



China's 21st century maritime silk road: Challenges and opportunities to coastal livelihoods in ASEAN countries

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ABSTRACT

Despite growing interest in how the emerging blue economy affects coastal livelihoods, there is a lack of understanding of Chinese investment in this context. This study explores ongoing practices of Chinese maritime investment in ASEAN countries and emerging patterns of the interaction between Chinese investment and coastal livelihoods. We reviewed the literature on the Belt and Road Initiative (BRI) to create a framework for assessing the challenges and opportunities of Chinese maritime investments under the 21st Century Maritime Silk Road (MSR) as part of the BRI. Examining primary and secondary sources, we outlined Chinese maritime investment in the areas of fisheries and mariculture, and tourism, and reviewed challenges and opportunities to coastal livelihoods within our framework. While offering economic opportunities, including jobs, it has presented challenges for distributing benefits of maritime investments to local residents.

1. Introduction

Recent marine policy scholarship has documented how the concept and implementation of the blue economy have increasingly generated challenges and opportunities for coastal livelihoods [1–3]. While definitions and uses of the term remain contested [4], the economic gains from utilising oceans and marine resources in new ways can come with costs for the environment and local communities [5–8]. Despite China's highly significant role in oceans economies and governance, little has been documented about China's role in this process. There is a need to better understand China's role in overseas maritime investments and how they interact with coastal livelihoods. Building on the emergent scholarship on the blue economy, this review examines the policies and practices of Chinese overseas maritime investments in the Belt and Road Initiative (BRI), with a focus on how they interact with illustrative sectors in coastal livelihoods from the Association of Southeast Asian Nations (ASEAN) countries.¹

In 2013, Chinese President Xi Jinping announced the centrepiece of foreign policy, the BRI, consisting of the Silk Road Economic Belt (SREB) and the 21st-Century Maritime Silk Road (MSR). The SREB and the MSR create land and maritime connectivity respectively, which aim to

generate linkages beyond transport and logistics infrastructure across countries and connect back to China as a hub. We chose the case of ASEAN countries for this study because ASEAN countries have been a site of particularly intense Chinese investments and geopolitical activity, given their economic and political importance to China [9,10]. ASEAN countries along the coastal line are important actors in the MSR connecting the ASEAN region through the South China Sea (SCS) (grey lines in Fig. 1).

Beijing has prioritised diplomatic relations with ASEAN countries since the late 1990s, and ASEAN is the first economic union or actor with which China initiated negotiations for a free trade agreement [12]. In addition to economic relations, ASEAN-China relations are further complicated by territorial disputes in the SCS. The Philippines and Vietnam, for instance, have been involved in disputes over China's territorial claims for Scarborough Shoal and the Spratly Islands. Given the ASEAN's strategic significance to China, it is not surprising to see that Chinese maritime investment has inundated ASEAN countries since the launch of the BRI (Fig. 1). While existing studies examined political and strategic motivations of China's engagement with ASEAN [9,13], this study moves beyond this debate and focuses on how Chinese investment has been unfolding on the ground and affecting coastal

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¹ ASEAN countries include Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Our study focuses on coastal countries among ASEAN, which cover all except Laos.

livelihoods. Recently, emerging studies have examined how Chinese investments are implemented in terrestrial parts of Southeast Asia [14–16] and suggested that the benefits from the investments may not trickle down to the local population, particularly by exacerbating social inequity for the vulnerable and low-income groups [17,18]. Building on this nascent literature, we focus on the development and impacts of Chinese maritime investments in ASEAN countries.

We do not intend to provide a comprehensive overview of Chinese investment in ASEAN countries. Instead, our goal is to highlight additional challenges and opportunities brought by Chinese investments to coastal livelihoods using the illustrative examples of fisheries, mariculture, and tourism sectors. Using primary and secondary sources, we captured the current practices of Chinese maritime investment and reviewed emerging pathways by which Chinese maritime investments interact with coastal livelihoods. Our review suggests that Chinese investment offers economic opportunities but that the speed and scale of the Chinese investment may overwhelm local capacity to address additional challenges faced by local residents.

Our study makes contributions to existing scholarship in two ways. First, this study adds to the literature on the rapid growth of global policy, private sector, and civil society attention on coasts and oceans, notably associated with the blue economy [4,19], by examining the role of Chinese overseas maritime investments. Much of this emerging literature has focused on the implications of the blue economy for

environmental sustainability and social equity for coastal livelihoods [1, 3]. However, despite China's increasing role in global ocean use and governance [20], beyond the distant water fishery [21,22], the role of trade [23–25], and investments in port developments [26–28], comparatively little attention has focused on the role of Chinese overseas coastal and ocean investments. Chinese investors with massive capital have become interested in the Southeast Asian region as the “frontline” of the MSR (p.330) [29]. In this context, it is important to understand how Chinese investments affect coastal livelihoods and how they shape the emerging landscape of economic interests in the maritime sphere. Our study examines the emerging impacts of Chinese investments on coastal livelihoods by investigating how they interact with ongoing patterns of livelihood change in coastal Southeast Asia [30–33]. Particularly, we highlight how Chinese investments create additional challenges and opportunities for coastal livelihoods, intensify particular changes – for instance, with a concentration of tourism investments – and permeate through local governance.

