oss-model-for-laos-vietnam-border/
22/12/2014	Greater Mekong Subregion to build on achievements, says ADB president	Vietnam Breaking News	http://www.vietnambreakingnews.com/tag/gms-strategic-framework/

20.12.2014	Joint Declaration of 5 th GMS Summit	Vietnam Breaking News	http://www.vietnambreakingnews.com/tag/gms-governors-forum/
19/12/2014	Backgrounder: Greater Mekong Subregion Summit	China daily	http://www.chinadaily.com.cn/world/2014livisitkst/2014-12/19/content_19123136.htm
26/11/2014	CLV joint statement reiterates cooperation commitment	Vietnam Breaking News	http://www.vietnambreakingnews.com/2014/11/clv-joint-statement-reiterates-cooperation-commitment/
26/11/2014	Vietnam, Laos, Cambodia to expand triangle cooperation	Vietnam Breaking News	http://www.vietnambreakingnews.com/2014/11/vietnam-laos-cambodia-to-expand-triangle-cooperation/
27/08/2014	ECF-6: Towards Economic Corridor Development	Vietnam Breaking News	http://www.vietnambreakingnews.com/2014/08/ecf-6-towards-economic-corridor-development/
22/08/2014	Second Friendship Bridge to be built at Mae Sot	The Nation	http://www.nationmultimedia.com/national/Second-Friendship-Bridge-to-be-built-at-Mae-Sot-30188977.html
16/08/2014	Big challenges remain for East-West corridor nations	Vietnam Breaking News	http://www.vietnambreakingnews.com/2014/08/big-challenges-remain-for-east-west-corridor-nations/
09/08/2014	Infrastructure in place for GMS economic corridors: ADB	The Nation	http://www.nationmultimedia.com/business/Infrastructure-in-place-for-GMS-economic-corridors-30240591.html
26/11/2013	GMS Ministers endorses plan to accelerate cross border transport, trade	Vietnam Breaking News	http://www.vietnambreakingnews.com/2013/11/gms-ministers-endorse-plan-to-

			accelerate-cross-border-transport-trade/
14/02/2013	VN-Australia: From the steel bridge to the bridge of knowledge	Vietnam net	http://english.vietnamnet.vn/fms/special-reports/67816/vn-australia--from-the-steel-bridge-to-the-bridge-of-knowledge.html
21/01/2013	ADB gets poor infrastructure on track	Vietnam Breaking News	http://www.vietnambreakingnews.com/tag/the-gms-corridor-towns-development-project/
21/11/2012	Australia-Laos-Thailand Friendship Bridge Fun Run	Australian Embassy Lao PDR	http://laos.embassy.gov.au/vtan/FunRun.html
13/10/2010	Thailand's Bamboo Diplomacy Blows in the Wind	Asia sentinel	http://www.asiasentinel.com/politics/thailands-bamboo-diplomacy-blows-in-the-wind/
21/08/2010	Greater Mekong Subregion Economic Cooperation – Strategic Framework for the Period of 2012 - 2022	Vietnam Breaking News	http://www.vietnambreakingnews.com/tag/gms-energy-road-map/
30/03/2010	CLV, Japan talk of closer cooperation	Vietnam Breaking News	http://www.vietnambreakingnews.com/2010/03/clv-japan-talk-of-closer-cooperation/
29/04/2009	Australia joins Friendship Bridge anniversary celebrations	Australian Embassy Lao PDR	http://laos.embassy.gov.au/vtan/PR0409.html
07/04/2006	Conference identifies potential for trade in Mekong subregion	Vietnam Breaking News	http://www.vietnambreakingnews.com/2006/04/conference-identifies-potential-for-trade-in-mekong-subregion/
05/10/2005	China, Japan tug-of-war over Indochina	Asia Times	http://www.atimes.com/atimes/Japan/GJ05Dh03.html

25/10/2002	An expanded vision for ASEAN	The Phnom Penh Post	http://www.phnompenhpost.com/national/expanded-vision-asean
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B. Appendix on SIEPAC

B.I. Interview notes on SIEPAC

B.I.I. SIEPAC I

Interviewees Jose Enrique Martinez, Luis Bujan, Jose Carlos Farfan

Affiliation EPR, General Manager, CFO, Operations Manager

Date 30 October 2012

Place San Jose, Costa Rica

Interview in Spanish, translation into English by the author

“The views provided by the interviewees do not represent the views of EPR or the governments it represents”

<u>Line</u>	<u>Text</u>
1	<u><i>Background of the process:</i></u>
2	o From 1976 there were meetings between the countries
3	o During the 80s bilateral interconnections
4	o The ERICA study showed that there were several benefits from the integration.
5	o In 1987, Spain for the “V Centenario” celebrations wanted to develop projects in Latin America. The electric integration was the most feasible in Central America.
6	o Teofilo de la Torre proposed the creation of CEAC as an institution for the cooperation and integration through the communication between the different parties.
7	o Before CEAC there were several coordination groups. CEAC was the mechanism for institutionalizing that.
8	o CEAC wrote the Framework Treaty.
9	o After the studies of Endesa, in 1987, financing was started to be sought. Then IADB got involved.
10	o IADB asked for new technical and economic studies. 500 kV was too high, 230 kV was found to be more suitable for the region.
11	o IADB financed the studies and gave technical cooperation. It was noticed that the infrastructure alone was not guarantee of success. An electricity market and deep integration were needed. For doing that, the governments were needed for signing a binding agreement.
12	o At that time every country was controlled by one state-owned company. The approach between them started the process.

13	○ At the technical level it was assumed that after expanding the national systems until the borders, those should interconnect and integrate. The border was only political, no physical. The hardest part has been to break that political barrier.
14	
15	<u>The sign of the Framework Treaty:</u>
16	
17	○ The IADB was very important for making this possible
18	○ The agreement was prepared and agreed by the state-owned companies in CEAC. Then, the governments signed it.
19	○ Initially the Framework Treaty was very large, but then it was reduced to the minimum agreed points.
20	○ The reforms of the national sectors were another factor that stimulated the integration.
21	○ The Framework Treaty gave stability to the project because for retiring each country must wait 10 years.
22	
23	<u>Differences between countries</u>
24	
25	○ Costa Rica:
26	<ul style="list-style-type: none"> ● The power is divided; the government doesn't control parliament or justice. In other countries is different.
27	<ul style="list-style-type: none"> ● Reach consensus takes long time
28	<ul style="list-style-type: none"> ● The public sector is very big. Many people work for public companies as ICE.
29	<ul style="list-style-type: none"> ● Work unions have large influence.
30	<ul style="list-style-type: none"> ● ICE is doing a good job, contracting many people, paying good salaries, keeping low tariffs without subsidies and in a good financial situation. Many people don't want any change.
31	<ul style="list-style-type: none"> ● There are several cases of political corruption. People don't trust in politics. This is more general in the whole region.
32	○ Guatemala:
33	<ul style="list-style-type: none"> ● 70% of the generation in private
34	<ul style="list-style-type: none"> ● There are large generation capacity that could be exported
35	<ul style="list-style-type: none"> ● Several contracts of PPAs with high costs. Pressures for extending them. It seems that now the government is trying to change that situation with new tendering process that should reduce the final price.
36	<ul style="list-style-type: none"> ● Electricity is still expensive in Guatemala
37	○ Honduras
38	<ul style="list-style-type: none"> ● Very bad situation of the state-owned company.

39	<ul style="list-style-type: none"> • High costs because of PPAs with thermal generation.
40	<ul style="list-style-type: none"> • Government doesn't allow passing that cost to final tariff. ENEE must assume that debt; therefore it cannot improve the national system.
41	
42	<u><i>Interconnections with Mexico and Colombia</i></u>
43	
44	<ul style="list-style-type: none"> ○ The interconnection between Mexico and Guatemala is only bilateral.
45	<ul style="list-style-type: none"> ○ Now Mexico would like to export to El Salvador and Honduras but regulation is still needed to be developed to allow that.
46	<ul style="list-style-type: none"> ○ The region would be benefited from an interconnection Mexico-MER
47	<ul style="list-style-type: none"> ○ For solving such problems the IADB is involving in the interconnection Colombia – Panama.
48	<ul style="list-style-type: none"> ○ Also for Colombian generators the interconnection is only meaningful if it is with the region.
49	
50	<u><i>Success actions in SIEPAC</i></u>
51	
52	<ul style="list-style-type: none"> ○ Involvement of the state-owned companies
53	<ul style="list-style-type: none"> ○ Consensus environment
54	<ul style="list-style-type: none"> ○ Sovereignty guarantees
55	<ul style="list-style-type: none"> ○ The idea of a gradual process respecting the national sovereignty (6+1) was well accepted.
56	<ul style="list-style-type: none"> ○ Make a mandatory agreement
57	<ul style="list-style-type: none"> ○ Difficult for retiring. 10 years and US\$100 million
58	<ul style="list-style-type: none"> ○ Active involvement of the IADB. IADB is the main financier of the region.
59	Make the process by consensus. Integration cannot be imposed

B.I.II. SIEPAC II

Interviewee Edgardo Calderón

Affiliation Executive Secretary of the MER Governing Board (CDMER)

Date October 30th, 2012

Place San Jose (Costa Rica)

Interview in Spanish, translation into English by the author

Line	<u>Text</u>
1	<u>The SIEPAC process:</u>
2	
3	SIEPAC is part of a process of electric integration. There have been different stages of this process:
4	
5	○ 1 st – Stage of the national integration:
6	• The national systems were composed by isolated small systems mainly private.
7	• It was more optimal and reliable to interconnect those systems.
8	• That was made by vertically integrated state-owned companies
9	• Finally the state-owned companies became monopolies
10	• Thermal generation was used only as back-up systems.
11	
12	○ 2 nd – Stage of the bilateral interconnections:
13	• It was only for mutual support between neighbouring countries.
14	• There was no cession of independence; each national system is expanded independently.
15	• “You don’t have an interconnected system, only linked systems.”
16	• After interconnecting many countries the idea of sending /receiving electricity to / from countries without shared border came to the discussion.
17	• Several coordination organisms were created. In the Southern countries the most famous was the GRIE, Regional Group of electric interconnection.
18	• The main agreed idea was “split-saving” were seller and buyer were benefited from the exchange.
19	• During this time large hydro power plants were built and the countries started to sell lot of electricity from these power plants. Therefore the benefits from greater interconnection appear naturally.
20	• Technical studies were made for finding the best way to create

	interconnections. In 1965, with ECLAC, the ERICA study was created. (Regional Study for the Interconnection of Central America). There were many different ideas about how to do it. El Salvador and Guatemala purchased a model to Tractobel
21	<ul style="list-style-type: none"> • Nevertheless the idea was not regional. Only strengthen the bilateral interconnections and that would increase the regional possibilities.
22	
23	○ 3 rd – Stage of the regional interconnection:
24	<ul style="list-style-type: none"> • Endesa brought a new idea: create a unique interconnection between all the countries.
25	<ul style="list-style-type: none"> • Endesa came with the solution, a single line of 500MW that would connect all the capitals.
26	<ul style="list-style-type: none"> • But that project was out of the reality. The national systems were, and are, weak. They can resist that kind of interconnection in a single point; there were possibility to total blackouts in case of failure.
27	<ul style="list-style-type: none"> • The financing was also very expensive. Despite Endesa said they would have paid everything, nobody relied on that.
28	<ul style="list-style-type: none"> • Finally the project was no accepted because pre-made solutions were not acceptable and the state-owned companies wanted strengthening of the national systems
29	<ul style="list-style-type: none"> • The important were agreements between the state-owned companies, right below the governments. “The governments didn’t bring any good idea”.
30	
31	○ 4 th – Stage of the feasibility studies, 1997:
32	<ul style="list-style-type: none"> • Technical studies by PTI (Canada) and economic by University of Comillas (Spain).
33	<ul style="list-style-type: none"> • Those showed that the “minimum cost of repentance”. That idea was very well accepted. The minimum was to build the line.
34	<ul style="list-style-type: none"> • After accepting that, feasibility studies were made considering 6 possible scenarios.
35	<ul style="list-style-type: none"> • With full integration the benefits were very large
36	<ul style="list-style-type: none"> • It was needed to create an electricity market for getting the benefits.
37	<ul style="list-style-type: none"> • It was also the “time” for the electricity markets. The other possibility would have continued through CEAC, but that was good only for vertically integrated systems and many countries started to create national electricity markets.
38	<ul style="list-style-type: none"> • After that there are no exchanges between countries but between agents. Therefore a market of agents.
39	<ul style="list-style-type: none"> • When the idea is defined, it is brought to the Presidents’ Summits at SICA. From there the idea of the Framework Treaty appears.

40	<ul style="list-style-type: none"> • The lack of trust and the legal insecurity would have driven to only small exchanges.
41	<ul style="list-style-type: none"> • It was a technical-political negotiation. Only Presidents and state-owned company involved, the ministers of energy were not included because of the low knowledge of the issues of the electric sector.
42	<ul style="list-style-type: none"> • All the ideas were first agreed at the technical level and then the top managers of the state-owned companies “sold” the ideas to the presidents of the countries.
43	
44	○ 5 th – Stage of the regional integration:
45	<ul style="list-style-type: none"> • Infrastructure doesn’t belong to one country; it has 9 owners in all its extension.
46	<ul style="list-style-type: none"> • Extra-regional members face the same risks: US\$40 million with sovereignty guarantees or internal equity. Sharing the risks = no feel they come to “steal”
47	<ul style="list-style-type: none"> • RMER because the Framework Treaty is not complete.
48	<ul style="list-style-type: none"> • Countries create their national electric law and then don’t want to change, despite it might be bad law. RMER was a unique opportunity to change all.
49	<ul style="list-style-type: none"> • Governments felt they have given too much power to the regional institutions, that’s why they created the Governing Board (CDMER). It has voice but actually no much decision power. It also can help to introduce political aspects to the development, not only technical, and reduce bureaucracy.
50	<ul style="list-style-type: none"> • So many changing actors, about 40 different governments. Many pretend to use the MER for other purposes. But they can’t because there are 6 to convince. Also is difficult to take too much advantages or reduce the commitment; that doesn’t work because “your neighbour can be kind because has other interests with you, but others will not allow you”.
51	<ul style="list-style-type: none"> • Central American are different countries but with similarities. That must be more challenging in regions and Africa where differences are also cultural
52	
53	○ 6 th Stage of finalization of the first goal:
54	<ul style="list-style-type: none"> • January 2013
55	<ul style="list-style-type: none"> • Two steps: increase the exchanges and develop regional plants
56	<ul style="list-style-type: none"> • Need to create mechanism of inter-institutional coordination
57	<ul style="list-style-type: none"> • The goal is to use one single electric sector law. There are several interphases for that
58	<ul style="list-style-type: none"> • From 2002 there are trading between the 7 countries, but the Framework Treaty is not only for exchanges, it has bigger targets. If not, it would have much simpler.
59	<ul style="list-style-type: none"> • Process will end with the full integration because national resources for

	national dispatch will finish (El Salvador has no more).
60	<ul style="list-style-type: none"> • Integration was not made since the beginning because politically was impossible. It was impossible to make such big reforms in each country
61	<ul style="list-style-type: none"> • “Steps cannot be done in one single”
62	
63	
64	<i>The Executive Unit:</i>
65	
66	<ul style="list-style-type: none"> ○ The Executive Unit is conformed to very high level persons, both technicians and top managers.
67	<ul style="list-style-type: none"> ○ There is the risk to get lost during the decision-making process. For that is important to have a “bedside consultant”. In SIEPAC three “gurus” were contracted, three global consultants.
68	<ul style="list-style-type: none"> ○ The consultant has no big power. In other regions consultants lead the process and impose the philosophy of the project. That scheme creates big problems.
69	<ul style="list-style-type: none"> ○ It is important to no allow the banks to be inside the decisions.
70	<ul style="list-style-type: none"> ○ Every step was approved by the Executive Unit.
71	<ul style="list-style-type: none"> ○ It is important to have a structure ad-hoc in order to avoid “political pollution”. The technical solutions must be first. Several mechanisms ad-hoc have been and are created for solving particular problems, in many occasions for big problems.

B.I.III. SIEPAC III

Interviewee Salvador López

Affiliation EOR director

Date November 1st, 2012

Place San Jose (Costa Rica)

Interview in Spanish, translation into English by the author

1	<u>Origin of the idea of regional integration:</u>
2	
3	○ It appears after the bilateral interconnections
4	○ Several benefits were identified, it was in a scheme of “cooperation”, exchange of electricity in critical times
5	○ The national systems have little capacity, so if we can create stronger interconnections we could increase the “cooperation”.
6	○ By the end of the 80s the bilateral interconnections were ready and the possibility to get Spanish collaboration funds from the V Centenario Funds appeared.
7	○ The system was perfected technically -> line of 230kV
8	○ It was not possible to made by 1992 (the desired date) and in 1996 a treaty is negotiated for constructing the line.
9	
10	<u>Origin of the agreement:</u>
11	○ It was the time of the electricity markets trend.
12	○ Guatemala, El Salvador and Panama created their own national electricity markets
13	○ In 1996 sign of the Framework Treaty with the laws of reform => Create an electricity market
14	○ There was a problem for including those countries with electricity market (Guatemala, El Salvador and Panama) and those vertically integrated (Honduras and Costa Rica).
15	○ The “creative idea” was to create a 7 th market apart of the nationals. The regional organisms will push to the integration; those are not created in other regions.
16	○ There was also a political decision motivated by the Peace Agreements. There was a favorable environment for the integration.
17	○ The process includes a high level of negotiation
18	○ Then the idea was not only to build the line or make exchanges. For that a regional administration is created: CRIE, EOR, EPR
19	
20	<u>The regional regulation:</u>
21	○ There was need a regulation for ruling the exchanges between agents
22	○ In 2005 the RMER => it is very complex, designed for allowing a full integration of the region.

