

**Environmental Flashpoint: Why Mekong River damming is the new front in South China
Sea tensions.**



Date Submitted: 19 OCT 2021

Word Count: 3271

A paper submitted to the Faculty of the United States Naval War College, Newport, RI in partial satisfaction of the requirements of the Department of Joint Military Operations.

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REPORT DOCUMENTATION PAGE				<i>Form Approved</i> OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 27-02-2022		2. REPORT TYPE FINAL		3. DATES COVERED (From - To) N/A	
4. TITLE AND SUBTITLE Environmental Flashpoint: Why Mekong River damming is the new front in South China Sea tensions.				5a. CONTRACT NUMBER N/A	
				5b. GRANT NUMBER N/A	
				5c. PROGRAM ELEMENT NUMBER N/A	
6. AUTHOR(S). COL Corey Woods				5d. PROJECT NUMBER N/A	
				5e. TASK NUMBER N/A	
				5f. WORK UNIT NUMBER N/A	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Writing & Teaching Excellence Center Naval War College 686 Cushing Road Newport, RI 02841-1207				8. PERFORMING ORGANIZATION REPORT NUMBER N/A	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A				10. SPONSOR/MONITOR'S ACRONYM(S) N/A	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) N/A	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution Statement A: Approved for public release; Distribution is unlimited.					
13. SUPPLEMENTARY NOTES A paper submitted to the faculty of the NWC in partial satisfaction of the requirements of the curriculum. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.					
14. ABSTRACT: Since 1995, China has built or funded 15 hydropower dams on the Mekong River that are creating devastating environmental and socio-economic implications to security in the region. These series of dams are a growing source of tension between the riparian countries of the Greater Mekong Subregion and China due to the connection between controlled water flow and impacts to fisheries in the Mekong Basin. ASEAN, supported by the U.S. Department of State, must urgently act to contain environmental damage to the Mekong River ecosystem, create unified efforts to protect commercial interests, and combat Chinese economic coercion. Failure to take substantive action by state actors or intergovernmental organizations, such as ASEAN, will result in permanent environmental damage, undoubtedly changing riparian society in the subregion. Damming of the Mekong River and the associated interconnected implications is the new front in regional tensions and a potential flashpoint between the U.S. and China. This paper provides nine recommended actions that ASEAN and the U.S. should consider, taking a more aggressive but non-confrontational stand against China's devastating policies and protect themselves against further degradation of basic human needs.					
15. SUBJECT TERMS (Key words) Mekong River, Damming, Conflict, Environmental Impact					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT N/A	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON Director, Writing Center
a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED	c. THIS PAGE UNCLASSIFIED			19b. TELEPHONE NUMBER (include area code) 401-841-6499

ABSTRACT

Since 1995, China has built or funded 15 hydropower dams on the Mekong River that are creating devastating environmental and socio-economic implications to security in the region. These series of dams are a growing source of tension between the riparian countries of the Greater Mekong Subregion and China due to the connection between controlled water flow and impacts to fisheries in the Mekong Basin. ASEAN, supported by the US Department of State, must urgently act to contain environmental damage to the Mekong River ecosystem, create unified efforts to protect commercial interests, and combat Chinese economic coercion. Failure to take substantive action by state actors or intergovernmental organizations, such as ASEAN, will result in permanent environmental damage, undoubtedly changing riparian society in the subregion. Damming of the Mekong River and the associated interconnected implications is the new front in regional tensions and a potential flashpoint between the US and China. This paper provides nine recommended actions that ASEAN and the US should consider, taking a more aggressive but non-confrontational stand against China's devastating policies and protect themselves against further degradation of basic human needs.

