



Strengthening Regional Energy Governance in the Mekong Subregion

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EXECUTIVE SUMMARY

This paper explores the energy trilemma problems in the Mekong subregion and explains the necessity for regional energy governance. The current governmental cooperative mechanisms are an ineffective approach to regional energy governance in the Mekong subregion and should thus be strengthened.

Countries of the Mekong subregion are facing the following energy trilemma: *energy security*, *energy poverty*, and *environmental sustainability* problems. This paper argues that regional energy governance is needed in the Mekong subregion because the energy trilemma has transboundary externalities on the Mekong ecosystem and requires regional cooperation to be managed effectively. Effective regional energy governance is based on three components: *coordination*, *general norms*, and *consideration of the regional context*. The existing mechanisms for governance in the subregion are lacking these elements.

This paper concludes with three policy recommendations. First, it is necessary to enhance coordination among the subregional mechanisms. By exploring mutual benefits to raise incentives for cooperation and by seeking third-party engagement, more effective coordination may be realized. Also, information sharing may be a way to enhance the mechanisms' transparency and improve coordination. Strengthened information sharing will enable other subregional mechanisms to understand the scale of the mechanisms' proposed investments and their impact on the whole subregion, as well as provide potential opportunities for cooperation. Second, it is essential to develop norms and standards for the optimal management of natural resources for energy-related activities. Developing norms and standards may keep nations from choosing norms that benefit themselves but not the whole subregion.

Finally, considering the context of the region is important, especially whether the actors share a largely homogeneous ecosystem. If actors in a geographical space share a largely homogeneous ecosystem, considering the negative impacts of transboundary externalities, they will be more willing to make compromises and cooperate to manage the energy trilemma. This paper assesses the engagement of the Association of Southeast Asian Nations (ASEAN) and indicates that the lack of sharing a largely homogeneous ecosystem between mainland Southeast Asia and maritime Southeast Asia has weakened ASEAN engagement in solving the energy trilemma in the Mekong subregion. However, ASEAN should still increase its participation in the Mekong subregion's energy sector. This would complement its efforts to push forward regional power integration plans such as the "ASEAN Power Grid," "ASEAN Economic Community Blueprint," and "ASEAN Master Plan 2025."

INTRODUCTION

The Mekong subregion, comprising six countries that include China (Yunnan province and Guangxi Zhuang Autonomous Region), Laos, Cambodia, Myanmar, Thailand, and Vietnam, is facing an energy trilemma: energy security, energy poverty, and environmental sustainability. With regard to *energy security*, the subregion is experiencing rapid energy demand growth due to rising industrialization and urbanization. The rising energy demand raises concerns of energy supply stability for the countries in the subregion. With regard to *energy poverty*, communities in the subregion without access to modern energy services rely on traditional fossil fuels, which may have negative effects on households' well-being, including health and education.¹ Finally, with regard to *environmental sustainability*, the subregion is suffering from several environmental threats, such as air pollution, climate change, and biodiversity losses due to a heavy reliance on fossil fuels and hydropower. Moreover, the subregion experienced a severe drought period in 2019 that caused water levels to drop to their lowest points in more than 100 years and raised concerns about the continued construction of upstream dams as they appear to make droughts worse.²

It is difficult to manage the energy trilemma only at the national level—regional cooperation is needed. Therefore, it is important to strengthen *regional energy governance* in the Mekong subregion. This paper defines regional energy governance as a coordinated form of management in which actors in a geographical space sharing a largely homogeneous ecosystem to collectively address energy trilemma problems. These actors include nations, civil society, the private sector, governmental cooperative mechanisms, and international organizations. In the Mekong subregion, there are over 10 governmental cooperative mechanisms and several countries which are involved but do not have geographic proximity with the subregion including the US, Japan, and South Korea.

Currently, there are a number of studies on energy governance such as the work of Goldthau and Witte, Gunningham, and Vina et al.³ While many of these studies focus on energy

¹ Han Phoumin and Fukunari Kimura, "Cambodia's Energy Poverty and Its Effects on Social Wellbeing: Empirical Evidence and Policy Implications," *Energy Policy* 132 (September 2019): pp. 283-289, <https://doi.org/10.1016/j.enpol.2019.05.032>; Sothea Oum, "Energy Poverty in the Lao PDR and Its Impacts on Education and Health," *Energy Policy* 132 (September 2019): pp. 247-253, <https://doi.org/10.1016/j.enpol.2019.05.030>.

² Stefan Lovgren, "Major River Sees 100-Year Lows, Threatening Food Supply," *National Geographic*, July 31, 2019, <https://www.nationalgeographic.com/environment/article/mekong-river-lowest-levels-100-years-food-shortages>; Tom Fawthrop, "Something Is Very Wrong on the Mekong River," *The Diplomat*, August 26, 2019, <https://thediplomat.com/2019/08/something-is-very-wrong-on-the-mekong-river/>; Zi Liang Wee, "Mekong nations face severe drought made worse by dam," *ASEAN Economist*, November 20, 2019, <https://www.aseaneconomist.com/mekong-nations-face-severe-drought-made-worse-by-dams/>; Simon Roughneen, "Mekong River dying a slow but certain death," *Asia Times*, December 6, 2019, <https://www.asiatimes.com/2019/12/article/mekong-river-dying-a-slow-but-certain-death/>.

³ Andreas Goldthau and Jan Witte, *Global Energy Governance: the New Rules of the Game* (Washington: Brookings Institution Press, 2010); Neil Gunningham, "Managing the Energy Trilemma: The Case of Indonesia," *Energy Policy* 54 (March 2013): pp. 184-193, <https://doi.org/10.1016/j.enpol.2012.11.018>; Antonio G. La Viña, Joanne C. Dulce, and Naderev Saño, "National and Global Energy Governance: Issues,

governance at the national or global level, only a few mention energy governance at the regional level (e.g., Giner-Reichl).⁴ There is currently no research on the Mekong subregion; therefore, this paper contributes to the existing literature by detailing this important area of the world.

In this paper, two key questions will be answered: (1) why regional energy governance is needed in the Mekong subregion; and (2) how effective regional energy governance can be promoted in the subregion. The research will focus on the role of governmental cooperative mechanisms involved in regional energy governance in the Mekong subregion, with eight mechanisms selected as case studies. The paper argues that regional energy governance is needed in the Mekong subregion as the energy trilemma has transboundary externalities on the Mekong ecosystem and requires regional cooperation to be managed effectively. Also, whether regional energy governance is effective will be the key factor in determining efficient management of the energy trilemma. Effectiveness is based on coordination among the regional mechanisms, establishment of norms generally accepted by all parties to the existing mechanisms, and consideration of regional context.

This paper is structured as follows: first, it defines the concepts of governance and energy governance and uses the energy trilemma concept to systemically analyze energy problems. By looking at the gaps between global energy governance, national governance, and geographic factors, it then proceeds to explain the necessity of energy governance at the regional level and how its effectiveness may be improved. Following this, it will discuss the current energy trilemma problems in the Mekong subregion to demonstrate the necessity for regional energy governance. The efforts of governmental cooperative mechanisms in assisting the subregion's nations to manage the energy trilemma will be discussed, as well as any potential problems arising from these mechanisms. Finally, it concludes with policy recommendations to improve the effectiveness of regional energy governance in the Mekong subregion.

ENERGY GOVERNANCE AT THE REGIONAL LEVEL

Concept of Governance

Before defining energy governance, it is best to begin with the concept of governance itself. While “government” refers to a formal institutional structure and authoritative decision-making location, “governance” occurs outside formal governmental structures at scales ranging from the community to the global level.⁵ Moreover, “government” requires formal authority and a strong enforcement mechanism, while “governance” refers to collective actions backed by

Linkages and Challenges in the Philippines,” *Global Policy* 2 (September 2011): pp. 80-93, <https://doi.org/10.1111/j.1758-5899.2011.00134.x>.

⁴ Irene Giner-Reichl, “Renewable Energy in International and Regional Governance: Propelling Development in Africa,” *Energy Research & Social Science* 5 (January 2015): pp. 116-119, <https://doi.org/10.1016/j.erss.2014.12.008>.

⁵ Ann Florini and Benjamin K. Sovacool, “Who Governs Energy? The Challenges Facing Global Energy Governance,” *Energy Policy* 37, no. 12 (December 2009): pp. 5239-5248, <https://doi.org/10.1016/j.enpol.2009.07.039>; Adrian Leftwich, “Governance, the State and the Politics of Development,” *Development and Change* 25, no. 2 (April 1994): pp. 363-386, <https://doi.org/10.1111/j.1467-7660.1994.tb00519.x>.

shared goals that may or may not rely on formal authority.⁶ Governance can generally be defined as the coordinated management of issues to achieve desired outcomes by a multitude of actors possessing different interests, including nations, civil society, the private sector, intergovernmental organizations, governmental cooperative mechanisms, and international organizations.⁷

The precise definition of governance is still hotly debated. For instance, some scholars emphasize “structure” and define governance as an institutionalized mode of coordination on a specific issue that occurs within or beyond the traditional channels of centralized authority and aims to achieve particular outcomes.⁸ Meanwhile, others focus on “process” in governance to emphasize the dynamic interactive aspects of governance, which can be seen as an ongoing process to enhance institutional capacity to coordinate.⁹ Scholars have also explored the concrete components of governance. Henrik et al. propose four components of governance: (1) a collective course of action including policies or programs that remedy public problems; (2) problems that are public issues; (3) actors and processes that devise a collective course of action; and (4) a structure that includes actors and institutions.¹⁰ These components can also be found in the studies of energy governance.¹¹

Energy Governance

Energy governance can be defined as a coordinated form of management requiring the collective actions of actors and institutions to address energy problems.¹² Zaman et al. point out that proper energy governance can act as a hedging mechanism against many energy

⁶ James N. Rosenau and Ernst-Otto Czempiel, *Governance without Government Order and Change in World Politics* (Cambridge: Cambridge University Press, 1992), quoted in Thijs Van de Graaf and Jeff Colgan, “Global Energy Governance: a Review and Research Agenda,” *Palgrave Communications* 2, no. 1 (January 2016), <https://doi.org/10.1057/palcomms.2015.47>.