23	○ There were meetings every 15 days during 2 until finalized it. That is because it face also all the details, and the conflicts are in the details. There were several arguments because in many cases there is a strong feeling of losing of sovereignty or power.
24	○ The definition of which was the regional transmission system and which not was very complicated. Being interconnected the regional line and the national systems both are affected. The national system and the regional system affect mutually. Electricity moves following the Ohm's law, it simply goes where there is lower resistance.
25	○ It is crucial to keep the 300MW of capacity in the regional transmission. The IADB was very worried about that point. It is still under discussion how to ensure it
26	
27	<u><i>The harmonization interphases:</i></u>
28	○ Some countries are faster than others on this.
29	○ There are several interferences from national actors. In Guatemala, the private generators are inside the decision-making process.
30	○ CRIE has recently strengthened with own personnel. But the problem is what the role of a regulator is. That seems to be not clear for many.
31	
32	<u><i>Challenges for the future:</i></u>
33	○ Implementation of the market:
34	<ul style="list-style-type: none"> • Up to now there are only exchanges in the connection nodes but not internal, because it is seen as a loss of sovereignty.
35	<ul style="list-style-type: none"> • It is needed a strong commitment with the regional transactions ensuring their technical viability. For that national reinforcement of the national systems is needed, the problem is who pays that.
36	<ul style="list-style-type: none"> • Guarantee legally the long term contracts through the conclusion of the regulatory harmonization processes.
37	○ Develop regional power plants:
38	<ul style="list-style-type: none"> • With the RMER operating we can enter into a new phase with commercial measurement and regional planning.
39	<ul style="list-style-type: none"> • For that is needed to have access to also internal nodes, that gives transparency for the payments and will increase the transactions.
40	<ul style="list-style-type: none"> • Countries will start to depend on others.
41	<ul style="list-style-type: none"> • Without the regional market, the largest power plant possible at each country was about 200MW. More could be dangerous for the system. But, with the regional market there is a maximum demand of 6600 MW, then 10% is 660 MW, that means that it is possible to construct a 500 MW power plant, but only if it is in the regional market.
42	○ Distinguish between energy security and sovereignty.
43	<ul style="list-style-type: none"> • Every country wants their national resources for their national supply, but no ones can design, efficiently, the systems for a 0% possibility of rationing. In particular, Costa Rica insists that all their national supply must be in Costa Rica and then export only surpluses.
44	<ul style="list-style-type: none"> • According to the RMER all the electricity must be dispatched. First national

	dispatch and then extra must be dispatched in the regional market. But the countries are not doing that, they only report a part of that as “guarantee”. However, if all the electricity would be dispatched there would always be a surplus of 200 MW, enough for covering any contingency through the spot market. And when Mexico and Colombia will make agreements with the MER, there will be much more “extra” electricity.
45	<ul style="list-style-type: none"> • If we do the security of supply between all, that costs much less.
46	<ul style="list-style-type: none"> • It is needed to break the old philosophy of the national regulators.
47	<ul style="list-style-type: none"> • Another question is how much firm energy the countries will to ensure for the regional market (to sell or buy). It is considered that 10% from each country is possible, considering that at a regional level is a lot.
48	
49	○ Overcome the national reluctances:
50	<ul style="list-style-type: none"> • The long term vision is that $6 + 1 = 1$, which means that the 6 national markets with the 7th regional will not be 7 markets but only 1.
51	<ul style="list-style-type: none"> • El Salvador, Nicaragua and Honduras have little potential. The incorporation of the extra-regional, Mexico and Colombia can boost the process again.
52	<ul style="list-style-type: none"> • Finally is a political choice to decide how much we interdepend.
53	<ul style="list-style-type: none"> • If Honduras depends on Colombia, but Nicaragua decides to nationalize and take control over the regional transmission line in its territory and block the transmissions to the north, then Honduras may face difficult challenges.
54	<ul style="list-style-type: none"> • It is very important the harmony between the political leaders. Nicaragua has border disputes with Costa Rica, Honduras and Colombia.
55	<ul style="list-style-type: none"> • Central America is not a stable region. Politics will not allow a full interdependency. But a 10% can be assumed by all.
56	<ul style="list-style-type: none"> • Nevertheless, despite the political problems, the project continues because the markets are relatively independent from this kind of problems.
57	
58	Origin of the cooperation in the electric sector:
59	<ul style="list-style-type: none"> • All started with the creation of the CEAC in 1986
60	<ul style="list-style-type: none"> • Every company was in charge their whole national sectors. INDE, CEL, ENEEL, INE, ICE and IRE. They were “gods”
61	<ul style="list-style-type: none"> • It was easy because the president of each company used to have more relevance than any minister.
62	<ul style="list-style-type: none"> • Since they were directed elected by the presidents of each country, they had a strong representation.
63	<ul style="list-style-type: none"> • The national reforms changed drastically. Nevertheless, the state-owned companies are still very large. Only in Panama they don’t control the generation, despite the government owns the 49% of the power plants

B.I.IV. SIEPAC.IV

Interviewee ETESA officials, CEAC official at the time of the interview

Date November 2nd, 2012

Place Panama City (Panama)

Interview in Spanish, translation into English by the author

1	<u>Introduction of SIEPAC:</u>
2	
3	<ul style="list-style-type: none"> • SIEPAC started before the national reforms but is also a trigger for the creation of national markets.
4	<ul style="list-style-type: none"> • It was possible because every state-owned company used to have decision capacity.
5	<ul style="list-style-type: none"> • The final goal is to <u>maximize the energy resources in the region</u> through regional power plants. But for that is needed to overcome the reluctances from energy security and sovereignty.
6	
7	<u>Regional regulation and harmonization process:</u>
8	
9	<ul style="list-style-type: none"> • With the perspective of the full enforcement of the RMER, projects for different regional power plants are arisen. For example, there are rumors about one possible thermal plant of 800 MW in Honduras.
10	<ul style="list-style-type: none"> • It is very important to make a good harmonization process of regulation and equipment.
11	<ul style="list-style-type: none"> • It is crucial to allow the long-term contracts, so far only the surpluses are being traded through the regional market.
12	<ul style="list-style-type: none"> • It is very important to make the national markets information available to all. And it must be public and updated. Panama used to do it, but, since it was the only one, it stopped.
13	<ul style="list-style-type: none"> • Each country must open and share its internal information. This is one of the challenges, politics must understand that point. For that is the reason of CDMER (Governing Board), try to involve more the politics in the process. That's also why SICA has an energy department.
14	
15	<u>Role of extra-regional members:</u>
16	
17	<ul style="list-style-type: none"> • They are important because facilitate financing, but also because of their technical experience. For example ISA has experience with interconnections in Brazil and Peru.
18	<ul style="list-style-type: none"> • CFE is a tremendously big company, Mexico is a system of 70000MW
19	<ul style="list-style-type: none"> • The interconnection between Guatemala and Mexico started after SIEPAC but it has been completed much before. There will be a need for new

	negotiations for making an agreement Mexico-MER when the 7 th market will start full operations.
20	<ul style="list-style-type: none"> • The Mesoamerican Project has been very important for the political support. It has allowed conversations between the governments and put it in the political agenda. These projects must be started with public support, despite it will finish with private initiative.
21	
22	<i><u>Problems with Costa Rica</u></i>
23	
24	<ul style="list-style-type: none"> • Agreements are easier because most of us operate under market scheme.
25	<ul style="list-style-type: none"> • Costa Rica is vertically integrated, that is a political decision
26	<ul style="list-style-type: none"> • It is needed to privatize ICE
27	<ul style="list-style-type: none"> • So far, it has divided in business units.
28	<ul style="list-style-type: none"> • It accepts private participation in generation with BOT contracts for 20 years.
29	<ul style="list-style-type: none"> • It's necessary that a new energy law observes that actual situation
30	<ul style="list-style-type: none"> • In Panama there was no such problem, actually many people don't know that generation and distribution were privatized.
31	
32	<i><u>Main success actions</u></i>
33	
34	<ul style="list-style-type: none"> • The possibility to have backup power and cheaper if the efficiency is achieved
35	<ul style="list-style-type: none"> • The feasibility studies showed that and make everyone to pay more attention to the process
36	<ul style="list-style-type: none"> • The Framework Treaty is crucial because if one retires from SIEPAC the project fails. It has given a very strong political support

B.I.V. SIEPAC.V

Interviewee Eric Jaramillo

Affiliation Panama state-owned lawyer at the time of Framework Treaty negotiations

Date November 2nd, 2012

Place Panama City (Panama)

Interview in Spanish, translation into English by the author

1	<u>Background of the SIEPAC project</u>
2	
3	<ul style="list-style-type: none">• In 1986 Endesa and the Spanish government proposed the project with the idea of commissioning on 1992.
4	<ul style="list-style-type: none">• They created a company in Spain named SIEPAC corporation with the states are shareholders (finally the shareholders are the state-own companies).
5	<ul style="list-style-type: none">• The idea was since the creation of the CEAC.
6	
7	<u>Reasons for the success</u>
8	
9	<ul style="list-style-type: none">• The most important element has been the sign of the Framework Treaty, because:
10	<ul style="list-style-type: none">○ Ensure the commitments:
11	<ul style="list-style-type: none">▪ For the creation of the regional market
12	<ul style="list-style-type: none">▪ For appointing a representative in the EPR
13	<ul style="list-style-type: none">▪ Each country will give concession to the EPR
14	<ul style="list-style-type: none">▪ Regional institutions will be created: EOR for commercial administration and CRIE for supervision
15	<ul style="list-style-type: none">○ Gradualism:
16	<ul style="list-style-type: none">▪ The integration will continue increasing
17	<ul style="list-style-type: none">▪ International interconnections will have no national taxes
18	<ul style="list-style-type: none">○ Adoption of a regional regulation (RMER)
19	<ul style="list-style-type: none">• II Protocol gives financial viability to CRIE and also increase its independence and authority
20	<ul style="list-style-type: none">• Presidential summits
21	<ul style="list-style-type: none">• State-owned companies involvement
22	<ul style="list-style-type: none">○ Everything was made by the state-owned companies. Governments didn't intervene
23	<ul style="list-style-type: none">○ For the ratification of the Framework Treaty we explained and defended the project in the national parliaments in El Salvador, Costa Rica...
24	<ul style="list-style-type: none">• Several people was very important:

25	<ul style="list-style-type: none"> ○ Don³⁹ Teofilo de la Torre, at that time Executive Secretary of the Executive Unit
26	<ul style="list-style-type: none"> ○ Pablo Cop, President of ICE at that time
27	<ul style="list-style-type: none"> ○ They had several meetings with the President of Costa Rica
28	<ul style="list-style-type: none"> ○ In Guatemala, we also had that kind of personal meetings
29	<ul style="list-style-type: none"> ● “Social contract”
30	<ul style="list-style-type: none"> ○ The ownership of the EPR is agreed to be shared equally. No company can control more than a 15% of the total shares.
31	<ul style="list-style-type: none"> ○ That % has been decreasing due to the incorporation of the extra-regional members
32	<ul style="list-style-type: none"> ○ Endesa was not included since the beginning because some members (like Costa Rica or El Salvador) opposed to it. There were nationalist feelings; they considered Endesa wanted to take the control. Panama had no problems with the incorporation but finally the regional consensus prevailed.
33	<ul style="list-style-type: none"> ● Incorporation of extra-regional members
34	<ul style="list-style-type: none"> ○ The Spanish government and Endesa continued showing interest in participating more actively
35	<ul style="list-style-type: none"> ○ The company was started in 1998 as under the Panama law.
36	<ul style="list-style-type: none"> ○ From 1999 to 2002 (incorporation of Endesa), the company operated very bad with meeting every 4 months with each company paying its own expenses and the studies financed by IADB and realized by the Executive Unit (Teofilo de la Torre)
37	<ul style="list-style-type: none"> ○ Thanks to the final incorporation of Endesa the project could start. Endesa unblock the financing of US\$170 million from IADB (Spain gave that money to IADB for this project).
38	<ul style="list-style-type: none"> ○ For making possible that agreement, EPR offices were located in Costa Rica. Because of that, most of the workers are Costa Rica nationals
39	<ul style="list-style-type: none"> ○ Also the general manager was from Endesa for the first period (5 years). That was Francisco Núñez Ortega.
40	<ul style="list-style-type: none"> ○ Conflicts have been reduced thanks to the participation of extra-regional members.
41	<ul style="list-style-type: none"> ○ After Francisco Núñez Ortega, Jose Enrique Martinez was appointed general manager (also from Endesa). His conciliatory character trying to promote consensus is very important.
42	<ul style="list-style-type: none"> ○ CFE and ISA joined EPR as investors; they have been very active, with high interest in making the project successful. Their collaboration in the management is also positive.

³⁹ “Don” is an equivalent to Mr, when used in this context means high respect to that person

B.I.VI. SIEPAC.VI

Interviewee Grupo Terra's expert (previously INDE official)

Date November 5th, 2012

Place Guatemala City (Guatemala)

Interview in Spanish, translation into English by the author

1	<u>Background of the SIEPAC project</u>
2	
3	<ul style="list-style-type: none">• During the 80s the national system of Guatemala was a “disaster”. There was corruption and no generation expansion -> finally rationing of electricity
4	<ul style="list-style-type: none">• After the problems with the electric supply some large power plants were built (Hidrochula, Chixoy)
5	<ul style="list-style-type: none">• In 1986 the interconnection with El Salvador
6	<ul style="list-style-type: none">• In 1990 studies with Mexico for importing electricity
7	<ul style="list-style-type: none">• During the 90s new electricity crisis -> private generators entered Guatemala and several emergency contract were signed
8	<ul style="list-style-type: none">• Then meeting with the IADB. There were three options:
9	<ul style="list-style-type: none">○ Isolated systems
10	<ul style="list-style-type: none">○ Coordinated systems
11	<ul style="list-style-type: none">○ Integrated systems
12	
13	<u>Strong points</u>
14	
15	<ul style="list-style-type: none">• There were several meetings before the sign of the Framework Treaty, which is basic pillar of the project
16	<ul style="list-style-type: none">• RMER is a Central American regulation, what means no country can “cut” the line. That gives a strong power, at least in theory; but, so far, all the agreements have been supported and respected.
17	
18	<u>Main Issues</u>
19	
20	<ul style="list-style-type: none">• Problems with Costa Rica
21	<ul style="list-style-type: none">○ There are problems of reciprocity: ICE can make contracts with distribution companies or invest in Guatemala, while the private generators in Guatemala cannot make it freely (only through ICE).
22	<ul style="list-style-type: none">○ ICE has divided into independent business units, but that's not enough.
23	<ul style="list-style-type: none">○ Nevertheless, ICE (Teófilo de la Torre in particular) is one of the first promoters
24	<ul style="list-style-type: none">○ The real problem is that private generators of Guatemala saw ICE as a strong competitor. Similar problem doesn't happen with ENEE in

	Honduras ⁴⁰ because the company has 40% of losses
25	
26	<ul style="list-style-type: none"> • Problems with CRIE
27	<ul style="list-style-type: none"> ○ There are problems for approving the needs for repayment to EPR, through the Annual Transmission Costs for the operation and maintenance. Law allows only 3%, EPR studies said they need 4%, while CRIE has only approved 1.9%. Despite it doesn't need to make a big business, EPR should be financially independent from the countries
28	<ul style="list-style-type: none"> ○ Guatemala and El Salvador have sign a long term contract, but there are no guarantees for supply, so it can start. There is need for a resolution of CRIE about that issue.
29	<ul style="list-style-type: none"> ○ CDMER has no control over CRIE, but the governments should be able to control CRIE
30	
31	<ul style="list-style-type: none"> • The benefits in the short term are being more attractive (those for reducing electricity tariff immediately), but the main benefit is in the construction of regional power plants. For a good plant of LNG, 500 MW is the minimum size.
32	<ul style="list-style-type: none"> • The main issue is to not become fully dependent of imported energy. Mexico has capacity for providing all the electricity of Guatemala and making the Guatemala companies go to bankruptcy. There must be concerns that extra-regional members should not be more than a %.
33	
34	<i>Role of the IADB</i>
35	
36	<ul style="list-style-type: none"> • The ascendancy of IADB is very huge.
37	<ul style="list-style-type: none"> • IADB gives the financing for any project in the Central American countries
38	<ul style="list-style-type: none"> • The support of the IADB is always kept in the mind of the governments.
39	

⁴⁰ Honduras has in fact a single buyer model as Costa Rica

B.I.VII. SIEPAC.VII

Interviewee Yancy Garita Brenes

Affiliation CRIE market analyst

Date November 5th, 2012

Place Guatemala City (Guatemala)

Interview in Spanish, translation into English by the author

1	<u>Activities of CRIE</u>
2	
3	<ul style="list-style-type: none"> • Meetings CRIE-SICA for the promotion of national laws that facilitate the commercial development of the regional market
4	<ul style="list-style-type: none"> • Intermediate stage, the harmonization for the measurement systems for being to apply RMER conditions. It is necessary to be able to use all the nodes (also internal)
5	<ul style="list-style-type: none"> • Ensure the transmission capacity of the regional grid
6	<ul style="list-style-type: none"> • Using the methodology detailed in the RMER, CRIE establish operational management, transmission charges (considering nodes) and complementary charge.
7	<ul style="list-style-type: none"> • There are difficulties for convincing about the payments because RMER is not operative and line is not finished (one part in Costa Rica).
8	<ul style="list-style-type: none"> • CRIE is the maximum authority of the MER. EOR realizes technical studies and proposes actions, then CRIE analyzes them and approves or not. CDMER cannot take decisions over the MER directly.
9	
10	<u>Structure of CRIE</u>
11	
12	<ul style="list-style-type: none"> • The maximum authority in CRIE is the Board of Directors, constituted by 1 representative (or commissioner) from each country.
13	<ul style="list-style-type: none"> • Usually this commissioner is from the national regulatory bodies. That makes that there are many national political pressures, because they want to go slower in the regulatory integration. Since the agreements are made by consensus, the decisions are slow.
14	<ul style="list-style-type: none"> • For example, Costa Rica must open the national market and improve the measurement equipment. In Costa Rica there is only one agent and the principle of gradualism of the Framework Treaty means give time to Costa Rica for changing.
15	<ul style="list-style-type: none"> • Recent strengthening of the CRIE:
16	<ul style="list-style-type: none"> ○ Apart of the Board of Directors, 3 managerial units have been created (legal, market and technical).
17	<ul style="list-style-type: none"> ○ Each counts with 1 specialist and 1 analyst. 6 new employees in total. 1 is

	from each country. There was not specific criterion for the election of position for each nationality; a “lottery” scheme was applied. There is a commitment with keeping diverse nationality representation at CRIE.
18	<ul style="list-style-type: none"> • CRIE has offices at every country
19	<ul style="list-style-type: none"> • Decisions are always by consensus. At least, that’s the main goal
20	
21	<u>Issues at CRIE</u>
22	
23	<ul style="list-style-type: none"> • The main problems come for the slowness in the enforcement of the RMER:
24	<ul style="list-style-type: none"> ○ II Protocol and RMER give sanctioning power to the CRIE. Without enforcement of RMER, CRIE cannot force because it cannot punish any action.
25	<ul style="list-style-type: none"> ○ CRIE should regulate interconnection between Guatemala and Mexico, in order to smooth operation at MER. But, without RMER, nothing can be made.

