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Photo: Benjamin Zawacki



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Abstract

This paper examines the trajectory of commercial navigation on the Upper Mekong River from the early 1990s through the present, primarily through the perspective of Thailand. The first two decades of the 21st century are covered in the greatest detail, with the most recent five years receiving the most analysis. The 25 years in question are, following the 1990s, categorized and addressed via three eras: 2000-2008, ending with the global financial crisis; 2009-2019, ending just prior to the Covid-19 pandemic; and 2020-2025. The paper argues that commercial navigation on the Upper Mekong, spurred by post-Cold War optimism and facilitated by the 2001 Agreement on Commercial Navigation (ACN) of the Lancang-Mekong River, grew quickly but from a low base during the first era. The era was best known for the Upper Mekong Navigation Improvement Project, which was promoted and funded by China and deepened and widened the river through a combination of blasting and dredging. Commercial navigation peaked during the second era, symbolized by the completion in 2013 of Thailand's Chiang Saen port, even as road and rail projects began to catch up to the river as a means of transporting cargo. During this era, Thailand's exports began to greatly exceed its imports, but overall cargo tonnage on the river increased. The third era saw commercial navigation recover from its near-stoppage at the start of Covid-19 to pre-pandemic levels, but also its overtaking by road and rail networks further connecting Thailand, Laos, Myanmar, and China. The paper concludes that a new trend of plateaued riverine trade, against accelerated commercial road and rail transport—multimodal connectivity with the Mekong utilized the least—is taking shape and set to continue in the years ahead.

Introduction

The end of the Cold War more than three decades ago gave rise to countless new economic opportunities, most of which barely registered in local media but made a significant difference between and within countries. In mainland Southeast Asia, which Thai Prime Minister Chatichai Choonhavan pledged to turn 'from battlefields into marketplaces', one such opportunity was transforming the mighty Mekong River into a commercial waterway.

The Mekong River is the tenth longest river in the world (about 4,800 kilometers) and the eighth in terms of mean annual discharge/flow at its delta. Beginning on the Tibetan Plateau, it is known as the Lancang in China where it serves as a small portion of China's border with Myanmar. It then becomes the Mekong as it constitutes the border between Myanmar and Laos, before reaching the 'Golden Triangle' where it sits at the convergence of all three countries as well as Thailand. From there, it flows further southeast, forming a large portion of Laos's border with Thailand, before flowing into Cambodia and exiting via its eponymous delta in Vietnam. The Mekong is also the most biodiverse river in the world, hosting at least 1,100 species of fish, including the iconic (and endangered) freshwater dolphin and the giant catfish and stingray. Cambodia's Tonle Sap Lake, a phenomenon of the Mekong's natural flood pulse, accounts for a quarter of the world's yearly freshwater catch and 70 percent of the country's annual protein intake. Partly due to climate change, however, floods and droughts are occurring more frequently and unseasonably in the Mekong's basin, including years of record-low water levels even during the wet seasons and some of the driest seasons on record.



The Greater Mekong Subregion (GMS), inclusive of China's Yunnan and Guangxi provinces, was established by the Asian Development Bank (ADB) in 1992 to help facilitate economic development. This included harnessing the existing, if largely informal and unregulated, commercial navigation on the river, as well as its even more considerable potential. For the Lower Mekong—the river south of Luang Prabang in Laos—this began with the Cooperation for the Sustainable Development of the Mekong River Basin in 1995, a treaty that established the Mekong River Commission (MRC).

For the Upper Mekong, following related bilateral agreements between China and Myanmar and Laos, respectively, the Agreement on Commercial Navigation (ACN) of the Lancang-Mekong River, was signed in 2001 by China, Myanmar, Laos, and Thailand.¹ Another treaty doubling as multilateral framework, the ACN was designed to boost traffic by allowing vessels to traverse the river year-round from China's Yunnan Province through Myanmar and Thailand to Luang Prabang in Laos. While commercial navigation then, as now, technically referred to the movement of both goods and people, because paid riverine tourism and transport was minimal during the 1990s and because only passenger vessels currently ply the river between the Golden Triangle and Luang Prabang, this paper defines the Upper Mekong as concluding at the Golden Triangle.

¹ The ACN signed under the Quadrangle Economic Cooperation (QEC) framework created by Bangkok rather than under the MRC.

A Joint Committee on Coordination of Commercial Navigation (JCCCN) on the Lancang-Mekong River was duly established to implement the ACN, not least through facilitating the four countries' efforts to promulgate and implement a raft of regulations and to survey the river, in both cases toward making it navigable for commercial vessels of agreed upon sizes. At the same time, roads and railways were also being newly considered, including via the GMS, such that commercial navigation would need to be developed in relation to other modes of transportation.

The 1990s were early days for linkages between and among the countries united and divided by the Mekong, but by 2001 the United Nations was able to conclude that “[r]iver transport has ... grown rapidly in the Upper Mekong area.”²

In the 25 years since the ACN was signed, commercial navigation on the Upper Mekong River for Thailand has proceeded via two clear and distinct eras and a third characterized by greater ambiguity. During the first era, from 2000-2008, commercial navigation moved rapidly from a busy but informal situation toward one regularized and regulated, replete with proposals, plans, and policies designed to see it increase in volume and value. It was characterized by a disproportionately large amount of river traffic heading south from China to the three other countries. The era came to an end on account of the 2008 global financial crisis, an event beyond any of the Mekong's actors' capacity to anticipate or mitigate, which slowed navigation for approximately two years.

During the second era, from 2009-2019, commercial navigation on the Upper Mekong peaked via greater interest, investment, and infrastructure, including in Thailand. This era was the reverse of the first, however, in that significantly more transport on the Mekong headed from Thailand to the three countries north of it, mostly China. It held steady until a second unexpected global event, the Covid-19 pandemic, nearly if briefly brought it to a complete halt.

The third era, from 2020 to the present, has been marked by changes—most notably the accelerated development and use of road and rail networks—caused not only by the pandemic, but also by policy decisions involving rapids-blasting on the river and the construction of upstream dams. Yet, whether commercial navigation can be said to have grown or slowed for Thailand during the current era depends upon whether it is assessed independently or in the broader context of four countries' cross-border movement of goods. Its medium-term prospects are uncertain.

First era: Deepening the shallows (2000-2008)

The ACN established that commercial navigation on the Upper Mekong starts at China's Simao port and concludes in Luang Prabang in Laos, a length of 786 kilometers that includes northern portions of Myanmar, Laos, and Thailand. The area was largely absorbed by the GMS, which aimed to facilitate markets in China's Yunnan Province and in the three lower countries for each other's products and industrial output.

Initially, it appeared that commercial navigation on the Upper Mekong would be slow to grow for a variety of reasons. First and foremost was the river itself, which from the Chinese town of Nandeba to the Green (or Friendship) Triangle (China, Myanmar, Laos) was free from reefs and rapids and could accommodate ships of 150-300 tons year-round.

² United Nations Economic and Social Commission for Asia and the Pacific, *Guidelines for the Harmonization of Navigation Rules and Regulations*, Vol. 1: Aids to Navigation, New York, 2001, p. vii.