⁷ David A. Welch, “What Is ‘Governance’, Anyway?,” *Canadian Foreign Policy Journal* 19, no. 3 (September 2013): pp. 253-267, <https://doi.org/10.1080/11926422.2013.845584>; Jon Pierre and B. Guy Peters, *Governance, Politics and the State* (New York: St. Martin’s Press, 2000).

⁸ Ibid: 219-234, 379-389.

⁹ David Levi-Faur, “From ‘Big government’ to ‘Big governance?,” in *The Oxford Handbook of Governance*, edited by David Levi-Faur, (New York: Oxford University Press, 2012), 8-9.

¹⁰ Henrik Enderlein, Sonja Wälti, and Michael Zürn, *Handbook on Multi-Level Governance* (Cheltenham: Edward Elgar, 2010), 2-3.

¹¹ Aleksandra Wagner, Tiffany Grobelski, and Marcin Harembki, “Is Energy Policy a Public Issue? Nuclear Power in Poland and Implications for Energy Transitions in Central and East Europe,” *Energy Research & Social Science* 13 (March 2016): pp. 158-169, <https://doi.org/10.1016/j.erss.2015.12.010>; Neil Gunningham, “Confronting the Challenge of Energy Governance,” *Transnational Environmental Law* 1, no.1 (February 2012): 119-135, <https://doi.org/10.1017/s2047102511000124>.

¹² Cameron Holley and Emma Lecavalier, “Energy Governance, Energy Security and Environmental Sustainability: A Case Study from Hong Kong,” *Energy Policy* 108 (September 2017): pp. 379-389, <https://doi.org/10.1016/j.enpol.2017.06.010>; Morgan Bazilian, Smita Nakhoda, and Thijs Van de Graaf, “Energy Governance and Poverty,” *Energy Research & Social Science* 1 (March 2014): pp. 217-225, <https://doi.org/10.1016/j.erss.2014.03.006>; Benjamin K Sovacool and Ann Florini, “Examining the Complications of Global Energy Governance,” *Journal of Energy & Natural Resources Law* 30, no. 3 (August 2012): pp. 235-263, <https://doi.org/10.1080/02646811.2012.11435295>.

problems, including supply disruption, corruption in project implementation, and cross-border climate change impacts.¹³

Since energy problems are broad, it is important to create a framework for systematically analyzing energy challenges. Here, the concept of the “energy trilemma” is useful. According to the World Energy Council, a major impartial network that includes leaders and practitioners to promote the sustainable supply and use of energy for the people around the world, an energy trilemma denotes “the conflicting goals that governments face in securing energy supplies, providing universal energy access and promoting environmental protection.”¹⁴ An energy trilemma has three components, namely *energy security*, *energy poverty* and *environmental sustainability*.¹⁵

Table 1: The three components of the energy trilemma

Component	Content
Energy Security	Securing sufficient and stable energy supplies at reasonable prices to support economy and industry.
Energy Poverty	Lack of access to electricity, heat, or other modern energy services; dependence on traditional biomass fuels for basic energy needs like cooking, lighting and heating; or access available to modern energy service but unable to consume it because of financial unaffordability.
Environmental Sustainability	Energy system transition toward mitigating and avoiding potential environmental damage, including water and climate change impacts.

Sources: Vlado Vivoda, “Evaluating Energy Security in the Asia-Pacific Region: A Novel Methodological Approach,” *Energy Policy* 38, no. 9 (September 2010): pp. 5258-5263, <https://doi.org/10.1016/j.enpol.2010.05.028>; Ole Odgaard and Jørgen Delman, “China’s Energy Security and Its Challenges towards 2035,” *Energy Policy* 71 (August 2014): pp. 107-117, <https://doi.org/10.1016/j.enpol.2014.03.040>; Ming Chih Chuang and Hwong Wen Ma, “An Assessment of Taiwan’s Energy Policy Using Multi-Dimensional Energy Security Indicators,” *Renewable and Sustainable Energy Reviews* 17 (January 2013): pp. 301-311, <https://doi.org/10.1016/j.rser.2012.09.034>; Neil Gunningham, “Managing the Energy Trilemma: The Case of Indonesia,” *Energy Policy* 54 (March 2013): pp. 184-193, <https://doi.org/10.1016/j.enpol.2012.11.018>; Benjamin K. Sovacool and Ira Martina Drupady, *Energy Access, Poverty, and Development: the Governance of Small-Scale Renewable Energy in Developing Asia* (Abingdon: Routledge, 2016); “2019 World Energy Trilemma Index,” World Energy Council, 2019, https://www.worldenergy.org/assets/downloads/WETrilemma_2019_Full_Report_v4_pages.pdf; Han Phoumin and Fukunari Kimura, “Cambodia’s Energy Poverty and Its Effects on Social Wellbeing: Empirical Evidence and Policy Implications,” *Energy Policy* 132 (September 2019): pp. 283-289, <https://doi.org/10.1016/j.enpol.2019.05.032>.

¹³ Rafia Zaman and Thomas Brudermann, “Energy Governance in Resource-Poor Settings: The Case of Bangladesh,” *Energy Procedia* 142 (December 2017): pp. 2384-2390, <https://doi.org/10.1016/j.egypro.2017.12.171>.

¹⁴ “Policies for the future: 2011 Assessment of country energy and climate policies,” World Energy Council, https://www.worldenergy.org/assets/downloads/PUB_wec_2011_assessment_of_energy_and_climate_policies_2011_WEC.pdf, quoted in Neil Gunningham, “Managing the Energy Trilemma: The Case of Indonesia,” *Energy Policy* 54 (March 2013): pp. 184-193, <https://doi.org/10.1016/j.enpol.2012.11.018>.

¹⁵ “2019 World Energy Trilemma Index,” World Energy Council, https://www.worldenergy.org/assets/downloads/WETrilemma_2019_Full_Report_v4_pages.pdf.

Scholars such as Gunningham have identified the energy trilemma as the central obstacle for energy transition to a low-carbon economy. Holley et al. explored energy security and environmental sustainability, the two components of the energy trilemma, to analyze energy governance in Hong Kong. While the energy trilemma is a problem that cannot be solved completely, it can still be managed; moreover, understanding the tensions and trade-offs it generates will facilitate the development of more effective energy governance strategy.

Regional Energy Governance

The Need for Regional Energy Governance

Though states still treat energy as a national security issue, which influences their willingness to expand energy cooperation beyond the national level, energy trilemma challenges go beyond the national level. A number of studies discuss the relationship between national and global energy governance.¹⁶ There are three major reasons why regional energy governance is needed: (1) transboundary externalities on the shared ecosystem; (2) international resource support; and (3) information sharing and learning.

(1) Transboundary externalities on the shared ecosystem

One of the key issues concerns transboundary externalities resulting from a country's energy system, which are incidentally positive or negative byproducts caused by a specific activity.¹⁷ Several regions face the negative impacts of transboundary externalities, such as South Asia, Central Asia, Latin America, and South Africa. For instance, in South Asia, coal is the largest domestic source of energy supply in India. The negative impacts of coal-fired power affect not only India but also neighboring countries like Nepal and Pakistan,¹⁸ which shows the problem of transboundary externalities. Another example is hydropower dam construction. The building of a dam can influence water usage of neighboring countries, which has been debated in the case of the Mekong subregion.¹⁹ These cases show that if countries are geographically proximate and share a largely homogeneous ecosystem, the negative environmental impacts of energy-related activities should encourage proximate nations to work together to mitigate the impacts.

(2) International resource support

Since addressing the energy trilemma is not an easy task for a state, especially for those which have financial difficulties, some resources from the international and regional community are

¹⁶ Antonio G. La Viña, Joanne C. Dulce, and Naderev Saño, "National and Global Energy Governance: Issues, Linkages and Challenges in the Philippines," *Global Policy* 2 (September 2011): pp. 80-93, <https://doi.org/10.1111/j.1758-5899.2011.00134.x>; Navroz K. Dubash, "From Norm Taker to Norm Maker? Indian Energy Governance in Global Context," *Global Policy* 2 (September 2011): pp. 66-79, <https://doi.org/10.1111/j.1758-5899.2011.00123.x>.

¹⁷ Ann Florini and Benjamin K. Sovacool, "Who Governs Energy? The Challenges Facing Global Energy Governance," *Energy Policy* 37, no. 12 (2009): pp. 5239-5248, <https://doi.org/10.1016/j.enpol.2009.07.039>.

¹⁸ Naem Abas et al., "Cooperative Control of Regional Transboundary Air Pollutants," *Environmental Systems Research* 8, no. 1 (March 2019), <https://doi.org/10.1186/s40068-019-0138-0>; Sahana Ghosh, "India's noxious emissions are messing up neighbours' air, too," *Quartz India*, September 9, 2019, <https://qz.com/india/1705179/indias-pollution-hurting-pakistan-bangladesh-nepal-sri-lanka/>.

¹⁹ "Predicted water loss and sediment reduction from hydropower development," Mekong River Commission, March 26, 2018, <http://www.mrcmekong.org/news-and-events/events/predicted-water-loss-and-sediment-reduction-from-hydropower-development/>.

needed. This is especially the case for energy poverty, which principally relates to the national level but requires international resources to tackle. For example, the Asian Development Bank has established programs to help member countries develop reliable and affordable energy. Also, some regional governmental cooperative mechanisms in South and Southeast Asia provide resources to tackle energy trilemma problems.

(3) *Information sharing and learning*

States also need to utilize international platforms to learn from other countries' experiences and share information to tackle energy trilemma problems. Countries with renewable energy development that is only just getting off the ground can facilitate progress by learning from other countries' successful energy transition experiences and sharing experiences to identify possible obstacles and solutions. For instance, the European Union plays a leading role in global renewable energy transition and has established many platforms with other countries like the "EU-India Clean Energy and Climate Partnerships" and the "EU-China Energy Cooperation Platform" to share its experience and facilitate renewable energy transition in these countries.