Second, this study contributes to the literature on China's BRI by distinguishing between Chinese maritime investments and land-based investments. Most studies on China's BRI do not distinguish between the MSR and SREB and tend to aggregate the investments as the BRI. Although this view can provide a broad picture, maritime investments involve a different set of countries and local actors and political, economic, and social dimensions compared to land-based investments [34,

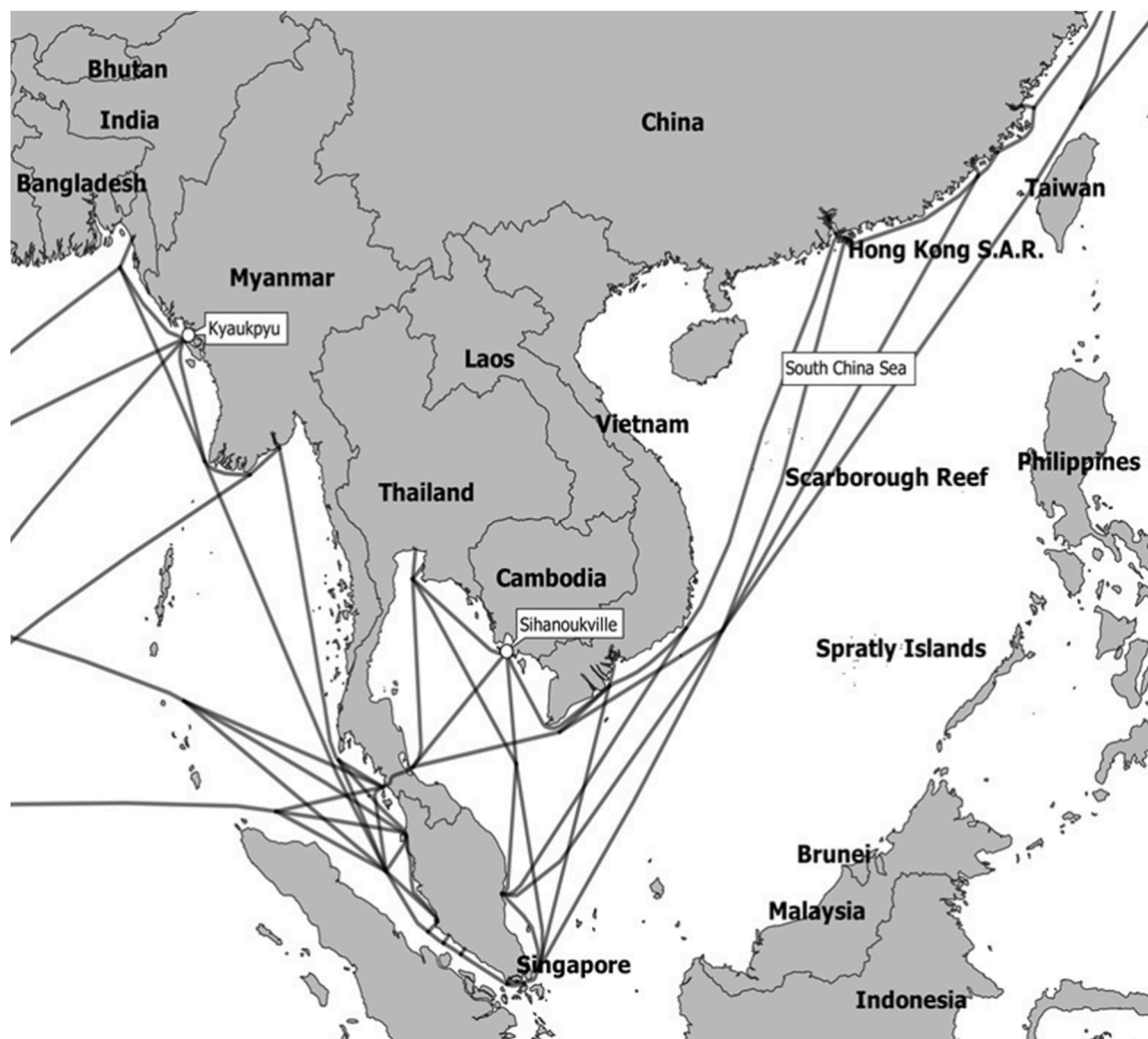


Fig. 1. 21st Century Maritime Silk Road in Southeast Asian region, Source: BRI Database in the World Bank (<https://datacatalog.worldbank.org/dataset/bri-database-reed-and-trubetskoy-2019>), Note: Grey lines represent existing and planned transportation networks as a part of the BRI [11].

35]. In the global context of increasing attention to coasts and oceans, it is important to assess how Chinese BRI investments interact with these livelihoods and how such interactions and outcomes compare with more well-known terrestrial examples.

2. Understanding the 21st century maritime silk road

2.1. Motivations and implications of belt and road initiative

Significant scholarly and media attention has discussed whether Chinese investment presents economic opportunities or security and political threats to host countries. On the one hand, the BRI represents a tool to fulfil Beijing's political and strategic interests. In this view, the BRI is China's response to the US pivot to Asia and deteriorating diplomatic relations with other countries in the region [36]. As the US has been pushing back to contain China's rising power, Beijing has launched the BRI in order to balance the US strategy [37,38]. While this argument considered Beijing's motivation to be a protective and defensive response in power competition, others argued that Beijing's motivations are more explicitly aggressive and assertive. For instance, the BRI has been compared with the Marshall Plan, the US economic aid to Europe in post-World War II [39], reflecting the concerns regarding Beijing's economic resources developed into security and political threats to others [40]. Similarly, some referred to Chinese investments as "debt-trap diplomacy", making low-income countries financially unsustainable in the long term and, therefore, vulnerable to China's influence [41].