Along the 30-kilometer China-Myanmar border, however, eight rapids and shoals hindered navigation during the low water season.³ According to the UN's Economic and Social Commission for Asia and the Pacific in 2001, the "navigation channel meanders by rock reefs and outcrops creating swift currents. Ships plying this stretch are restricted to 60 tons in the dry season and 150 tons in the high-water season".⁴

From there to the Golden Triangle, where the Mekong links Myanmar, Laos, and Thailand, the river passed through 57 rapids and hazardous places, three shallow shoals, and two single-lane stretches, which in some places required hauling assistance. It was navigable year-round for vessels of up to only 60 tons.⁵

The ACN itself identified and partially addressed—via six annexes—a second challenge: the absence of regulations concerning aspects of navigation or a lack of harmonization among those that did exist in its four member countries. These pertained to the safe navigation of vessels; water transport administration; investigation and handling of waterborne traffic accidents; management of search, rescue, salvage, and wreck removal; surveys of commercial ships; and most fundamentally, maintenance and improvement of the river's navigability. The JCCCN had a full agenda. Among the main safety and navigability issues were the dearth of markers of the many obstacles and obstructions to the passage of vessels on the Upper Mekong; Myanmar and Thailand had installed no aids to navigation whatsoever on their sections of the river.⁶

In 2003, the MRC noted that in Laos and Thailand, "very few waterway users and operators are aware of the existence of ... the 2000 Upper Lancang Agreement [ACN]".⁷ It went on to note, moreover, that those most aware of it were environmental activists who opposed much of the activity that might enhance commercial navigation, and "that there is a tendency on the part of environmentalists (and also of the public authorities) to judge the environmental consequences of inland waterway projects more severely than those of projects for the other modes".⁸

Further, after decades of neglect or diverted investment, the infrastructure on which riverine navigation depends, principally but not only ports, was lacking or operating at very low capacity. The ACN itself listed 14 ports and permitted countries to withdraw or designate new ones as necessary. In China, ports at Simao, Jinghong, and Guanlei were being expanded and upgraded. Myanmar had established ports at Wan Seng and Wan Pong, Laos was constructing one at Muang Mom, and Thailand had recently built terminals in Chiang Saen and Chiang Khong. But progress was slow and uneven and changes to the list of 14 would regularly occur in the years to come.

Finally—and prophetically—the MRC noted that water transportation was competing with other transport modes, mainly road and rail transport, "on unequal terms", and that, "to date, most politicians and administrators tend to refer alternative investments to rail rather than to waterborne transportation".⁹ Its proposed solution, however, was "to utilize the given advantages from inland water transport and to integrate it into a multi-modal transport system" whereby freight could be efficiently transferred between modes.¹⁰ It further stated

³ See *Ibid.* at 7.

⁴ *Ibid.*

⁵ See *Ibid.*

⁶ See *Ibid.* at 14

⁷ Mekong River Commission, MRC Navigation Strategy, Phnom Penh, August 2003, p. 24.

⁸ *Ibid.* at 14

⁹ *Ibid.* at 19 and 24, respectively.

¹⁰ *Ibid.* at 19.

that rising congestion and environmental concerns relating to road transport “may provide an opportunity to renewed political interest in water transportation”.¹¹

Indeed, even as these assessments were being made, the positive side of the ledger was rapidly overtaking the negative—again, beginning with the river itself. On the basis of previous joint field investigations undertaken by the ACN’s four member countries, it was determined that the river could be made more navigable in its depth, width, and bend radius via a three-phase Upper Mekong Navigation Improvement Project. According to the plan, through a combination of blasting and dredging the Mekong would be navigable for 100-ton vessels via 11 ports, four shipyards, and two training centers by 2002, and by 2006 for 300-ton vessels via the upgrading of such infrastructure. The third, long-term phase would see 500-ton barges.¹²

Phases one and two of this were duly accomplished—far ahead of schedule, no less—between January 2002 and April 2003, when the agreement allowing for the blasting of rapids and related manipulation of the river’s channel was signed and carried out in 16 locations.¹³ The project was financed and carried out in nearly its entirety by China; not coincidentally, an ASEAN-China free trade agreement was signed in late 2002 and a Thailand-China FTA in late 2003. That Thailand actually suspended the project in 2003, “concerned that blasting might prejudice Thai border negotiations with Laos” (and to a lesser degree, adversely affect the river’s ecology and the livelihoods of those dependent upon it), was welcomed by many along the river but also seen as too little, too late: only the Khon Pi Luang rapids in Chiang Saen and a series of other minor obstacles remained untouched.¹⁴

Indeed, by the end of 2003, Chinese vessels had passed more than 1,000 times through Thailand’s Chiang Saen port, which was planning a second and larger port to accommodate the 500-ton phase three vessels. Some 3,000 visits were projected for the following year, including a first by a 300-ton vessel, which docked there in May 2004.¹⁵ Trade, primarily agricultural and manufactured goods flowing from southern China to northern Thailand, remained small but increased rapidly. It was reported in 2005 that the carrying capacity of the river between China’s Jinghong port and Laos’s Huay Xay port would reach 500 tons during the rainy season in 2010.¹⁶ Notwithstanding the suspension further south, China cleared 11 more rapids and 10 more shoals between the Green Triangle and the Golden Triangle in 2006.¹⁷

At the same time, ports Bang Xiangkheng in Laos, Soap Loi and Tachileik in Myanmar, and Chiang Saen in Thailand were “all under rapid development in building port, dock and road facilities” (emphasis added).¹⁸ While the Chinese academic who noted this went on to add that “road transport plays the most important role in GMS cooperation”, she was equally

¹¹ Ibid at 24.

¹² See United Nations Economic and Social Commission for Asia and the Pacific, *Guidelines for the Harmonization of Navigation Rules and Regulations*, Vol. 1: Aids to Navigation, New York, 2001, p. 13.

¹³ See Supalak Ganjanakhundee, “Thailand Uses Participatory Diplomacy to Terminate the Joint Clearing of the Mekong with China”, *Perspective*, ISEAS-Yusof Ishak Institute, Singapore, Issue No. 30, 17 April 2020.

¹⁴ Wheeler, Matthew Z., “Blasted River: Dilemmas of Mekong Navigation”, *ICWA Letters*, Institute of Current World Affairs, June 2004, p. 1.

¹⁵ See Ibid at 9 and 11, respectively.

¹⁶ See He Shengda, “The water transport network between Yunnan and mainland Southeast Asia: A study of GMS water transport construction network”, *Yunnan Academy of Social Sciences*, 2005, p. 7.

¹⁷ See Mekong River Commission Navigation Programme, *Design of a Masterplan for Regional Waterborne Transport in the Mekong River Basin*, Final Report Volume I, December 2015, p. 146.

¹⁸ He Shengda, “The water transport network between Yunnan and mainland Southeast Asia: A study of GMS water transport construction network”, *Yunnan Academy of Social Sciences*, 2005, p. 5.

clear that Mekong navigation, a Pan-Asian Railway, and a Kunming-Bangkok Highway project were intended as complementary and mutually reinforcing modes of commercial transportation.¹⁹

Symbolically, the first era of commercial navigation on the Upper Mekong culminated in December 2006 with the initial upriver shipment, launched from Thailand's Chiang Saen port, of oil to China's Simao port. While the shipment consisted of a mere 300 tons, six months earlier China had moved to increase in the quota, which had been agreed upon in March 2006, of 1,200 tons of oil that it could import on the river. Some experts believed that this development could eventually lessen China's dependence on the Strait of Malacca for its sourcing of fossil fuels, and a Chinese official was quoted as stating that China hoped to import some 70,000 tons of refined oil each year from Thailand alone on the Mekong River.²⁰

Indicative of the situation along the northern part of the Mekong, Chiang Saen port's cargo throughput grew through 2007 but began two years of regression on account of the 2008 global financial crisis.²¹ The initial and otherwise promising era of commercial navigation on the Upper Mekong came to an end.