Thus far, comparatively few studies have focused on energy governance at the regional level. However, some problems pertaining to global energy governance have been acknowledged. These challenges include states' unwillingness to sign away their sovereignty on energy issues, asymmetry between industrialized and industrializing nations due to their different concerns regarding energy problems, and a lack of trust that industrialized nations will provide committed support.²⁰ Graaf et al. note that the differences in national interests between developed and developing countries will influence the priority goals of global energy governance and limit international cooperation, so developing countries' energy problems may not be solved effectively. For example, developing countries are likely to be more concerned with addressing energy poverty than developed countries.²¹

Gunningham further notes insufficient international support for helping developing countries achieve energy transition.²² To solve these problems, Patt advocates for regional energy governance, which results in far fewer asymmetries among nations with different levels of development, enables more effective regional negotiations, and facilitates improved regional cooperation. Patt further points out that regional energy governance can better develop renewable energy technologies due to the need for extensive regional electricity transmission and cross-border planning.²³

²⁰ Anthony G. Patt, "Effective Regional Energy Governance—Not Global Environmental Governance—Is What We Need Right Now for Climate Change," *Global Environmental Change* 20, no. 1 (February 2010): pp. 33-35, <https://doi.org/10.1016/j.gloenvcha.2009.09.006>.

²¹ Thijs Van de Graaf and Jeff Colgan, "Global Energy Governance: a Review and Research Agenda," *Palgrave Communications* 2, no. 1 (January 2016), <https://doi.org/10.1057/palcomms.2015.47>.

²² Neil Gunningham, "Managing the Energy Trilemma: The Case of Indonesia," *Energy Policy* 54 (March 2013): pp. 184-193, <https://doi.org/10.1016/j.enpol.2012.11.018>.

²³ Anthony G. Patt, "Effective Regional Energy Governance—Not Global Environmental Governance—Is What We Need Right Now for Climate Change," *Global Environmental Change* 20, no. 1 (February 2010): pp. 33-35, <https://doi.org/10.1016/j.gloenvcha.2009.09.006>.

Defining Regional Energy Governance

Now that the need for regional energy governance has been addressed, some related problems also require discussion. First, the definition of “region” is usually called into question when talking about regional governance or regionalism. The meaning of “region” is variable and depends upon context. Scholars like Hemmer and Katzenstein note that regions are not fixed by geography, but are rather political creations, while other scholars such as Nolte argue that the concept of a region should also include geographical components.²⁴ Bruzelius points out the importance of geographical position with regard to regional cooperation, noting that states’ proportion of territory within a regime’s ecosystem boundaries may influence individual members’ commitment to the regime.²⁵ In a report for the Intergovernmental Panel on Climate Change, Agrawala et al. define “region” at a supra-national level based on a combination of geographical proximity and levels of economic and human development.²⁶

For regional energy governance, owing to the aforementioned importance of a shared ecosystem, region should here be defined as a geographical space with a largely homogeneous ecosystem.

The Components of Effective Regional Energy Governance

It is important to develop effective regional energy governance that can help nations to efficiently manage the energy trilemma at the regional level. While there is limited research discussing effective regional energy governance, this study will fill this gap by exploring from other regional governance perspectives, like regional water governance and regional environmental governance. Through the related literature, effective regional energy governance can be identified based on three components: (1) coordination among existing regional mechanisms; (2) clear norms for the optimal management of natural resource for energy-related activities; and (3) consideration of the regional context. The content of these components is explained below.

(1) Coordination among existing regional mechanisms

In a region, there may be several regional mechanisms that have overlapping mandates or membership. Mandate refers to the issue area that an institution covers.²⁷ Overlapping

²⁴ Christopher Hemmer and Peter J. Katzenstein, “Why Is There No NATO in Asia? Collective Identity, Regionalism, and the Origins of Multilateralism,” *International Organization* 56, no. 3 (2002): pp. 575-607, <https://doi.org/10.1162/002081802760199890>; Detlef Nolte, “Regional Powers and Regional Governance,” In *Regional Power and Regional Orders*, ed. Nadine Godehardt and Dirk Nabers (United Kingdom: Routledge, 2011): 49-67.

²⁵ Backer Bruzelius, “The Mekong River Commission: Does It Work, and How Does the Mekong Basin’s Geography Influence Its Effectiveness?” *Südostasien aktuell: Journal of Current Southeast Asian Affairs* 26, no. 4 (2007): pp.31-55, <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-336276>.

²⁶ S. Agrawala et al., “Regional Development and Cooperation” in *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Intergovernmental Panel on Climate Change (New York: Cambridge University Press, 2014), https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_full.pdf.

²⁷ Detlef Nolte, “Costs and Benefits of Overlapping Regional Organizations in Latin America: The Case of the OAS and UNASUR,” *Latin American Politics and Society* 60, no. 1 (January 2018): pp. 128-153, <https://doi.org/10.1017/lap.2017.8>.

mandates reflect the consensus of needs in the region among different mechanisms.²⁸ Some research has explored the costs and benefits of overlapping regional mechanisms and the implications for regional governance. In terms of benefits, overlapping regional organizations or mechanisms may provide support for issues that others neglect or only partially include. Also, they can provide more total resources and create standards for the accomplishment of certain objectives.²⁹ As for drawbacks, overlapping may result in “forum shopping,” which refers to actors selecting the international venues that favor their interests and promote specific policy preferences.³⁰ While nations in a region can choose the regional mechanisms that maximize their national interests, the ability to do so may be detrimental to the region’s long-term development. In addition, overlap may cause duplication of efforts and resource wastage.

Therefore, to maximize the benefits of overlapping regional mechanisms to efficiently manage the energy trilemma, it is important to promote coordination among existing regional mechanisms. One of the ways to develop coordination is communication. In the case of transboundary water cooperation in the Mekong subregion, Zhang has noted that the effectiveness of cooperation should be based on establishing a sense of trust in the cooperation mechanism and expanding communication and information channels, as these can enable sub-regional countries to better understand each other and solve their water problems collaboratively.³¹

(2) Clear norms for the optimal management of natural resource for energy-related activities

Effective regional energy governance should reach consensus via existing mechanisms to establish clear natural resource management norms for energy production, as the overuse of natural resources will worsen negative externalities.

(3) Consideration of the regional context

Finally, it is important to consider the context of the region, especially whether the actors share a largely homogeneous ecosystem. In ASEAN, maritime Southeast Asian countries may not have substantial interest in tackling problems occurring in the mainland Southeast Asia.³² And due to ASEAN’s principles of non-interference and consensus-building, the low interest of maritime Southeast Asian countries may influence regional energy governance. A similar problem has been pointed out by Lian and Robinson, who argue that ASEAN’s principles of non-interference and consensus-building have caused limitations in regional environmental

²⁸ Benjamin Zawacki, “Implications of a Crowded Field: Sub-regional architecture in ACMECS Member States,” *Asia Foundation*, June 27, 2019, https://asiafoundation.org/wp-content/uploads/2019/06/Implications-of-a-Crowded-Field_whitePaper.pdf.

²⁹ *Ibid.*

³⁰ Karen J. Alter and Sophie Meunier, “The Politics of International Regime Complexity,” *Perspectives on Politics* 7, no. 1 (February 2009): pp. 13-24, <https://doi.org/10.1017/s1537592709090033>.

³¹ Li Zhang, “Trust Crisis and Building Trust in Transboundary Water Cooperation Along the Lancang-Mekong River.” In *Water and Power: Environmental Governance and Strategies for Sustainability in the Lower Mekong Basin*, ed. Mart Stewart and Peter Coclans (Switzerland: Springer, 2018), 235-252.

³² Shawn Ho and Kaewkamol Pitakdumrongkit, “Can ASEAN Play a Greater Role in the Mekong Subregion?” *The Diplomat*, January 30, 2019, <https://thediplomat.com/2019/01/can-asean-play-a-greater-role-in-the-mekong-subregion/>; Harris Zainul, “Asean and he dammed Mekong,” *New Straits Times*, November 8, 2019, <https://www.nst.com.my/opinion/columnists/2019/11/536714/asean-and-dammed-mekong>.

governance.³³ This reflects the problems of lacking a largely shared homogeneous ecosystem in ASEAN. Therefore, when thinking about how to promote effective regional energy governance, the regional context, including shared ecosystems, should be considered. Only if actors share a largely homogeneous ecosystem will they make compromises and cooperate to manage the energy trilemma.

ENERGY TRILEMMA PROBLEMS IN THE MEKONG SUBREGION

According to the World Energy Trilemma Index 2019 released by the World Energy Council, Mekong subregion countries have poor performance in managing energy trilemma problems when compared to the other 128 countries in the world.³⁵ The nations in the Mekong subregion face similar challenges, which are: (1) rising energy demand; (2) a lack of sufficient energy access in rural areas or the unaffordability of energy prices; and (3) cross-border environmental threats resulting from energy-related activities. These problems also reflect the three major drivers of regional energy governance: transboundary externalities on the shared ecosystem, international resource support, and information sharing and learning.

Energy Security

In terms of energy security, Mekong subregion countries are facing rising energy demand due to industrialization and urbanization. The energy demand in the subregion is expected to increase by 66 percent by 2040.³⁴ With rising energy demand, some countries have become net energy importers. For instance, although Vietnam has a large array of domestic primary energy sources (including crude oil, coal, natural gas and hydropower), these resources are being depleted such that the country is now a net energy importer. China and Thailand also face similar problems. Chinese energy consumption increased by 4.3 percent in 2018, accounting for 24 percent of global energy consumption.³⁵ The International Energy Agency's long-term scenario predicts that Chinese energy demand will eventually account for half of the global demand for oil, coal and nuclear power.³⁶ Between 2009 and 2018, Chinese total domestic energy consumption exceeded total production, reflecting the country's heavy reliance on energy imports, especially of coal and oil.³⁷ Regarding Thailand, since 2005, the share of energy import value to total import value remained above 10 percent. Between 2016 and 2018, energy

33 Koh Lian and Nicholas Robinson. "Regional Environmental Governance: Examining the Association of Southeast Asian Nations (ASEAN) Model." in *Global Environmental Governance: Options & Opportunities*, ed. Daniel Esty and Maria Ivanova (Forestry & Environmental Studies Publications Series. 8, 2002), 101-120.