B.I.VIII. SIEPAC.VIII

Interviewee Karla Hernandez
 Affiliation EPR manager in Honduras
 Date November 6th, 2012
 Place Tegucigalpa (Honduras)

Interview in Spanish, translation into English by the author

1	<u>Background of SIEPAC</u>
2	
3	<ul style="list-style-type: none"> At the initial stages the framework was very different because there used to be no markets.
4	<ul style="list-style-type: none"> The main motivation was the mutual cooperation between different systems.
5	<ul style="list-style-type: none"> El Cajon dam in Honduras was so large that it was from other countries was sent to there and then Honduras charged 20% of the electricity generated.
6	<ul style="list-style-type: none"> Studies of ECLAC attempted to integrate the whole region as one single system. Then different studies for making a more feasible project.
7	<ul style="list-style-type: none"> Then, the goal changed to promote foreign investment because the region as a whole is more attractive
8	<ul style="list-style-type: none"> The idea was to make possible the construction of regional power plants. In Honduras there are talks for developing El Faro with 750MW, in Costa Rica for Boruca.
9	<ul style="list-style-type: none"> The 6 + 1 = 1 still is not real, at this moment they are still 7 different markets.
10	
11	<u>Main issues</u>
12	
13	<ul style="list-style-type: none"> Nowadays there are several fears because of differences in political ideologies.
14	<ul style="list-style-type: none"> Honduras (actually every country) is investing only for national generation.
15	<ul style="list-style-type: none"> The region is politically instable. When the coup d'état in Honduras, Guatemala, El Salvador and Nicaragua closed the borders isolating Honduras.
16	<ul style="list-style-type: none"> Finally they open because several products they need come from Honduras' ports. There is a mutual dependency between the countries.
17	<ul style="list-style-type: none"> Problem is the inference of political decisions in commercial issues.
18	<ul style="list-style-type: none"> In Nicaragua, Daniel Ortega, has put taxes against the agreements
19	<ul style="list-style-type: none"> There are bad past experiences in national security issues.
20	<ul style="list-style-type: none"> Therefore, the question is <i>how much can I depend on energy?</i>
21	<ul style="list-style-type: none"> For solving disputes CRIE works well, but we don't feel comfortable that there is no regional institution over CRIE. Costa Rica has not accepted

	Parlacen (Central American Parliament) and Panama will soon quit. The Central American Court works better, but it is still not enough.
22	
23	<u>Role of international actors</u>
24	
25	<ul style="list-style-type: none"> • IADB
26	<ul style="list-style-type: none"> ○ It gives strong guarantees to the project
27	<ul style="list-style-type: none"> ○ The involvement of the IADB gave a “certificate of certainty”
28	<ul style="list-style-type: none"> ○ IADB ensures transparency and quality
29	<ul style="list-style-type: none"> • Endesa
30	<ul style="list-style-type: none"> ○ It is very important because it was the first to boost the project and contributes with money and financing
31	<ul style="list-style-type: none"> • Mexico and Colombia
32	<ul style="list-style-type: none"> ○ CFE and ISA are seen with more reluctances because they are much stronger than the Central American companies
33	<ul style="list-style-type: none"> • There is a common fear to loss the control of the region
34	<ul style="list-style-type: none"> ○ For appointing the executive director of REDCA⁴¹ three candidates were proposed. One from Honduras, one from Spain and another from Colombia. The Honduran candidate was the favorite but he decided to withdraw. Finally, no one was chosen and REDCA is still inside the EPR structure. There were concerns to choose the most neutral, and there is confidence on EPR work.
35	<ul style="list-style-type: none"> • The general consensus in how much open the region is:
36	<ul style="list-style-type: none"> ○ EPR: fully open to extra-regional members
37	<ul style="list-style-type: none"> ○ EOR: only for Central Americans but there is no quotas per country
38	<ul style="list-style-type: none"> ○ CRIE: close, only to countries and with quotas
39	
40	<u>Challenges for the future</u>
41	
42	<ul style="list-style-type: none"> • Operation of CDMER for the promotion of the regional market benefits
43	<ul style="list-style-type: none"> • CDMER is composed mainly by ministers of energy, but in Honduras there is not Ministry of energy. Therefore is again the state-owned company who represents.
44	<ul style="list-style-type: none"> • How to develop the regional generation? Similar scheme as for EPR cannot be used. For the line, there are parts in every country, but the power plant will be in one country. And the country which will cut the trees and move people will claim to use its national resources for the supply of foreign countries. The solution will be private or PPP.
45	<ul style="list-style-type: none"> • Mesoamerican Project will not be successful because every aspect included in “national security” is put out of the agenda
46	

⁴¹ REDCA is a new project developed by EPR for creating a regional optical fiber using the route of the SIEPAC line

47	<i>Differences between Honduras and Costa Rica</i>
48	
49	<ul style="list-style-type: none"> • Honduras is delayed in the division in business units, but it is more open to private generation. Everybody can sell to Honduras with contracts with high securities
50	<ul style="list-style-type: none"> • The main problem with Costa Rica is that very protectionist. If ICE tries to protect its internal market, then others try to do the same.
51	<ul style="list-style-type: none"> • ICE has been cooperating always; despite some don't want to see that point. During the period of the ratification, ICE commit with the payments despite it was not accepted by the country.

B.I.XIX. SIEPAC.XIX

Interviewee Juan Carlos Posadas

Affiliation Institute of the Americas, Country Director, Project on Regional Electric Interconnection and Trade in Central America.

Date November 6th, 2012

Place Tegucigalpa (Honduras)

Interview in Spanish, translation into English by the author

1	<u>Reasons for the integration</u>
2	
3	<ul style="list-style-type: none">• Technical studies showed the operational benefits.
4	<ul style="list-style-type: none">• For the case of southern countries. Costa Rica has its generation capacity on the north. So the exports from Panama to Nicaragua gave higher stability to the Costa Rica system. Studies said that Costa Rica should pay to Panama for those exports. Obviously Costa Rica didn't agree, but that was the seed of everything.
5	<ul style="list-style-type: none">• Through the optimization of the regional resources, the society gets a benefit.
6	
7	<u>Main issues</u>
8	
9	<ul style="list-style-type: none">• At present times, no one country really accepts to depend on the others. Only El Salvador and Panama accepts relatively.
10	<ul style="list-style-type: none">• Problems to Hidro Xacbal for ensuring the transmission rights. That should have already been solved by the governments
11	<ul style="list-style-type: none">• Governments must give clear signals that they support the integration. At this stage the political support must be much bigger than it actually is.
12	<ul style="list-style-type: none">• Guatemala has put barriers to export. They want to use the renewable energy for the national dispatch and export only thermal.
13	<ul style="list-style-type: none">• It is very easy to make the project fail just with taxes issues (that happen in Argentina-Chile)
14	<ul style="list-style-type: none">• Who is going to lead the integration process? That should be CRIE, but it is not acting like that. For that reason the CDMER has been created, but it can be dangerous if the governments pretend to interfere in the future development.
15	<ul style="list-style-type: none">• The problem is that presidents of the country are not well informed of the situation and the needed actions. Actually ministers of energy are not involved with the process. From the Institute of the Americas we want to promote more meetings between different institutions, add new ideas to the debates.
16	<ul style="list-style-type: none">• Guatemala and Panama want to take advantage from the extra-regional members. But if Mexico and Colombia want to interconnect is for exporting

	energy to MER, not only to Guatemala and Panama.
17	<ul style="list-style-type: none">• CRIE must be strengthened much more. Commissioners full time, more technical capacity and more financial resources. Every country wants to get the most benefits possible, that's the natural behavior, for that a strong regulator is needed in order to ensure the fairness and the future development.

B.I.XX. SIEPAC.XX

Interviewee Teófilo de la Torre

Affiliation President of ICE at the time of the interview

Date November 8th, 2012

Place San Jose (Costa Rica)

Interview in Spanish, translation into English by the author

1	<u>General ideas</u>
2	
3	<ul style="list-style-type: none">• The creation of a regional market is a very very difficult task. That's why almost no market exists in the world. Particularly including 6 countries. There are some for 2 or 3.
4	<ul style="list-style-type: none">• They European Union has no European electricity market.
5	<ul style="list-style-type: none">• It is very complicate the tasks of communicating and forcing agreements.
6	<ul style="list-style-type: none">• We have less ability to obey communitarian rules. However, I've seen several efforts are being down in the world in this direction. I hope our will be the most successful in the world. Africa, Europe, Scandinavian countries, within United States. All they have problems.
7	<ul style="list-style-type: none">• We have worked at this effort for many decades. First we speak the same language, second we are small, and third, we have other communitarian relations. Industrialization of the region promoted efforts in trade, certain amount of ability of governmental officials to negotiate and to accept rules that are on top of national regulation.
8	
9	<u>Background of SIEPAC</u>
10	
11	<ul style="list-style-type: none">• We have strong technical capacities, which were very simple to coordinate between the 6 countries because when we started this effort, the electric sector was very simple, on vertical integrated company, state-owned in each country. All you have to do is coordinate six electric managers. At that time each country was trying to build an electric system in the whole country. Try to reach to the borders, main cities.
12	<ul style="list-style-type: none">• By late 70s, each country had an interconnected electric system and reached to the borders.
13	<ul style="list-style-type: none">• We found that an opportunity, larger electric systems, you have many opportunities of better quality of service. Any electric company sees the benefits of interconnection. You did inside your country and you should do with other countries or federals states.
14	<ul style="list-style-type: none">• So the six electric companies did that from a technical point of view. We started to meet until understand how to do it.
15	<ul style="list-style-type: none">• we have the same voltage and frequency

16	<ul style="list-style-type: none"> • all with systems arrive to the border or close to the border with high voltage
17	<ul style="list-style-type: none"> • So we agreed in a bilateral manner to interconnect between neighbouring countries. We did it over 10 or 20 years
18	<ul style="list-style-type: none"> ○ Nicaragua-Honduras
19	<ul style="list-style-type: none"> ○ Costa Rica-Panama
20	<ul style="list-style-type: none"> ○ Guatemala-El Salvador
21	<ul style="list-style-type: none"> ○ Nicaragua-Costa Rica
22	<ul style="list-style-type: none"> • We made in a bilateral way and we agreed how to sell / purchase power between two countries, or better said, between two companies. That allowed us to sell / purchase surplus power from some countries to another. We found we were in a position to move to a more integrated situation. If two are interconnected, why not two, three,..., six. We did it in a gradual process.
23	<ul style="list-style-type: none"> • Technically, no market wise, larger electric systems have more strength. And it's the best way for having better cost. That was made by the national companies and it didn't require in all the situation governmental treaties. Governments only participate in two occasions: Nicaragua – Honduras and Guatemala – El Salvador. Other was only a contract between two electric companies.
24	<ul style="list-style-type: none"> • We arrived to a point we had difficult situation in late 80s, economic situation in the region. One of the problems was being able to support the growth of power demand. Because the economic situation was difficult in the world and in Central America. Governments started to shrink, because of liberalist political situation in the world.
25	<ul style="list-style-type: none"> • The electric companies, government owned, started to have a lot of difficulties in order to finance future generation projects. Because governments will not permit them to finance, because it is debt, or the electric rates were controlled politically. Companies started to deteriorate at the end of 80s. In general the whole region started to have blackouts, payment problems, no continue the expansion of new projects. And the demand continued to grow. The solution started to be, take a look at the electric competitive markets. Chile and England have done that, there were some experiences. Suggestions appear that part of the solution was to have electric markets, at least until the wholesale market.
26	<ul style="list-style-type: none"> • The first step was that the vertical integrated power company purchase power from privates, PPAs (independent power producers). 10 or 20 years of power at a fix rate. Those companies put their money.
27	<ul style="list-style-type: none"> • That solved the first problem: to have supply. Early 90s, all have. Costa Rica did not have that problem, because of the investment of ICE did not shrink as in other countries, but still have limitations. And it opened that possibility for renewable energy up to a 30 % of the capacity of the country. Each country was transitioning vertically monopoly markets to wholesale competition in generation.
28	<ul style="list-style-type: none"> • We continued to discuss among electric companies to create a larger electric system. We started to see in parallel that these electric companies were disintegrating, dividing in different companies. 4 companies move from

	<p>purchasing power to a wholesale electricity market, unbundling generation, transmission and distribution, and large consumers appear: Guatemala, El Salvador, Nicaragua, and Panama. In Honduras and Costa Rica, politically it was not successful. And the old model is today present. Now the task is more complicated. Larger electricity market + wholesale market among 6 countries. Studies in mid 90s, the product of that effort was the Tratado Marco. Reading it is not a substitute of 6 wholesale markets, it is superposed on top of national ones. In simple, the Tratado Marco we respect what you do in your country (it's on your loss), but if you are going to sell / purchasing cross border there are new rules. When it is international trade we use different rules, and those rules are clear in Tratado Marco: international trade we apply new regional rules, detailed in Tratado Marco and RMER. Since you have new rules, you need to have someone who takes a look, CRIE, and a operator who says how much you have pay / charge, the operator. Operator of the system and the market. That was the idea.</p>
29	
30	<i>Signing the Framework Treaty (Tratado Marco) and the way after</i>
31	
32	<ul style="list-style-type: none"> • It was quite simple to agree on that. In less than one year 6 governments and 6 electric companies agreed on that. In the following two years, the congress of each country agreed the Tratado. And this Tratado is binding, if any of these countries want to retire, it has to give in advance of 10 years. It deterred to leave the compromise.
33	<ul style="list-style-type: none"> • Since then, created CRIE, EOR, special purpose for the construction of the transmission EPR, and prepare the operating codes, contracted several international consulting companies and experts in electric markets. Transmission line is almost finished, except a part in Costa Rica, and it is also interconnected with the national lines. EOR and CRIE in operation since the last 10 years, and the transmission line will be finish in 2013.
34	<ul style="list-style-type: none"> • We finish the simple part. We thought it was the most complicated, but now is more difficult.
35	<ul style="list-style-type: none"> • For the construction, it was not so difficult, and EPR made a good job obtaining the financing and new investors
36	<ul style="list-style-type: none"> • In the creation of the market rules, that was more complicated. Several years of discussion of each article of the 400 pages of the RMER. Technical people, lawyers, economist, politics.
37	<ul style="list-style-type: none"> • Make the agreement is complicated. But it was made and approved in December 2005. Nevertheless, we could not put in force because transmission line was not ready. Now it's ready, so we can put it. RMER will be enforced at the beginning of 2013
38	<ul style="list-style-type: none"> • <i>Who is going to buy and purchase?</i> Up to now is only surplus. If you have short term surplus, you take a look who want to buy it and negotiate the price or go to the spot market. For 10 years that has been working. People at EOR have great experience operating among 6 different countries. Opportunity trade, that was small.

39	<ul style="list-style-type: none"> • Then you have to pass to something more complicated. Power blocks of electricity that you are willing to trade for a longer times (5 - 10 years), 50, 100 – 200 MW. There are other problems, easy to write but difficult to accept in the reality. They are written in RMER. For example:
40	<ul style="list-style-type: none"> ○ If I have a generating plant in Costa Rica and someone in Guatemala offer to buy 100 MW for the next 10 years. That means that the electricity system in Guatemala for the next 10 years, and if something goes wrong in between, you have a problem. You have to move to the spot market, and the spot market might not have enough electricity; so, long term contracts have to pass different tests of reliability and change a little the culture of the people, who are used to have the generating facilities inside the country and not outside. A country can be very willing to export, but a country depending on imports is a more difficult culture. And technical people get nervous; they cannot control the electricity you have to import.
41	
42	<i>Challenges for building regional power plants</i>
43	
44	<ul style="list-style-type: none"> • That is one of the issues in the near future. We have to see people building plants which will sell to other countries, no countries, other agents located in other countries (large consumers...).
45	<ul style="list-style-type: none"> • Be sure that what is written in Tratado Marco is enough. So far, the trading is small.
46	<ul style="list-style-type: none"> • Regional plants
47	<ul style="list-style-type: none"> • What happen if someone says, I don't want to buy? I don't want to sell to you because I need in my country or someone is willing to pay more?
48	<ul style="list-style-type: none"> • Those relations are controlled by contracts, and they have rules. The problem if it is between governments. But between companies and with contracts, the probability of no paying is lower.
49	<ul style="list-style-type: none"> • The playground is ready. Several barriers and limitations.
50	<ul style="list-style-type: none"> • Nobody believed this was going to be simple. The capacities of the groups at the technical entities are growing. EOR has good capacity, CRIE is on the way. Consejo Director, Board of Directors, constituted by representers of the countries, it is a political body that oversees the whole market. Advise that something is failing. They are the policemen. They can go back to the governments and say that there is a problem.
51	<ul style="list-style-type: none"> • That's general.
52	
53	<i>Differences between CRIE and CDMER</i>
54	
55	<ul style="list-style-type: none"> • CRIE is the electric regional regulator: it's not for relation between governments
56	<ul style="list-style-type: none"> • CDMER is political representative.
57	<ul style="list-style-type: none"> • CRIE is appointed by politics but it is technical. Measures to ensure the market is working and if there is needed a future expansion. The maximum

	authority in the market.
58	<ul style="list-style-type: none"> • CDMER is a group of representing the 6 governments taking a look that everything is going ok. A kind of supervisor of CRIE, but it cannot give orders, but suggestions.
59	<ul style="list-style-type: none"> • Sometimes there are different opinions between countries. If they cannot be solved in the technical level, CDMER try to do it. If it is not successful that goes to the governments. And the governments have their relations at SICA, ministers of foreign affairs or Presidents. High level coordination groups. Political playground for taking considerations of major problems.
60	<ul style="list-style-type: none"> • CDMER is a group of representatives of the countries, report to governments what is happening. It is not an international entity. It is a technical audit. It gives the guarantee to the governments that this regional entity is not going in a wrong direction.
61	<ul style="list-style-type: none"> • If CRIE cannot solve a dispute, then there is a major problem. Probably parts will go to court. Before going to court, there are several mechanisms for solving disputes, arbitration, coordination, conversations. CRIE is the last point of administrative issues. But CDMER is no superior to CRIE. SICA could be superior. It is not clear if it could be a court of appealing, at this time it's not. But some lawyers that is the case.
62	
63	<u>Merits of RMER over past situations (bilateral agreements, RTMER)</u>
64	
65	<ul style="list-style-type: none"> • In 2002, all the bilateral agreements were canceled and replaced by RTMER. A very simple regulation because the transactions capacity was very limited. A Pilot code for 1 or 2 years, but finally during a longer time. RMER and line. It has been enforcing for 10 years. It is a very weak regulation, cannot operate with several transmission lines connecting countries. It is very important to start using the RMER and stop using the RTMER. A lot of new problems
66	<ul style="list-style-type: none"> • The order of level in the dispatch is: 1st Firm contracts, 2nd national dispatch and finally regional dispatch
67	<ul style="list-style-type: none"> • In the future is expected that it will 1st firm contracts and then regional dispatch.
68	<ul style="list-style-type: none"> • There is a respect for the national dispatch, and then each national operator tells what is available and at what price. EOR decide whether to accept or not
69	<ul style="list-style-type: none"> • If one country doesn't want to sell, it can simply to put a very high price. So nobody buys.
70	<ul style="list-style-type: none"> • That would be against the regional market but it is one the no technical decisions. Technically is better to do the regional dispatch and the countries will adjust to that, but that was no accept by the six countries. By nobody, neither the companies.
71	<ul style="list-style-type: none"> • We are not at the time that we can with to the regional entity. That's why it is a 7th market, because it respect the
72	<ul style="list-style-type: none"> • In future they will merge in one $6 + 1 = 1$