Second era: Favorable currents (2009-2019)

At the eighth JCCCN meeting in 2009, the Governor of Chiang Rai described his province as "a perfect gateway to the GMS. He stressed the role of Chiang Rai as the northern economic and transport hub with its two designated ports, Chiang Saen and Chiang Khong".²² By the start of the second era of commercial navigation on the Upper Mekong, Chiang Rai's status as a hub was established in two ways.

First, the Khon Pi Luang rapids left alone by the suspension of the blasting and dredging project were located in Chiang Saen, making it the start/terminus of waterborne cargo going to/from Laos, Myanmar, and China. Second, the main north-south road route for commerce, Route 3A (R3A), similarly commenced/concluded at the Chiang Khong-Huay Xay (Thai-Lao) checkpoint and proceeded to/from China via the Boten-Mohan (Lao-Chinese) checkpoint.

Despite two deadly incidents on the Upper Mekong in 2009 and 2011, when one and then 13 Chinese sailors, respectively, were killed, riverine commerce began growing again in 2010 in cargo value and in the number and size of vessels.²³ By 2015, the MRC stated that "[c]argo throughput and ship calls are increasing through Chiang Saen and the new Chiang Saen Port II has commenced operations in 2012, with imports and exports set to increase even further."²⁴

Cargo-wise at the new Chiang Saen port, which replaced the older port entirely for commercial purposes, tonnage increased from (approximately in all cases) 500,000 tons

¹⁹ Ibid at 4.

²⁰ See Macan-Markar, Marwaan, "China Moves Oil Up the Mekong: What Choice the Environment?", *Asia-Pacific Journal: Japan Focus*, Volume 5, Issue 1, 2 January 2007.

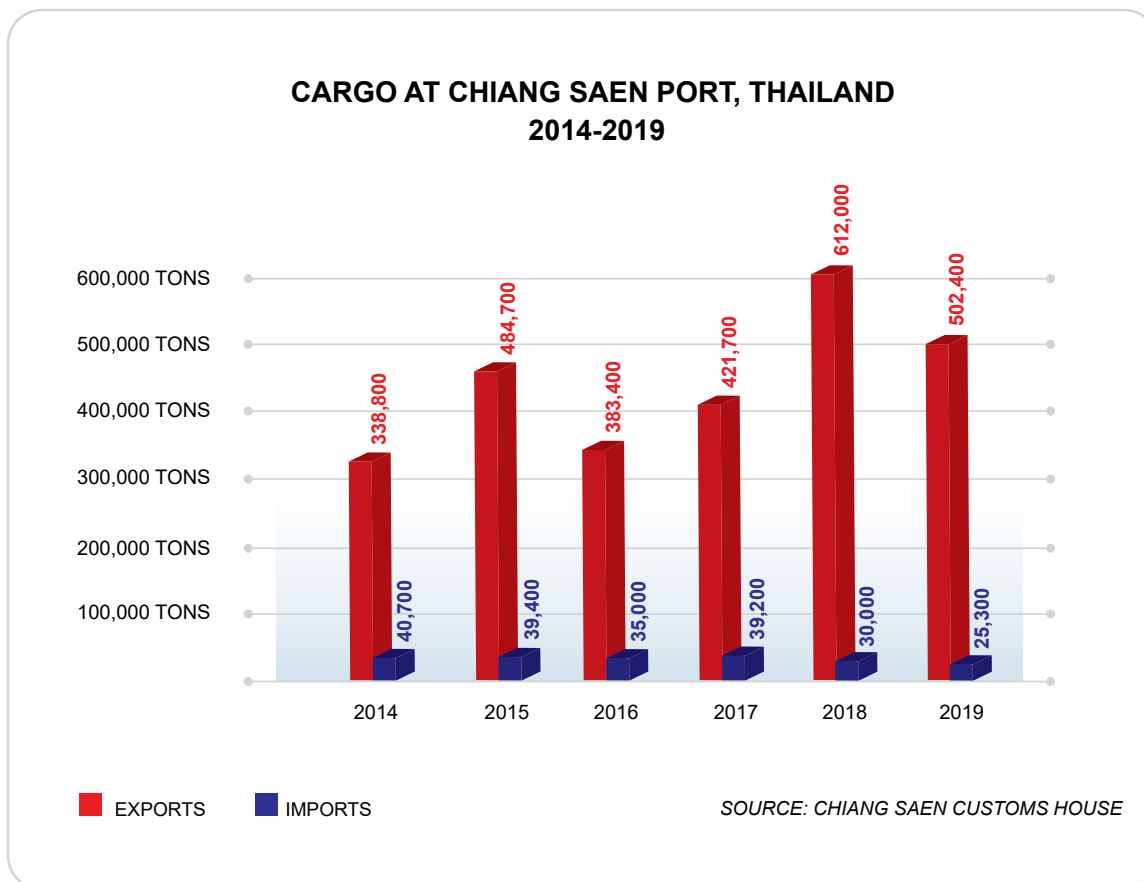
²¹ See Mekong River Commission Navigation Programme, Design of a Masterplan for Regional Waterborne Transport in the Mekong River Basin, Final Report Volume I, December 2015, p. 62.

²² Summary Record of the Eighth Meeting of the Joint Committee on Coordination of Commercial Navigation on the Lancang-Mekong River among China, Laos, Myanmar and Thailand, 1-3 September 2009, Chiang Rai, Thailand.

²³ See Marshall, Andrew R.C., "Golden Triangle mystery: Who killed 13 Chinese sailors?", Reuters, 28 January 2012.

²⁴ See Mekong River Commission Navigation Programme, Design of a Masterplan for Regional Waterborne Transport in the Mekong River Basin, Final Report Volume II, December 2015, p. 141.

in 2010 to a peak of 780,000 in 2013.²⁵ It then fell below 400,000 tons only once (in 2014) through the remainder of the era, ranging from 418,300 tons in 2016 to 642,000 in 2018.²⁶



Vessel numbers at the port peaked at roughly the same time (2013-2015): 12,700; 12,200; and 13,500, respectively. The two years on either side of this stretch saw ship numbers of about half the size (5,000 and 7,700; and 6,000 and 5,800, respectively).²⁷ The far less pronounced drop in tonnage compared to vessels over the same period suggests that larger ships were calling and loading at Chiang Saen port.

Chiang Saen also adopted a one-stop service system at the port office building for more efficient checking and processing in relation to customs, food and drugs, plants and animals/fish, public health, and immigration. In what would be echoed as a complaint by interested Thais a decade later, the MRC commented that “the available equipment will have to be supplemented by heavy lift machines. A 10-ton mobile crane is not good enough for handling containers, neither will the 10-ton forklift be sufficient for handling containers on the yard.”²⁸