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INTRODUCTION

Tensions in the South China Sea between China and its neighbors have yielded unprecedented global competition in which the United States (US) and the world have a great deal at stake. The South China Sea accounts for up to 33% of all seaborne traffic, making it one of the world's most vital maritime routes.¹ The US's efforts to preserve an open and free market exacerbate an already complex web of tensions, including territorial disputes, foreign economic coercion, and food insecurity. Underneath these geostrategic concerns is a developing environmental and socioeconomic disaster that, if not handled, might escalate into an intraregional conflict which is already increasing instability in the region. Since 1995, China has constructed 11 hydropower dams on the Lancang River (Called Mekong River South of the Chinese Border) north of the Chinese border with Laos.² These dams, along with four others built with Chinese finance on the Mekong River in Laos, have been a subject of significant contention between the riparian nations of the Greater Mekong Subregion and China, owing to the link between restricted water flow and the impact on Mekong Basin fisheries.³ What makes this a critical regional issue? Conservation International reports that "the Mekong River produces 4.5 million metric tons of fish every year, contributing about 80% of the protein consumed in the region's households,"⁴ as well as a significant source of drinking water. The river is the societal lifeblood in this riparian region, which is already competing with China over food insecurity in the South China Sea. The US has been working with the Association of Southeast Asian Nations (ASEAN) on this topic through the Department of State since 2017 and

¹ David Uren, "Southeast Asia Will Take a Major Economic Hit If Shipping Is Blocked in the South China Sea." *The Strategist*, December 8, 2020. <https://www.aspistrategist.org.au/southeast-asia-will-take-a-major-economic-hit-if-shipping-is-blocked-in-the-south-china-sea/>.

² Tyler Roney, "What Are the Impacts of Dams on the Mekong River?" *The Third Pole*, July 1, 2021. https://www.thethirdpole.net/en/energy/what-are-the-impacts-of-dams-on-the-mekong-river/?fbclid=IwAR0qgCpEKp4qhjmNiuS4XnGgbMVU_klgqb-mlwiFLNZqUz35HeUc_mU5vDE.

³ Alan Basist, and Claude Williams, "Mekong River Wetness Anomalies in the 2019 Monsoon Season." *Eyes on Earth*, April 19, 2020. <https://www.eyesonearth.org/reports>.

⁴ "Greater Mekong." Conservation International, n.d. Accessed September 2, 2021. <https://www.conservation.org/places/greater-mekong>.

launched the US-Mekong Partnership in 2020. The US reaffirmed this commitment last year by obligating \$153 million for humanitarian assistance, expanding on the \$3.5 billion already committed to the region through the Lower Mekong Initiative since 2009.⁵ The growing issue has also caught the attention of former US INDO-PACIFIC Command Commander, Admiral Davidson, who stated in his 2021 Congressional Posture Statement: “We are working with the State Department on the US-Mekong Partnership to address environmental degradation and the related concerns with water and food insecurity caused by upstream damming operations.”⁶ Despite these efforts, little progress has been made in convincing China to maintain predictable water release from these dams and to give downstream nations with data on water flow, which is crucial for prediction planning models. ASEAN, supported by the US Department of State, must urgently act to contain environmental damage to the Mekong River ecosystem, create unified efforts to protect commercial interests, and combat Chinese economic coercion in the Greater Mekong Subregion.

ENVIRONMENTAL IMPLICATIONS

Damming of the Mekong River, combined with sand harvesting, is having devastating environmental impacts on the Mekong River ecosystem. Following a crippling 2019 drought in the subregion, an organization called Eyes on Earth published a convincing report linking the drought to wetness anomalies induced by China's regulated water flows via dams.⁷ The report claims that Chinese-owned operating companies were purposefully holding back water during the monsoon season in reservoirs and releasing it during the dry season to maximize year-long hydropower for internal use. The seasonal variations in river flow, in conjunction with climate

⁵ Basist and Williams.

⁶ Davidson, Phillip S. Statement of Admiral Philip S. Davidson, US Navy, Commander, US Indo-Pacific Command, 9 March 2021, page 18

⁷ Basist and Williams.

change events, are the primary drivers of the 2019 drought and large changes in sediment flow in the lower Mekong River.⁸ In a broader context, China's unregulated hydropower practices on the Mekong River have developed a concerning pattern of flooding and unpredictable changes in downstream water levels.⁹ These dams also create multiple physical barriers which prevent the natural migration of fish downstream, thereby affecting fishing levels in the lower Mekong.¹⁰ Special precautions have been put in place in some dams such as “fish ladders and sediment-flushing gates.”¹¹ However, “the technology is based on rivers from Europe and the US so is unable to cope with the Mekong's biodiversity, a river system that may need to move more than 30 tonnes of fish in one hour.”¹²