35 "2019 World Energy Trilemma Index," World Energy Council, https://www.worldenergy.org/assets/downloads/WETrilemma_2019_Full_Report_v4_pages.pdf.

34 Christopher Len and Huong Le Thu, "Dammed Mekong: lasting challenges for the region's energy security," *Australian Strategic Policy Institute*, August 3, 2018, <https://www.aspistrategist.org.au/dammed-mekong-lasting-challenges-for-the-regions-energy-security/>.

35 "China's energy market in 2018," BP, 2019, <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/country-and-regional-insights/china.html>.

36 Harvard International Review, "Strategizing for Energy Policy: China's Drive to Reduce Dependence," *Harvard International Review*, August 18, 2019, <https://hir.harvard.edu/strategizing-for-energy-policy/>.

37 "Annual Data-Energy," National Bureau of Statistics of China, <http://data.stats.gov.cn/easyquery.htm?cn=C01>

imports increased from 11.1 percent to 15.1 percent, with 36 percent growth, and the self-sufficiency ratio in total primary energy supply decreased from 59.8 percent to 54.9 percent.³⁸

Paralleling economic development, domestic energy demand in Myanmar is also rising. The Ministry of Electricity and Energy of Myanmar noted that the country's energy needs increased by 19 percent in 2019. Domestic electricity needs are expected to be around 4,000 megawatts (MW), while domestic generation capacity is around 3,000–3,100 MW, threatening Myanmar's energy security.³⁹ According to the Asian Development Bank, Cambodia's energy needs will also double by 2030.⁴⁰

To help Mekong subregion countries solve the challenges of rising energy demand and maintain energy security, two approaches may be effective: promoting subregion grid interconnection and implementing energy efficiency and conservation (EEC). The former needs international support for building subregion energy networks while the latter needs shared experience to cultivate EEC professionals.

Energy Poverty

There are two types of energy poverty that Mekong subregion countries face. The first type is the lack of, or limited access to, a modern energy service such as electricity and clean cooking facilities for communities living in rural areas that currently rely on biomass fuel. The second type is financial unaffordability, which restricts communities from the consumption of modern energy services, despite the fact that they are connected to the national electricity grid.

Limited access to modern energy services

All countries of the Mekong subregion face the challenge of limited access to a modern energy services for populations in rural areas. Among Mekong subregion countries, Cambodia and Myanmar have the two lowest electrification rates in Southeast Asia, which are 71.5 percent and 42 percent, respectively.⁴¹ While the percentage of those with access to electricity in rural Laos has improved from 29 percent to 80 percent between 2000 and 2016,⁴² 20 percent of people living in rural areas are still without connection to electricity. One of the reasons is that

³⁸ Energy Policy and Planning Office, "Energy Indicators," Ministry of Energy, <http://www.eppo.go.th/index.php/en/en-energystatistics/indicators>.

³⁹ Htoo Thant, "Electricity demand tops projections, dams unable to keep up: ministry," *Myanmar Times*, June 18, 2019, <https://www.mmtimes.com/news/electricity-demand-tops-projections-dams-unable-keep-ministry.html>.

⁴⁰ "Cambodia: Energy Sector Assessment, Strategy, and Road Map," Asian Development Bank, December 2018, <https://www.adb.org/documents/cambodia-energy-assessment-strategy-road-map>.

⁴¹ "Cambodia: Electricity Access Increased, Reliability Needs Improvement," The World Bank, March 22, 2018, <https://www.worldbank.org/en/news/press-release/2018/03/22/cambodia-electricity-access-increased-reliability-needs-improvement>; "Shaping Energy Policies to Achieve the Sustainable Development Goals in Myanmar and the Greater Mekong Subregion," Economic Research Institute for ASEAN and East Asia, August, 2019, http://www.eria.org/uploads/media/RPR_FY2018_10.pdf.

⁴² Sothea Oum, "Energy Poverty in the Lao PDR and Its Impacts on Education and Health," *Energy Policy* 132 (September 2019): pp. 247-253, <https://doi.org/10.1016/j.enpol.2019.05.030>.

the rugged terrain hinders the capacity to provide electrification for the Laotian population as a whole.⁴³

Unaffordability of energy services

Some countries also face problems of financial affordability in accessing energy services. For example, electricity prices in Cambodia are among the highest in the world,⁴⁴ which limits its population's access to energy service even while connected to the national grid. Vietnam and China face similar issues; Nguyen et al. point out that despite electricity poverty in Vietnam decreasing between 2004 and 2016, the energy-cost poverty of minority groups and rural populations increased during the same period, meaning that the burden of energy expenditure on these groups is rising.⁴⁵ Additionally, through the use of the Comprehensive Energy Poverty Index, Wang et al. point out that the south-western region of China, including Yunnan province and Guangxi Zhuang Autonomous Region, has low household energy affordability and a lack of energy service, as well as a poor energy supply infrastructure in rural areas.⁴⁶

To decrease energy poverty, small-scale renewable energy technologies such as home solar systems can be introduced in these countries. However, without sufficient knowledge, they will be difficult to operate appropriately. Promoting energy efficiency improvement can reduce household energy consumption and electricity bills, which improves financial affordability.⁴⁷

To promote small-scale renewable energy technologies and improve energy efficiency, information, experience, and international resource support from regional and extra-regional countries may help countries in the subregion train their populations in operating and maintaining these technologies, thereby reducing unnecessary energy consumption.

Environmental Sustainability

In terms of environmental sustainability, the third leg of the energy trilemma, the heavy reliance on fossil fuels and hydropower has caused environmental harm to the Mekong subregion. A great deal of literature studies the negative environmental impacts of hydropower dams, including the loss of biodiversity, changes to ecological productivity, and the release of greenhouse gas emissions.⁴⁸ Since the Mekong subregion countries share a largely

⁴³ Benjamin K. Sovacool and Ira Martina Drupady, *Energy Access, Poverty, and Development: the Governance of Small-Scale Renewable Energy in Developing Asia* (Abingdon: Routledge, 2016)

⁴⁴ Jack Board, "Hun Sen promises to slash electricity price in major populist pitch to Cambodian voters," *Channel News Asia*, July 7, 2018, <https://www.channelnewsasia.com/news/asia/hun-sen-promises-to-slash-electricity-prices-in-major-populist-10508230>

⁴⁵ Trung Thanh Nguyen et al., "Energy Transition, Poverty and Inequality in Vietnam," *Energy Policy* 132 (September 2019): pp. 536-548, <https://doi.org/10.1016/j.enpol.2019.06.001>.

⁴⁶ Ke Wang et al., "Energy Poverty in China: An Index Based Comprehensive Evaluation," *Renewable and Sustainable Energy Reviews* 47 (July 2015): pp. 308-323, <https://doi.org/10.1016/j.rser.2015.03.041>.

⁴⁷ "Energy Poverty in Europe: How Energy Efficiency and Renewables Can Help," Council of Europe Development Bank, March 2019, https://coebank.org/media/documents/CEB_Study_Energy_Poverty_in_Europe.pdf.

⁴⁸ G. Ziv et al., "Trading-off Fish Biodiversity, Food Security, and Hydropower in the Mekong River Basin," *Proceedings of the National Academy of Sciences* 109, no. 15 (March 2012): pp. 5609-5614, <https://doi.org/10.1073/pnas.1201423109>; Mauricio E. Arias et al., "Impacts of Hydropower and Climate Change on Drivers of Ecological Productivity of Southeast Asia's Most Important Wetland," *Ecological*

homogeneous ecosystem, the building of hydropower dams will not only impact the host nation but also the subregion as a whole. For example, China's upstream dams have profound effects on the flood cycles of Cambodia's Tonle Sap Lake — a major fishery source for Cambodians. Altering the seasonal flood patterns influence Tonle Sap Lake's ecosystem productivity, including habitat cover and sedimentation.⁴⁹ The upstream hydropower dams also reduce the supply of agricultural land and induce salt-water intrusion into the Mekong Delta, thereby restricting agricultural productivity — one of the major economic activities in the Lower Mekong Basin for countries such as Vietnam, where rice production relies heavily on the Mekong Delta.⁵⁰

In addition to the impacts of hydropower dams, coal-fired power plants also have transboundary externalities such as air pollution. Koplitz et al. point out that the transboundary air pollution to Thailand caused by Vietnam is greater than Thailand's own domestic emissions. In their projection, Vietnam will be the largest transboundary coal particulate matter 2.5 (PM_{2.5}) contributor to Southern China by 2030, and China may suffer from an increase in premature mortality due to coal emissions from Southeast Asia.⁵¹

To mitigate transboundary externalities from coal-fired power plants and hydropower dams, the promotion of renewable energy sources such as solar and wind power is critical for the subregion. Since the promotion of this energy source requires advanced technology and funding, international support and experience sharing play a key role in helping the countries of the Mekong subregion transition from coal-fired power plants and hydropower dams toward renewable energy development and production. In addition, according to the International Energy Agency, promoting regional power system integration can also facilitate growth in renewable energy sources, especially wind and solar power, as integration can allow access to a larger and more diverse pool of sources and reduce the system variability of wind and solar output.⁵²

REGIONAL MECHANISMS FOR ADDRESSING ENERGY TRILEMMA CHALLENGES

Currently, there are 12 regional mechanisms in the Mekong subregion covering the energy sector, described in Table 2 below. Based on the level of information that can be acquired and

Modelling 272 (January 2014): pp. 252-263, <https://doi.org/10.1016/j.ecolmodel.2013.10.015>; Timo A Räsänen et al., "Greenhouse Gas Emissions of Hydropower in the Mekong River Basin," *Environmental Research Letters* 13, no. 3 (March 2018): p. 034030, <https://doi.org/10.1088/1748-9326/aaa817>.