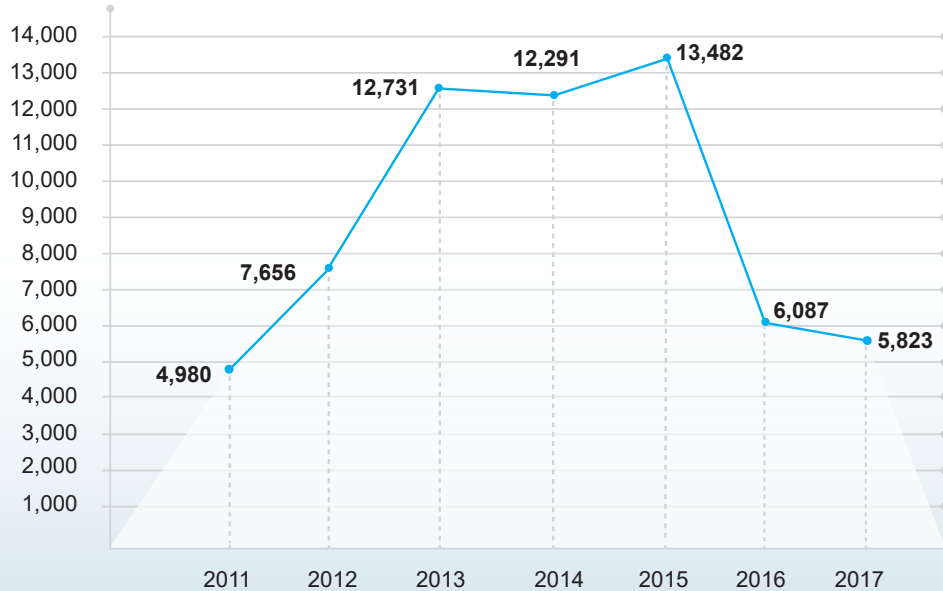
²⁵ See Ibid at 62.

²⁶ See Chiang Saen Customs House, https://chiangsaen.customs.go.th/list_strc_download.php?ini_content=statistic_and_report_180205_01_201024_01&ini_menu=&left_menu=menu_statistics_report&left_menu=&show_search=&root_content_group=&order_by=&cg_order_by=&cg_sort_type=&root_left_menu=, accessed on 1 May 2025. Note that all yearly references to tonnage and cargo denote the fiscal year of the year mentioned.

²⁷ See Thanatip Jantarapakde, “Waterborne Connectivity in Mekong-Lancang River”, Marine Department of Thailand, 2018.

²⁸ Mekong River Commission Navigation Programme, Design of a Masterplan for Regional Waterborne Transport in the Mekong River Basin, Final Report Volume II, December 2015, p. 308.

SHIPS AT CHIANG SAEN PORT, THAILAND 2011-2017



SOURCE: MARINE DEPARTMENT OF THAILAND

It is an understatement that more cargo left Chiang Saen than arrived; between 2014 and 2019, exports accounted for 89-95 percent of all tonnage.²⁹ This marked a stark reversal of the trend during the first era of commercial navigation on the Upper Mekong. ‘Miscellaneous’ led exports for the first four of those six years, followed in varying orders by sugar, diesel, frozen chicken parts, live cattle, live pigs, and rubber. Fuel oils not only joined the list of top five exports in 2018 but topped it, followed by cars. The similar situation occurred in 2019, with cement leading all exports and live buffalo joining the list further down.³⁰ Other than miscellaneous goods, over the same six years Chiang Saen imported almost entirely natural food or plant products from China. The only exceptions even among the top 10 imports were kaolin (Chinese clay), paper cup components, overhead cranes, and steam boilers.³¹

Thailand also continued exporting refined petroleum products to Myanmar and China, but due to low water levels in 2012 this moved from Chiang Saen to Thailand’s privately owned Hacieng port. Volume reached 21,700 tons in 2014—18 times more than eight years prior and representing 32 percent of all oil transported from Thailand to China.³² A Regional Action Plan for Sustainable Transport of Dangerous Goods was published the same year

²⁹ See Chiang Saen Customs House, https://chiangsaen.customs.go.th/list_strc_download.php?ini_content=statistic_and_report_180205_01_201024_01&ini_menu=&left_menu=menu_statistics_report&xleft_menu=&show_search=&root_content_group=&order_by=&cg_order_by=&cg_sort_type=&root_left_menu=, accessed on 1 May 2025.

³⁰ See Ibid.

³¹ See Ibid.

³² See Mekong River Commission Navigation Programme, Design of a Masterplan for Regional Waterborne Transport in the Mekong River Basin, Final Report Volume I, December 2015, p. 8.

to reduce the risk of accidents and pollution and to enhance emergency response and regional coordination.

Taking a broader view, the MRC noted in 2015 that “[r]elatively strong IWT [inland waterway transport] cargo growth has been achieved in all riverine countries, with the exception of Lao PDR. Here, IWT growth is restricted by the poor condition of boats and port infrastructure”. It added that “increasing competition from road transport, which has benefitted from improved highway infrastructure”, was also hindering commercial navigation on Laos’s part of the Upper Mekong.³³ This was in reference to R3A that started/stopped at the Chiang Khong-Huay Xay (Thai-Lao) checkpoint and proceeded to/from China via the Boten-Mohan (Lao-Chinese) checkpoint. A bridge across the Mekong connecting Chiang Khong and Huay Xay was completed in 2013.



Indeed, consistent with the GMS’s express vision, during this second era two-way commercial road traffic also increased: 380,000 tons along R3A in 2014. Yet this still represented less than what was transported on the Mekong overall (600,000 tons at Chiang Saen alone the same year; 39 percent versus 61 percent).³⁴ Oil was an exception, as the remaining 68 percent not sent from Thailand by river went to China via R3A.³⁵ The MRC remarked that Chiang Saen port was “close to the Chiang Rai/Chiang Mai road which will, in years to come, offer a transfer point to the fast railway connection to Thailand’s Eastern Seaboard, mainly Laem Chabang”, and that “Internationally, the port connects with the East-West Economic Corridor and the North-South Economic Corridor”.³⁶

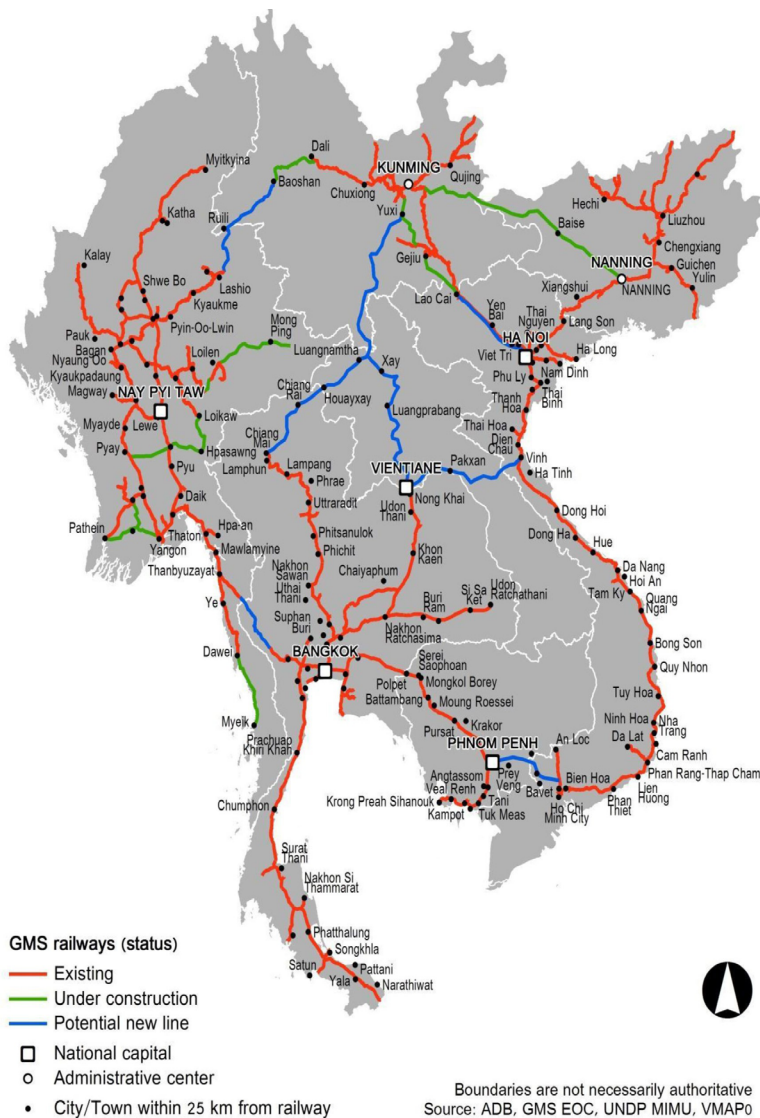
The increase in commercial navigation cast into stronger light many ongoing regulatory, operational, and practical needs along the Upper Mekong as well as created new ones. Rather than act as a hindrance to navigation, however, the filling of these gaps encouraged it by helping to ensure smoother, safer, and more predictable conditions. Action was taken

³³ Ibid at 141.