73	<ul style="list-style-type: none"> Politically is still not acceptable, it is the future, but before we must be sure that we have something that is suitable.
74	<ul style="list-style-type: none"> <i>But if regional dispatch is after national dispatch price will be higher?</i> That's why the firm contracts are so important
75	<ul style="list-style-type: none"> Also the countries must accept that the firm contract has priority to the national dispatch. Countries tend to say that buying electricity has priority to selling. Countries have the authority to say yes or no.
76	<ul style="list-style-type: none"> Reasonable regulator will say yes, if it is a plant that is being built for exports. Other will create an economic loss to their country.
77	<ul style="list-style-type: none"> Degree of the dependence from other countries is part of the national policy. We don't worry about depending 100% on oil for transport, but in electricity we should not depend more than a 10%, it is in the national policy. Most of the countries would not want to depend more than the national reserve of the system (10 – 15%). If some of the neighbours make a problem, technical or political. As long as not being more than 10%, regulators will say yes (in purchasing countries).
78	
79	<u><i>Who should lead the process of promoting the development of MER?</i></u>
80	
81	<ul style="list-style-type: none"> That is a good question. I may have no answer. But I would say the most interested party for promoting the use of the market should CDMER. All parts have responsibility.
82	<ul style="list-style-type: none"> EOR indicative power planning for transmission and generation. Those plans are shown to any group which is interested in investing. Giving orientation of thermal, hydro.... Instruments made by EOR very useful for attracting investment
83	<ul style="list-style-type: none"> CRIE is for interesting parties understanding the legal reliability and the rules they will play.
84	<ul style="list-style-type: none"> CDMER is a second stage insurance that the 6 governments are committed with the market. There is a political will below it.
85	<ul style="list-style-type: none"> In the end, the six governments are the most interested in attracting the private investors. And each of them wants to install in their country. That's natural. Make here and export to whole Central America.
86	<ul style="list-style-type: none"> The most simple is each government will say: I'm the best come here.
87	<ul style="list-style-type: none"> The main moving block since the beginning has been to attract investors.
88	<ul style="list-style-type: none"> Government has not enough money for investing to the electric sector.
89	<ul style="list-style-type: none"> Private sector was invited. They did with PPAs.
90	<ul style="list-style-type: none"> But that was too expensive for governments, because of no competition. And they passed to competitive markets
91	<ul style="list-style-type: none"> But competitive markets are not so attractive for private investors as PPAs. In market there is a risk, you are not so sure you will make money.
92	<ul style="list-style-type: none"> This regional market is the opportunity to bring more foreign investment and allow building larger plants that will not be able to be built without the regional market. Large plants give lower plants. If you build one 500 MW the final price is lower than if you build 5 of 100MW

93	<ul style="list-style-type: none"> • But if it is very large you need investors. You will find easily investors for several investors 500 MW plants than for 5 of 100MW. More funding opportunities for developing the sector.
94	<ul style="list-style-type: none"> • That is the main objective. There are others as increasing reliability, lower cost, but also that you have also large players in generation than if you don't have the regional market.
95	
96	<u>Interest of Costa Rica in SIEPAC</u>
97	
98	<ul style="list-style-type: none"> • We have large capacity, with renewables in a large proportion due to large reservoirs.
99	<ul style="list-style-type: none"> • 6000 MW, we need to have 1000MW of capacity for having security of supply. We don't have so much export capacity except during rainy season.
100	<ul style="list-style-type: none"> • We also import thermal when that is cheaper in the dry season.
101	<ul style="list-style-type: none"> • Now we are at a point that the plants we want to build are very large. Those are projects that need investors, partners to ICE.
102	<ul style="list-style-type: none"> • Mainly, since is renewable, we have lot of plants, wind, geothermal, mini hydro. With multiple owners, most of them local companies. You don't have those large international firms.
103	<ul style="list-style-type: none"> • There is no fear to extra-regional members because presence of CFE, Endesa and ISA are limited, but they can have subsidiaries. But ISA has no generation, only transmission and market operator. Endesa has lot of generation capacity. And CFE is like ICE, governmental, no intention to invest in generation in other countries.
104	<ul style="list-style-type: none"> • I have seen that large private generators they are retiring from Central America. Tampa (from Florida) they sold their investments in Guatemala. It seems there is a trend of large energy companies to leave space in small countries and concentrate in larger markets.
105	<ul style="list-style-type: none"> ○ For example, in the oil business. Shell sold all their gas, Texaco. Why are you selling? Is a bad business? No we are concentrating in the large markets. Central America is not attractive. Large companies are losing interest in small countries.
106	<ul style="list-style-type: none"> ○ New actors appear: Grupo Terra (Honduras) with Hidroxacbal. They are growing as a large conglomerate.
107	
108	<u>Claims from Guatemala</u>
109	
1110	<ul style="list-style-type: none"> • There is no limit of how much to purchase. Guatemala says they cannot sell. ICE can purchase power from Guatemala companies, what they want to see is that they can sell not only to ICE but to the other distribution companies or large consumers (Intel). That's why they complain, we have an open market
1111	<ul style="list-style-type: none"> • We are still vertical integrated but with the division in business units we commit with the Tratado Marco. Logic is that we will arrive to the same situation as other countries.

112	<ul style="list-style-type: none"> • It might give us an advantage, temporally.
113	<ul style="list-style-type: none"> • We are very socialistic country. It is very difficult to privatize or unbundling or increase the amount of private generation. Changes in the law for the last 20 years
114	<ul style="list-style-type: none"> • In congress there are now 6 projects for changing the electric law. There are people reactions
115	<ul style="list-style-type: none"> • No large changes soon, but the trend is in that direction.
116	<ul style="list-style-type: none"> • The entering the SIEPAC put us one step closer to having wholesale market. If not locally, we will have it regionally.
117	<ul style="list-style-type: none"> • The same with Honduras. They have very bad financial situation. But they have more other more complicated problems than the electric sector.
118	
119	<u>Role of the extra-regional members</u>
120	
121	<ul style="list-style-type: none"> • Endesa was founder of the project. They have the idea of having a strong transmission line crossing Central America. And they were going to finance it with Spanish cooperation funds. But it was too much. Talking with other banks we arrived to IADB. Making a group in order to finance the project.
122	<ul style="list-style-type: none"> • At the beginning, Central American countries felt that this is a project that only Central American should be the owners of the transmission line. And that was not attractive for Endesa, because they wanted to be leaders of the project. But at that time Endesa was a public company.
123	<ul style="list-style-type: none"> • 1995 – 2001 – Endesa was not included in the EPR concept.
124	<ul style="list-style-type: none"> • “We are more comfortable doing alone”, “we want to do it by ourselves”
125	<ul style="list-style-type: none"> • In 2001 we restarted everything and we arrived that Endesa should be an equal partner. Access to Spanish funds, Endesa wanted to have a significant part of the project in the management. Management responsibility for Endesa.
126	<ul style="list-style-type: none"> • The changed was motivated because we were having several difficulties for raising the financing. IADB conditions were not acceptable for the ministers of finance.
127	<ul style="list-style-type: none"> • The project almost disappeared. There was a full renegotiation. And then Endesa and Spain entered. The new package included Endesa, Spain and IADB.
128	<ul style="list-style-type: none"> • IADB had offered expensive money (ordinary capital) for all the countries. And there are several countries in the region, that according to IMF they cannot receive normal money, only concessional money (40 years). They found a piece of that money in the soft loan section of IADB and the government of Spain. Spain appears as a part of the solution. Honduras and Nicaragua could sign the financing. That brought the solution
129	<ul style="list-style-type: none"> • CFE and ISA entered later. They requested invitation. Each one of them have interest of being part of the SIEPAC development expecting that they will be able to interconnect their systems with SIEPAC and they wanted to have knowledge and influence. Mexico – Guatemala finished before SIEPAC. Interest of both, (public owned), political risks for participates. Good

	neighbours policy. The proportion of equity of each partner, started to decrease. The Central American countries have been reduced. Colombia and Mexico have also given strong political support
130	<ul style="list-style-type: none"> • During those years there was a program proposed by Mexico, called Plan Puebla-Panama, now Proyecto Mesoamerica (including Colombia), which adopted SIEPAC as one of the insignia projects, through that we also have with strong political support from Mexico, and eventually CFE entered through that road.
131	<ul style="list-style-type: none"> • External political support is very important for national government support
132	<ul style="list-style-type: none"> • The main support that we have been receiving external has been IADB. They have been the leaders of the full effort from the beginning not only with money, but with technical advice and support.
133	<ul style="list-style-type: none"> • At one time, many years ago, the Spanish president, he made a meeting with Central American Presidents and told them:
134	<ul style="list-style-type: none"> ○ “You are stupid people that you don’t go ahead with large for big projects that are import for you, we have the money ready and you don’t act”
135	<ul style="list-style-type: none"> ○ That made an important reaction
136	<ul style="list-style-type: none"> ○ The President of IADB has told the Presidents of Central America, why are you doing? why are you so slow? It is a petty that you are not taking advantage of this project
137	<ul style="list-style-type: none"> • Strong international movement that pushed governmental decisions in that direction. That’s part of the success. Strong political support, not only locally but also from outside.
138	
139	<u>National level issues</u>
140	
141	<ul style="list-style-type: none"> • Straightly enough all the politicians agree with the SIEPAC project, maybe not all the parts. But in general, the concept of participating in a larger market is accepted by all, from the right, the center or the left.
142	<ul style="list-style-type: none"> • The problem is when you say: let private sector to export, and they say no. When you say ICE is the exporter, they say yes.
143	<ul style="list-style-type: none"> • You should not use your natural resources, which are scarce, for exporting raw material. These scarce resources that should be for value added products, with higher profitability.
144	<ul style="list-style-type: none"> • Don’t make exports using hydro sites, with environmental limitations.
145	<ul style="list-style-type: none"> • In general they have approved the Treaty, the II protocol. 3 years of negotiation because of local rules of how to go to the regional market. We have to be sure that ICE is the only actor.
146	<ul style="list-style-type: none"> • You will not find politicians opposing SIEPAC. But if you are going to build the large hydro projects for exports. No, you should use that for local development, and use them for making new products and then sell those products.
147	<ul style="list-style-type: none"> ○ Yes, that’s what we are doing. If you build the large project (Reventazon), it takes three years to use it. Ok, so let’s export during

	the time you have surplus. And someone will buy it.
148	○ The national resources will be used for the national development.
149	• Politicians basically agree on SIEPAC, but they disagree on how to move at the national level. ICE has been trying to coordinate to pursue other politicians
150	• Now the problem is the harmonization in the regional and national level.
151	• ICE has lot of technical knowledge; we are also the operator for Costa Rica in Central America. Discussing with the regulator
152	
153	<u>Harmonization</u>
154	
155	• Harmonization has been a slow process
156	• CRIE made a proposal to each country, what CRIE considered a valid way to making the harmonization. Maintain the regional regulation and tide the local regulation to the regional. Plugging both together. CRIE did that by contracting consulting companies. Panama did by them.
157	• Then each national regulator has used this information for taking more time of study and decided how to do it. How they will take resolution in order to have the RMER in operation in January, under preliminary phase.
158	• Right now CRIE is not participating. But local regulators. It is their job.
159	
160	<u>Strengthening of CRIE</u>
161	
162	• They still need to change their “hat” from national to regional.
163	• It’s growing. Until very recently they didn’t have own budget, they were living with donations from IADB. Now they are more than 20, they used to be only 3.
164	• Develop CRIE is more complicate than EOR because governments are reluctant to give power to it.
165	
166	<u>Role of CDMER</u>
167	
168	• The idea is that CDMER reduce reluctances from governments.
169	• Treaty 1998, CDMER in 2010. And the decision to create CDMER came from 10 years of experience; we found that something was missing. Only EOR and CRIE will be something isolated from the countries. And that was not going to be good for the market. CDMER is the place for involving the governments.
170	• CDMER is by delegated from ministers of energy.
171	• Most of the countries have ministers of energy, but others do not have.
172	• Panama until very recently, and then the responsibility was for the company.
173	• In Honduras there is no minister of energy.
174	• In El Salvador there is no minister of energy, it is an internal group inside the minister of Economy.

175	<ul style="list-style-type: none"> • Then, the national companies, that are government-owned, have a larger role.
176	
177	<i>Main issues</i>
178	
179	<ul style="list-style-type: none"> • The problem with this project is that it has been so slow, that if you have it in a high profile for many years, everybody will know that it goes too slow. You only communicate the accomplishment of milestones.
180	<ul style="list-style-type: none"> • I prefer low profile because in any way you have nothing to say.
181	<ul style="list-style-type: none"> • The most important is to have been faster.
182	<ul style="list-style-type: none"> • This project has a longer life than internet.
183	<ul style="list-style-type: none"> • I sometimes check what is going in internet about SIEPAC. With time is getting better.
184	<ul style="list-style-type: none"> • The reform of the electricity law in Costa Rica is very unpopular. Times change. Combo was in 2000, and II protocol was ten years later. Governments always consider the reform of the law is necessary.
185	<ul style="list-style-type: none"> ○ When II protocol went to the parliament, government found the opportunity to make slightly changes. For example:
186	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ Private generators could sell energy in the regional market
187	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ Since it was with a popular project, there will be no oppositions.
188	<ul style="list-style-type: none"> ○ It took three years to the government to understand that was not going to happen
189	<ul style="list-style-type: none"> ○ It is a very sensitive issue. Government tried to put something but it was no success
190	<ul style="list-style-type: none"> ○ The general position is that we have a successful model for generating and selling. And what is successful should not be changed. Government thinks it should change because everything its changing, and there is also stakeholders which would like to participate: investors, foreign companies.
191	<ul style="list-style-type: none"> ○ So, that's the case, the present situation is supportable, it is sustainable, as long as ICE has the ability to finance development of generation. The discussion is whether it will have that ability in the next years, when the investment will be higher. Allow ICE to make partnerships or allow higher private participation. Both changes are needed in order to maintain the
192	<ul style="list-style-type: none"> ○ This is small market; it doesn't need highly competitive market because it is difficult to make it in a small market.
193	<ul style="list-style-type: none"> ○ The difference between ICE and ENEE. Is that ENEE is not building any generation, it is buying power. Only owns the old plants.
194	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ That is a model fine for private. PPAs are very beneficial for them. Make money in a simple way.
195	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ In Costa Rica they have to be small and renewable. Lot of limitations. 60% ICE, 30% private 10% others. Private stakeholders, businessmen complain in front of their governments.
196	<ul style="list-style-type: none"> ○ Also ideological reasons in each country. Those who are promoting

	foreign investment and more trade, those bodies within any government are requesting that everything should be changed. Government small and only regulator.
197	○ If we don't change they could have more of the pie.
198	
199	<i>Possible lessons from SIEPAC</i>
201	
202	<ul style="list-style-type: none"> ● The first Tratado was very large and we went to directors and they started to have many objections. After several meetings we found we will never agree
203	○ Why don't we do differently? Just put in this board what we agree about and then build a treaty that write what we agree.
204	○ We throw again the two hundred pages.
205	○ Started to say general ideas.
206	○ We agree in 8 or 9 points. Now drafted the protocol for these 8 or 9 points.
207	○ We did that, next meeting we found that with minor changes we have the drafted agreement.
208	○ We only put there what we believe that the 6 countries was going to accept. If we would have continued discussing the full Tratado we will have never finished.
209	○ "Agree on principles first"
210	<ul style="list-style-type: none"> ● The amount of control that each country is willing to give to the regional bodies. Because you are losing part of the sovereignty. 10 % goes to the regional body, do you agree with that? If you say 50%, some will not agree.
211	<ul style="list-style-type: none"> ● Very general discussion is important. People who know about the business also, lawyers, politicians, people out of the electric sector that are able to take decisions. Once we had that we started to go ahead
212	<ul style="list-style-type: none"> ● Agree on a general set of rules, and then tie together the responsible parties to comply with it.
213	<ul style="list-style-type: none"> ● It is not sufficient we agree on this rules, but you have to sign something that is mandatory, irreversible and then you start to build based on that principles.
214	○ Many years later no country has never say they don't agree on the principles of Tratado, we have discussed about RMER but not about Tratado.
215	○ Everybody says Tratado is the Bible, we cannot change the Bible, so we make a good Bible. Because it would have been badly done somebody would have said, I don't with that Bible.
216	<ul style="list-style-type: none"> ● The other is that things should go quickly. One of our mistakes is that we have been slow, tremendously slow. The success comes from doing things faster. Because it took 15 years, 4 governments in each country, 6 countries, 24 governments. Each time the government you have new stakeholders. New minister, new president of the company, new president of the government...
217	○ And what people usually do, it is to take a good look of what the former president did and it is basically wrong so throw it and do it again. So the effort we have to do as coordinators it was to teach each new official

	and make him to participate in the process. And that is a terrible job, because you have to convince 24 governments along 15 years, and the president, the ministers, the staff and the responsible of the electric sector all of them change.
218	○ And some of them have different ideas and they want to change. But you cannot change, it was decided like this.
219	○ I don't care what other did.
220	○ Then you have to convince them they are not right. It is very slow.
221	○ One of the recommendations, you should tried in the shortest period, if possible in one government, and make it irreversible. It is a very difficult process, but that is the main finding. Also be sure that you have very good supporters from outside. Governments are very permeable of what developing banks official, say. We found that IADB was very important. President of Costa Rica may not listen to me but he will listen to the President of IADB or the President of Mexico and that push the project to go in the right direction.
222	• Most of the Treaties that are sign by Presidents in Central America are irreversible that, a long term commitment. And here you have lot of investments that they want to invest if in 60 days the market can disappear. So you need to have a long term, the 10 years.
223	○ There are many other examples of treaties sign by the governments in Central America like that.