⁴⁹ Brian Eyler and Courtney Weatherby, "Letter from the Mekong: Toward a Sustainable Water-Energy-Food Future in Cambodia," The Stimson Center, February 27, 2019, https://www.stimson.org/sites/default/files/file-attachments/WEB-FEB_Cambodia%20Report.pdf; Mauricio E. Arias et al., "Impacts of Hydropower and Climate Change on Drivers of Ecological Productivity of Southeast Asia's Most Important Wetland," *Ecological Modelling* 272 (January 2014): pp. 252-263, <https://doi.org/10.1016/j.ecolmodel.2013.10.015>.

⁵⁰ *Ibid.*

⁵¹ Shannon N. Koplitz et al., "Burden of Disease from Rising Coal-Fired Power Plant Emissions in Southeast Asia," *Environmental Science & Technology* 51, no. 3 (January 2017): pp. 1467-1476, <https://doi.org/10.1021/acs.est.6b03731>.

⁵² "Southeast Asia Energy Outlook 2019," International Energy Agency, October 2019, https://webstore.iea.org/download/direct/2887?fileName=Southeast_Asia_Energy_Outlook_2019.pdf.

the importance of actors in the subregion, this paper selects eight major mechanisms established by the subregion’s countries, countries outside the subregion, and ASEAN to explore how these mechanisms are helping countries in the subregion manage energy trilemma (even if these mechanisms do not explicitly refer to the trilemma).

For *energy security*, these mechanisms invest in energy infrastructure to ensure energy supply. Some mechanisms promote renewable energy such as solar power to diversify subregional primary energy sources and the subregion’s energy market and enhance grid integration. Other mechanisms help subregional countries improve energy efficiency to decrease unnecessary energy waste. To mitigate *energy poverty*, mechanisms introduce independent power supply systems in rural areas. Finally, for *environmental sustainability*, alongside building renewable energy plants, some mechanisms advocate the establishment of norms or standards that take into consideration the environmental impacts of energy infrastructure. Such mechanisms enhance countries’ capacity to access clean energy technology and strengthen local young labor talent to increase research and development (R&D) capabilities.

Table 2: Mekong regional mechanisms covering the energy sector

Mechanism	Member countries	Year
Greater Mekong Subregion Economic Cooperation Program	CH KH LA MM TH VN	1992
Mekong River Commission	KH LA TH VN	1995
ASEAN Mekong Basin Development Cooperation	CH KH LA MM TH VN BN ID MY PH SG	1996
Cambodia-Laos-Vietnam Development Triangle Area	KH LA VN	1999
Initiative for ASEAN Integration	KH LA MM TH VN BN ID MY PH SG	2000
Ayeyarwady-Chao Phraya-Mekong Economic Cooperation Strategy	TH KH LA MM VN	2003
Cambodia, Laos, Myanmar, Vietnam Cooperation	KH LA MM VN	2004
Australia’s ASEAN and Mekong Program	AU KH LA MM TH VN BN ID MY PH SG	2005
Mekong-Japan Cooperation	JP KH LA MM TH VN	2007
Lower Mekong Initiative	US KH LA MM TH VN	2009
Mekong-Republic of Korea Cooperation	KR KH LA MM TH VN	2011
Lancang-Mekong Cooperation	CH KH LA MM TH VN	2016

Key:

BN = Brunei	CN = China	ID = Indonesia	KH = Cambodia
LA = Laos	MM = Myanmar	MY = Malaysia	PH = Philippines
SG = Singapore	TH = Thailand	VN = Vietnam	KR = Republic of Korea
AU = Australia	JP = Japan	US = United States	

Mekong-Japan Cooperation

In 1993, Kiichi Miyazawa's administration proposed the "Forum for Comprehensive Development of Indochina" to facilitate balanced development in the Indochina region, especially by promoting market economies in Vietnam, Laos, and Cambodia.⁵³ In 2009, Japan upgraded its relationship with the five Mekong subregion countries by holding the first "Japan-Mekong summit." Following regular high-level meetings, three strategies — the "Tokyo Strategy 2012," "Tokyo Strategy 2015" and "Tokyo Strategy 2018" — were released that underpinned Japan-Mekong cooperation. These strategies and other official documents, such as a speech entitled "Energy and Resource Diplomacy of Japan—Global Vision for a Shared Future," delivered by then-Japanese Foreign Minister Fumio Kishida, reflected cooperation from both sides in managing the energy trilemma.⁵⁴ To help the Mekong subregion solve its energy trilemma problems, there are four key areas that the Japanese government concentrates on: (1) energy diversification and efficiency; (2) greenhouse gas emissions reduction; (3) quality infrastructure; and (4) a stable and transparent energy investment environment.

In terms of *energy security*, Japan focuses on energy diversification and efficiency to help the subregion manage energy security, actively promoting renewable energy such as solar or biomass power. At the same time, Japan acknowledges the significance of coal and hydropower in the countries' energy supply and has therefore promoted highly efficient coal-fired power and hydropower plants in the region. While Japan previously planned to introduce nuclear power plants to the region, it faced pushback from constituent countries. For instance, it financed Vietnam to develop the Ninh Thuan 2 Nuclear Power Plant, but this project was abandoned due to cost and safety concerns.⁵⁵

Moreover, after the first Japan-Mekong summit, both sides decided to establish the initiative "A Decade toward the Green Mekong" in 2010, which promotes sustainable development in the region and created an action plan.⁵⁶ In accordance with this action plan, the two sides hold a regular "Green Mekong Forum." Its agenda includes increasing the region's resilience to climate change by introducing renewable energy facilities and highly efficient thermal power stations with advanced Japanese technology.

In addition, Japan actively promotes the subregion's openness to energy investment that considers environmental and social impacts. For example, Prime Minister Shinzo Abe's administration advocated for so-called quality infrastructure, which includes *environmental sustainability* concerns. In 2015, Japan first proposed the "Partnership for Quality Infrastructure," which aims at addressing infrastructure requirements in Asia and emphasizes the environmental and social impacts and benefits for local communities. In the 2016 G7 Ise-Shima Summit, it was expanded to cover the energy sector. During the 2019 G20 Summit, the

⁵³ "Japan-ASEAN Cooperation: A New Dimension in Cooperation," Ministry of Foreign Affairs of Japan, <https://www.mofa.go.jp/region/asia-paci/asean/relation/dimens.html>.

⁵⁴ "Energy and Resource Diplomacy of Japan – Global vision for a shared future," Ministry of Foreign Affairs of Japan, July 13, 2017, <https://www.mofa.go.jp/files/000272775.pdf>.

⁵⁵ Mai Nguyen, "Vietnam abandons plan for first nuclear power plants," *Reuters*, November 22, 2016, <https://www.reuters.com/article/us-vietnam-politics-nuclearpower/vietnam-abandons-plan-for-first-nuclear-power-plants-idUSKBN13H0VO>.

⁵⁶ "Action Plan for "A Decade toward the Green Mekong" Initiative," Ministry of Foreign Affairs of Japan, October 29, 2010, https://www.mofa.go.jp/region/asia-paci/mekong/summit02/gm10_iap_en.html.

“G20 Principles for Quality Infrastructure Investment” secured the endorsement of the G20 countries. These principles focus on ensuring that infrastructure investment, including energy, considers sustainable development and environmental impacts and integrates social inclusion and governance.

The Japanese government pursues stable and transparent energy investment. In Japan’s earlier visions of energy diplomacy, the government sought to improve the energy investment environment through international frameworks such as the “Energy Charter Treaty,” an international agreement that established a multilateral framework for cross-border energy cooperation, although only Cambodia and Vietnam were signatories. In the new Tokyo Strategy 2018, however, Japan and the Mekong subregion countries have reaffirmed the importance of following international standards.

Mekong-Republic of Korea Cooperation

South Korea has had a formal dialogue relationship with ASEAN for 30 years and established a strategic partnership in 2010 during the “13th Korea-ASEAN summit. The 2011 “Han-River Declaration,” “Mekong-Republic of Korea Plan of Action 2014-2017,” and the 2019 “Republic of Korea-Mekong Vision” underpin South Korea’s cooperation areas with the countries of the Mekong subregion. Also, in 2013, the “Mekong–ROK Cooperation Fund” was established to provide financial support in seven areas outlined in the 2011 “Han-River Declaration” (Culture and Tourism; Human Resources Development; Agriculture and Rural Development; Infrastructure, Information and Communication Technology; Environment, and Non-Traditional Security Challenges. Although the Mekong-Korea Action Plan does not refer to energy cooperation, the “ASEAN-Republic of Korea Plan of Action to Implement the Joint Declaration on Strategic Partnership for Peace and Prosperity 2016-2020” outlines priority areas, concentrating on: (1) promoting renewable energy; (2) developing hydropower; (3) improving energy efficiency; (4) enhancing R&D capacity; (5) promoting independent power supply systems in rural areas; and (6) expanding electricity transmission capacity and grid development.

First, to enhance *energy security* and *environmental sustainability* in the subregion, apart from introducing renewable energy and improving energy efficiency in the subregion, South Korea concentrates on capacity building and R&D through technology transfer and expertise exchange to facilitate subregional energy transition.⁵⁷ For instance, one of the “Mekong–ROK Cooperation Fund” projects is capacity enhancement on wind energy usage for sustainable rural development in Myanmar.⁵⁸ In addition, to ensure stable energy supply, South Korea helps develop hydropower plants in Laos.

As for *energy poverty*, South Korea helps the Mekong subregion countries enhance electrification through bilateral ODA focusing on Laos and Myanmar. In the country partnership strategy with Laos, South Korea assists with facilitating the expansion of electricity transmission

⁵⁷ “ASEAN-Republic of Korea Plan of Action to Implement the Joint Declaration on Strategic Partnership for Peace and Prosperity 2016-2020,” Association of Southeast Asian Nations, May 2012, <https://asean.org/storage/2012/05/ASEAN-ROK-POA-2016-2020-FINAL.pdf>.