³⁴ See Ibid at 7.

³⁵ See Ibid at 8.

³⁶ See Ibid at 8. Mekong River Commission Navigation Programme, Design of a Masterplan for Regional Waterborne Transport in the Mekong River Basin, Final Report Volume II, December 2015, p. 30



to address port health and safety, climate change and the environment, the movement of oil and other dangerous goods, legal protection of passengers, and further implementation of the ACN. Operationally, port infrastructure was being improved and lights and air clearance signs were being installed on bridges. Vessels were being newly constructed, modernized, inspected, and installed with AIS/VHF and GPS navigation systems, as well as having their classifications standardized. And relating to the river itself, steps were being taken to standardize waterway classification, respond to accidents, install low water alert gauges, and establish Mekong Navigation Data and Information Management Centers. Additional surveys of still-dangerous areas were carried out and a study of how and where sand could be dredged from the river without negative ecological impact was being planned.

The MRC also noted the intention that a minimum 500 DWT navigation channel be provided between the Green Triangle and Huay Xay through dredging and/or excavating. Among other benefits, this “will reduce IWT operating cost and increase IWT competitiveness and modal share against road transport in Lao PDR”.³⁷ This came as a surprise to many since the Upper Mekong Navigation Improvement Project—whose third phase was to provide exactly such a channel—had remained suspended since early 2003 when ships of only 300 tons were the maximum the river could accommodate.

In late 2016, however, CCC Second Harbour Engineering, a major Chinese infrastructure construction company, requested a meeting with the Chiang Khong Conservation Group to share information about the resumption of the project. Days later, the Thai Cabinet adopted a resolution supporting this in principle. The next three years were confused and uncertain. In late 2017, Thailand’s foreign minister announced that China had decided to suspend its plan to resume the removal of the Khon Pi Luang rapids in Chiang Saen and

³⁷ Mekong River Commission Navigation Programme, Design of a Masterplan for Regional Waterborne Transport in the Mekong River Basin, Final Report Volume I, December 2015, p. 141.

12 other minor obstacles, citing adverse effects on local communities; the Chiang Khong Conservation Group had undertaken a committed campaign.³⁸ Nonetheless, Thailand allowed China's design survey to proceed along the 97-kilometer Thailand-Laos border in 2018 and 2019.³⁹

The cabinet resolution and renewed work seemed set to end the second era of commercial navigation on the Upper Mekong by interrupting it around Chiang Saen long enough to 'improve' the waterway for larger vessels and larger tonnage. Instead, the river itself would be given another reprieve and it would be a global pandemic that interrupted navigation and ended the era.

Third era: Ceding ground (2020-2025)

In February 2020, in a reversal of reasons given back in 2003, Thai officials announced that Thailand itself was cancelling the resumption of rapids-blasting primarily in response to local concerns. Thailand's border with Laos, which ran through the middle of the river and so would have undoubtedly been affected by the destruction and excavation of some 20,000 tons of rock,⁴⁰ was raised secondarily. A month later, however, the first cases outside of China of what would become the Covid-19 pandemic were discovered in Thailand and, by late March, the four countries' borders marked and crossed by the Mekong River were suddenly closed.

Some of the effects of Covid-19 on the Upper Mekong's commercial navigation are clear; others are less so. The borders were officially closed, though for how long and for what purposes varied. Some interlocutors in Thailand's Chiang Rai Province with whom this author spoke claimed that they barely closed at all; others mentioned months, even years. Depending on their principal points of reference, all were correct. Initially, border closures took hold more robustly on international roads and rails than on the river, which cast the Mekong in a more favorable and flexible light as an independent supply chain, as opposed to one linked to multi-modal transport. While the pandemic raised logistical costs substantially across the board, river transport's advantage of being the least expensive of the three methods—and the most friendly to Covid protocols—quickly came to the fore.

Given the proximity of the borders in the Golden Triangle, merely crossing the river from one side to another—as happened with the movement of goods from Thailand to the Kings Roman casino in Laos to compensate for China's lack of access—was possible save for the very early, panicked days of the pandemic. On a more formal level, in the words of a local academic, "Chiang Saen Commercial Port remained operational throughout the crisis, albeit under strict public health regulations. These included modified loading and unloading procedures, cross-border screening, and vessel inspections. Despite these constraints, the port's capacity to handle general cargo vessels, fuel tankers, and car transport ships allowed it to continue serving regional trade efficiently."⁴¹

According to the Chiang Saen Customs House, total tonnage handled by the port was 331,200 in 2020; 228,800 in 2021; and 226,200 in 2022—substantial drops, to be sure,

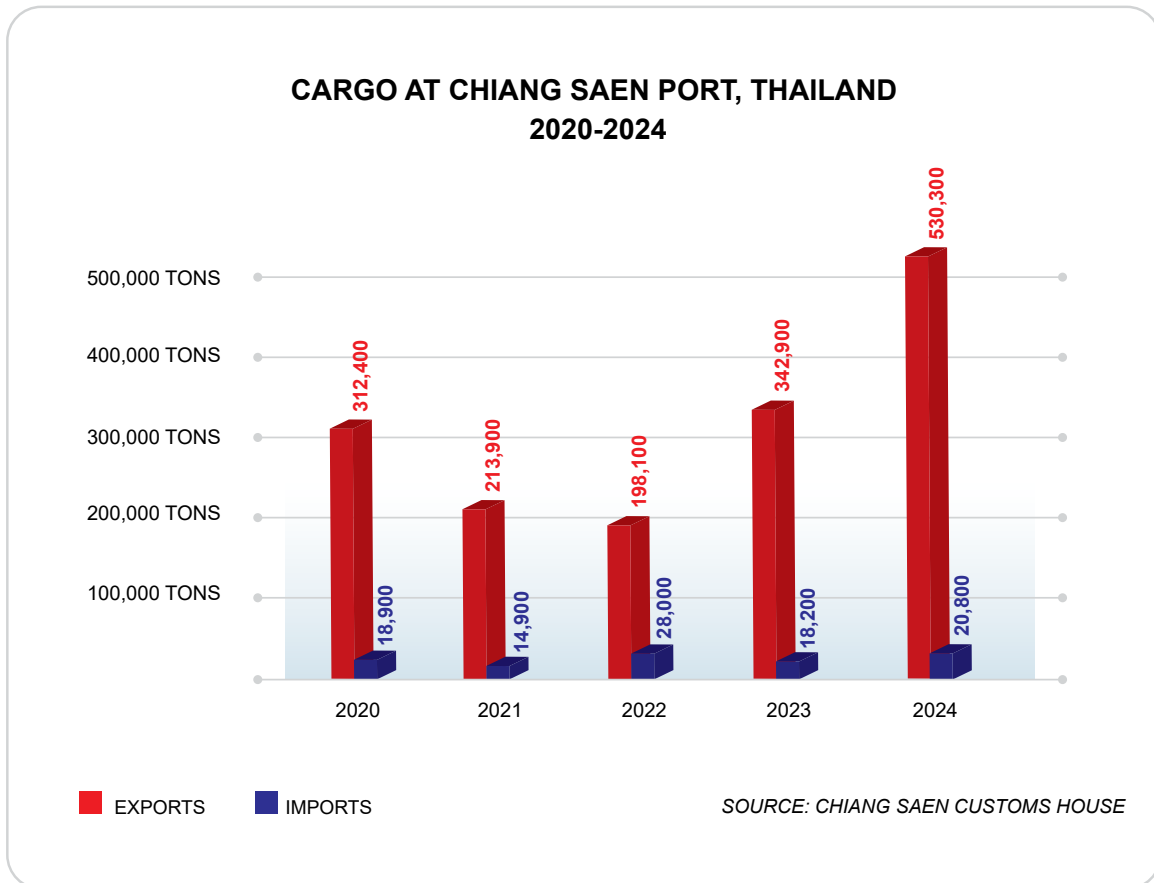
³⁸ See Pianporn Deetes, "Troubled Waters", *The Nation*, 2 January 2019.