On the other hand, others argued that China's domestic interests are the main driver of the BRI [42,43]. While Beijing's political and strategic interests are inevitably embedded in the BRI, these scholars argue that an overemphasis on geopolitical dimensions may lead to incomplete analysis [43]. Inherently, the BRI aims to boost China's economic growth and address internal political dynamics [34,43–46]. Supporting this focus on economic and domestic political dynamics, recent studies pushed back on the debt-trap diplomacy argument [47,48]. For instance, some weaker ASEAN countries have been able to push back and shape the ways in which Chinese investors implement BRI projects [49]. They may engage in hedging towards a rising power, such as China, by pursuing contradictory strategies to balance trade-offs between choosing operative and confrontational policy options [50,51]. In doing so, the ruling elites of these countries "seek to capitalise on the dynamics of rising power" in order to garner their domestic political support and authority (p.181) [50]. In this sense, the domestic interests of the recipient governments play a significant role in shaping the nature of BRI projects rather than the Chinese government [47,52–56].

Additionally, China's incoherent and fragmented financing system impedes Beijing's advancement of strategic policy goals through delivering the BRI [42,47]. In this sense, the BRI projects are "loose policy envelopes" involving fragmentation, decentralisation, and internationalisation [42,44,47]. They are intentionally loose in articulating plans and roadmaps, "enabling dozens of agencies to interpret and implement BRI according to their sectional interests, not a centrally-defined strategy" (p.1425) [42]. By extension, the way in which the BRI projects are implemented is often seen as incoherent, accommodating competing domestic interests [42]. Indeed, local governments and companies have been implementing the BRI projects in "a highly fragmented fashion" (p.710) [44]. For instance, discrepancies of interests between the central and local governments can inevitably create incoherent policy directions in overseas port investments [27]. Studies emphasising these aspects argue that it is unlikely that the BRI can become a tool for strategic objectives, as the BRI projects are evolving to accommodate China's internal politics and power dynamics.

Building on this debate, we constructed a framework spanning from threats to opportunities in economic and non-economic (political and strategic) dimensions (Fig. 2). By placing keywords from each discussion, this framework aims to visualise different views on Chinese

investments in general. Each axis represents not a continuous but a binary scale. For instance, the keywords included in the economic opportunities axis denote that they create economic opportunities for the BRI partner countries, while those in the economic threats axis represent that they generate threats to the economies of the BRI partners. We do not argue that this framework includes all perspectives of the current debate.² However, it offers critical angles to assess an emerging volume of literature on Chinese investment and provide guidance to orient our attention in examining the challenges and opportunities of Chinese investments on coastal livelihoods.

2.2. Chinese Investment under the 21st century maritime silk road

Maritime policies play an important part in Beijing's grand strategy of becoming a global power. However, it was not until Chinese President Hu Jintao's leadership (2003–2013) when Beijing provided explicit political support to expand its power in ocean spaces [57]. In 2012 (18th Party congress), Beijing highlighted the aspiration for becoming a strong maritime country (海洋强国) as a national goal for the first time. Under this overarching policy priority, the MSR plays an important role in implementing Beijing's ambition in ocean spaces.

While Beijing did not provide specifics, it has highlighted a number of key concepts to develop the MSR. To enhance connectivity in the maritime sphere, the Vision for Maritime Cooperation Under the Belt and Road Initiative (一带一路"建设海上合作设想) [58] proposed blue economic corridors (蓝色经济通道), consisting of three parts, including channels: (1) connecting China-Pakistan, Bangladesh-China-India-Myanmar through the South China Sea and the Indian Ocean, and then continuing to the Mediterranean Sea and into the Atlantic and Africa; (2) linking China, the South Pacific and then Australia; (3) starting from China to the north-west of Russia's northern coast, and then to the Nordic region and parts of Europe through the Arctic Ocean. Using a set of these corridors, Beijing aims to achieve "ocean-based prosperity" along with other goals of "green development," "marine security," "innovative growth," and "collaborative governance". By the end of January 2021, Beijing has indicated that 140 countries and 31 international organisations signed BRI documents, including bilateral declarations, joint communique, and a memorandum of understanding [59]. While they are not necessarily legally binding and may simply represent high-level policy rhetoric, Beijing has considered these countries partners of the BRI. All countries in ASEAN have been identified as BRI partner countries. ASEAN as an organisation has signed or joined nine documents with China between the period of 2013–2018. At a country level, several countries, including Malaysia, Cambodia, Vietnam, Brunei, Bangladesh, Indonesia, and the Philippines joined bilateral documents on the BRI.

3. Chinese investment in ASEAN

Chinese investment in ASEAN peaked in 2017 and then decreased slightly afterwards (Fig. 3). It has been lower and did not fluctuate as much in relation to investments from Japan and the US. The comparison shows that Chinese investment is significant but still smaller than other major countries. While Beijing highlights the significance of the BRI, it is difficult, if impossible, to grasp a comprehensive overview of projects under the MSR [29]. Beijing does not have an official map of the BRI with participating countries in order to emphasise the openness and inclusiveness of its nature. Furthermore, it indicated that it would not limit the scope of the BRI, and therefore it will not produce the fixed list and map of BRI countries [60]. This vagueness offers flexibility for Beijing to include projects as it sees fit.

We collected 11 bilateral documents between ASEAN countries and

² For example, we did not include environmental dimensions in this framework for the purpose of study.