Sediment flow is critical for aquatic life in a river environment, and persistent variations in the flow can have severe implications. The Mekong River floods during monsoon season, delivering sediment to the riverbed and the lakes it creates; a critical element to plant life and fish reproduction. As a result of changes in water flow, the upriver dams are altering the amount of sediment that has typically flowed through this ecosystem for thousands of years which impacts the soil's fertility and, consequently, the plant nutrition required by the region's fisheries.¹³ Millions of people in the region depend on these fisheries, and their degradation exacerbates food insecurity and competition for few resources. Additionally, riverbed sand harvesting is compounding the sediment flow problem. While not unique to this location, local sand harvesting is a low-cost means of supplying raw building material to metropolitan

⁸ Ibid.

⁹ “Mekong Dam Monitor.” Stimson Center, July 22, 2021. Accessed 14 Sep 2021.
<https://www.stimson.org/project/mekong-dam-monitor/> .

¹⁰ Tyler Roney, “What Are the Impacts of Dams on the Mekong River?” The Third Pole, July 1, 2021.
https://www.thethirdpole.net/en/energy/what-are-the-impacts-of-dams-on-the-mekong-river/?fbclid=IwAR0qgCpEKp4qhjmNiuS4XnGgbMVU_klgqb-mlwiFLNZqUz35HeUc_mU5vDE .

¹¹ Tyler Roney, “Mekong Dams Destroy Tonle Sap Lake.” The Third Pole, July 1, 2021, 10.
<https://www.thethirdpole.net/en/regional-cooperation/mekong-dams/>.

¹² Ibid, page 8

¹³ Roney, “What Are the Impacts of Dams on the Mekong River?”

development. River dredging initiatives funded by Chinese state-owned firms are further modifying the river's flow, altering the silt, and increasing biological problems by causing erosion and bank collapse.¹⁴

Moreover, a lack of transparency from Chinese officials or their state-owned operating companies has prohibited downstream countries from accurately forecasting river levels which helps them better prepare. In October 2020, “China formally agreed on Thursday to provide the Mekong River Commission with year-round data on water flows on the Mekong, a move aimed at better monitoring and forecasting of floods and drought on the important regional waterway.”¹⁵ However, results of transparency have been mixed. Countries downstream assert that the data given is insufficient for developing predictive models. To assist, the US began providing satellite imagery to help the Mekong Dam Monitor, an organization established specifically to monitor wetness anomalies and track water levels in December 2020.¹⁶ This is the latest US commitment to assist ASEAN countries and the Mekong River Commission in fighting back against Chinese unregulated practices.

Shouldn't China, the world's leading air polluter, be applauded for efforts to reduce carbon emissions through the investment in hydropower? Yes, of course, China should be encouraged to cap fossil fuels and invest in renewable energy. However, China is the fifth-largest energy exporter globally, with hydropower accounting for 17% of China's energy sector.¹⁷ With such a severe air quality problem and rising energy demand, how is China able to

¹⁴ “Unsustainable Sand Mining Is Threatening Lives along the Mekong River in Cambodia.” 13 Jan 2020.. Accessed September 7, 2021. <https://www.southampton.ac.uk/news/2020/01/mekong-river-sand.page>.

¹⁵ Richard Finney, “China Agrees to Provide Year-Round Mekong River Data to Downstream Countries.” Radio Free Asia, 22 Oct 2020. Accessed 14 Sep 2021. <https://www.rfa.org/english/news/china/agrees-10222020160430.html>.

¹⁶ “Satellites to Track China's Mekong Dams as ASEAN Warned of ‘Existential Threat.’” *South China Morning Post*, December 16, 2020. <https://www.scmp.com/week-asia/politics/article/3114206/us-satellites-track-chinese-dams-mekong-river-it-likens-threat>.