³⁹ See Thai Mekong People's Network, "Response from Thai Mekong People's Network from eight provinces to the Chinese embassy spokesperson's remarks on the media report on China's impact on the Mekong River", *My Mekong*, 6 July 2019.

⁴⁰ See *Ibid.* Transport in the Mekong River Basin, Final Report Volume I, December 2015, p. 141.

⁴¹ Interview with academic, Chiang Rai Rajabhat University, Chiang Rai, Thailand, 23 April 2025.

from 2019’s 527,700 tons, but far from zeroed out.⁴² Moreover, tonnage began climbing again thereafter, reaching 361,000 in 2023 and 551,000 in 2024, an amount exceeding 2019’s pre-pandemic figure. Only 2018 boasts greater tonnage out of Chiang Saen over the past 11 years. Nor did the differential between exports and imports contrast with the pre-Covid years, as the former continued to account for 88-96 percent of cargo from 2020-2024.



The closure of China’s Guanlei port in Kunming at the start of the pandemic, however—and its remaining closed through China’s ‘Zero Covid’ policy until September 2022—affected commercial navigation on the Upper Mekong considerably. In addition to disrupting established river logistics routes generally, it caused or coincided with the ending of an MOU that had allowed Thai goods to enter China’s Mekong ports tariff-free. China continued to maintain this arrangement with Myanmar and Laos, with which—and because—it shares borders. This, in turn, caused a change in the practice and practicalities of northbound river cargo from Thailand, and has contributed to a broader shift in commercial transportation in the area of the four countries’ convergence.

The number of Thai vessels traveling all the way to Guanlei dropped steadily between 2019-2022 as the end of the MOU raised export costs on the Mekong.⁴³ Since that time, to be profitable, most cargo leaving from Chiang Saen for China’s Guanlei port has had to change its nationality from Thai to either Lao or Burmese—and so acquire tariff-free status—between its initial departure and final arrival. It usually does that at a checkpoint

⁴² See Chiang Saen Customs House, https://chiangsaen.customs.go.th/list_strc_download.php?ini_content=statistic_and_report_180205_01_201024_01&ini_menu=&left_menu=menu_statistics_report&xleft_menu=&show_search=&root_content_group=&order_by=&cg_order_by=&cg_sort_type=&root_left_menu=, accessed on 3 May 2025.

in either country, mostly Ban Mom port in Laos and Soap Loi port in Myanmar, before traveling onward on the river or via road on R3A or R3B.

One informant pointed out that some 100-ton vessels, Laos' largest, simply depart Chiang Saen under a Lao flag en route to Ban Mom with the intention of continuing on; another claimed that as much as 80 percent of goods leaving Thailand are relabeled 'Made in Myanmar' at Soap Loi, which can accommodate larger ships. From Ban Mom, most cargo is placed on trucks for R3A, which links with China's Guanlei port. Cargo at Soap Loi is more evenly split between (usually larger) ships going further north and R3B, which some merchants avoid on account of armed groups in Myanmar. Although vessels must pay import taxes and/or informal fees at the border, are delayed by the change-over, and generally return to Chiang Saen empty, the practice is economically viable for Thailand.

What effect this new practice has had on the export tonnage figures noted above is unclear. If those figures simply indicate all cargo that has left Chiang Saen, regardless of its nationality upon its arrival in China—and acknowledging that not all such cargo is intended for China—then they are accurate and reliable, strictly speaking. If, however, the figures do not include cargo whose nationality is changed—as not being 'Thai' at its final destination—then they significantly underrepresent Thailand's actual exports. Several well-placed informants stated plainly that this is the case.

A related issue is whether Laos and Myanmar count Thai cargo, duly changed to their nationalities, as their own; if so, their equivalent figures overrepresent their actual exports. This also seems likely according to interlocutors, who offered by way of example that Thai cows help Laos meet China's import quota, which would otherwise far exceed the cows that Laos can provide. If the first of the two Thai scenarios above holds, then this practice by Laos and Myanmar means that the cargo leaving Chiang Saen is counted twice. If the second Thai scenario is true, then overall combined tonnage for all three countries is not affected beyond Thailand's underreporting.

In contrast to the comparable tonnage figures, "the nature of the goods transported via the Mekong River also evolved in response to the pandemic. There was a noticeable increase in the volume of essential items such as fresh and frozen food, pharmaceuticals, and personal protective equipment during periods when land transportation faced logistical bottlenecks".⁴⁴ Except for live cattle, buffalo, and pigs, most of these exports presumably fell under the 'miscellaneous' label on customs lists, where it came in at second or third each year from 2020-2024. Otherwise, cement led exports by a wide margin in three of the five years, with fuel oils and diesel, respectively, leading in 2021 and 2022—the same years in which cars and gasoline also began appearing on the top-five list.⁴⁵ While only 446 cars left Chiang Saen in 2020, the figure leapt to 5,300 the following year and 9,000 in 2022, before spiking again to 22,800 and 22,500, respectively, in 2023 and 2024. In just the first month of 2025, some 8,700 cars had left the port for points further north.⁴⁶ Oil headed for China also shifted back from Thailand's privately run Hacıeng port to Chiang Saen.

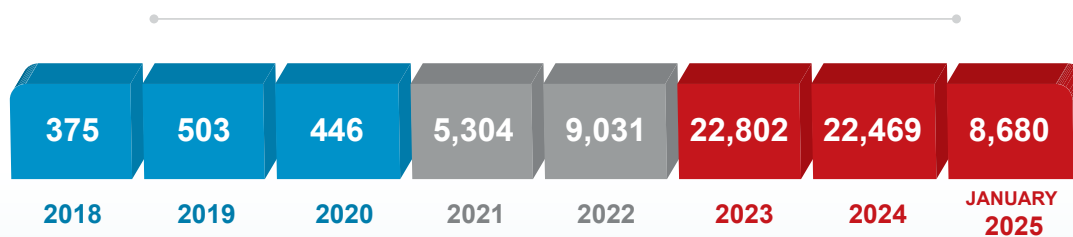
⁴³ See Port Authority of Thailand, "Transportation information between Chiang Saen port and Guanlei port", slide shared by Acting Sub Lt. Kansinee Rodliang, Lecturer, Mae Fah Laung University, 25 April 2025.