B.I.XXI. SIEPAC.XXI

Interviewee Rodolfo Rieznik

Affiliation Representative of Spain cooperation funds (V Centenario) at the time of initial negotiations

Date December 27th, 2012

Place Madrid (Spain)

Interview in Spanish, translation into English by the author

1	<u><i>Barriers for the cooperation in the power sector</i></u>
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3	<ul style="list-style-type: none">• There are not many experiences in creating this kind of markets. There are many policies pretending to do it, but, for political reasons mainly, they don't consolidate.
4	<ul style="list-style-type: none">• It is a problem of national sovereignty.
5	<ul style="list-style-type: none">• There are also many economic interests. Past contracts with high price that they don't want to lose.
6	<ul style="list-style-type: none">• SIEPAC took 25 years. And after so long period, reality and feasibility studies are very different.
7	<ul style="list-style-type: none">• In SIEPAC, combination of infrastructure and the interest of the multilateral organizations of promoting electricity markets was very important.
8	
9	<u><i>Origin of the project</i></u>
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11	<ul style="list-style-type: none">• The region was talking about the integration time ago because of the benefits it can provide
12	<ul style="list-style-type: none">• During the 80s the debt crisis in Latin America. International financing is closed for them.
13	<ul style="list-style-type: none">• They didn't have enough money for buying the fuel for thermal plants
14	<ul style="list-style-type: none">• They were not able to expand the generation capacity
15	<ul style="list-style-type: none">• Endesa offered to pay technical studies for supporting the regional integration.
16	<ul style="list-style-type: none">• At that time Endesa was a state-owned company and vast experience in transmission projects.
17	
18	<u><i>Why and how did Endesa get involved in SIEPAC?</i></u>
19	
20	<ul style="list-style-type: none">• In 1987 Spain was preparing for celebrating in 1992 the 500 years from the arrival of Colon to America. That meant an increase in the political relations with Latin America. Spain offered to give money to the IADB for projects in Latin America. That created also a relation between Spain and the IADB.

21	<ul style="list-style-type: none"> • Endesa was interested to start a internationalization process. Ignacio Larranzabal, the director of the international department of Endesa, has worked previously in ECLAC, where he heard about the interest of the Central American countries about creating regional interconnection. He reported to Mr. Tora Galvan, his boss and an expert in transmission projects. Tora Galvan showed great interest in the project and offered the support of Endesa to Central America.
22	
23	<u><i>IADB and the agreement for the Framework Treaty</i></u>
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25	<ul style="list-style-type: none"> • The IADB revised the studies of Endesa but it considered the investment and the voltage proposed too high. There was also no proposal for opening the national markets. The project was not meaningful if the region didn't compromise to open the markets.
26	<ul style="list-style-type: none"> • New studies were made, around 70. The IADB conditioned everything to the sign an international treaty that would set the minimum commitments. That made everything slower, because those treaties should be ratified by the national parliaments.
27	<ul style="list-style-type: none"> • What used to be a technical problem became political.
28	<ul style="list-style-type: none"> • IADB conditioned the financing to a clear and firm commitment of the countries. In 1992 it decided to include it in its portfolio. In 1997, in a summit in Barcelona, it accepts to finance. But until 2011 or 2002, the financing was not ensured.
29	
30	<u><i>How was the consensus about the project achieved?</i></u>
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32	<ul style="list-style-type: none"> • At the beginning the interests of IADB and the state-owned companies were different
33	<ul style="list-style-type: none"> ○ IADB wanted the reform of the national markets, not the construction of the infrastructure. First the countries should reform their national systems, and then if there were a clear interest with electricity exchanges, the project could be studied.
34	<ul style="list-style-type: none"> ○ Endesa defended the need of the infrastructure for making possible those exchanges of electricity. The development of the infrastructure was going to promote the exchanges in a better way.
35	<ul style="list-style-type: none"> ▪ “you need the roads for making possible the trading”
36	<ul style="list-style-type: none"> ▪ it was not a “white elephant” project
37	<ul style="list-style-type: none"> ○ I considered that both aspects should be done at the same time. Because difficulties would have existed in any case. Also you cannot have guarantee that markets would solve the problems in the electric sector in Central America
38	<ul style="list-style-type: none"> ○ The region (Teofilo de la Torre) only wanted the interconnection.
39	<ul style="list-style-type: none"> ○ The compromise solution was to do both aspects
40	
41	

42	<i>Incorporation of Endesa to EPR</i>
43	
44	<ul style="list-style-type: none"> • Actually Endesa has been always in the project since it could convince the IADB to include the project in its portfolio.
45	<ul style="list-style-type: none"> • Endesa proposed the creation of a company for the construction of the project, but the problem was that a private company couldn't have sovereignty guarantees. The other problem was to define the ownership of the line. At first, the idea was that every country would have the ownership of the line in its territory.
46	<ul style="list-style-type: none"> • I proposed a single company with equal ownership of every country. Then, no one could dominate the project.
47	<ul style="list-style-type: none"> • The IADB accepted the incorporation of Endesa because its clients (the countries of the region) continued having majority.
48	<ul style="list-style-type: none"> • Endesa contributed to the peace between the shareholders, because being extra-regional is considered to be independent.
49	<ul style="list-style-type: none"> • One of the key aspects of the EPR is that is not dispersed in the whole region. It has offices, but the headquarters are in place.
50	<ul style="list-style-type: none"> • Other is that EPR is very executing; it gives explications only to its shareholders, not to the governments. The countries have also respected that.

B.2. News on SIEPAC

Date	Highlight	Source	Link
21/01/2016	Progress in regional power market	Central America Data	http://www.centralamericadata.com/es/article/home/Avance_en_mercado_regional_de_energia
22/12/2015	Costa Rica achieved 99% renewable energy this year	Tree hugger	http://www.treehugger.com/renewable-energy/costa-rica-achieved-99-renewable-energy-year.html
14/07/2015	July 14, 1969: Honduras and El Salvador clash in the four-day “Football War”	BR	http://home.bt.com/news/world-news/july-14-1969-honduras-and-el-salvador-clash-in-the-four-day-football-war-11363991995167
22/06/2015	The electricity that Central America needs	Central America Data	http://www.centralamericadata.com/es/article/home/La_electricidad_que_necesita_Centroamerica
09/04/2015	Costa Rica: State-owned utility obliged to export surpluses		
10/10/2014	Conclusion celebration and re-strengthening compromise with Central American Electric interconnection, SIEPAC	IADB	http://www.iadb.org/es/noticias/comunicados-de-prensa/2014-12-10/siepac-celebracion-conclusion,11018.html
10/10/2014	Central America takes a significant step: SIEPAC is completed	E&N	http://www.estrategiaynegocios.net/inicio/756554-330/centroam%C3%A9rica-da-paso-trascendente-se-complet%C3%B3-siepac
10/09/2014	Mexico willing to export electricity to Central America	Central America Data	http://www.centralamericadata.com/es/article/home/Mexico_quiere_exportar_electricidad_a_Centroamerica
13/08/2014	Regional power system working at half	Central America Data	http://www.centralamericadata.com/es/article/home/Sistema

			a regional de energia funciona a medias
24/04/2014	Intra-regional power trading	Central America Data	http://www.centralamericadata.com/es/article/home/El_comercio_intrarregional_de_energia
01/04/2014	Lack of regulation prevents power delivery (3)	Central America Data	http://www.centralamericadata.com/es/article/home/Falta_de_reglamento_impide_entrega_de_energia_3
18/03/2014	Power interconnection opens market in Honduras	Central America Data	http://www.centralamericadata.com/es/article/home/Interconexion_elctrica_abre_mercado_en_Honduras
22/11/2013	Restriction in the regional power market	Central America Data	http://www.centralamericadata.com/es/article/home/Restricciones_en_el_comercio_regional_de_energia
20/11/2013	Guatemala has exportable power surpluses	Central America Data	http://www.centralamericadata.com/es/article/home/Guatemala_tiene_excedentes_de_elctricidad_exportables
31/10/2013	Uncertainty in power market in Costa Rica	Central America Data	http://www.centralamericadata.com/es/article/home/Incertidumbre_en_mercado_elctrico_de_Costa_Rica
06/08/2013	Integrating the Latin American Electricity Grid	World Watch Institute	http://blogs.worldwatch.org/revolt/integrating-the-latin-american-electricity-grid-2/
27/06/2013	IADB hosts ministerial meeting for boosting the Mesoamerican electric grid	Prensa Libre	http://www.prensalibre.com/economia/BID-ministerial-impulsar-electrica-Mesoamerica_0_945505683.html
13/06/2013	IADB considers SIEPAC successful	Prensa Libre	http://www.prensalibre.com/economia/BID-califica-exitoso-Siepac_0_944905502.html
05/06/2013	Official starting of Mercado Electrico Regional	Central America Data	http://www.centralamericadata.com/es/article/home/Arranq

			ue oficial del Mercado Elctrico Regional
31/03/2013	Celsia doesn't discard to invest in interconnection with Panama	El Colombiano.com	http://www.elcolombiano.com/BancoConocimiento/C/celsia_no_descarta_invertir_en_interconexion_con_panama/celsia_no_descarta_invertir_en_interconexion_con_panama.asp
26/03/2013	Mesoamerican Project, progress	El Arsenal.net	http://www.elarsenal.net/2013/03/26/proyecto-de-mesoamerica-avances/
14/03/2013	Panama-Colombia electric interconnection project discarded	El espectador.com	http://www.elespectador.com/noticias/economia/articulo-410353-descartan-proyecto-de-interconexion-electrica-colombia-panama
05/03/2013	Shale and Beyond: The Next Phase of Latin American Energy Integration	World Politics Review	http://www.worldpoliticsreview.com/articles/12761/shale-and-beyond-the-next-phase-of-latin-american-energy-integration
01/03/2013	EOR: Present stage of regulation and operation of the regional market	CRIE	http://www.crie.org.gt/images/stories/PUBLICACIONES%20VARIAS/Boletin_EOR_Estado_actual_regulacion_y_operacion_MER.pdf
28/02/2013	Lack of regulation prevents power delivery (2)	Central America Data	http://www.centralamericadata.com/es/article/home/Falta_de_reglamento_impide_entrega_de_energia_2
12/02/2013	Costs of System of regional electric interconnection	Central America Data	http://www.centralamericadata.com/es/article/home/Costos_del_Sistema_de_Interconexion_Electrica_regional
08/12/2012	Boundary disputes in Latin America: An islet for a sea	The Economist	http://www.economist.com/news/americas/21567986-colombia-smarts-loss-territorial-waters-islet-sea
20/11/2012	Suspended interconnection between Panama and Colombia	Estrategia y Negocios	http://www.estrategiaynegocios.net/2012/10/12/suspendida

			-interconexion-entre-panama-y-colombia/
20/11/2012	Energy and sustainable development in Central America	El Periodico	http://www.elperiodico.com.gt/es/20121120/economia/220873/
20/11/2012	Electricity from the North	El Periodico	http://www.elperiodico.com.gt/es/20121120/economia/220875/
07/11/2012	Panama and Colombia analyze project for electric interconnection	La Prensa	http://www.laprensa.com.ni/2011/07/activos/122999
09/09/2012	Energy sales from Hidro Xacbal not before January, 2013	El mundo	http://elmundo.com.sv/venta-de-energia-de-hidro-xacbal-hasta-enero-2013
28/08/2012	Transmission through SIEPAC is ready	Prensa Libre	http://www.prensalibre.com/economia/Transmision-traves-Siepac-lista_0_763723635.html
13/08/2012	Central America's Electric Sector: The Path to Interconnection and a Regional Market - IOA	Ensec	http://www.ensec.org/index.php?option=com_content&view=article&id=375:central-america-electric-sector-the-path-to-interconnection-and-a-regional-market&catid=128:issue-content&Itemid=402
12/08/2012	SIEPAC charges criticized	Prensa Libre	http://www.prensalibre.com/economia/Critican-cobros-Siepac_0_763123689.html
06/08/2012	Opening of power market in Costa Rica	Central America Data	http://www.centralamericadata.com/es/article/home/La_apertura_del_mercado_elctrico_de_Costa_Rica
09/06/2012	Central America prepares for improving electric generation	El digital	http://el19digital.com/index.php?option=com_content&view=article&id=39885:centroamerica-se-prepara-para-mejorar-su-generacion-electrica&catid=23:nacionales&Itemid=12

26/05/2012	Electric interconnection with Mexico becomes priority: Guatemala	El Economista	http://eleconomista.com.mx/industrias/2012/05/27/interconexion-electrica-mexico-se-vuelve-prioritaria-guatemala
22/05/2012	Central America increase generation capacity	El Salvador	http://www.elsalvador.com/mwedh/nota/nota_completa.asp?idCat=47673&idArt=6922440
20/05/2012	Mexico will be able to sell electricity to Central America	Energias 4e	http://www.energias4e.com/noticia.php?id=1053
23/04/2012	Honduras in disadvantage in electric interconnection	La Prensa	http://www.laprensa.hn/Secciones-Principales/Economia/Economia/Honduras-con-desventaja-en-interconexion-electrica
22/04/2012	Central America: Challenge to the physical integration	La Estrella	http://laestrella.com.pa/online/impreso/2012/04/22/centroamerica-desafio-a-la-integracion-fisica.asp
20/04/2012	Country increases selling of energy to neighbours	Prensa Libre	http://www.prensalibre.com/economia/Pais-incrementa-venta-energia-vecinos_0_685731421.html
20/04/2012	Energy bag will be created in Central America and Panama	La Tribuna	http://www.latribuna.hn/2012/04/20/crearan-una-%E2%80%9Cbolsa-energetica%E2%80%9Dde-centroamerica-y-panama/
18/04/2012	Electric sub-station inaugurated in Honduras as part of SIEPAC	La Tribuna	http://www.latribuna.hn/2012/04/18/inauguraran-una-subestacion-en-honduras-como-parte-del-siepac/
18/04/2012	Cost of SIEPAC will be transfer to final users	Prensa Libre	http://www.prensalibre.com/economia/Costo-Siepac-trasladado-usuarios_0_684531549.html
11/04/2012	Light adjustment will affect mainly people	La Tribuna	http://www.latribuna.hn/2012/04/11/ajuste-a-%E2%80%9Cluz%E2%80%9D-afectara-mayormente-al-pueblo/

25/03/2012	Plan for El Diquis continues in ICE	Nacion	http://www.nacion.com/2012-03-25/EIPais/Plan-para--represa-El-Diquis-avanza-a-paso-firme-en--el-ICE.aspx
15/02/2012	CABEI agrees US\$65 million loan with German bank	People Daily	http://spanish.peopledaily.com.cn/31618/7729263.html
14/02/2012	ICE and SIEPAC signed loans for extension of Cachi and regional electric interconnection	La Nacion	http://www.nacion.com/economia/ICE-Siepac-ampliacion-Cachi-interconexion_0_1250475155.html
14/02/2012	System for the Electric Interconnection of Central America is ready in 92%	La voz del Sandinismo	http://www.lavozdelsandinismo.com/nicaragua/2012-02-14/sistema-de-interconexion-electrica-de-america-central-esta-construido-en-un-92-por-ciento/
14/02/2012	CABEI finances final works for the regional electric interconnection	El Financiero	http://www.elfinancierocr.com/ef_archivo/2012/febrero/19/economia3072867.html
13/02/2012	Germany finances energy projects	El Nuevo Diario	http://www.elnuevodiario.com.ni/nacionales/241596-alemania-financia-proyectos-de-energeticos
04/02/2012	Actions for promoting regional projects in generation in Central America are analyzed	ECLAC	http://www.eclac.cl/cgi-bin/getProd.asp?xml=/mexico/noticias/noticias/6/46256/P46256.xml&xsl=/mexico/tpl/pl1f.xsl&base=/tpl/top-bottom.xsl
16/01/2012	Lack of regulation prevents power delivery	Central America Data	http://www.centralamericadata.com/es/article/home/Falta_de_reglamento_impide_compra_de_energia
16/01/2012	Mercado Electrico Regional in 2011	Central America Data	http://www.centralamericadata.com/es/article/home/Mercado_Electrico_Regional_en_2011
14/01/2012	Absence of information	El Financiero	http://www.elfinancierocr.com/ef_archivo/2012/enero/22/opinion3014136.html

13/01/2012	Latin America 2012: Energy Outlook	Latin Business Chronicle	http://www.latinbusinesschronicle.com/app/article.aspx?id=5392
12/01/2012	Electricity market advances in Central America	Estrategia y Negocios	http://www.estrategiaynegocios.net/2012/01/09/avanza-el-mercado-electrico-en-centroamerica/
12/01/2012	Cutuco to participate in Central American supply calls	BNAmericas	http://www.bnamericas.com/story.jsp?sector=10&noticia=575731&idioma=I&source=
11/01/2012	EOR: Hidro Xacbal must wait for regulation	La Prensa Grafica	http://m.laprensagrafica.com/2012/01/11/eor-hidro-xacbal-debe-esperar-reglamento/
04/01/2012	De la Madrid, a legacy of crises in the late 20 th century	Vivelo Hoy	http://www.vivelohoy.com/noticias/8081854/de-la-madrid-un-legado-de-crisis-a-finales-del-siglo-xx
04/01/2012	Nicaragua asks Venezuela for US\$108 million for subsidizes energy	Prensa.com	http://www.prensa.com/uhora/economia/nicaragua-pide-venezuela-108-millones-de-dolares-para-subsidiar-energia/53273
24/11/2011	Boosting the interconnection with Honduras	S21	http://www.s21.com.gt/pulso/2011/11/24/impulsan-interconexion-honduras
26/08/2010	Grupo Terra looks to expand to all Central America	Central America Data	http://www.centralamericadata.com/es/article/home/Grupo_Terra_busca_expandirse_a_toda_Centroamerica
24/08/2010	Inauguration of hydroelectric Hydroxacbal	Central America Data	http://www.centralamericadata.com/es/article/home/Inauguran_proyecto_hidroelectrico_Hidroxacbal
15/08/2011	Costa Rica: One single power exporter	Central America Data	http://www.centralamericadata.com/es/article/home/Costa_Rica_Un_nico_exportador_de_electricidad
12/08/2011	Central America ready for the shared electric grid SIEPAC	Revista Summa	http://www.revistasumma.com/economia/15441-centroamerica-alista-red-

			electrica-compartida-siepac.html
10/08/2011	II Protocol is approved	Tico Vision	http://www.ticovision.com/cgi-bin/index.cgi?action=viewnews&id=6790
29/07/2010	El Salvador hosts electric market summit	Central America Data	http://www.centralamericadata.com/es/article/home/El_Salvador_sede_de_convencions_obre_mercado_electrico
13/07/2011	Change in the electric model of Costa Rica	CR Hoy	http://www.crhoy.com/cambio-de-modelo-electrico-en-costa-rica/
12/07/2011	The barriers for the regional electric interconnection	Central America Data	http://www.centralamericadata.com/es/article/home/Los_obstaculos_a_la_Interconexin_energica_regional
04/07/2011	Interview: Teofilo de la Torre: Our Project protects the role of ICE	CR Hoy	http://www.crhoy.com/entrevista-teofilo-de-la-torre-%E2%80%9Cnuestro-proyecto-lo-que-hace-es-proteger-el-rol-del-ice%E2%80%9D/
23/03/2011	The process for the Central American electric integration	El Herald	http://archivo.elheraldo.hn/Ediciones/2011/03/24/Noticias/El-proceso-de-la-integracion-electrica-centroamericana
11/03/2011	Effectiveness of SIEPAC will speed fragmentation of ENEE	El Herald	http://archivo.elheraldo.hn/Ediciones/2011/03/25/Noticias/Vigencia-de-SIEPAC-agilizara-fragmentacion-de-la-ENEE
23/09/2010	Expert denounces plan for finishing ICE	ANEP	http://www.anep.or.cr/article/experto-denuncia-plan-para-liquidar-al-ice/
26/07/2010	MINAET endorses Framework Treaty	CR Hoy	http://www.crhoy.com/minaet-avala-tramite-de-tratado-marco-del-mercado-electrico/
02/06/2010	Countries of SICA bet for the implementation of renewable energies	CR Hoy	http://www.crhoy.com/paises-del-sica-apuestan-a-la-