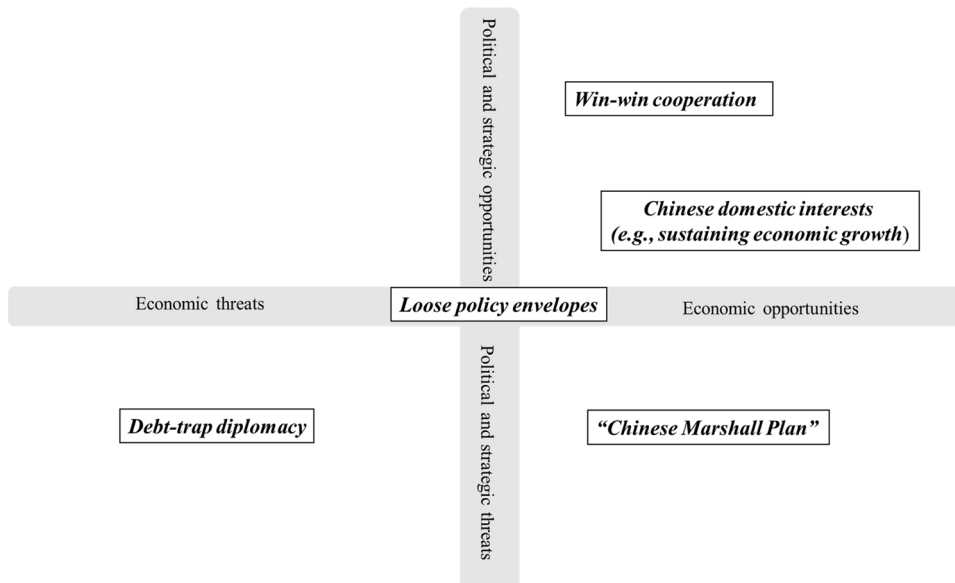


Fig. 2. Challenges and opportunities arising from the BRI.

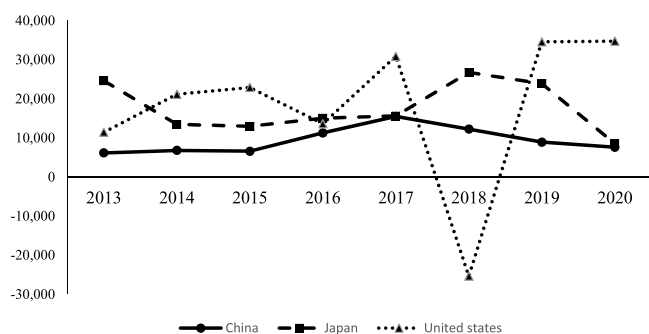


Fig. 3. Flows of inward foreign direct investment into ASEAN (in million USD), Source: ASEAN Stats Data Portal (<https://data.aseanstats.org/>).

China from the official BRI website³ to identify the maritime investment areas and sectors that Beijing prioritised. While the official statements reflect the intention of the state actor (i.e., Beijing) on the priority areas of Chinese investment, we note that non-state actors (i.e., Chinese companies) may bring investments in other areas such as gambling industry. In this regard, we consider these areas as relevant to the MSR although the investments in some areas – outside of Beijing’s intention – may not be construed as ‘official’ MSR.

Beijing has been promoting ocean economic development dating back to the early 2000s and classified 12 ocean economy industries (OEI), including seawater utilisation, electricity, mining, salt, chemical engineering, pharmaceuticals, shipbuilding, hydrocarbon/oil and gas, civil engineering, marine fisheries and mariculture, tourism, and transportation and logistics [61]. Using this classification, we coded whether bilateral documents include cooperation pledges in one of the OEI sectors. We coded if one of the OEI sectors was mentioned and

0 otherwise (Table 1). In doing so, our coding includes inland and maritime investments in the sectors unless indicated otherwise. The most frequently mentioned sectors were marine fisheries and mariculture, transportation and logistics, and tourism. Another area that has not been included in China’s OEI but was frequently mentioned in the bilateral documents was the energy sector – which is relevant to one of the OEI sectors, the hydrocarbon/oil and gas sector.⁴ Likewise, the ASEAN-China documents included the cooperation commitments in energy sectors along with transportation and logistics and tourism sectors. This result implies China’s growing interests in energy sectors with some ASEAN countries, including Cambodia, Vietnam, Brunei, Indonesia, and the Philippines. Similarly, other frequently mentioned sectors – marine fisheries and mariculture and tourism – can be viewed as the potential focus of Chinese investment.

The section below highlights how Chinese investment in marine fisheries and mariculture, and tourism may present challenges and opportunities to coastal livelihoods in ASEAN countries. Coastal livelihoods in Southeast Asia are typically highly flexible, with varying degrees of occupational multiplicity, seasonality, and diverse livelihood activities across rural to urban regions [62–64]. We recognise that the development of transportation and energy infrastructure can influence coastal livelihoods in specific locations, for example, through provision of new employment or reduced access to coastal lands or fishing grounds [65]. However, as some of these investments may be only peripherally or not relevant for coastal livelihoods (e.g. inland investments), we focus on mariculture, marine fisheries, and tourism as particularly widespread and directly relevant sectors for coastal livelihoods across the region [66–71]. Marine fisheries and mariculture, by their very nature, are likely to affect coastal livelihoods, while much tourism in the region is focused on coastal regions [66].

3.1. Mariculture

Beijing’s long-lasting interests in overseas fisheries and mariculture have continued and integrated into the MSR [72]. Notably, Beijing has highlighted the mariculture industry as one of the main areas of cooperation in the ocean economy. For instance, the Vision indicated that “developing countries along the Road will be supported in mariculture

³ The documents reviewed here were mostly declarations or joint communiques and often included a list of memorandums of understanding (MOU) or cooperation plans as a follow-up or part of cooperation activities. We note that this list may not be a comprehensive representation of bilateral documents between ASEAN countries and China. However, it includes all bilateral documents that have been officially released by China. In this sense, it provides an initial point to capture an overview of Chinese investment, and particularly China’s prioritised industry sectors.