⁵⁸ “Mekong-ROK Cooperation Fund,” Mekong Institute, <http://www.mekonginstitute.org/what-we-do/development-funds/mekong-rok-cooperation-fund/>.

capacity and electricity grid development to help Laos reach its national target of 90 percent electrification by 2020.⁵⁹ As for Myanmar, South Korea is helping the country expand energy infrastructure to areas that have poor access to electricity and promote independent power supply systems.⁶⁰ Furthermore, in November 2019, South Korea held the first ROK-Mekong Summit to deepen bilateral cooperation. After the summit, the “Mekong-Han River Declaration for Establishing Partnership for People, Prosperity and Peace” was adopted, reconfirming South Korea’s assistance to increase electrification in rural areas in the Mekong subregion through initiatives such as the Energy Independent Energy Town Projects.⁶¹

Lower Mekong Initiative

Following the establishment of President Barack Obama’s “Pivot to Asia” policy, the US increased its attention to Southeast Asia, including the Mekong subregion, which the US sees as integral to its engagement with ASEAN. In 2009, the US launched the Lower Mekong Initiative (LMI) to enhance cooperation among the Mekong region countries in six key areas: energy, environment and water, health, education, infrastructure, and agriculture. Over the past 10 years, the US has provided over \$3.8 billion to assist with Mekong subregion development.⁶² Regarding the energy trilemma, the LMI concentrates on: (1) promoting subregional energy integration; (2) investing in renewable energy; (3) enhancing environmental impact assessments; (4) sharing information and experience; (5) improving young labor R&D capacity; and (6) seeking cooperation with partner countries.

In terms of *energy security* and *energy poverty*, the LMI focuses on promoting subregional energy market development and grid interconnection to ensure stable energy supply and energy access, as well as introducing renewable energy to diversify energy sources in the subregion. Also, under the LMI “Sustainable Infrastructure Partnership,” the LMI promotes energy infrastructure efficiency and conservation.

In addition, the US has already expressed its concerns about the negative environmental impacts of dam-building activities in the subregion.⁶³ Considering *environmental sustainability*, through the LMI’s “Smart Infrastructure for the Mekong,” the US can provide engineering support to incorporate environmental impact mitigation measures for dam construction. For instance, the US has helped to improve Vietnam’s “Mekong Delta Study” (MDS) regarding the

⁵⁹ “The Republic of Korea’s Country Partnership Strategy for the Lao People’s Democratic Republic 2016-2020,” Office for Government Policy Coordination, <http://www.odakorea.go.kr/eng.policy.CountryPartnershipStrategy.do>.

⁶⁰ “The Republic of Korea’s Country Partnership Strategy for the Republic of the Union of Myanmar 2016-2020,” Office for Government Policy Coordination, <http://www.odakorea.go.kr/eng.policy.CountryPartnershipStrategy.do>.

⁶¹ Yonhap News Agency, “Full text of a joint declaration adopted at Mekong-S. Korea summit,” *Yonhap News Agency*, November 27, 2019, <https://en.yna.co.kr/view/AEN20191127004200315>.

⁶² “A Free and Open Indo-Pacific-Advancing a Shared Vision,” U.S. Department of State, November 4, 2019, <https://www.state.gov/wp-content/uploads/2019/11/Free-and-Open-Indo-Pacific-4Nov2019.pdf>.

⁶³ “Remarks on Climate Change and the Environment,” Lower Mekong Initiative, December 15, 2013, <https://www.lowermekong.org/news/remarks-climate-change-and-environment>; “Opening Remarks at the Lower Mekong Initiative Ministerial,” U.S. Department of State, August 1, 2019, <https://www.state.gov/opening-remarks-at-the-lower-mekong-initiative-ministerial/>.

impacts of hydropower development.⁶⁴ The LMI also shares information and helps the subregion identify best practices on alternative energy sources through workshop discussions. Furthermore, through the LMI “Young Scientist Program,” the LMI strengthens local young labor talent in the energy sector to increase R&D capability.

Lancang-Mekong Cooperation

In 2016, China and the Mekong subregion countries established the Lancang-Mekong Cooperation (LMC) mechanism, which is the most recently established mechanism in the subregion. The LMC mechanism stipulates four levels of meetings, ranging from working group meetings to leader meetings, and one comprehensive cooperative framework called the “three plus five framework.” This framework outlines three pillars of cooperation: political and security issues, economic and sustainable development, and social, cultural and people-to-people exchange; plus five key priority areas: agriculture, water, connectivity, cross-border economic cooperation, and production capacity. In terms of the energy sector, the LMC focuses on promoting subregional energy integration and building hydropower dams.

So far, the LMC has held two leader meetings. The first of these, held in 2016, released the “Sanya Declaration.” This declaration not only outlined the three aforementioned cooperation pillars, but also discussed enhancing cooperation to tackle non-traditional security challenges including *energy security*. The second leader meeting was held in 2018 and released the “Phnom Penh Declaration,” which outlined more details of the LMC and proposed several new platforms and projects including the Global Center for Mekong Studies, Lancang-Mekong Water Resources Cooperation Center, Lancang-Mekong Environmental Cooperation Center, and Lancang-Mekong Business Forum.

Despite energy being mentioned in both the Sanya and Phnom Penh Declarations, no clear explanation regarding cooperation in this sector has been provided.⁶⁵ According to the five-year action plan, the LMC focuses on regional power grid planning and construction to promote regional power connectivity. It further plans to establish an integrated regional energy power market to enhance energy security in the subregion. In terms of *environmental sustainability*, despite the Lancang-Mekong Environmental Cooperation Center having released the “Lancang-Mekong Environmental Cooperation Strategy,” which outlines seven priority areas for the cooperation, it does not discuss how to tackle environmental sustainability specifically.

While the energy sector is not explicitly mentioned in the current LMC mechanism, China has included some hydropower dams in its LMC cooperation outcomes.⁶⁶ However, there is limited cooperation on managing hydropower dam construction through the LMC. Also, there are some discussions concerning the motivations of the LMC, especially regarding dam

⁶⁴ “Smart Infrastructure for the Mekong,” United States Agency for International Development, <https://www.usaid.gov/asia-regional/fact-sheets/smart-infrastructure-mekong>.

⁶⁵ Xinhua, “Sanya Declaration of the First Lancang-Mekong Cooperation (LMC) Leaders' Meeting,” *China.org.cn*, March 2016, http://www.china.org.cn/china/Off_the_Wire/2016-03/23/content_38096975.htm; “Phnom Penh Declaration of the Second Mekong-Lancang Cooperation (MLC) Leaders' Meeting “Our River of Peace and Sustainable Development,” Press and Quick Reaction Unit of Cambodia, January 11, 2018, <https://pressocm.gov.kh/en/archives/21699>.

⁶⁶ Xinhua, “Xinhua Headlines: Lancang-Mekong Cooperation brings hope, prosperity to less-developed countries,” *Xinhua*, December 19, 2018, http://www.xinhuanet.com/english/2018-12/19/c_137684176.htm.

construction.⁶⁷ Since China is a major hydropower developer and investor, eschewing discussion about appropriate dam construction management will hinder the LMC's capacity to help the subregion manage environmental sustainability problems.

Ayeyarwady-Chao Phraya-Mekong Economic Cooperation Strategy

The Ayeyarwady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS) was proposed by Thailand and established in April 2003. So far it has already held eight summits and gone on to release six action plans. The major goal of ACMECS is to narrow the development gap among the countries of the Mekong subregion and strengthen ASEAN's economic position. The "Bagan Declaration" released after the first summit in 2003 outlines five priority areas: trade and investment liberalization, agriculture and industry, transport, human resource development, and tourism. Since the second summit, energy security issues have also been included and are now covered by a working group.⁶⁸ The last ACMECS summit was held in 2018 and resulted in the adoption of the new "ACMECS Master Plan (2019-2023)." Regarding the energy sector, the ACMECS concentrates on: (1) promoting subregional energy integration; (2) promoting renewable energy; (3) sharing information and experience to improve capacity in renewable energy technology.

Regarding the promotion of subregional energy integration, compared to previous action plans like the "ACMECS Plan of Action 2013-2015," which only outlines general cooperative fields like enhancing renewable energy development and the optimal utilization of renewable energy sources, the new Master Plan (2019-2023) provides more details regarding future energy cooperation.⁶⁹ These action plans show that ACMECS members consider interconnectivity and power trading with neighboring nations to be critical in maintaining energy security. Accordingly, ACMECS promotes subregional energy interconnection through the building of power transmission lines, oil and gas pipelines, and terminals to ensure *energy security* and mitigate *energy poverty* in the subregion.

In addition, by considering *environmental sustainability*, the action plans also promote the sharing of new renewable energy technologies such as solar power, energy efficiency, and devising strategic renewable energy plans. Furthermore, to cultivate local talent, the Master Plan also promotes cooperation within ACMECS to facilitate access to clean energy research, technology, and capacity-building. It also emphasizes the importance of extending modern

⁶⁷ Victor Fernandez, "The Lancang-Mekong cooperation framework: China's real motivations," *Mekong Eye*, October 11, 2017, <https://www.mekongeye.com/2017/10/11/the-lancang-mekong-cooperation-framework-chinas-real-motivation/>; Jason Thomas, "Lancang-Mekong Cooperation: Blessing or curse?" *The ASEAN Post*, April 3, 2019, <https://theaseanpost.com/article/lancang-mekong-cooperation-blessing-or-curse>.

⁶⁸ "News: Minister of Foreign Affairs participated at the 2nd ACMECS Summit Meeting chaired by Prime Minister Thaksin Shinawatra at the Government House," The Ayeyawady - Chao Phraya - Mekong Economic Cooperation Strategy website, November 3, 2005, <http://www.mfa.go.th/acmeecs/en/news/3491/39281-Minister-of-Foreign-Affairs-participated-at-the-2n.html>.