¹⁷ OEC, “Electricity in China.” The Observatory of Economic Complexity, n.d. Accessed August 13, 2021. <https://oec.world/en/profile/bilateral-product/electricity/reporter/chn>.

export such a large amount of electricity? The answer is, of course, economics. In 2019, China enjoyed a \$1.4 billion trade surplus in electricity while only being its 268th most exported product of that year.¹⁸ In July 2021, China's trade surplus accounted for \$127 million in that month alone, which maintains the positive trend line of a growth market.¹⁹ It would make sense if renewable energy investments were replacing coal capacity or assisting in meeting expanding demand. However, for exports to continue to rise with demands counters China's narrative and diminishes its legitimacy as an honest broker in climate change relations.

The cumulative effects of these issues, combined with natural effects from climate change, are resulting in concerning environmental implications on a regional scale. "According to the MRC's development scenarios mapped out in 2018, the total weight of fish in the Lower Mekong Basin will fall by 40-80% by 2040, while sediment in the Mekong could be reduced by 67-97%."²⁰ Failure of state actors or intergovernmental bodies, such as ASEAN, to take significant action will result in irreversible environmental harm, surely altering riparian society in the Greater Mekong Subregion. As a result, the region will unquestionably experience increased occurrences of flooding and droughts while the ecosystem and fisheries continue to decline in yield and fertility.

SOCIOECONOMIC IMPLICATIONS

The Mekong River is not only the primary source of protein for the people of the lower region, but it also serves as a vital economic engine. Agriculture and natural resources associated with the river system are one of the region's top sources for individual income.²¹ On

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Roney, "What Are the Impacts of Dams on the Mekong River?"

²¹ Isolano, "Overview of the Greater Mekong Subregion Economic Cooperation Program." Greater Mekong Subregion (GMS), 2019. <https://greatermekong.org/overview>.

average, the agriculture sector accounts for over 30% of employment in the region.²² However, these resources are increasingly in danger of dramatic decline, which is not great news considering all the countries of the Greater Mekong Subregion, apart from Thailand, have substantial trade deficits, primarily attributed to China.²³ Hydropower, on the other hand, developed with foreign direct investment produces millions of dollars in trade as exportable energy. Even at an environmental cost, developing countries are more frequently looking into offsetting economic revenue with low-cost exportable energy.

The Greater Mekong Subregion is home to some of the world's largest rice farming countries. Vietnam is the world's third largest producer of rice, which accounts for their largest agricultural sector and 15% of their annual GDP.²⁴ The Mekong River Delta is the heart of the region's rice production, producing 57% of the annual yield.²⁵ However, the river delta has seen catastrophic effects of salt inundation into rice farms in recent years because of rising sea levels and a slower river flow to counter it. In 2015 and 2016, Vietnam saw a \$337 million loss in rice crops due to saltwater inundation alone.²⁶ Further, in 2019 the industry took another dramatic loss due to severe drought now linked to controlled water release from upstream dams. While there are emerging solutions in salt-tolerant rice seeds on the horizon, Vietnam and other regional rice-producing countries should expect further challenges and lower rice harvest yields without directly addressing the Mekong River damming.

As already mentioned, the fishing industry in the Greater Mekong Subregion is being decimated by the environmental changes in the river ecosystem. However, there is a

²² US Central Intelligence Agency, "Country Profile." *The World Factbook*, n.d. Accessed September 7, 2021. <https://www.cia.gov/the-world-factbook/countries/>.

²³ Ibid.

²⁴ SongYi Paik, Dung Thi Phuong Le, Lien Thi Nhu, and Bradford Franklin Mills, "Salt-Tolerant Rice Variety Adoption in the Mekong River Delta: Farmer Adaptation to Sea-Level Rise." 16 Mar 2020. Accessed September 9, 2021. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0229464> .

²⁵ Ibid.