⁴ The ‘energy’ category in the table could include hydrocarbon/oil and gas but may go beyond these specific energy resources.

Table 1
Bilateral documents between ASEAN countries and China.

Countries	Year	Seawater utilisation	Hydrocarbon/Oil and Gas	Civil engineering	Marine fisheries and mariculture	Tourism	Transportation and logistics	Energy
Brunei	2018		1		1			1
Cambodia	2015			1			1	1
	2017			1			1	
	2018						1	1
	2018						1	1
Indonesia	2018					1		1
Malaysia	2018				1			
Philippines	2017		1		1	1		
	2018		1		1			1
Vietnam	2017	1			1		1	1
	2017				1		1	
Total		1	3	2	6	6	6	6

to improve livelihoods and alleviate poverty” under the MSR (p.6) [58]. Indeed, Beijing intended to expand mariculture cooperation by using China’s technology and assisting in processing, equipment, and feed development with developing countries along the BRI in order to develop a sustainable mariculture industry [73]. Additionally, China’s interests in developing mariculture technology are part of its long-term goal of achieving food security [74].

Since the launch of the Vision, China has been mainly focusing on engaging in mariculture technology transfer and development with ASEAN countries. In November 2018, the Ministry of Agriculture and Rural Affairs (MOA) established the Tropical Countries Aquaculture Science and Technology Innovation Cooperation Project (热带国家水产养殖科技创新合作) involving Chinese fisheries research institutions and related organisations led by the Chinese Academy of Fisheries Science. This project aims to implement the BRI projects in agricultural cooperation with a focus on developing and managing mariculture technology in tropical countries [75]. The Chinese Academy of Fisheries Sciences delivered 16 cooperation projects (CNY120 million) with ASEAN countries focusing on all aspects of mariculture operations, including breeding, disease control and prevention, environment-friendly mariculture facilities, and upgrading and designing of mariculture facilities and equipment in the period of 2015–2019 [76].

In 2018, the Institute signed a memorandum of understanding (MOU) on mariculture technology transfer and development with the Palawan Council for Sustainable Development Staff and the Bureau of Fisheries and Aquatic Resources (Mimaropa Division) of the Philippines [70]. This was part of the 2017–2019 China-Philippines Agricultural Cooperation Action Plan and the cooperation between China and the Philippines in 2017 [77]. In 2019, the Fisheries Machinery and Instrument Research Institute of the Chinese Academy of Fishery Sciences and the Thai Fisheries Department signed an MOU as part of implementing BRI in Thailand, including building a Sino-Thai mariculture and seafood processing park and promoting technology transfer, development, and training [78].

Similarly, the Yellow Sea Fisheries Research Institute offered training programmes on mariculture technology with Southeast Asian countries and other MSR partners as part of the Belt and Road Mariculture Technology Base (农业农村部“一带一路”海水养殖技术培训基) under the MOA established in 2018 [79]. In September 2020, the Institute launched the 2020 Sailing to Sea Talent Programme as part of the BRI Mariculture Technology Training supported by the MOA and the Network of Aquaculture Centres in Asia-Pacific. Participants of this Programme included government officials, scientists, managers, fisheries companies’ executives, and technicians from 23 countries covering Southeast Asia, Pacific Islands, Africa, and South America [80].

Additionally, local governments, other research institutions, and Chinese companies also played a critical role in advancing mariculture cooperation projects. For instance, Guangdong province has engaged in a mariculture cooperation project as part of the BRI with ASEAN countries along with the South China Sea Fisheries Research Institute,

South China Sea Institute of Oceanology, Chinese Academy of Sciences, Guangdong Ocean University, Guangdong Marine Fisheries Experiment Centre, Guangdong Fishery Germplasm Protection Centre, and Jiangmen Zhenye Aquatic Products Company [81].

3.2. Marine fisheries

In November 2011, China proposed establishing the China-ASEAN Maritime Cooperation Fund to implement projects in maritime sectors covering “connectivity, fisheries, marine science and technology, environmental protection, navigation security, search and rescue at sea, and maritime culture transport” [82]. Other funding sources include the China-Indonesia Maritime Cooperation Fund, the Asian Infrastructure Investment Bank, and the Silk Road Fund (p.12) [58]. Although the Fund was established prior to the official announcement of the BRI, it has played an important role in supporting the fishery technology cooperation projects as part of the China-ASEAN Modern Marine Fishery Development Pilot Project on Technology Cooperation and Industrialisation (中国-东盟现代海洋渔业技术合作及产业化开发示范), which is, in turn, part of the 21st Century MSR.

In 2014, the planning stage of the projects began with Chinese experts in marine fishery science and technology to discuss the ways in which China and ASEAN countries can promote cooperation in marine fisheries in alignment with strategic directions under the China-ASEAN Maritime Cooperation Fund [83]. Within the China-ASEAN Pilot Project funded by the China-ASEAN Maritime Cooperation Fund, Chinese fisheries research institutes have launched bilateral engagement with ASEAN countries. For instance, the South China Sea Fisheries Research Institute (SCSFRI; part of the Chinese Academy of Fishery Sciences) has signed an MOU on agriculture and fisheries research cooperation with the Cambodian government and Cambodian fisheries companies in June 2017 [84]. The SCSFRI has led fishery technology training with the Philippines and joint activities in fishery release and conservation in Beibu Gulf with Vietnam in 2017 [85]. In the same year, the experts from SCSFRI have visited and promoted a fishery industrial park in Myanmar [84].