			implementacion-de-energias-renovables/
26/04/2010	Central American nations must have common policy to promote electric development	CR Hoy	http://www.crhoy.com/naciones-centroamericanas-deben-tener-politica-comun-que-fomente-desarrollo-electrico/
26/02/2010	Guatemala starts to import energy from Mexico	Summa	http://www.revistasumma.com/economia/1990-guatemala-comienza-a-importar-energia-desde-mexico.html
24/10/2009	Mexico-Guatemala electric interconnection inaugurated	Summa	http://www.revistasumma.com/economia/166-inauguraran-interconexion-electrica-entre-mexico-y-guatemala.html
28/07/2009	XI Tuxtla Summit begins	CR Hoy	http://www.crhoy.com/iniciaxi-cumbre-de-tuxtla/
29/02/2009	CFE will provide energy to Central America	El Porvenir	http://www.elporvenir.com.mx/notas.asp?nota_id=287721
19/02/2009	CFE acquires 11,1% participation in SIEPAC	BNAmericas	http://www.bnamericas.com/news/energielectrica/CFE_adquiere_participacion_de_11,1*_en_Siepac
21/12/2008	El Diquis replaces the big project of Boruca	Nacion	http://www.nacion.com/ln_ee/2008/diciembre/21/pais1816296.html
16/12/2008	\$16.7 million from CAF for regional power integration	Central America Data	http://www.centralamericadata.com/es/article/home/167_millones_para_integracion_electrica_de_Centroamerica
29/10/2008	Central America needs more electricity more its development	La Voz del Sandinismo	http://www.lavozdelsandinismo.com/economia/2008-10-29/centroamerica-necesitamas-energia-electrica-para-su-desarrollo/
09/04/2007	Seeing to revive the Puebla-Panama Plan	BBC News	http://news.bbc.co.uk/hi/spanish/latin_america/newsid_6540000/6540033.stm
02/08/2006	Endesa: SIEPAC works starts, the electricity line that will	El Economista	http://www.eleconomista.es/empresas-finanzas/noticias/61794/08/06

	connect the Central American countries		/Endesa-Comienzan-las-obras-del-proyecto-Siepac-la-linea-electrica-que-conectara-a-los-paises-centroamericanos.html
11/07/2006	Construction of the Central American transmission line SIEPAC starts in Panama	IADB	http://www.iadb.org/es/noticias/comunicados-de-prensa/2006-07-11/comienzan-en-panama-construccion-de-linea-de-transmision-electrica-centroamericana-siepac.3182.html
18/02/2005	ISA joins EPR as new shareholder of SIEPAC	BN Americas	http://www.bnamericas.com/news/energiaelectrica/ISA_se_une_a_EPR_como_nuevo_socio_en_proyecto_Siepac
05/03/2004	Central America boosts in Madrid its Free Trade Agreement with the European Union	America Economica	http://www.americaeconomica.com/numeros4/255/reportajes/mike255.htm
01/07/2002	Construction of SIEPAC will be tendered on September 2 of 2003	BN Americas	http://www.bnamericas.com/news/energiaelectrica/Construccion_de_Siepac_se_licitara_el_2S03
09/11/2001	Endesa to take 14.3% SIEPAC stake	BN Americas	http://www.bnamericas.com/en/news/electricpower/Endesa_to_Take_14,3*_Siepac_Stake
07/11/2001	SIEPAC, IADB and governments approved loan for US\$250 million	BN Americas	http://www.bnamericas.com/news/energiaelectrica/Siepac,_BID_y_Gobs,_Acuerdan_Prestamo_por_US*250mn
21/10/2000	ISA: Shares for all	El Tiempo	http://www.eltiempo.com/archivo/documento/MAM-1224181
15/04/2000	Report from Costa Rica on mass protests against privatization of state-owned utilities	WSWS.org	http://www.wsws.org/en/articles/2000/04/cr-a15.html
15/09/1998	Endesa, energy in expansion	El Tiempo	http://www.eltiempo.com/archivo/documento/MAM-819269

30/06/1990	500 years, 500 programs	El Pais	http://elpais.com/diario/1985/06/30/espana/488930402_850215.html
29/05/1990	The High Patronage will approve today in Seville the Cooperation Plan V Centenario	El Pais	http://elpais.com/diario/1990/05/29/espana/643932016_850215.html
23/01/1990	One plan for the V centenary	El Pais	http://elpais.com/diario/1990/01/23/espana/633049201_850215.html

C. Appendix on GMS-Power

C.I. Interview notes on GMS-Power

C.I.I. GMS-P.I

Interviewee Noritada Morita
Affiliation Former ADB official
Date March 30th, 2016
Place Bangkok, Thailand

This interview also corresponds to GMS-EC.II

1	<u>Idea of technical level cooperation:</u>
2	The reason why in the GMS I refuse that is represented by the ministries of foreign affairs is because the nature of foreign affairs. They are not guided to put priority for the international cooperation. Collectively not.
3	So when I started the sub-regional cooperation, GMS, I asked all the leaders “please do not put minister of foreign affairs as the coordination office, please remove them from the scheme”.
4	It was very drastic. Any of the international affair or foreign affairs minister, any diplomatic aspects people just simply think without ta
5	My view is different. If ministry of foreign affairs make the decision without looking at the benefit of the neighbor. The man like the president of Uruguay will never come out in that country. That is the point
6	Now your be your benefit how its fits on my benefit, a bit of engineering is necessarily for what we call Broad minding approach is needed.
7	And foreign affairs people are not allowed initially to have such mind. They can exercise the flexibility only when they find that the things will not move. If they are flexible, they are at the end of the road. And then they look at what my neighbor needs, but that is too late. In that particular process of competition, you lose so many things and you can reach a point where there is not return.
8	This was one of my philosophical principles, because this statement alone does not stand by itself. It works only in the foreign situation.
9	When I started this region was in the middle of the Indochina war. My concern was when the Indochina sign the peace contract (peace accord or whatever), can they work together or not?
10	My philosophy is that singing the paper for the peace is easy, but signing the peace of paper does not guarantee any peace at all. Next day you can bring out your gun and I can bring out my bread and we can start shooting each other. What I had to think was what assurance can we give among all these countries that are enemy today, tomorrow can they work together? Can they sleep together in the same bed?

11	No, because each insist on their own benefit of blaming each other about what happened in the war, not necessarily accepting others' reasons and problems that other has to face because of me (it is happening between Japan and Korea).
12	Now, in order to mitigate or neutralize such an behavior of the man that intend to insist that you are right and he is wrong we have to put the people into the peaceful stage of the mid. Means, in this particularly case, I have the following history that you may want to know:
13	
14	<u>Origins of the idea for the GMS:</u>
15	I held very uncomfortable in Laos. Laos is the other side of the Mekong River, just over there. I went there from Bangkok for an agreement. I went by plane, only one per day. And I stayed in the other side of the Mekong River, in the Laotian side.
16	In the meeting, when the meeting finished when I came back to my hotel, I found that machine guns from the other side was hitting the next room of my hotel. Three artilleries went above over the hotel, fortunately. That artillery missed the hotel, but blasted behind the hotel. That was when I was the manager of this region. I was stretching my head, what area I have under my responsibility? How can I manage it?
17	Then, that meeting I attended was of the Mekong River Commission. Instead of people talking about the agenda, both countries started criticizing the other size. Thai said oh yes, we shot Laotians because it was Laotians first who came to our size, so we just responded. Laotians said, no it is not true that we attacked, you attacked us first.
18	The Thai delegation was there and all the international community members was there, and I was there representing the ADB. So, the entire meeting didn't function blaming each other. And Western side was always siding to Thai side.
19	Now, meeting was miserable and Western community was looking at the Laotians like they were the guilty of this incident. Nobody knows which side.
20	When the meeting was over we went all to the airport and Laos, the hosting country and the chairman: "Nobody from Western side spoke to me because Thai delegation was there, they don't want to be seen by Thai side that they were talking to Laos side".
21	Laotian side they have Laos and Viet Nam. Cambodia was unable to send their delegation because they were fighting with Pol Pot. So Laotians were in a way isolated.
22	After the airport, this chairman from Laos' side: Mr. Morita, you have seen, Laos is nobody is nobody in this world, everybody is siding to Western side, can you see how poor we are?
23	We don't have any sea, we have to rely on seaport from Thailand, who are not friendly at all. At that time they are exchanging the fire almost every day at the Mekong river.
24	And Thai they were also under attention, because once they make a mistake, collectively they felt that soviet Russian together with its partners countries across the Mekong river. So I can also sympathize with the Thai side.
25	<u>The story of the Xeset hydropower dam</u>
26	But anyway, he said we are isolated, nobody is helping us, maybe it's only ADB who can understand us.
27	Now, we are international, Thailand is our shareholder, but your country is also our shareholder. For us, as long as you are our member country, whether than country A or country B is correct is not my issues. My issues is how to create the peace. So whatever I can do, please let me know.

28	He said, I like to have ADB financing for us to construct a hydro power project. I asked, what is the size? He said 1.5MW. Wow, so minor. 1.5 Mw I think if you have 1.5 MW is just good enough to give the lights for the Shangri-La hotel. They said after Laos revolution, 30-40 years, we are not heard by anybody.
29	Even small hydropower, this one we need it. So that was the start point of GMS.
30	I clearly remembered about that 40 years ago. He was almost crying I had to say yes or not. So I said sincerely, 1.5 Mw is too small. Your request is 1.5 MW is too small, it cannot produce economy.
31	Unless you proof that it is financeable, it is very difficult for ADB to use the money that is donated by all the donors.
32	To make the solution, answering to his question, what should we do then? Only way is you make this project at least 40-50 MW, then you might find some economy, Then he said: No Mr. Morita we don't use such a big power station because we don't have any industry to use the electricity so 1.5 is enough. So, how can we make this 40 50 MW when we don't have no money?
33	My question was very sympathetically frank, you sell the power to Thailand. His face was at least today we had a fight with Thailand, how can we sell. I know it, but if you want to make the project viable, you have to find the market. Whether this side of the river of the other it doesn't matter, market is market. I was stupidly simple.
34	Then I went back to Manila, my headquarters. I spoke to my boss, vice-president. He was laughing, he is an Indian. Do you know out board is reading English newspaper every day, they are not stupid, they know what is happening between two countries across the river. Every day they are shooting each other, how can you go to the board asking for the approval to expend the money when two countries are fighting. He was right, I was stupid, I knew it.
35	But against that background, whether the country is smaller or big, they are our member countries, east or west doesn't matter, they are member countries. So, we need to support.
36	I said that according to my quick conversation with Thai government on the way back. They Thai government I don't know but their electric authority: as long is power, whether it has yellow colour or red colour we buy it. Of course he know the problem involved. I feel pity of the other guys of the river, so small country.
37	I talked with my boss that EGAT was sying, they can buy it. My boss said you don't understand the situation, what I'm saying is that I need a written paper from Thai side that they will buy. You produce the official paper from Thai side that they will buy and then I can go to the board. But I cannot guarantee you that the board will say yes, because they are every day fighting.
38	But Asians sometimes they can be illogical. Indians are very logical. What he said is true. When I was almost going out of his room, he said Mr. Morita come back. Are you sure that is what Thai electric authority said? Yes. Whatver you say I will try to get the written form from Thai government. I knew that I was going to be kick out of ADB if I failed. At least my vice president was watching me, because eit was my first year in the country department. Iwas in agriculture side. This was my first difficult case. Vice president said, good luck.
39	I started talking to Laotians. We had almost 0 chances if you really convince Thai side. Thai side was seeing colour of electricity doesn't matter, only price, how much do you need? How much do you like to charge?

40	After that we started doing all the calculations. I mobilized all my team and started the calculations.
41	What Laotian side proposed I move back and for, 6 months I think to find the price that is attractive enough for Thailand to buy. The reason I was doing that, in a very hopeless situation was because before Laotian went into the eastern group. Late 1960s. Before Laotian revolution, western community have created SEATO (Southeast Asia Treaty Organization) just to settle down political tension from eastern side, they have given Laotians one hydropower project that is called Nan Theun 1. But that was before revolution, so it is really a different country. New Laos I was dealing with is a new Laos.
42	The Laotian was saying that during our difficult times with Thailand we never cut off the power, we always sent the power. And Thai side they never get delayed in paying us. End of the month, in our New York account, the money was already there. That means between the two electric companies they have some trust. So, as long as this transmission line continue being active, I somehow feeling that we can re-activate. So many months back and for talking about the price.
43	First thing I need was feasibility studies, and money for that. The first I need was a written form from Thai. That's not easy. Our salary is always perform based. If you don't perform your salary might go down. My Thai friend, gave a recommendation. Mr. Morita your name is always appearing in this newspaper.
44	Mr. Morita no more you negotiate the price. It is beyond your capacity. I promise in a few months of time, our prime minister might be in Vientiane and your issue will be in his priority agenda. It is only prime minister who can decide the price. If you accept the price, whatever we agree I can do that, I can ask the prime minister to negotiate. I asked, do I have to follow the price two of you agree? Economical or not? If not economical I cannot agree. He said, shut up, that's not important, important for us is to agree something for you, for ADB and for Asia. I said ok. Thank you, I will never try to intervene in the negotiation and I will try to persuade headquarters whatever the figure.
45	
46	<i>Moving forward after the Xeset hydropower</i>
47	Somehow things went ok. Xeset hydropower. Countries shooting each other, make a common hydropower dam. I felt at that time two things:
48	(iii) Unless we grab this opportunity, the Mekong countries will continue to fall apart
49	(iv) Unless we do something similar to this, the countries which shooting until last night, can really become friendly tomorrow morning? Even if they sign a paper
50	So I thought we have to do something
51	That was the first motivation that I started thinking about the present form of GMS.
52	I knew under the situation these two countries into one. And eventually all the countries of the Mekong that are divided into East and West is beyond to what I'm required to do.
53	So I thought it was needed to create or provide a forum or platform where you can peacefully sit down and peacefully talk, and have a coffee together and smoke together
54	This is how I was motivated. This is how to maintain the peace, once the peace comes to this region.
55	That is all the purpose for ADB in Asia.
56	

57	If I do it in a very transparent way, simple being transparent would make the things fall done because I would have been a target of the both sides. I did it very quietly, and by that time I said China please come if the platform is ready.
58	Thanks to the cooperation of my close friends I was able to do certain things. Friends from all the countries, although they are not officially friends, but through the ADB we are friends. This is what we called honest broker, goodwill broker. We are coordinator. Whether ADB can be trusted or not.
59	
60	Why we included China that is out of issue. It was my invitation, not the request from China. The condition was that it should be Yunnan province. Yunnan province is large enough just to counterbalance all entire Mekong region population-wise. Moreover 67% of the water is through the Yunnan province. Large of Yunnan province used to be Tibet. Tibet is Mekong River.
61	
62	We are trying to achieve the regional cooperation as a possible means to lead this region stability, political stability despite of East and West.
63	
64	Now Thailand is the center of what is overseas investment today, prosperous. But during the Indochina war nobody paid any attention other than American army. You can see very prosperous Thailand. I think reason number (i) is Majesty and number (ii) regional stability.
65	No more to China one, although people might not recall
66	Thailand has proved that peace and leadership are important
67	I was waiting among all the Indochina countries that Cambodia which is, still fighting to Pol Pot and Hun Sen. I was waiting until the peace come in Cambodia I present the entire project to the ADB as an official proposal to the board.
68	Once the Cambodia peace was signed (that was 1991, October 23) Peace Accord was signed in Paris. Among the four parties – or four governments: Pol Pot group, Hun Sen, Song San, Prince Sijamuk
69	Incidentally Prince Sijamuk sold itself to China. He was captured of the Pol Pot group and he was forced to agreed to stay in Beijing.
70	Son San group was another group
71	Hun Sen group. Mr. Hun Sen used to be under Pol Pot but he didn't like Pol Pot. When he was said by Pol Pot to invade Viet Nam. He thought he was crazy, even Americans cannot defeat Viet Nam, how can I do that. So Hun Sen refused to use his army. Rather he crossed the border and make cese fire agreement with Viet Nam and he came back with the Viet Nam soldiers. What people didn't like it, but he was at that time the strongest man.
72	I had to deal with all these groups before I finalize GMS. I said everybody, all other countries have agreed, we are now waiting for Cambodia to get your settle peace, I am now here to ask you if you are interested in joining the GMS. That was my first visit to Cambodia after the peace accord in Paris.
73	Among all the four representatives of the different parties. One thing that you may like to know is that the Paris Peace Accord which was agreed by all four parties and international community, for the first three years the country would be under the supervision of the OCDCD, representative of the United Nations. After that there will be

	national elections. And chairman of that four group committee was prince Sinajuk and other three are members.
74	For the first three years I have to see all the group. So anyway, the first time I met with them only one topic in the agenda: would you like to join the GMS? Other countries have already agreed, now we are waiting for you to come. Congratulations, you become now peace and we welcome you to join if you like.
75	Everyone said yes, that is good idea. Even Pol Pot group said yes. The last man was Hun Sen, since then my relation with him was ok. He said oh, what you are saying are you proposing connecting the road and transmission line connected and communication aspects also interconnected and integrated?
76	Yes, that is what we are proposed
77	He said, ohh, this is very good.
78	The reason he thought it was very good. He said this is good if I can be really friendly. If six countries worked together I don't have to expend any budget on my defense, I can reduce the number of soldiers, I can move my soldiers from the border and I can reduce money from the budget, and that money I can spend on the poor people and on education of the young generation, they have suffered during the war time. So if peace comes, money is there for me to do this.
79	Very impressive, young man, military man, no education but very clever. Other people were college graduate, they didn't touch about that aspect. They are so tired about. But Hun Sen beyond that he mentioned this.
80	Now Hun Sen is not popular among Western community. Maybe the reason is he is still close to Viet Nam what Americans and French dislike.
81	This can be one of the reasons for value of the man. If peace comes I can save money and spend on the good of people.
82	I thought this gentleman can become a good leader of the country.
83	So at this moment GMS was ready
84	
85	<i>First conference in Manila:</i>
86	The first meeting in Manila, in 1992. It was not a big event at all. People didn't understand what was naturally. To me it was a dream, countries shooting each other now coming to the Philippines which is outside the Indochina, in a way neutral.
87	They didn't talk each other in the meeting, they cannot speak English in a way. Only few people. So first day of the meeting was very stiff.
88	The substance aspect after formality was discussed in the following manner. Because I didn't have time to discuss in the bank. Some of the guidelines which I presented in the meeting I made conclusion only on the day I attend the meeting. Only in 5 minutes walk in the ADB building.
89	(ix) Greater Subregion Mekong, we have to give a name later on. If you pick up name first, there will be disagreement
90	
91	(x) Can we make this group without any charter? No agreement? Just by trust? I think this is first and last international group without a charter. People just don't notice it, but it doesn't have it. Because I know, it's nicer to have but if you propose something among countries they are shooting each other until yesterday, nothing will be agreed. If country A said chapter 1 ok,