⁶⁹ "Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy Plan of Action 2013-2015," Ministry of Foreign Affairs of the Kingdom of Thailand, March 13, 2013, http://www.mfa.go.th/acmeecs/contents/images/text_editor/files/hilights/Plan.pdf

energy technologies and cooperation in the energy sector in accordance with international standards.⁷⁰

Greater Mekong Subregion Economic Cooperation Program

The Greater Mekong Subregion Economic Cooperation Program (GMS) was established in 1992 with support from the Asian Development Bank, with energy cooperation commencing in 1995. Within the energy sector, the GMS prioritizes subregional energy market integration which can help member states manage the energy trilemma. The GMS mainly concentrates on: (1) promoting subregional energy integration; (2) developing renewable energy; and (3) promoting Strategic Environmental Assessments (SEAs).

The GMS promotes cross-border energy trade and power market integration to manage *energy security* and *energy poverty*. To achieve these goals, it divides the process into four stages. The first stage is centered around policy and an institutional framework that focuses on grid-to-grid power trade between any two countries, and the second stage on trade through the transmission lines of third countries. The final two stages concentrate on physical grid infrastructure interconnection to create the GMS power market. According to the GMS's "Ha Noi Action Plan 2018-2022," the process has so far reached stage one and begun moving to stage two.⁷¹

To manage subregional power trade, the GMS has also established a Regional Power Trade Coordination Committee (RPTCC) that organizes meetings with officials from the energy departments and ministries of member states. It manages subregional power trade and provides both policy recommendations and information exchange. Two working groups have been developed under the RPTCC, focusing on regulatory and performance standards and grid code issues.⁷² The member states are now considering creating a new Regional Power Coordination Center to replace the RPTCC, as the latter does not have a permanent secretariat to monitor progress and activities. The RPTCC also promotes renewable energy to diversify energy sources, as well as energy efficiency to decrease unnecessary energy waste.

Finally, regarding *environmental sustainability* concerns, the GMS promotes SEAs to evaluate power sector planning and hydropower development. In comparison to Environmental Impact Assessments (EIAs), while both emphasize participatory processes inclusive of government officials and the public, the SEAs are applied at an earlier stage of the decision-making process to provide early warning and prevent identified environmental impacts, with a particular focus on identifying hidden externalities.⁷³ For example, with support from the GMS's Core Environment Program, Vietnam undertook an SEA of its national power development plan for 2011-2020. Through its analytical framework and extensive participatory approach, the SEA

⁷⁰ "ACMECS Master Plan (2019-2023)," Ministry of Foreign Affairs of Thailand, June 18, 2018, <http://www.mfa.go.th/main/contents/files/information-20180618-142227-835103.pdf>.

⁷¹ The Ha Noi Action Plan 2018-2022," Asian Development Bank, March 2018, <https://www.adb.org/sites/default/files/institutional-document/409086/ha-noi-action-plan-2018-2022.pdf>.

⁷² "Greater Mekong Subregion Energy Sector Assessment, Strategy, and Road Map," Asian Development Bank, June 2016, <https://www.adb.org/sites/default/files/institutional-document/188878/gms-energy-asr.pdf>.

⁷³ "Difference between EIA and SEA," United Nations Environment Programme, 2014, <http://www.grida.no/resources/6287>; "Strategic Environmental Assessment in the Greater Mekong Subregion," Asian Development Bank, April 2015, <https://www.adb.org/sites/default/files/publication/158167/strategic-environmental-assessment-gms.pdf>.

helped the Vietnamese government to identify the importance of renewable energy and energy efficiency investment to maintaining energy security and decreasing reliance on imported thermal energy and hydropower.⁷⁴

Mekong River Commission

The Mekong River Commission (MRC) was established in 1995 based on the 1995 Mekong Agreement and aims to manage water resources in a sustainable way. In terms of energy, the MRC works with the member countries on hydropower development strategies and policy, impact assessments, and mitigation measures, which are all important to manage the *environmental sustainability* component of the energy trilemma. If a member state plans to develop a new hydropower dam, it needs to send a notification to the MRC, which will inform other member states.

Based on an understanding of the requirements of hydropower dams in the Mekong subregion, the MRC helps the subregional countries consider the effectiveness and impacts of hydropower dams from a basin-wide perspective. It has launched several strategies to achieve this goal, such as the “Basin-wide Strategy for Sustainable Hydropower Development for the Lower Mekong Basin.”

However, the major problem regarding the MRC concerns its authority. While the MRC promotes sustainable hydropower development in the Mekong subregion, some complex problems impact its effectiveness. For instance, the MRC does not require consensus among the member states for hydropower dam construction, only consultation; moreover, there is no binding agreement on hydropower development between the member states and China, the major dam constructor and investor as well as a dialogue partner of the MRC.⁷⁵ As the MRC only has a consultatory function, the final decision regarding dam building still rests with the developer.⁷⁶

ASEAN Mekong Basin Development Cooperation

The ASEAN Mekong Basin Development Cooperation was established in 1996 to promote economic integration among the Mekong subregion countries through infrastructure and human capital development. With regard to the energy sector, it only mentions developing energy infrastructure in the Mekong subregion.⁷⁹

⁷⁴ “Strategic Environmental Assessment in the Greater Mekong Subregion,” Asian Development Bank, April 2015, <https://www.adb.org/sites/default/files/publication/158167/strategic-environmental-assessment-gms.pdf>.

⁷⁵ Victor Fernandez, “The Lancang-Mekong cooperation framework: China’s real motivation,” *Mekong Eye*, October 11, 2017, <https://www.mekongeye.com/2017/10/11/the-lancang-mekong-cooperation-framework-chinas-real-motivation/>.

⁷⁶ Andrew Nagemson, “Laos to go ahead with Luang Prabang dam project despite warning,” *Aljazeera*, September 24, 2019, <https://www.aljazeera.com/news/2019/09/laos-luang-prabang-dam-project-warnings-190924102523452.html>.

⁷⁹ “Basic Framework of ASEAN-Mekong Basin Development Cooperation,” Association of Southeast Asian Nations, June 17, 1996, <https://www.asean.org/wp-content/uploads/images/2013/economic/mbdc/basic%20framework%20of%20ambdc.pdf>.

INEFFECTIVE REGIONAL ENERGY GOVERNANCE IN THE MEKONG SUBREGION

Apart from the eight mechanisms described above, four other subregional mechanisms cover the energy sector. There are a dozen total mechanisms implies that there is an overlap of issue areas and memberships among these mechanisms. Although overlapping issue areas can create positive competition that benefits the Mekong subregion, they may also cause negative competition over resources and duplicated efforts. Based on an analysis of the eight subregional mechanisms described above, the current mechanisms do not link to the three components of effective regional energy governance, which are coordination among existing regional mechanisms, clear norms for the optimal management of natural resource for energy-related activities, and consideration of the regional context. The problems of the subregion are: (1) a lack of full coordination among the mechanisms; (2) a lack of general norms about the optimal management of natural resource for energy-related activities; and (3) the “non-interference principle” and a lack of sharing the largely homogeneous ecosystem among all member states, which makes ASEAN mechanisms reluctant to actively engage in the Mekong subregion. The current regional energy governance in the Mekong subregion is therefore ineffective and needs to be improved.

First, coordination among the mechanisms in the Mekong subregion is happening, but the mechanisms are not fully coordinated. Most of the mechanisms express their willingness to seek synergies with other existing mechanisms like the US has explored coordination with Japan and has further developed the “Japan-U.S. Mekong Power Partnership” to help the subregion manage its energy trilemma problems. However, different partners may have different motives behind the mechanisms or lack strong political will, which affects coordination. For example, so far, coordination between the US-led LMI and the China-led LMC has not emerged. The negative impact of hydropower dams in the Mekong subregion has exacerbated severe droughts, especially compared to the past. The US has acknowledged this problem and at the “2019 Lower Mekong Ministerial Meeting” criticized the Chinese for continuing to build dams. Although the reason for creating the LMI is to slow Chinese influence in the region and strengthen US engagement in Mekong subregion issues, the LMI has not been able to help subregional countries efficiently decrease the negative effects of hydropower dams. Also, while the LMC mentions seeking coordination opportunities with other mechanisms like those led by Japan and South Korea, it does not include the LMI as a cooperation target.

The lack of full coordination may be a result of limited information sharing, and vice-versa. Some mechanisms only provide limited information about how they help the subregion tackle energy trilemma challenges. For example, the LMC and the AMBDC both mention cooperation in the energy sector but do not provide public information about how they are going to do this or details on their projects.⁸⁰ Limited information sharing hinders cooperation opportunities

⁸⁰ Hang Ngo Thu and Uta Wehn, “Data Sharing in International Transboundary Contexts: The Vietnamese Perspective on Data Sharing in the Lower Mekong Basin,” *Journal of Hydrology* 536 (May 2016): pp. 351-364, <https://doi.org/10.1016/j.jhydrol.2016.02.035>; “Mekong water related resources need urgent protection, better planning and management,” Mekong River Commission, October 22, 2019, <http://www.mrcmekong.org/news-and-events/news/mekong-water-related-resources-need-urgent-protection-better-planning-and-management-says-a-new-mrc-report/>; “Mekong related regional cooperation frameworks recommend more joint efforts, coordination to boost effectiveness,” Mekong River

with other mechanisms and leads to the transparency problems within these mechanisms. Since some of the mechanisms with overlapping memberships have leadership meetings, senior official meetings, and working groups, a busy schedule without proper coordination will increase the administrative and human resource burden of the members, especially for the Mekong subregion countries. Lacking full coordination may also limit information sharing among the mechanisms in the subregion.