²⁶ Ibid.

socioeconomic aspect worth considering. Fishing on the river has historically been a mainstay in the economic sector that provides primary or supplementary income to millions of people. The region has experienced a sharp decline in fish yields in recent years, primarily related to the degradation of underwater ecosystems. This is compounded by expanding rice farms from the South moving away from the impacts of salt inundation and squeezing out fishing opportunities. “The decline in the Mekong’s fisheries alone is predicted to cost nearly USD 23 billion by 2040 and poses risks to riparian communities and indigenous peoples who rely on fish for sustenance and livelihoods.”²⁷ Economic cost, however, is not the only implication associated with an environmental trade-off. The ecological impacts to fisheries have significantly impacted the number of fish and are creating reflection points for fishermen on future fishing prospects.²⁸ Numerous fishing towns are now turning to agriculture as an alternative source of income, putting the region on the verge of a cultural transformation.²⁹ Failure to act will most likely result in gradual changes to the riparian way of life and significant challenges for the region’s developing economies.

REGIONAL SECURITY IMPLICATIONS

Is the implication of river damming merely Western nations' political posturing in response to Chinese actions to depict China as a bad actor, rather than a rising regional problem? The extent to which damming has impacted the area is rapidly becoming a significant flashpoint in Southeast Asia's geopolitical landscape. In 2020 Vietnam, at the urging of the US State Department, recommended to ASEAN's Executive Committee that the body examine damming

²⁷ Roney, “What Are the Impacts of Dams on the Mekong River?”

²⁸ Michael Sullivan, “The Lake That Feeds the Mekong Basin Is Facing a Shortage of Fish.” NPR. NPR, November 9, 2019. <https://www.npr.org/sections/goatsandsoda/2019/11/09/777539946/the-lake-that-feeds-the-mekong-basin-is-facing-a-shortage-of-fish>.

²⁹ Tyler..

the Mekong River as a regional problem.³⁰ This would raise the issue to an ASEAN regional topic, the highest level of regional diplomacy, allowing for significant new resources to be invested in exploring and mitigating the problem. Subsequently, voting members voted down the motion, begging the question, is this really a regional issue, or is it simply too confrontational with China? As seen in Figure 1, the damming of the Mekong River is inextricably linked to food insecurity, economic reliance, and South China Sea territorial claims, which is why ASEAN should view this as a new front in its tensions with China. Considering the scientifically proven environmental and socioeconomic implications combined with other unresolved tensions in the region, it is clear that this issue will not be resolved bilaterally and is easily becoming an intraregional dispute.