In addition to these cooperation projects, Chinese investments in marine fisheries have been particularly focused on building fishing bases, which aim to support the Chinese distant water fleet (DWF). The fishing bases are intended to assist the Chinese DWF to obtain fishery rights in the countries with fishing bases, providing logistics and emergency services, and training and rest areas for fishing crews [86]. In this sense, they have multiple economic functions, including providing support and supplies to the DWF, loading and unloading fish catch, processing distant water seafood products, and cold storage and logistics along with their important role in political and diplomatic aspects. They offer shelters for Chinese DWF and the bases to develop distant water fisheries industry overseas [87]. In Myanmar, the China International Trust and Investment Corporation, a Chinese conglomerate, plans to build the Kyaukpyu SEZ, including a deep-sea port and industrial park

[88]. This investment is expected to generate “more than 100,000 jobs each year for local residents and tax revenues of 15 billion dollars” during the first 50 years [89].

3.3. Tourism

The BRI has a specific focus on the tourism industry as part of promoting regional integration (Aries, 2017). Beijing has promoted tourism development in the 13th Five-Year Tourism Development Plan (《十三五”旅游业发展规划》) released in 2016, aiming to facilitate cooperation in tourism sectors along with the BRI partner countries including Russia, Korea, India, the US, the Central and Eastern Europe, Australia, Denmark, Switzerland, Kazakhstan, and ASEAN [88]. The interests in tourism have been embedded into the MSR, indicating that “China will also work with countries along the Road in developing marine tourism routes and high-quality tourism products and setting up mechanisms for tourism information sharing” (p.6) [58].

Beijing has been signing treaties such as visa exemption agreements and tourist promotion agreements with the BRI countries. There have been 95 visa exemption treaties signed between China and others covering diplomatic, service, and ordinary passports between 2013 and 2020 [90]. This type of agreement facilitated Chinese tourists to go abroad for sightseeing without the need for visas. As the visa requirement has been one of the barriers for Chinese tourists going aboard, the visa exemption treaties contribute to resolving this issue [91]. Along with visa waiver agreements, Beijing has promised to encourage Chinese tourists to choose the BRI partner countries (including the 21st Maritime Silk Road) as their destination. For instance, China and Cambodia signed an MOU for the Tourism Cooperation Plan to be implemented in 2017–2020 [92], aiming to attract 2 million Chinese tourists by 2020 [93].

Over the last two decades, the number of Chinese outbound tourists increased from 4.5 million in 2000 to 150 million in 2018, at an average annual growth of 16% [88]. Although these figures represent tourism in general, coastal tourism has been an important part of the tourist sector in Southeast Asia [70]. In 2018, the main destinations of Chinese tourists included Russia, Myanmar, Vietnam, Mongolia, Malaysia, the Philippines, and Singapore [94]. Particularly, there has been a sharp increase in the total number of Chinese visitors to ASEAN countries between 2013 and 2019, with Thailand as the top destination (Fig. 4).

The surge of Chinese tourists has appeared to facilitate Chinese overseas investment in tourism [95]. Chinese investors have been engaged in developing a range of facilities and services, such as accommodation and resort development, restaurants and food tourism, retail, urban and port area development, cruise and coastal tourism [88]. In 2015, there were 1082 Chinese companies investing in tourism [96]. While most of the Chinese tourism companies were in developed countries (approximately 72%), enterprises receiving China’s tourism

investments are also mainly located in neighbouring economies, including Northeast Asia (e.g., South Korea, Japan) and Southeast Asia (e.g., Cambodia, Thailand) [96]. A study has shown that Chinese companies prefer to invest in the tourism sector of the BRI partner countries with less cultural difference, similar institutional quality and environment with China, and a high percentage of Chinese immigrant population [96,97].

In this sense, it is not surprising to see the increase in Chinese investment in the tourism sector in ASEAN countries, such as Cambodia. In July 2019, Chinese companies owned 90 per cent of Sihanoukville businesses, including hotels, restaurants, and gambling dens [98]. In 2018, the joint venture between Chinese and Malaysian companies launched a one-billion-dollar resort project, Wisney World, including water parks, hotels, casinos, malls, gardens, and churches in Sihanoukville [99].

4. Discussion

In this section, we discuss challenges and opportunities emerging from Chinese maritime investment in mariculture, marine fisheries, and tourism sectors to coastal livelihoods in ASEAN.

The potential benefits of technology transfer in the mariculture and capture fisheries sectors include not only the development of domestic technology but also the improvement of equitable accessibility to domestic users and marginalised groups. Recently, China appeared to play a growing part in South-South technology transfer, notably in energy sectors – especially in hydropower industry – across African and Asian regions [100–102]. However, while China’s involvement can provide an opportunity in providing technology to developing countries, technology transfer is more than a technical process and “inherently political, starting from the decision on the technology to be transferred to the engagement with people in whose environment the technology is introduced” (p. 300) [100]. In this sense, the process of technology transfer needs to build upon “domestic institution-building” and “multi-actor engagement” (p. 300) [100]. Otherwise, the lack of local engagement and domestic institutions can lead to environmental damages and exacerbation of social inequity [102], in addition to an increase in the project risk [103].

In the case of mariculture technology transfer, important stakeholders such as small-scale fishers need to be considered [83]. Small-scale fisheries can be negatively impacted by mariculture expansion through restricted access to fishing grounds [104–106]. Partner governments can distribute the benefits of mariculture technology transfer (e.g., poverty alleviation) in an equitable way only with local engagement throughout the processes. The potential negative impacts on mariculture expansion for the supply of affordable, nutritious fish easily accessed by poorer consumers that are provided by small-scale fisheries [106] also needs to be considered.