⁴⁴ Interview with academic, Chiang Rai Rajabhat University, Chiang Rai, Thailand, 23 April 2025.

⁴⁵ See Chiang Saen Customs House, https://chiangsaen.customs.go.th/list_strc_download.php?ini_content=statistic_and_report_180205_01_201024_01&ini_menu=&left_menu=menu_statistics_report&xleft_menu=&show_search=&root_content_group=&order_by=&cg_order_by=&cg_sort_type=&root_left_menu=, accessed on 2 May 2025.

⁴⁶ See Port Authority of Thailand, "Transportation information between Chiang Saen port and Guanlei port", slide shared by Acting Sub Lt. Kansinee Rodliang, Lecturer, Mae Fah Laung University, 25 April 2025.

VEHICLE EXPORTS FROM CHIANG SEAN PORT, THAILAND, 2018-2025



SOURCE: MARINE DEPARTMENT OF THAILAND

Miscellaneous cargo accounted for the first or second largest volume of imports during all five years, followed mostly by produce and other natural products, though topping the list in both 2023 and 2024 was ferro manganese. Used scrap metal registered as the third largest import in 2024, while 173 used cars flowed against the dominant export current last year as well.⁴⁷

In addition to affecting the transport of goods on the river, the closure of Guanlei and conclusion of the MOU have contributed to a broader shift in commercial transport in the area of the Upper Mekong; namely the growing interest in the use of railways and actual growth in the use of roads. The Mekong benefitted in the early months of the pandemic and has tentatively returned to pre-Covid levels in Chiang Saen. River transport remains cheapest and profitable, particularly for SMEs, which cannot afford refrigerated trucks. But in the current third era of commercial navigation, following two eras in which this was not the case, railways are being prioritized and the use of roads is surpassing—and increasing faster than—that of the river. This is happening for a number of reasons.

The leg of China’s high-speed rail project, from Kunming to Vientiane and completed in 2022, has focused on passenger traffic, but it is increasingly being eyed by China (at least) as yet another north-south mode of cargo transport in the coming years. That it does not directly connect to Guanlei port is a drawback, though notable that it bypasses Chiang Saen port as well. Its appeal rests in its not being subject to the many navigability variables inherent to the Mekong River and to the bottlenecks and expenses relating to roads. In addition, the separate dual-track railway being constructed from Bangkok to Chiang Khong will connect with R3A, which will in turn connect to the high-speed rail. At that point, any cargo destined for the river would also need to go by road, east-to-west for roughly 54 kilometers from Chiang Khong to Chiang Saen.

This is unlikely, as the MOU’s cancellation lessened the river’s competitiveness and increased the use of R3A and R3B, a trend that has convinced many businesses to simply switch to roads for the entire journey. China exercises stricter standards and controls over goods and containers arriving by river than by road (insisting that pineapples on

⁴⁷ See Chiang Saen Customs House, https://chiangsaen.customs.go.th/list_strc_download.php?ini_content=statistic_and_report_180205_01_201024_01&ini_menu=&left_menu=menu_statistics_report&left_menu=&show_search=&root_content_group=&order_by=&cg_order_by=&cg_sort_type=&root_left_menu=, accessed on 2 May 2025.

vessels be pre-peeled, for example) and lacks sufficient staff at Guanlei for the purpose, causing another delay. In July 2024, China named Guanlei a ‘designated port for imported fruits’ and so began allowing Thailand to export fruits to China tariff-free—effectively a narrow exception to the cancelled MOU. Yet, as R3A offers faster customs clearance through checkpoints, reducing the risk of spoilage, fruits have not been among the top 10 exports from Chiang Saen since the start of the pandemic, except perhaps under the ‘miscellaneous’ label, and the new allowance at Guanlei is not expected to change that. Moreover, it is limited to fruits. Thai authorities are currently trying to negotiate a renewal of the MOU for all goods under a Chiang-Rai-Kunming ‘sister cities’ scheme.

The opening of Chiang Saen’s port in 2013 partly accounted for the previous ‘favorable currents’ of commercial navigation on the Upper Mekong, but remaining infrastructure gaps, chiefly a crane, have limited its growth capacity and the comparative appeal of moving cargo by vessel. And this has worked both ways, as the lopsidedness of Chiang Saen’s activity would seem to indicate decreasing interest or economic advantage for upstream countries, including China, in shipping cargo south. Kunming too has focused more in recent years on roads.

Whatever its overall effect on commercial navigation, Laos’s Ban Mom port is unlikely to directly benefit Thailand, given that R3A connects to Ban Mom as well as it does Chiang Saen. According to an academic in Chiang Rai, citing Thailand’s Marine Department, “Ban Mom port is being designed to accommodate large cargo vessels, particularly during the high-water season, and is projected to evolve into a deep-water port in the long term. This would significantly increase the Mekong River’s capacity to handle regional imports and exports. Such infrastructural development suggests a shift in the balance of logistical power in the region, with Laos positioning itself as a key transit country in the China-ASEAN trading landscape.”⁴⁸

Two more reasons, related to one another, also account for the rapid rise in road transport relative to the river. The first, pertaining to Thai exports heading north, is unstable water levels on the Mekong. The MRC stated in early 2021 that “[e]levated water levels due to hydropower dams may assist development of navigation in Lao PDR and Cambodia, but only if dams are sited to also suit IWT.” The sentence’s omission of Thailand was telling, as was its qualification. For while higher water itself has not adversely affected the Upper Mekong’s commercial navigation—elevated water levels allow for larger ships regardless of the season, and dams in Laos are equipped with ship locks—the unpredictability of when the water will rise has.

Interlocutors explained that, aside from Chinese New Year (late January-early February), Songkran (mid-April), and Chinese National Day (October), when China is known to not release water from its upstream reservoirs, Thai ports and vessels seldom know in advance when water will be held or released. China reportedly has an association of Mekong-related actors that can negotiate with the dams—particularly Jinghong dam (located near Jinghong port)—to release water. As Jinghong dam has the greatest effect on shipping from Chiang Saen, Thai port and vessels operators sometimes call their counterparts in China to get information as to when, and with how much cargo, to depart. Otherwise, the uncertainty can cause vessels to run aground in shallow water or underutilize increased depth, both of which are discouraging economically.

⁴⁸ Interview with Aree Binprathan, Graduate Program, Regional Development Strategies, Chiang Rai Rajabhat University, Chiang Rai Rajabhat University, Chiang Rai, Thailand, 23 April 2025.

The second reason pertains to Thai imports originating mostly from China and to the river's navigability relative to its natural features, following the on-again/off-again/cancelled status of the various improvement projects. At the time of the cancellation in early 2020, 500-ton vessels could travel year-round from China's Simao port to its Nuozhadu transport hub; 300-ton ships were clear from Nuozhadu to the Green/Friendship Triangle; and from there to the Golden Triangle—inclusive of Chiang Saen—vessels of 150 dead-weight-tons could move throughout the year and those of 200-300 tons seasonally.⁴⁹ In 2018, the Marine Department of Thailand noted yet again that one berth of 500 dead-weight tons was to be built at Chiang Saen port during the second phase (2020-2025) of the JCCCN's Development Plan.⁵⁰ This has not happened, though the port's capacity to accommodate ships of only 300 tons seasonally has increased to 300 during the dry season and to 400 during the wet season or when water is released upstream.