	country B will say no. Going back to parliament, to cabinet and 1 year 2 years 3 years disappear. So I said we have to skip this very critical and unnecessary thing to avoid any conflict. So when the Indochina war was ended, I didn't think I need to introduce new war that is battle. Because I knew they are all Buddhist countries and I think they are tired of fighting 30 years (they all have something in common, in this case religion / dimension, culture is very similar (Iberoamerica is culture through language, this is culture through religion).
92	Another reason is once you start drafting charter you have to deal with foreign affairs. Department of treaty or treaty department, ministry of foreign affairs. They all have their own approach and their own language. They have to quote all the previous agreement, previous battles and so on. I don't want to go back to all these previous things, which is useless.
93	ADB colleagues thought, Morita is crazy. I accept. But there is no other way, and this is still wisest, I still believe.
94	
95	The participants of each country were selected by each country. I only said please do not send minister of foreign affairs and the mission must be led by the office of prime minister because once the prime minister understand it, no argument latter on.
96	And each meeting has to be presented, led by the team of office of prime minister. Because if you try to make a road in this way, the minister of construction says one thing, then the minister of environment says different, ministry of industry says different, ministry of agriculture.... . So each country cannot decide where the road has to go through.
97	
98	ADB is not going to play a big role. You are the owners of the project. You decide everything. We are going to serve you as Secretariat.
99	No headquarters. This is very fantastic. Because once one country decide where the headquarters, then they start fighting. Then no headquarters, ADB will give you support as a secretariat.
100	Always ownership. Since then, word of ownership in the community started to grow. I have seen other donors' project, the donor always try to have the ownership, this is our project, this is Japan. That's wrong, that is their project. So don't call it ADB project, it is Mekong project.
101	Third reason is once you have a charter, always become a question of interpretation. And always when they have a problem of interpretation they look at my face, ADB what is your judgement, we follow your judgement.
102	That means ADB becomes important. Ownership comes to ADB decision. But ADB is not owner, ADB is not going to decide, don't look at us, you look at yourself. If we have a charter, always interpretation is key, wrong or right. Whether I like or not, as ADB I have to sit at the center. Incidentally I was so lucky, the head of our regional department.
103	(xi) Morita san if you say charter is needed, we are very happy to draft. I said, no thanks Peter, no need it. Why? Ok, no problem, agree. (1:06:00). He said, yes, I understand, no charter. So legal department has no role to play
104	(xii) Once court and legal department play a role, you have to go.
105	(xiii) Very lucky, we are very close friend

106	(xiv) The next rule I introduce was a very sensitive issue. I don't want to have a vote. You may think it is very modern thing. But once you start voting you can have 51% versus 49%. And difference of 1 really decide everything. That is not our philosophy. Our philosophy should be that you really want to be democratic, not by country or number. But really democracy I believe is: if you really want to join us, you join, if you don't like to join, you don't join, if you want to come back, welcome. I said as long as two countries agree to do that, whether you have a third or fourth country I said, it doesn't matter. Country A and B please start, we support you. If country C and D really like to join later, please welcome them. If you would like to drop in between, ok, we don't count a vote.
107	(xv) Another thing I didn't say but in practice. In the meetings we don't keep minutes, once you keep the minutes, negotiation start. I said, if you don't mind, we make chairman statement. And chairman statement will incorporate all opinions. So you kindly leave it on our neutral position. And chairman statement is one, which they take as pipeline of the meeting. Because once you take the minutes, each delegation needs to take it back to their capital. And report to each cabinet. Then cabinet will reject, you will go back to the square one, nothing. So, all these things people agree, no complain. That's how we started.
108	(xvi) In special guideline that I may was, this was incidental. I remember Asian highway which was push by United Nations group, no single inch was accomplished. Even now, what they call Asian highway is actually ADB project. But original Asian highway was never done, because they are applying international standard in their technology, this is you area. I said, if you are really to decide about the road network, which is very important. Everybody lets come together to one place and compare your map and my map and see at to the border what are the missing links. And connect these missing links, once the road is upgrade or not, if the missing link is due to absence of bridge, whether the bridge is wood or concrete or even bamboo, let's accept it. Once you start designing, new road takes the time. And let's no create new route. Initially let's connect existing road by filling the missing links and ask your village people which road should connect. Whether is straight line or not, it doesn't matter. If you want to make it straight line, you make latter on. When you make the tunnel, you make later on. If you want concrete bridge you make when you country become rich. We are just from the Indochina war (4:34:28). No money. So let's respect whatever you had in your hands and connect. This is very important because if you are going to provide a new line, each country will say we like this link, this corridor. Just lets them decide which line, which 20 m across the border they want. That is enough.
109	These are major parts of agreement. And we decided. Once these principle are ok we go into long term development plan meeting. The second meeting, we approved for the long term plan consisting of six sectors.
1110	Some of which became useless, some of them very useful. I skip this now. Initially I didn't include agriculture, very questionable third party. But I have two reasons:

1111	(v) Sub-regional cooperation basically should have the pillars consisting of the sector which require the other side also active. Unless two persons carry together, things don't move at regional cooperation. If one person can carry all the things, that is no need for regional cooperation. Agriculture is good example.
112	Your side of the border is forest, my side I want to cultivate it. I can do it by myself as long as I have water.
113	(vi) All the countries are communist or socialist, that means ownership of the land is not private sector. All the western side, they are very curious about what is regional cooperation. How this communist countries say, what is their policy for. We have change we have to teach them that land reform is needed and etc. Once you start land reform it takes 10, 20 years. Some countries cannot do land reform. So once you go to the board, they will give you the money, approve it with the condition of land reform has to be done. But completely stop the progress. Unless you do the homework, we cannot do the second round. That is not the desire.
114	(vii) Number 2, all the communist countries in the agriculture sector has the subsidy. And some countries still do like America or Japan. But developed countries they accept their own subsidies, but they don't accept yours. A lot of problems of the board that I have to negotiate with all the countries to remove all the subsidies. Then things get stuck. So I decide not to include agriculture.
115	(viii) This is not positive reason but self-defense reason. So that we don't have to deal with land reform issue which is never be acceptable. I use to call to the board, Hong Kong, Singapore they are successful but all the land belong to the government. And until many years ago, the Netherlands the land use to belong to the king. So I have to use the reasons. Nothing wrong to them to have their own system. So let's alone to them to have their own system until they established the economy. So it was later on that agriculture sector was added. Other than that, I'm not going to go to any sector. You may look at ADB literature.
116	
117	<i>Exceptional things: Civil aviation and tourism sector</i>
118	Civil aviation, is part of transport sector, and tourism sector went so well after two to three years counting after the completion of the master plan they have done all the homework, very quickly. But civil aviation group have made a very substantial contribution. Earlier, only capitals are connected. Connection between capital and secondary cities of the other side, and vice versa, or connections among the secondary or tertiary non existing, like Kunming. Nowadays every day you have all together 20 flights between Bangkok and so on. Less or more, more or less. This is the first product of GMS. There are so many, hundreds. And tourism. Naturally is motivated by private sector.
119	The other sectors you may like to use the rest of the time after wash your hands and take some rest. We can go to question if I can answer, if I cannot honestly I say I don't know how to answer.

120	Once my thinking was valid, yes it was valid. Once it was not valid, I tell you it was not valid. Useful, useless it depends.
121	
122	<u><i>View of countries at the incubation period</i></u>
123	GMS is becoming next year 25 years old and I was responsible from the officially 1992 until my retirement in 1997. Unofficially this incubation starting 1983 . 10 years of preparation.
124	Two to three things that made my job easier: In a way, all the countries are so centrally planned, except for Thailand. That means, whatever the system they have, good or bad, they blindly follow. If the communist party says this is our guideline, they all follow. This tended to be strong point.
125	And another aspect, second point. They have been in closed economy, closed technology, and they didn't have any window to see through what is going on technology on the Western side. So whenever they met Thai group, which is only one from West. Thai is explaining this really fantastic and fresh, they all say: "this is so good", "ok, we agree". Thai leadership, with the knowledge the other five didn't have it.
126	In this case, other countries happened to be very slow. Thailand is not necessarily very fast, but ordinary. Whoever who have the knowledge
127	So when you choose the leader, you don't need to choose the leader. They naturally understand which country, who is going to be more updated knowledge.
128	So between the countries these are two aspects from communist or socialist side.
129	[Not for writing] From Thai side: Thailand was working against the Indochina. They were fighting against its neighbours. In a sense they were friends. When they were put together, they felt a bit guilty. So I think, they understand what they have done, so they didn't bound the table. They tried to understand the neighbours, how they have suffered from this war.
130	No country had a very sufficient infrastructure, other than Thailand. Thailand road standard is American. Again everybody was looking to Thai's development on roads and ports. Admiring eyes.
131	Thai provided in a way the modern standard. So, no difficult coordination is necessary. Technically all follow Thailand.
132	Only thing you may want to know, some countries go for inches, kilometres, dimension. Technical dimension.
133	I never tried to introduce that dimension unilaterally. That is something nations have to decide by themselves. Ownership to decide. If they like, it is ok, if they don't like it is ok.
134	This has worked very well, because this has not become a thing to fight. The reason to talk, can you tell me how you measure?
135	So, technically the standard I think good but they have the American standard here, and American standard is not different to British standard from Asian point of view.
136	These technical aspects. I have not been invited to United Nations concept of the Asian Highway except for two times. Where all this people. We are really looking towards.
137	
138	<u><i>GMS versus UN-ESCAP</i></u>
139	While ADB GMS was going on. UN-ESCAP proposal for Asian highway were discussed. They could compare different approach.

140	Ours was very modest, if it is one lane...ok, you make bigger when you become rich. If you need tunnel, you make tunnel later, but you first connect. Connection is first. That is important
141	How fast it is, is secondary. But United Nations always modern technology and strict. Everything has to be done according to what they want. Connect Singapore to Beijing and Europe.
142	But we are saying apply and use existing road, if you need to expand two meters...ok. But don't tell us full length or that kind of thing
143	That is relatively easy to adjust with Thai as leadership. If you go to Thailand, they have very nice highway. But if you go to the villages, they are also similar. That give them very comfortable feeling.
144	In Malaysia, even in the village, it's very nice.
145	But anyway, in a way, to me, question of the technical standard was achieved in a way by the basically before the WWII through British.
146	Even if you think that Thailand has not been under any colonial power, that doesn't mean they have not absorb western standards. They are very well educated. Similar or above the neighbours who have been educated by the British.
147	During 30 years of Indochina War, they have going to old style.
148	So, I think this type of experience may apply to African or Latin American countries.
149	But if you go beyond to what Thailand did, I think we failed. Maximum Thailand. Maximum that what they can digest, don't go beyond. The best evidence is as I said, try to connect the two borders by extending 10 meters from each side. Very simple. Digestible. So things...started.
150	
151	<i>Initial stage: getting national stakeholders' support</i>
152	The first meeting up to 2003, no heads of state meeting. Mostly deputy prime ministers or equivalent.
153	The status of the prime minister depending on the country, but the fact, that prime minister sent their deputies or very senior cabinet member, there are truly authorized.
154	Coming to the specific, maybe if you put zero, that is starting point, how to convince the country? Why you need the port? Why you need the road? And that is why you have to participate in GMS? This is the most difficult task for me to do, because it takes before you create a system.
155	Why do they need to be part of the system? Which, for the communist countries something uncomfortable, they like to have their own system, but they don't like to observe other system. So this area, I just give you example. If you look at the map, Laos is in the center. Fortunately or unfortunately.
156	To me is fortunately. Because if first hydropower project, Xeset. If it was not in Laos, and if it was in some other countries, Laos could not understood that they can do it, despite of the international situation.
157	You are right that Xeset hydro-project was a frontrunner, a good pilot. In fact, once Xeset hydropower started, I was able to start discussion, look, even Thai and Lao was shooting to each other, they are now doing joint project. So you are 100% right
158	To have a good example, positively front-runner, a pilot. You can get any of the

159	Secondly, all the countries had a suspicion over the neighbouring countries, they had a border issue. They had a trade issue. Throw of the labors, legal, illegal. I think more or less, you have to verify that issue.
160	If two to three countries agree, other countries fear to be left behind unless they join. So, which country you start talking is very important, and which country you select as the number two, you need a bit of analysis.
161	Now, in case of Laos, because of hydropower was successful, the next is how I convince the other countries. That means, not the government, the political bureau above that. That means I had 100% bureaucrats including ministers. That took time.
162	I thought it Laotians couldn't join, this GMS would not be there because is center.
163	Laotians always complaining two aspects: we are landlocked country, and therefore we are very poor, no power, no single country power. That was their complain.
164	Behind the scenery, always Morita-san, how we can do it? Very small, No power, no political influence. I started to put myself into Laotian shoes.
165	True, in case of the port, they have to rely on Thailand. So Thais, according to UN resolution, you are neighbouring to landlocked country, you have to keep at least one port open to them. Bangkok is the closes, and that is the only they can go. Road number 9.
166	They always complain. We have to plan everything to Bangkok. Trucking company is Thai government that only allow Thai company. And they inspect everything. So they know very well where we are, and what we are carrying. Everything is under their military observation.
167	That's tragedy that they are land-locked as Nepal
168	Answering to their questions, "oh, lucky, you are landlocked". This is always my remark. Very lucky, I think during two years I continued to say. Look at Switzerland, they are lucky. So small country like you, no natural resources. But because they are at the center of Europe and by providing the road to the other countries to come across, right to the left and center. They are always Switzerland. If Switzerland cut one of the roads, all the other big European countries, beg, please, what is your condition?
169	Then, you have
170	No matters small, you get the power
171	How we can cross our road, we don't have power. You can say, sorry, we have to go maintenance works for two months. So we close this road. Then they will tell you, what do you need? All the help will come. Then you say, yeas, we accept. That is the power
172	If Portugal and Spain were locked in the center, they could have been stronger in Europe. They have many ports, many coast lines. Switzerland has no port.
173	I tell you how you can exercise your power. Back and ford, back and ford.
174	Finally, my counterpart in Laos was able to convince the politburo
175	When they say, they will join. I really. Politically I think he was on tense situation. Are you coordinating with Thailand? Are you...? But he was very firm
176	I really like to explain to our government, that although you may don't know Mr. Kanpuy. Thanks to his efforts convincing the politburo.
177	The point is before you come to the stage 1. Point 0, how to convince.
178	In case of Viet Nam. Viet Nam was still under the international sanctions. They have lifted the bar. Only 1994. But nevertheless, I said. We will invite you. And they have so

	much pressure. Why Morita is keen to bring Viet Nam. We are still not welcoming them to the international community.
179	My answer was always, apart from the political issue. Only one factor, Viet Nam is our member country. That was my concern, my answer.
180	In case of Viet Nam, we are a bit complicated. While they are under the sanctions. Now country helps, because no external aid was allowed. So, the benefit however was that at least they could appear that they are part of the international community through the GMS. That was the strong point from me to convince them.
181	1990, when very difficult to go to the country. We started sending the missions to prepare for the projects. Because my concern was when the economic sanctions are lifted, if no project was not prepared, even if America would like to help, Viet Nam no project there.
182	So preparation of the project early was extremely important message for Viet Nam. For them to join.
183	And Cambodia, already Mr. Hun Sen position very clear. If we stands I don't have to spend any government money for soldiers. I can spend for more social aspects.
184	Now, in case of Thailand, no need to mention. They really like to become the center for the overseas investment.
185	I didn't need to discuss with them
186	Although I had lot of preparatory with Thailand because they use our common language. Market language
187	Myanmar, was really to me. I respect Myanmar, very strong mind. Because of the military group and Su Chi issue. Particularly military group. Su chi was not there before. I knew we could not give any money, but Myanmar was not the member of ASEAN. So unless we invite Myanmar, they would really left isolated. So this is opportunity that at least Western community, but GMS will welcome you. So you can be member group. And the water, Mekong comes from, 30% approx. comes from rainfall from Himalaya and similar from Myanmar, and the rest from Laotian mountains. So without Myanmar, this project doesn't mean anything
188	Myanmar was relatively easy.
189	This process, was very important. And each country has each own project. So going bilateral was important to understand before sub-regional cooperation
190	
191	<u>Next stage:</u>
192	This is when we formulated the group. There was already the Xeset hydropower was under preparation.
193	And luckily or unluckily, Thailand and Laos was still not in good term, almost fighting. Much more severe than India and Pakistan. Something like Pakistan and Afghanistan.
194	I think today all are looking to Xeset project.
195	Yes, basically although, economic corridors are modern. When they started looking at them, they were looking to where they can connect and where are the missing links.
196	I think, that process of internal discussion, domestic discussion with the communes in the communist counties, communes were there. They present interest like Cambodia and Thailand they were fighting about border. UNESCO gave the world heritage status to the Temple of Preah Vihear (temple of God). That is located almost at the border. And they started shooting each other, to claim position.

197	This was after GMS started. When Mr Thaksin issue came out. The government wanted to divert attention of people. Red and Yellow color collision.
198	There are so many incidences
199	Similar aspect, Myanmar and Thailand border issue
201	The point is, in fact, how to avoid these negotiations were to pass through was one of my headaches.
202	You touch upon it
203	
204	<i>Route number 9 (EWEC):</i>
205	Ones is Route 9 (EWEC). Da Nang – Savannakhet. And Thai side is Mukdahan. That was to me the most difficult routing. It took almost three years, because against military groups are there.
206	In Thai side, Mukdahan, near to the river, there was cantonment. Military base. Military camp.
207	That was the legacy of the Indochina war.
208	And if you have ever come from Da Nang to Laos and connect to the existing road. Savannakhet – Mukadahan was very beneficial, but the Laotian side didn't agree. Because the Thai side you have military base, and before in Vientiane we get any report, Thai tanks are already coming into our country
209	So, can you please change the route? Thai said no. This is almost completed.
210	So, I thought better thing is to cool down and let the economic necessity speak. Either support or not. It took three years, but compromise came, that is still Savannakhet but suburb of Savannakhet. More expensive than original.
211	That way we were able to avoid the situation
212	Negotiation stuck for three years and we didn't push
213	And another aspect that complicated there was when you are crossing the bridge what is the international border. It should be the deepest point of the river, because that is real river. Another said, that 50/50. The center, measuring from the banks.
214	They find that international bridge says it is in the center
215	Most difficult part is, who is going to be responsible for the management and administration of the bridge?
216	Three proposals were made:
217	4) A company, sponsor, 50/50, equity participation by two governments.
218	5) 50/50 and two departments of the bridge of both countries. Ministry of transports will form joint committee
219	6) I forgot
220	They selected the second option. Third time they agreed.
221	Very amicable solution on that
222	This is technical aspects which can happen any of the bridges
223	
224	<i>Route Number 3 (NSEC):</i>
225	The second point that you mentioned on that issues was the China route through Laos to Thailand.