In the marine fisheries sector with regard to Chinese development projects on fishing bases and ports, the benefits and challenges to coastal livelihoods in ASEAN countries are yet to be determined as some are still under construction. However, the experiences from other countries provide one indication of what might happen in ASEAN in the future. First, the development projects in the port areas can create potential challenges to small-scale fishers competing with industrial fishing. Fisheries are an important income source for individuals in coastal communities, especially those engaging in small-scale fisheries. As fishing bases are primarily for the industrial fishing fleet, industrial fishers would engage in fishing in the area. The coexistence of small-scale and industrial fisheries may be viable with effective governance to separate them or their informal relations [107]. However, in some cases, there can be conflicts between small-scale and industrialised fishers because of their different economic interests along with social, cultural, and legal environments [108]. As fishing bases funded by Chinese investments and other projects are being completed, such concerns have been already present among local residents in Myanmar, who

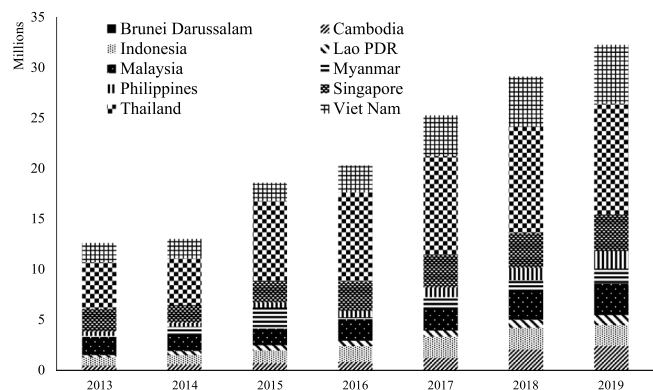


Fig. 4. Chinese visitors to ASEAN countries (in millions), Source: ASEAN Stats Data Portal (<https://data.aseanstats.org/>).

were “allowed to work only in one small area” and “lost their jobs, and [became] dejected” in the case of the Kyaukpyu port development project [109]. In this sense, the potential challenges would involve local residents’ displacement from port areas, leading to the inability to live in the coastlines they used to live or to fish in their inshore fishing areas.

Second and relatedly, the operation of fishing bases may lead to further income reduction for small-scale fishers through a reduction in catch. As fishing plants and processing zones have a larger capacity to produce seafood products compared to small-scale fisheries, a higher quantity of fish landings will be in demand. The development of Chinese invested fishing bases attracts more Chinese fishing boats, which may exacerbate overfishing. The experiences of Chinese industrial fishing (bases) in Africa highlight potential challenges for Southeast Asian countries. For instance, local fishers in Ghana using traditional fishing methods are often unable to compete with the scale and size of Chinese vessels [110]. In this sense, Chinese fishing bases can potentially lead to a reduction in fish catch from increased Chinese industrial fishing catch.

In the tourism sector, Chinese tourists contribute to an increase in GDP and labour demand creation [111]. Consequently, coastal communities benefit from the expansion in types and size of tourist sectors as there is a higher number of jobs and business opportunities [112,113]. Although there are insufficient statistics available to offer an exact growth rate of the local economy, this assessment resonates with other reviews. For instance, some locals gained employment in Chinese casinos with wages and benefits that are perceived to be high [113]. Additionally, local land and property owners can earn higher incomes from renting out their real estate to Chinese investors [113]. While Chinese investment in tourism can vitalise the economies of coastal communities, locals can face socio-cultural, environmental, and economic challenges [114].

First, the increase in land prices worsened the income disparity between local residents. In the case of Sihanoukville, higher property prices and living costs [115] led to financial distress to local renters and residents, while Cambodians with real estate gained benefits from higher prices of their lands and properties [116]. Furthermore, the local land reclamation process for the development project has prompted challenges to local residents in the area. In the Kyaukphyu development project in Myanmar, the land ownership of residents has been dismissed without official documents, although they have been farming in the area for generations [109].

Second, whether the Chinese invested large scale of tourist accommodation and facilities and a high number of Chinese outbound tourists can distribute economic gains to local residents remains open to debate. For instance, large resorts like Wisney World in Sihanoukville may not be able to coexist with small-scale tourism mainly run by fishers and locals. Small-scale tourist products such as homestays and eco-tourism have appeared to provide alternative income sources to fishers facing declining fisheries and relevant environmental problems [117]. This community-based tourism differs from a large-scale resort built with Chinese investments, which might bring economic benefits but may not settle within a community [118]. Furthermore, employment opportunities produced by these new tourist activities may not necessarily translate into local benefits [119]. Drawing upon the case of Jeju Island in Korea, Chinese companies are likely to hire those who speak Chinese and Chinese nationals leading to fewer job openings for the locals [119]. In this sense, it raises questions about how economic gains arising from Chinese tourism investments would be distributed to local residents and represent local interests.

Third, the Chinese invested gambling industry in Southeast Asia has created emerging and potential problems for local residents in coastal communities. Southeast Asia has affluent resources for coastal tourism [70], which has led to the growth of gambling industry as well. Chinese investors have developed online and offline gambling industries targeting mainland Chinese customers in the Philippines, Cambodia, and Myanmar. For instance, Sihanoukville and Manila have experienced a surge of casino and gambling dens [120]. This has created challenges in

the local community as crimes associated with gambling or illegal businesses have increased [121,122]. Addressing these issues and associated impacts on Chinese tourists, Beijing has issued a blacklist for casino destinations, including Southeast Asia [123]. However, as these investors operating overseas do not necessarily abide by Chinese regulations, these problems are likely to persist without implementing local policies.