Moreover, although some mechanisms have developed their own strategies to decrease the impacts of energy-related activities on the environment, such as GMS's "Strategic Environmental Assessment," LMC's "Lancang-Mekong Environmental Cooperation Strategy," MRC's "Basin-wide Sustainable Hydropower Development Strategy," and Japan's "G20 Principles for Quality Infrastructure Investment," the Mekong subregional mechanisms have not adopted a general norm for the optimal management of natural resources for energy-related activities. Without general norms, countries may choose to follow standards that meet their national interests, which may not benefit the subregion's development in the long term. For instance, in a case study on acid rain problem in Northeast Asia, Komori analyzes the competition and lack of coordination between the Japan-led Acid Deposition Monitoring Network in East Asia (EANET) and the South Korea-led project for Long-range Transboundary Air Pollutants in Northeast Asia (LTP). He points out that the lack of a central coordinating mechanism among the existing institutional arrangements enable the Northeast Asian countries to work with their preferred regional environmental initiatives and lead to redundancies in activities and the inefficient use of resources. Ultimately, this problem becomes an obstacle for the development of effective regional environmental governance in Northeast Asia.⁸¹

Finally, while ASEAN-led mechanisms like AMBDC mention the energy sector, they do not provide detailed actions to help the subregion. In addition, there is no recent information about the progress of AMBDC. The last ministerial meeting was held in 2014. The slow progress of this ASEAN-led mechanism reflects the lack of attention given to the Mekong subregion, which may be a result of decreased interest of the maritime Southeast Asian countries.⁷⁷ This situation also reflects the problem of the non-interference principle of Southeast Asian countries and the influence of geographic factors since they do not share a largely homogeneous ecosystem.

Most of the mechanisms say that their purpose is to help the Mekong subregion nations narrow the development gap between themselves and the other ASEAN member states to realize the goals of the ASEAN community. ASEAN has its own policies to promote regional energy connectivity, such as the "Master Plan on ASEAN Connectivity 2025" and the "ASEAN Power Grid." Yet the limited engagement of ASEAN-led mechanisms in the Mekong subregion will

Commission, August 16, 2019, <http://www.mrcmekong.org/news-and-events/news/mekong-related-regional-cooperation-frameworks-recommend-more-joint-efforts/>.

⁸¹ Yasumasa Komori, "Evaluating Regional Environmental Governance in Northeast Asia," *Asian Affairs: An American Review* 37, no. 1 (February 2010): pp. 1-25, <https://doi.org/10.1080/00927671003591367>.

⁷⁷ Shawn Ho and Kaewkamol Pitakdumrongkit, "Can ASEAN Play a Greater Role in the Mekong Subregion?" *The Diplomat*, January 30, 2019, <https://thediplomat.com/2019/01/can-asean-play-a-greater-role-in-the-mekong-subregion/>; Harris Zainul, "Asean and the dammed Mekong," *New Straits Times*, November 8, 2019, <https://www.nst.com.my/opinion/columnists/2019/11/536714/asean-and-dammed-mekong>.

hinder the progress of its Master Plan and programs that could help the subregional countries manage their energy trilemma problems.

PROMOTING EFFECTIVE REGIONAL ENERGY GOVERNANCE IN THE MEKONG SUBREGION

The preceding analysis has identified several problems with the current regional energy governance in the Mekong subregion and offers three recommendations that can improve its effectiveness. These are to: (1) strengthen coordination among the existing mechanisms; (2) develop common norms and standards; and (3) increase ASEAN engagement. First, it is necessary to enhance coordination among the mechanisms. The various mechanisms have both overlapping and divergent focuses. For instance, most mechanisms promote regional energy integration, renewable energy investment, and capacity building. Coordination between these mechanisms will not only avoid duplicated efforts but also enhance each project.

(1) Strengthen coordination and information sharing among the existing mechanisms

Some of the mechanisms have sought synergy with other mechanisms, while some mechanisms do not seek coordination with each other, especially the US-led and China-led mechanisms.⁷⁸ The lack of coordination between the LMI and the LMC may be a critical obstacle in realizing effective regional energy governance since both play influential roles in the subregion.

To realize more effective coordination, states should explore mutual benefits and raise the incentives for cooperation, both political and economic. Ratner points out that one of the critical components to strengthening regional governance over Mekong Basin resources is raising the incentives for intergovernmental cooperation.⁷⁹

If it is difficult to achieve direct coordination between the LMI and LMC mechanisms, a third party can play a role to connect the two. For instance, both the US and China have expressed their willingness to coordinate with the ACMECS and both of them are development partners of this mechanism. So far, the ACMECS has a “Joint Development Plan” with different regional players that include the US and China separately. ACMECS can consider integrating these development plans which can connect the regional players – namely the US and China.

Apart from the LMI and LMC, if other mechanisms want to develop more effective coordination with each other, information sharing is a key step. For instance, as the problems caused by hydropower dams affect subregional development, subregional mechanisms like the MRC have hosted workshops to discuss information sharing. In addition to hydropower, information sharing about other energy infrastructure investments that will harm the environment, like coal or natural gas, should also be discussed. Doing so will enable subregional countries to understand the impact of these investments on the entire subregion. Furthermore, information sharing can clarify which projects proposed by the mechanisms do not have

78 Benjamin Zawacki, “Implications of a Crowded Field: Sub-regional architecture in ACMECS Member States,” Asia Foundation, June 27, 2019, https://asiafoundation.org/wp-content/uploads/2019/06/Implications-of-a-Crowded-Field_whitePaper.pdf.

79 Blake D. Ratner, “The Politics of Regional Governance in the Mekong River Basin,” *Global Change, Peace & Security* 15, no. 1 (February 2003): pp. 59-76, <https://doi.org/10.1080/0951274032000044522>.

sufficient funding, despite some of them having benefits for the subregion.⁸⁰ Supporting these projects could decrease duplicated efforts and make the mechanisms more inclusive.

(2) Develop common norms and standards

Apart from strengthening the coordination and information sharing of the mechanisms, it is also important to develop common norms and standards for the optimal management of natural resources for energy-related activities in the Mekong subregion to steer nations away from choosing standards that benefit themselves but not the whole subregion. These norms or standards could refer to some common standards established by an international organization, such as the “United Nations Framework Classification for Fossil Energy Mineral Reserves and Resources 2009” (UNFC-2009) and the “UNFC-2009 for Renewable Energy Resources.” The mechanisms can also develop a common standard to achieve the seventh UN Sustainable Development Goal, which is ensuring access to affordable, reliable, sustainable and modern energy for all.⁸¹

(3) Increase ASEAN engagement

Finally, despite being based in Southeast Asia, non-interference principles and maritime members that do not share a largely homogeneous ecosystem with the Mekong subregion influence ASEAN’s engagement in the subregion. However, if ASEAN truly wants to realize an ASEAN community without dividing it into two continents, mainland Southeast Asia and maritime Southeast Asia, it should increase its engagement with the Mekong subregion in the energy sector. Increasing ASEAN engagement would complement its efforts to push forward regional power integration plans, such as the “ASEAN Power Grid,” “ASEAN Economic Community Blueprint,” and the “ASEAN Master Plan 2025.” Mekong subregion countries can seize the opportunity of being chair of the ASEAN Summit to upgrade the discussion of ASEAN-led energy mechanisms in the subregion. Efficiently integrating these mechanisms with ASEAN’s plans could increase the attention of maritime Southeast Asian countries. Also, ASEAN could have more influence to stop any mechanism’s unilateral actions that harm environmental sustainability in the subregion.

CONCLUSION

This paper has explored regional energy governance and the key components of its effectiveness. Most of the existing literature on energy governance only focuses on the national or global level. Although there is some literature on regional governance, it primarily focuses on regional *security* governance or regional *environmental* governance. Exploration of *energy* governance at the regional level can bridge the gap between studies of global and national

⁸⁰ Pich Charadine, “Cambodia in the context of Mekong-Lancang Cooperation (MLC): progress and ways forward,” Konrad Adenauer Stiftung, December 2018, <https://www.kas.de/documents/264850/264899/PICH+CHARADINE+-+CAMBODIA+IN+THE+CONTEXT+OF+MEKONG-LANCANG+COOPERATION+%28MLC%29+-+PROGRESS+AND+WAYS+FORWARD.pdf/877f94d8-4cfa-1d0c-7a67-e5da7a4c7d0c?version=1.0&t=1547520230286>.

⁸¹ “SDG 7 ISSUE BRIEF: ENSURING ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL,” United Nations Environment Programme, <https://wedocs.unep.org/handle/20.500.11822/25762>.

energy governance. Apart from the Mekong subregion, future researchers can examine other regions such as the Nile River region in Africa to understand the necessity of regional energy governance and the components of its effectiveness to help the region better manage energy trilemma challenges.

Southeast Asia, especially the Mekong subregion, is experiencing rapid economic development. Growing economic development means increased energy demand. Energy security, energy poverty, and environmental sustainability are the three major challenges that the subregion is facing. These challenges cannot be completely managed at a national level because sharing a largely homogeneous ecosystem worsens the transboundary externalities on the entire subregion. Therefore, regional energy governance through governmental cooperative mechanisms is needed to help subregional nations manage their energy trilemma challenges.

To have effective regional energy governance, coordination, common standards, and the regional context need to be considered, as these are currently lacking among the mechanisms in the Mekong subregion. Although there has been some coordination between the mechanisms, there is still much to be desired. For example, the US has not sought collaboration with the China-led mechanism. Furthermore, limited information sharing is another obstacle that influences coordination, hinders potential cooperation opportunities, and causes doubts about transparency.

Moreover, there are no common standards for optimal management of natural resources for energy-related activities. This lack of norms leads to nations choosing standards that benefit their own national interests instead of the subregion as a whole. Finally, due to non-interference principles and not sharing a largely homogeneous ecosystem, ASEAN engagement is limited, which not only hinders the progress of ASEAN's Master Plan, but also decreases its influence to contain any unilateral actions that harm environmental sustainability in the subregion. Therefore, increasing coordination and ASEAN engagement, as well as developing common standards for resource management, are all required to improve the effectiveness of the regional energy governance of the Mekong subregion.

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