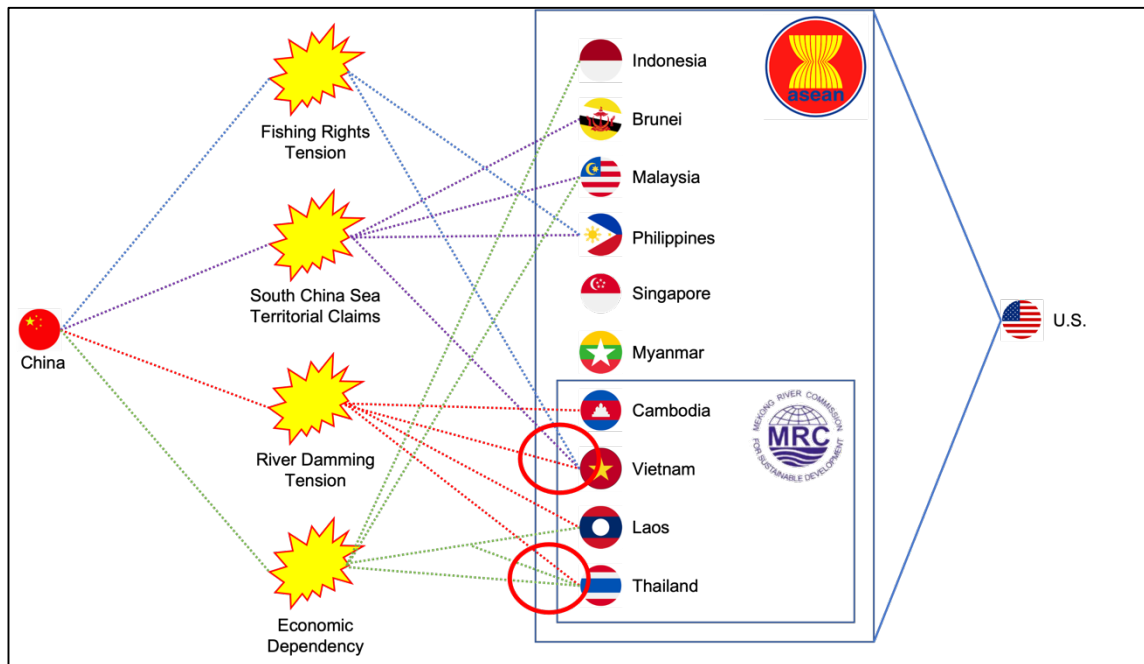


Figure 1: Southeast Asia Tensions Matrix

³⁰ HoangThi Ha and Farah Nadine Seth. "The Mekong River Ecosystem in Crisis: ASEAN Cannot Be a Bystander." *ISEAS Perspective* no. 69 (May 19, 2021): 1–8. https://www.iseas.edu.sg/wp-content/uploads/2021/04/ISEAS_Perspective_2021_69.pdf, page 4 .

Hydropower is a highly lucrative venture that is tempting for lower Mekong countries to contemplate, even with the environmental consequences already suffered. Despite expert warnings, Laos is the only lower Mekong country that has constructed dams on the Mekong River. It has now completed four dams primarily for electricity export purposes and 95% of the output is sold to neighboring Thailand.³¹ Laos, using Chinese direct foreign investment and Chinese state-owned construction companies to build the dams, defaulted on payments to Chinese banks earlier this year. As a result, China effectively controls the power grid in Laos, which provides significant exports to Thailand, thus tightening the knot of Chinese influence in the region.³² This highlights the Mekong River Commission's little influence with host countries on issues regarding the Mekong River. However, in 2020 Cambodia decided to take a 10-year postponement of planned dam construction to assess the situation for environmental and economic factors leaving hope that countries are awakening to the threat of Chinese economic coercion and control.³³

Moreover, food insecurity in Southeast Asia continues to increasingly become a likely flashpoint between regional actors, with overfishing in the South China Sea as the leading topic. Apart from petroleum deposits, fishing rights are perhaps the biggest driver of territorial disputes in the South and East China Seas. The steady decline in fish and rice yields because of environmental factors only adds to the competition as Vietnam and other riparian countries look more to the sea to counterbalance.³⁴ However, China continues to tighten its grip on control of the region through economic and diplomatic coercion to dictate terms to downstream countries

³¹ Luke.Hunt, "Laos Presses Ahead with 4 More Mekong Dams Amid Drought." Voice of America, December 12, 2020. <https://www.voanews.com/east-asia-pacific/laos-presses-ahead-4-more-mekong-dams-amid-drought>.

³² Roney, "What Are the Impacts of Dams on the Mekong River?"

³³ Ibid.

³⁴ Thi Ha and Seth, page 4.

and ASEAN.³⁵ As shown in Figure 2, these variables, together with climate change and population shifts, are producing an atmosphere conducive to conflict.