5. Conclusion

This study reviewed the ongoing practices of Chinese maritime investment in ASEAN and identified opportunities and challenges emerging from the investments to coastal livelihoods, focusing on the mariculture, marine fisheries and tourism sectors. We understand that there are insufficient quantitative sources to present comprehensive statistics on the impacts of Chinese investment. Therefore, given the nature of the data currently available, our findings highlight preliminary assessments of emerging patterns of Chinese maritime investment. In doing so, we recognise the rapidly increasing involvement of Chinese maritime investment in marine and coastal spaces. While there is no specific list of MSR investments, we focused on the maritime investment that has been highlighted in official Chinese documents on the BRI. We find that Chinese investment in the marine fisheries and mariculture and tourism sectors is increasing rapidly while some of the investments, such as fishing bases, are not necessarily implemented. Chinese investment can potentially revitalise the local economy by offering new jobs and incomes to local residents. However, the opportunities are accompanied by challenges, mainly associated with the distribution of benefits to local residents (Fig. 5).⁵

This review offers insights into the current status of Chinese investment and its impact on coastal livelihoods as follows. First, our finding speaks to the emerging literature on the blue economy. Often the blue economy has emphasised economic value generation at the expense of the environment and local livelihoods [8]. Similarly, Chinese maritime investments bring new economic opportunities accompanied by potential challenges creating social inequity between local residents, and between Chinese investors and communities. While Chinese companies are increasingly localising their jobs in some African and Central Asian countries [124,125], the challenges may persist in the quality of jobs provided to local workers and income disparity between locals employed and unemployed. Second, the intensity of Chinese investment can potentially overwhelm the capacity of local governance to address the emerging challenges for local residents. While the types of challenges are not surprising, the rate at which this transition occurs may exacerbate the negative impacts on coastal livelihoods. Third, this review suggests the importance of local engagement in the process of development projects. Local residents are not usually aware of development projects occurring in their community. This lack of local engagement creates problems when local authorities or relevant actors attempt to identify and respond to the arising challenges. In doing so, social inequity presents as an issue not only between Chinese and local actors but also between different local actors. For instance, the new economic opportunities in the fishing processing zones may not extend to local fishers who are unable to fish and compete with Chinese industrial fishers. Finally, the quality and representation of Chinese investment in the local community matters. The potential social problems associated with the gambling industry investments can exacerbate the existing challenges faced by coastal livelihoods.

We propose that future studies need to examine Chinese maritime

⁵ The below figure is drawn from Fig. 2 with a change in the Y-axis label from political and strategic to social equity opportunities and threats. While the Y-axis broadly denotes non-economic challenges and opportunities, the political and strategic aspects represent an international context, and the social equity aspect pertains to a local context.

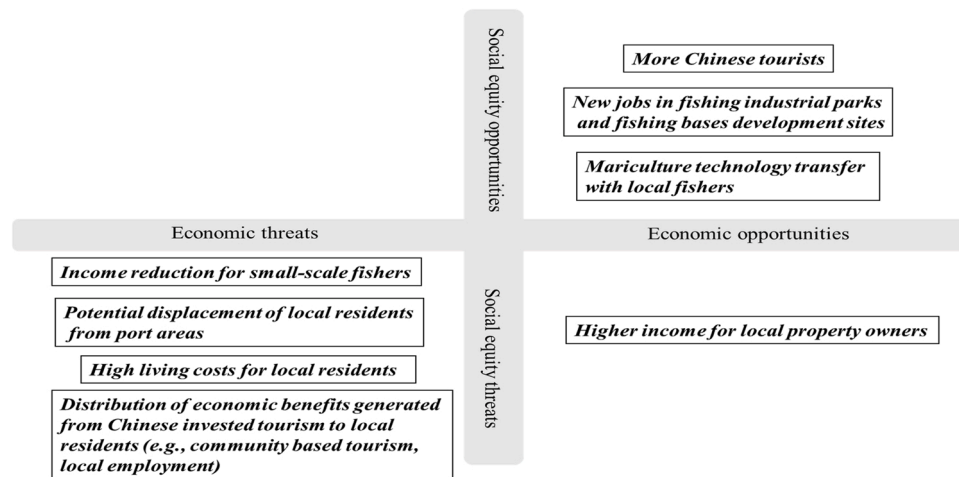


Fig. 5. Challenges and opportunities emerging from Chinese investment to coastal livelihoods.

investment in other regions, and the impact of the pandemic on coastal livelihoods in the areas with intense Chinese investments. The point of such attention is not to single out or demonise Chinese overseas maritime investments but rather to recognise the significance of their rapid increase in coastal livelihoods. First, a future study can focus on whether the opportunities and challenges discussed here apply to coastal communities in other regions involving a different set of investments and sectors where Chinese investments are increasing, including European, African and South and Central American countries. Comparative studies can improve our understanding of the overall impacts of Chinese maritime investments on coastal livelihoods. Second, the recent coronavirus pandemic has reduced the number of Chinese tourists, lowering incomes for those relying on tourism sectors. Future research can highlight how the pandemic has interacted with the opportunities and challenges that emerged from Chinese maritime investments.

CRedit authorship contribution statement

Annie Young Song: Methodology, Writing – original draft, Writing – review & editing, Formal analysis, Investigation, Visualization. **Michael Fabinyi:** Conceptualization, Writing – original draft, Writing – review & editing.

Declaration of Interest

None.

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