Yet all vessels over 150 dead-weight tons belong to China—ships that seldom come as far south as Chiang Saen. China has 77 vessels on the Mekong compared to Thailand's 21 (Laos has 501 and Myanmar 58).⁵¹ The MRC forecast in 2015 that cargo through Chiang Saen port would reach 808,000 tons by 2020,⁵² and in 2021 the International Labour Organization (ILO) stated that an "estimated 800,000 tons of cargo are shipped annually between China, Thailand, Myanmar and Lao PDR".⁵³ Commercial navigation grew as predicted to that point. But the MRC appears to have been incorrect in also predicting a decade ago that "the progressive increase in cargo boat capacity from the current 100 DWT to 500 DWT in future will reduce IWT operating cost and increase IWT competitiveness and modal share against road transport in Lao PDR, thereby boosting its growth prospects" (emphasis added).⁵⁴ Cargo boat capacity has increased accordingly and operating costs have been reduced, resulting in boosted growth and a speedy recovery from Covid-19. But commercial navigation's growth prospects both in absolute terms and relative to road (and rail) transportation appear much less promising, since south-bound Chinese shipping to Thailand has barely budged since the end of the 2000s.

Conclusion

The success of any endeavor depends upon how it is measured, and by many measures—perhaps most—commercial navigation on the Upper Mekong River has been successful in Thailand. Comparing the express goals and aims of the post-Cold War period, when such navigation received its first serious examination, with the results of all three of its subsequent eras, reveals a steady rise in the use of the river for transporting goods between and among the four countries through which it flows in its upper reaches. Aside from a normal and negligible ebb and flow year-by-year along the overall incline, the only two appreciable dips in navigation between 2000 and 2025 occurred on account of outside and outsized events: a global financial crisis and a global pandemic. Moreover, the upward trajectory is evident in both quantitative—numbers, figures, percentages—and qualitative terms, principally the desire, duly realized, to see riverine transport become an integral part

⁴⁹ See Supalak Ganjanakhandee, "Thailand Uses Participatory Diplomacy to Terminate the Joint Clearing of the Mekong with China", *Perspective*, ISEAS-Yusof Ishak Institute, Singapore, Issue No. 30, 17 April 2020.

⁵⁰ See Thanatip Jantarapakde, "Waterborne Connectivity in Mekong-Lancang River", Marine Department of Thailand, 2018.

⁵¹ See Chiang Rai Regional Port Authority Office, slide shared by Acting Sub Lt. Kansinee Rodliang, Lecturer, Mae Fah Laung University, 25 April 2025.

⁵² See Mekong River Commission Navigation Programme, *Design of a Masterplan for Regional Waterborne Transport in the Mekong River Basin, Final Report Volume I*, December 2015, p. 129.

⁵³ Cacaud, P., International Labour Organization, *Conditions of work in inland navigation in Southeast Asia: The case of the Mekong River system*, 7 December 2021, p. 16.

⁵⁴ Mekong River Commission Navigation Programme, *Design of a Masterplan for Regional Waterborne Transport in the Mekong River Basin, Final Report Volume I*, December 2015, p. 143.

of an expanding multimodal system of linkages. Setting aside non-commercial measures, such as the environment, (geo)politics, and public perceptions, navigation on the Upper Mekong for commercial purposes has been a growth industry in Thailand for a quarter-century.

A deeper and disaggregated look, however, as well as one that compares commercial navigation with roadways and railways, reveals a more mixed conclusion. Having tentatively returned during its third era to pre-Covid levels—when it peaked—commercial navigation on the Upper Mekong is most likely slated less for a new peak than for an uneven plateau. And even should that plateau reveal a modest incline, it is poised to fall further behind roads, and eventually rails and the nexus between them, than it is to catch them. As a means of cross-border commerce, the Mekong has succeeded in its own right, but in the multimodal context envisaged by the GMS and its six member countries, the river is ceding ground and settling into the role of junior partner.

Recalling that this role is not entirely inconsistent with the GMS and MRC projections over the three eras, it does not itself necessarily represent a shortcoming. What does, however, are indicators that some of the assumptions upon which the competitiveness of commercial navigation was based have proven unreliable—and, more to the point, are unlikely to prove otherwise in the years ahead.

Starting in Thailand, several informants expressed resignation that Chiang Saen port has simply not lived up to its billing in the run-up to its completion in 2013, symbolized by the continued absence of a crane that might invite more cargo. Moreover, if Thailand has not been counting the considerable amount of cargo that leaves Chiang Saen marked as ‘Thai’ but changes its nationality before reaching China, then the port is actually being ‘maxed out’ to an even greater degree than it would appear. If it is exporting even more cargo than official statistics indicate, then any argument (based on those statistics) that a crane would attract more cargo is even less compelling. From an export standpoint, there simply may not be much more growth potential.

Not so in Laos, albeit with the Mekong making only an ancillary contribution to commerce there as well. The dual-track railway being constructed from Bangkok goes to Chiang Khong, which handles only passengers, not to Chiang Saen. It then links up with R3A, which in turn runs through Laos’s Ban Mom port—a port whose very conception is difficult to justify if Chiang Saen were operating at its previously anticipated capacity. Whether by river or, more likely, by road—cargo from there can reach China’s Guanlei port directly. It will also reach Guanlei tariff-free if it originates in Laos or takes on a ‘Lao’ origin before it arrives, which is not the case for Thai goods other than fruits. Informants were non-committal as to whether the Chiang Rai-Kunming ‘sister cities’ arrangement, adapted from the cancelled MOU, will eventually come to fruition.

It is China, however—just as it was during the 1990s and has been throughout—whose assumptions and actions are having the greatest effect on the nature and stature of commercial navigation on the Upper Mekong. If there has been one consistency over the three eras, it is the disproportionately small volume of Chinese exports traveling south on the river, at least as far as Chiang Saen. It is disproportionate relative to China’s overall export market and capacity, and to the total cargo tonnage at issue. What makes this consistency stand out are the significant changes (the inconsistencies) made to the conditions of navigability that China expressly supported, at least in part, to increase its river-bound exports. Chief among these were the initial, three-phase Upper Mekong Navigation Improvement Project and the subsequent alterations of the river conducted with JCCCN approval over several decades. Second chronologically but increasingly at

the fore, are the dams China has built and/or financed on the Upper Mekong and whose reservoirs' discharge, critically, it controls. China has not only ensured that the dams include ship locks but often pressed for larger locks during the design phase.

From at least an export standpoint then, the cancellation of the rapids project in Chiang Saen in early 2020 seems not to have declared a limit on the potential of cargo on the Upper Mekong but to have merely acknowledged one with which China was already comfortable. As one informant offered, China fell short of its original goal in 2002 by only one set of rapids and only one classification of vessel.

Concerning China's imports, the lion's share of Upper Mekong cargo with potential to rise further, the limit may simply be at a point—at a port—closer to Kunming on the map: Ban Mom. Most of the financing for Laos' new port comes from the Chinese private sector after all, and it was China, not Thailand, that cancelled the MOU granting Thai goods the same tariff-free privilege as Lao goods. Though even then, given the stricter standards and controls China enforces on cargo arriving by river than by road and the progressing road-rail projects, Ban Mom's overall contribution may come to resemble Chiang Saen's in the long run.

As it was originally intended, commercial navigation on the Upper Mekong River has become an integral part of a multimodal system of connectivity between China, Myanmar, Laos, and Thailand. It will remain so, only to a lesser degree, and less still compared to its land-based counterparts.



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