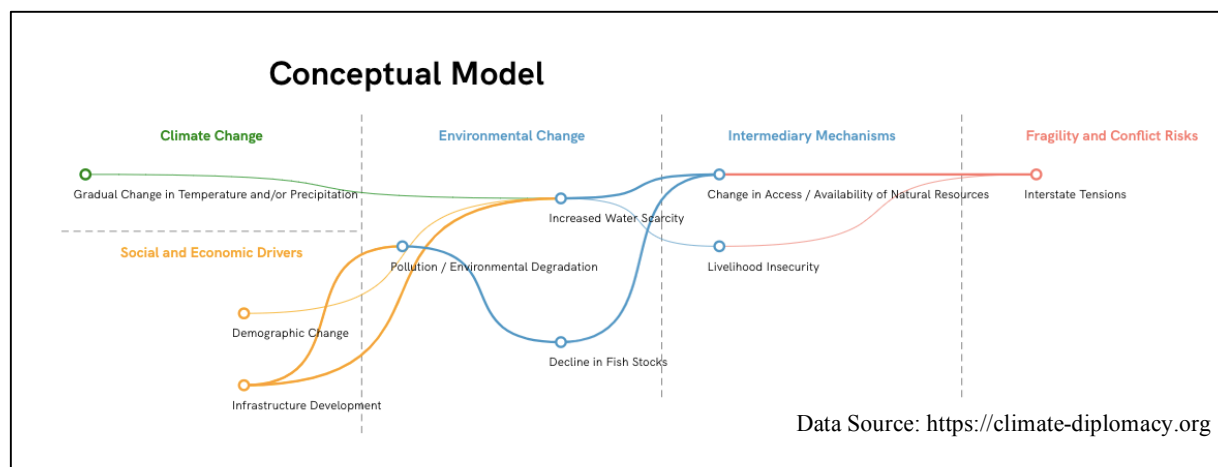


Figure 2: Tension to Conflict Model

Using its state-owned enterprises and foreign direct investment, China builds leverage and power indirectly influencing policy decisions made regionally and through international governmental organizations in China's favor. Ultimately, the developing countries of the Greater Mekong Subregion are ceding sovereignty in exchange for short-term economic benefit and are therefore unlikely to succeed in preventing Chinese hegemony without external support. The US's growing role in support of ASEAN and the subregion puts China and the US in a situation where national interests diverge. By providing billions of dollars in financial and material assistance, the US has established a strong commitment to ASEAN, ensuring that it has the resources to implement its end states when it has the political will to do so. ASEAN is the remaining international organization where China's influence remains on the peripheral, making it the figurative Alamo to counter malign Chinese activity in the region. The interconnectedness

³⁵ Ibid.

of these issues, destructive Chinese foreign activity, and US pressure all contribute to an increased chance of confrontation.

CONCLUSION AND RECOMMENDATIONS

Damming of the Mekong River and the associated interconnected implications is the new front in regional tensions and a potential flashpoint between the US and China. ASEAN, supported by the US Department of State, must urgently act to contain environmental damage of the Mekong River ecosystem, create unified efforts to protect commercial interests, and combat Chinese economic coercion in the Greater Mekong Subregion. Thus far, attempts to slow or stop the environmental damage have been unsuccessful and require a more robust form of diplomacy void of fear from economic coercion. The following are recommended actions that ASEAN and the US should consider, taking a more aggressive but non-confrontational stand against China's devastating policies and safeguard themselves against further degradation of basic human necessities.

ASEAN

- ASEAN should elevate Mekong River damming as a regional issue and resource independent research to guide viable courses of action.
- ASEAN should negotiate a River Treaty amongst member countries with sovereign rights to the river to establish acceptable norms of behavior.
- In conjunction with the Mekong River Commission, ASEAN should coordinate alternatives to sand harvesting in the Mekong River to reduce riverbed erosion.
- Formally present this topic for consideration to the APEC Economic Committee and the Life Sciences Innovation Forum to determine the socioeconomic and

environmental effects of damming on the Greater Mekong Subregion and future trade and food security within APEC.

- ASEAN should assist countries with developing salt-tolerant rice innovations to build resiliency against climate change induced salt inundation.
- Accept US appropriated funds to support companies targeted by China and consider re-negotiating the 15-country free trade pact known as the Regional Comprehensive Economic Partnership to include the US and exclude China.³⁶

United States State Department Initiatives

- The US should provide incentives for US multi-national corporations to provide foreign direct investments in ASEAN countries that offer alternatives to China and help alleviate economic dependence.
- The US should invest in specific energy and environmental projects to mitigate the consequences of damming and reduce Chinese economic dependency in the subregion.
- The US should establish a mechanism between the United States, ASEAN, partners, and Ally's to coordinate economic pressure against China in response to Chinese coercion attempts.³⁷

³⁶ Lin, Bonny, Michael Chase, Jonah Blank, Cortez Cooper, Derek Grossman, Scott Harold, Jennifer Maroney, Lyle Morris, Logan Ma, and Palul Orner. "Regional Responses to US -China Competition in the Indo-Pacific." RAND Research Reports. RAND Corp., 2020. https://www.rand.org/pubs/research_reports/RR4412.html. Page 84

³⁷ Ibid.

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<https://www.bangkokpost.com/opinion/opinion/1994067/asean-needs-to-act-on-mekong-river> <https://www.bangkokpost.com/opinion/opinion/1994067/asean-needs-to-act-on-mekong-river> .
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