226	Now, that route is called Route number 3, and actual length was from Kunming to Chiang Mai, but route part of Chinese side already done, and good part of Thailand already done before they started the missing link.
227	The missing link was from the china Laotian border (Boten) to this side of Mekong river.
228	All together, 400 km approx..., maybe?
229	I retired already at that time, this project should have been done much earlier. But because of reluctance of Laos and because of Laotians' mistake get delayed.
230	The mistake that Laos made was, at that time, international community there talking about World Bank, IMF, BOT by the private sector.
231	So, Laotians very happy to follow international community because the private sector build operate and after 20-30 years give it back. And they have done it without consulting us.
232	I couldn't complain, because that is what we told them. I am very happy as long as you decide by yourself.
233	They have awarded the road to the Thai group. And that group when to financial crisis.
234	And this private sector project didn't move at all, because none of the banks came to the rescue.
235	I was relaxing into the retirement, I was told to talk with them.
236	I found that the real reason was not the question of the need of financing. No legal aspects, or financial aspects. It was really Laotians that were saying this road which we are offering our land and participating the financing, that we have to borrow from outside, really benefits only Thailand and China, not us. It only benefits Thailand and China
237	That was the strong message that they told me.
238	To my surprise, they are not very fair balance explanation.
239	Laotians eventually would benefit from the increasing traffic
240	I mobilized so much my limited knowledge that without having disclose the initial power that we told, that Laotians do or are going to miss one of the very important ones. You cannot calculate economically viability with and without this road. And also looking at the economic benefits, what you want to do is
241	Without doing anything, people do illegal traffic
242	Better have the road and controlling if you have the capacity
243	Eventually they agreed, Laos was able to raise the money to buy back the right to construct the road to the private sector, who had that right. Although they were almost bankrupt, but they still had that certificate.
244	This negotiation was in a way very difficult. Again the question is you cannot ensure the economic benefit to Laotians.
245	By, in the form of ERR to the country as the whole. Ordinary rate of return was a bit short (9.5 or something less than 10%)
246	I think at that time the economic growth of China, it was very clear that they have to rely
247	Economic loss of China. It was very clear that they had to rely on this area: supply of food and supply of rubber and palm oil and so on
248	Very fortunate, all the sudden, the Malaysia and Thai they came up to here to continue the number one of rubber production because of the increase of labour cost.
249	So the rubber plantation starting moving to the Mekong area. And Laotians saw it
250	Lava plantaion started moving to Mekong area

251	And Laotians saw
252	Number 2: increase of China per capita income.
253	But most attractive was for the rubber. Because at that time massive investment by European, Japanese and Chinese automobile industry gave a shortage in the rubber.
254	But this came at the very last moment. Until then, they couldn't understand by figure, and I couldn't present concrete figure.
255	Later on, massive shortage of food itself. That was very decisive, because China offered Thailand, Cambodia, Laos the almost free import of agricultural products. They have selected 80, 85 to 90 items which the import tax of 1.5%
256	That convinced I think Laotians that is true that they can make the plantation around the highway, although I think that plantation is eventually done by Chinese. As long as money comes, money is money.
257	The next point in that project was a bit little extra things for you
258	The Mekong bridge at Lao approach
259	Chiang Kong bridge
260	Laotians wanted to ban to financing. Japan said no, for whatever the reason (that's very bad). Then China offered to pay. Finally the entire pay was divided into three. China financed their own. Thai side Thai government. Central side, Laotians financed by borrowing from ADB.
261	
262	<i>Mediation on NSEC</i>
263	When I was asked to mediate, or to convince the Laotian government.
264	This question about the Myanmar side I didn't question. To me, I sincerely felt, Laotians are going to lose their position if that road is not built, only philosophy that I had
265	And later on, I was told by one of the senior officials. Now Laos per capita income went up, it used to be income from hydro power, now its gold mine.
266	Thank you, without GMS road we could not get a hit on gold mine. How to develop, how to transport out. It was our headache. But now, thanks to this project, the gold mine give us more money than hydropower. It is very nice
267	This road will give another gold, which gold I don't know.
268	When I first visited Switzerland, unbelievable. I went left
269	The most eastern part life was so miserable. I even don't know if they have the heater ni winter. I couldn't see the electricity lines
270	I was given example to the deputy minister. Switzerland, where there is no main road there, the life is different
271	You can be as Switzerland
272	Don't joke
273	If you work with eastern part, life is still very low.
274	Matterhorn
275	Zermatt, is relatively the center. When I was young, I could see all the farmers, the houses were like the poor houses here. So I said, it must have taken Switzerland to today. Still some places are not so much different.
276	You could be like Switzerland. It will take time.
277	
278	

279	<i>ADB's neutrality role:</i>
280	Route N9, from Da Nang to Savannakhet. Japan was prepared to pay the cost and participate in the bridge and road. Laotians said, Morita san we cannot accept that. To me bridge is bridge, this is a bit sensitive (not for public knowledge)
281	If Japan do it. If Thailand and Japan shake hands, they twist our arm. Because Japan cannot say not to Thailand, but they can say no to us. Can you make sure that ADB is also part of the financing group, because we believe ADB is very fair to both sides. So you will come to meeting. ADB will sit there and ADB neutral position is very important for anything
282	Neutrality.
283	Neutral position, or fair position which is difficult to maintain. But if you have a honest broker they are all very happy. Finance only 70km, but Laotians are very happy.
284	So, this is out of the negotiations.
285	There could be so many things, but these are still in the memory
286	How you generalize it, is out to you
287	
288	<i>Other donors' support, Australia:</i>
289	Australia is one of the countries which is counted as the Asian member and for that reason in the board Australian constituency is looked together not with western countries. Joining the Asian countries
290	And one of the greatest contributions was they helped a lot Cambodia. Because Cambodia was the country under continuous wrong finale of Indochina because of Pol Pot. Cambodia was still with internal fights. Cambodia is in that sense, late comer.
291	Australia supported them
292	Cambodia. ADB is preparing the review of ADB's work, which will be for publication at the end of this year. Peter McColly. He was tough member of the board. He used to be the chief of the group or rather. He is really nice assigned him for this interesting task

C.I.II. GMS-P.II

Interviewee Energy expert
 Date May 31st, 2016
 Place Tokyo (Japan)

Summary of interview:

Line	Text
1	GMS Power trade overview
2	- GMS is a concept rather than an actual project
3	- It is design / a vision ADB provide to countries showing its possibility to fund in case they want
4	- There is no actual movement
5	HAPUA:
6	- It has no power to control or coordinate the projects, but rather serves for sharing information
7	- EGAT, EDL and other national utilities are in charge of bilateral contracts
8	- There is not clear intention to create the regional market
9	- So far it is connection between power generation and demand
10	China:
11	- It is not clear if it wants to export or import
12	Viet Nam:
13	- Currently it is importing from China
14	- It is looking for energy independence.
15	- In particular would like to set limits to import from China to no more than 5 or 10%
16	- Currently they are short in their generation, particularly in the North
17	- In the South they have surplus capacity and utilize it to export to Cambodia. This is a win-win situation for both countries
18	- Lao PDR and Viet Nam have complicated political relationship. So they are reluctant to depend on each other.
19	Myanmar:
20	-
21	Thailand:
22	- Willing to increase imports
23	- Now too much dependent on gas-fired:
24	o It used to produce all the natural gas but now need to import LNG

25	○ The dependency on imports of LNG is a major threat
26	○ Looking to develop coal in neighbouring countries:
27	▪ It used to be highly pollutant coal power plant at the center of the country
28	▪ Strong public criticism against coal
29	▪ Currently very difficult to develop new coal power plants in the country
30	○ Hydro from Lao is clean and cheap
31	- Also looking to limit imports:
32	○ Target on limit single source (country) 10 – 15%
33	Cambodia:
34	- Potential for hydro development from the Mekong river, will to export that electricity
35	- Main problem is the lack of financial resources.
36	- Cambodia needs foreign investment
37	HAPUA:
38	- It is the regional organization looking for power trade the most in the region
39	- One of the recommendations is to HAPUA to be central organizer of the project
40	- It doesn't have permanent office
41	- The current secretariat is from Indonesia, but there are no employees
42	- There are many committees
43	○ Each one has its special members
44	Relations with international donors:
45	- ADB was who initiated and now proceeding to the investment
46	- Currently ADB and WB are not working much in financing projects because companies like EGAT can self-finance their projects
47	- Other countries need funding from international donors
48	○ Some problems are:
49	▪ Long procedure for ADB
50	▪ Conditioning. For example World Bank funding Viet Nam under the conditions of market reforms in energy market
51	Main barriers:
52	- Institutions:
53	○ There is no institution for coordination / control the work.
54	○ There is no organization similar to ENTSO-E in Europe
55	- Political issues:
56	○ Sometimes is said that ASEAN is like EU, but political situation is very different.

57	○ EU started from experience of II World War
58	▪ There was a strong political motivation
59	○ But in ASEAN there is not that strong political motivation
60	▪ In their heart they don't trust
61	▪ It is mostly purely economical
62	National utilities:
63	- Relations:
64	○ Very fluent relations because the trade is beneficial for every company in terms on money
65	○ They manage the contracts
66	- They have some level of autonomy
67	○ EGAT
68	○ EDL is very similar to the government
69	○ Cambodia like EDL
70	○ In Viet Nam is different because they are under process of being unbundled and liberalized
71	○ Malaysia is like Thailand
72	○ In Singapore purely private
73	Laos-Thailand-Malaysia-Singapore:
74	- It is not new line, it is just connecting the missing links, so investment is not so large
75	- Contracted capacity of 100 MW (not so big project)
76	- It is supposed to serve as a pilot for the region
77	- Thailand and Malaysia are transit countries, they receive a fee for transmission
78	Yunnan-Thailand:
79	- Remains not implemented (maybe)
80	Mekong River Committee:
81	- It serves to discuss how the river should be development
82	- It includes Lao PDR, Viet Nam, Cambodia and Thailand (but not China)
83	- New development of hydropower dams in the main stream of the Mekong is becoming very difficult (if not impossible) because of its affection to downstream countries
84	- But China, not being member is free for doing its development
85	○ "China does not want to be controlled by anyone"
86	Lack of political will:
87	- Lack of strong political intention for regional market
88	- On the other hand, bilateral is gradually proceeding

89	- It might be more important to support those business agreements rather than the political agreement
90	- They invite much more investment: for that maybe need to relax taxes, change regulations
91	- There is willingness at companies level
92	- As long as trading is inside ASEAN there is not much opposition from politicians
93	- 15% seems to be a limit (similar to reserve)
94	Regional optimization results:
95	- The core is hydro development in Laos
96	- Development on the main stream might not be possible due to affections to Lower Mekong countries
97	Regional talks (about headquarters of RPCC)
98	- Not sure about current status
99	- But Lower Mekong want to keep control inside the region
100	- But China provides lot of money to Laos, Myanmar and Cambodia
101	Other issues
102	- Possibility of connection between Indonesia and Singapore
103	- The project for the ASEAN gas pipeline has been already abandoned because it is too much investment
104	- The new approach is to increase the interconnections through LNG
105	- For regional market development, the grid is still weak in Myanmar and Cambodia
106	o Need to build their grid and then connect
107	- Construction of power transmission line between Malaysia (Sarawak) and Indonesia (West Kalimantan)
108	- Under current situation, continuity of development of IPP seems the best solution
109	o Until the development of conditions for a regional market

C.I.III. GMS-P.III

Interviewee EGAT officials

Date June 14th, 2016

Place Bangkok (Thailand)

The views provided by the interviewees do not represent the views of EGAT or shall not considered as official view of the government of Thailand

Issues discussed, Notes:

1	<i>(i) Electricity cooperation of Thailand with neighbouring countries:</i>
2	• Several MOUs signed with neighbouring countries
3	- Lao PDR:
4	▪ MOU for 7,000 MW
5	▪ Existing framework for development
6	▪ Currently 5,000 MW, therefore there is still gap of 2,000MW
7	- Myanmar:
8	▪ New MOU signed last year
9	▪ Still not framework
10	▪ Cooperation includes other aspects as generation and transmission as well as human resources development (HRD)
11	- China:
12	▪ MOU and framework for 3,000 MW
13	▪ Still on development
14	• Power would be transmitted through Lao PDR
15	• There is need for agreement between exporting (China) and Lao PDR about how to pay for the use of Lao infrastructure
16	- Malaysia:
17	▪ There is no MOU at governments level
18	▪ But grid to grid link of 300MW
19	• Current agreement (export from Lao) includes 100 MW
20	- Cambodia:
21	▪ There is MOU but not framework
22	• Thailand looking to 25-30% of power import in the PDP
23	- Limit to max of 15% from a single country
24	
25	<i>(ii) Stages of regional power trade</i>
26	
27	• Still at bilateral agreements phase

28	• Still not a multilateral trade
29	• China and Thailand would be 2 nd stage because it goes through Lao PDR
30	○ Need for China and Lao PDR to make an arrangement
31	• If you know the exact amount of power that you want/need, you do a bilateral contract.
32	• But sometimes your demand is fluctuating, that's why you need market
33	○ For the 3 rd stage, there would be need of a regional market
34	
35	<i>(iii) ADB involvement</i>
36	
37	• Financial support
38	○ Identification of bankable projects
39	• Technical studies
40	○ Relevance of the most recent, RETA 6440
41	▪ Update of the regional master plan
42	
43	<i>(iv) Regional coordination</i>
44	
45	• Regional Power Trade Coordination Committee (RPTCC)
46	- Coordination committee
47	- Two working groups on Grid Code and Regulatory issues
48	• Regional Power Coordination Center (RPCC)
49	- To promote synchronized / unified regional electricity market
50	- Expected to become like the ENTSO-E in Europe
51	- Current discussions for the location of the RPCC
52	▪ China and Thailand bidding
53	▪ No agreement was possible, ADB is setting the criteria for re-bidding process
54	• Currently, all the countries' PDP are done independently
55	- Plan to set a group to see to the PDP of each country and to integrate them
56	- For the ASEAN Power Grid
57	- Under HAPUA cooperation
58	
59	<i>(v) Summary of the initiatives</i>
60	
61	• Three major initiatives:
62	- Country to country discussions/negotiations:
63	▪ To set MOUs and based on individual countries objectives (PDPs)
64	- ADB supported studies/initiatives:
65	▪ To identify relevant bankable projects to develop the MOUs
66	- HAPUA/APG discussions:
67	▪ To overcome technical

68	
69	<i>(vi) EGAT and Thai government coordination</i>
70	
71	<ul style="list-style-type: none"> • Upper committee with government, EPPO
72	<ul style="list-style-type: none"> • Ministry of energy, office of prime ministry to coordinate international activity and to set the framework for the MOUs
73	- Authority, government body and related government agencies
74	-

C.II. News on GMS-Power

Date	Highlight	Source	Link
06/05/2016	The truth behind the blackouts	Myanmar Times	http://www.mmtimes.com/index.php/business/20167-the-truth-behind-the-blackouts.html
31/03/2016	Vietnam revises its Power Development Plan: much greener	CleanED	http://news.cleaned-usth.com/post/2016/03/31/Vietnam-revises-its-Power-Development-Plan-much-greener
10/02/2016	Managing the Mekong River for All	Khmer Times	http://www.khmertimeskh.com/news/21222/managing-the-mekong-river-for-all/
03/02/2016	Laos to export electricity to Myanmar, more for Vietnam	The Nation	http://www.nationmultimedia.com/business/Laos-to-export-electricity-to-Myanmar-more-for-Vie-30278432.html
10/12/2015	Govt to mull power offer from Laos	The Nation	http://www.nationmultimedia.com/business/Govt-to-mull-power-offer-from-Laos-30274616.html
02/10/2015	Laos and the Nam Theun 2 project fails its human rights obligations	FIVAS	http://fivas.org/frontsak/laos-and-the-nam-theun-2-project-fails-its-human-rights-obligations/
25/09/2014	Lao-Singapore transmission line can save billions	The Nation	http://www.nationmultimedia.com/business/Lao-Singapore-transmission-line-can-save-billions-30244094.html
16/06/2015	Myanmar, Thailand to enhance cooperation in energy, electric power	Xinhuanet	http://news.xinhuanet.com/english/2015-06/16/c_134330004.htm
28/05/2015	Time to SCRUTINISE ‘win-win’ mega-dams	The Nation	http://www.nationmultimedia.com/opinion/Time-to-SCRUTINISE-win-win-mega-dams-30261094.html
02/03/2015	Power plants to play a bigger role in Banpu’s future	Bangkok Post	http://www.bangkokpost.com/archive/power-plants-to-play-a-

			bigger-role-in-banpu-future/486508
30/03/2014	PTTEP's gas project begins to show growth	Myanmar Times	http://www.mmtimes.com/index.php/business/10011-pttep-s-gas-project-begins-to-show-growth.html
23/03/2014	(*)Tapping a neighbour's energy	Bangkok Post	http://www.bangkokpost.com/p/rint/401245/
02/03/2014	PTTEP to invest \$3.3 b in oil and gas projects	Myanmar Times	http://www.mmtimes.com/index.php/business/9719-pttep-to-invest-3-3b-in-new-myanmar-gas-and-oil-projects.html
12/12/2013	Thailand signs up for Asean grid	Bangkok Post	http://www.bangkokpost.com/archive/thailand-signs-up-for-asean-grid/384385
18/11/2013	Powering the future	Bangkok Post	http://www.bangkokpost.com/archive/powering-the-future/380446
27/05/2013	Thai-based solar developer completes 84 MW PV plant in Lopburi	Pv-magazine	http://www.pv-magazine.com/news/details/beitrag/thai-based-solar-developer-completes-84-mw-pv-plant-in-lopburi_100011487/#axzz4AtH5qH41
05/11/2012	ADB, Norway to Help Update Myanmar Electricity Law	ADB News Release	http://www.adb.org/news/adb-norway-help-update-myanmar-electricity-law
17/10/2012	Indonesia – Malaysia Power Transmission Line Plans Kick-Off	Engerati	http://www.engerati.com/article/indonesia-malaysia-power-transmission-line-plans-kick
30/03/2008	China, Laos pledge further coop, sign agreements	Xinhuanet	http://news.xinhuanet.com/english/2008-03/30/content_7884583.htm
05/10/2005	China, Japan tug-of-war over Indochina	AsiaTimes	http://www.atimes.com/atimes/Japan/GJ05Dh03.html