

# From Perahus to Cars

## Sectoral Planning and the Transformation of Fishing Villages in Kuching, Sarawak

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### **Abstract**

As Kuching, Sarawak expanded in the 20th century, Malay fishing villages on the edge of Kuching's rivers faced challenges due to congested waters and disruptions caused by sectoral planning policies. The villages' growth trajectories were determined by economic activities in their vicinity, such as industrial estates, trading ports, educational institutions, or eco-tourism in rainforest parks. Situated in various locations, they have undergone significant changes that are directly linked to the expansion of Kuching and the emergence of new infrastructure. The replacement of rivers with roads has gradually severed their historic connection to the river, leading to a fundamental reshaping of their built environment, livelihoods, and sense of community. This study examines the transformation of four Kuching fishing villages from the 20th century to the present day. Drawing on in-depth semi-structured interviews with villagers, preliminary fieldwork, studies of settlement morphology, and analysis of planning documents, this research uncovers the often-overlooked human costs of sectoral planning and offers valuable lessons for planners facing similar challenges in Southeast Asia and beyond. Through the lens of four fishing villages in Kuching, we reveal the complex interplay between infrastructure growth, social resilience, and economic viability in the face of rapid development and call for a nuanced approach to planning that prioritises the well-being of peripheral rural communities.

### **Keywords**

Southeast Asia, fishing villages, Borneo, sectoral planning, social resilience, settlement morphology

### **How to cite**

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## INTRODUCTION

As the cities in Borneo have undergone exponential growth in the past century, scholarly attention has often been captivated by early colonial settlements. This tendency to define a city's origins solely through colonialism or Western settlers has resulted in the overlooking of coastal villages and their contributions to urban development. Kozlowski et al. (2021)<sup>1</sup> briefly acknowledged the existence of coastal or water villages but failed to accord them the importance they deserve. Notably, however, they advocated for the preservation of these settlements.

From Kuching to Kota Kinabalu, Banjarmasin, and Pontianak, the initial development of these cities was inextricably linked to a maritime culture. Prior to the advent of roads, rivers served as the lifeblood of transportation throughout Borneo. The dense rainforest made traversing the land by foot incredibly difficult, necessitating the transport of building materials, food sources, minerals, and other essentials by boat. This water-based way of life shaped the identity of the Bornean people residing in cities.

However, since the 1970s, advancements in technology, alongside the clearing of rainforests, levelling of hills, and construction of extensive road networks, have led to a gradual decline in reliance on boats for transportation. This shift has been further amplified by government policies and structures surrounding waterborne transport and management. The enduring presence and resilience of fishing villages on the fringes of urban areas now represent the last vestiges of this fading culture.

The Sarawak River in Kuching bifurcates and flows into the sea through five river estuaries, which have constituted the principal source of sustenance for the fishing villages for centuries. Prior to the establishment of the port in Kuching, the centre of trade for northwest Borneo was located in Santubong, which was known as Po'ni according to ancient Chinese sources dating back to 860 AD.<sup>2</sup> Ships from across Austronesia, as well as Arab and Chinese traders, have been engaged in trade in Santubong since 200 AD, when the population was estimated at 10,000.<sup>3</sup> At the time, they would construct semi-permanent settlements during the monsoon season, awaiting a change in wind direction before embarking on another voyage.<sup>4</sup> Santubong ceased to exist by the mid-1500s, and northwest Borneo subsequently came under the rule of the Sultanate of Brunei. During the rule of Indra Sarik (1053-1096) in Santubong, several settlements were established in the vicinity of Santubong. Among these settlements were Sungey Buntak and Bakok, which subsequently became known as Kampung Buntal and Kampung Bako, respectively. Muara Tebas was first mentioned during the reign of Indra Ranga (1096-1131). Sungey Buntak became one of the ports for ship repairs in Santubong.<sup>5</sup> Consequently, three of the villages under consideration have been documented as existing for approximately a millennium. These settlements can be observed when one

departs from the city and proceeds towards the coast or along the Sarawak River. The way of life of the inhabitants of these villages is undergoing a process of change. In some cases, their identity is shifting as the population no longer depends on fishing as their sole source of income and takes on other jobs to adapt to the changing circumstances.

Data on the lifestyles and conditions of the Malay villages, including Boyan, Gersik and Simunjan, situated on the north banks of Kuching in the city centre, were recorded as early as 1953. These villages were found to be highly dependent on the urban economic activities across the river. In the mid-20th century, the area that is now known as Petra Jaya was characterised by vast expanses of rubber tree estates and small orchards owned by the local villagers. Furthermore, they would navigate the rivers and travel downstream for several days in the mangrove forest reserve in Rambungan and Buntal to procure wood for sale to the Chinese or for their homes.<sup>6</sup> The historical records in question are becoming increasingly valuable and poignant in light of the government's 2019 announcement of plans to develop and demolish the remaining villages on Petra Jaya, with the intention of relocating the villagers in a resettlement scheme, as what happened to the inhabitants of Kampung Panglima Seman, who were relocated to Darul Hana. Given its proximity to the city's economic and financial hub, it was inevitable that development would occur. Regardless, there is a paucity of detailed records pertaining to the Malay villages situated on the peripheries of the coastal areas of north Kuching.

While colonialism and the governance of foreign entities have influenced urban planning and the settlement patterns around the city, the majority of these changes and developments in road infrastructure occurred in the postcolonial era. The Brooke and British colonial administrations did not impact the traditional villages during their tenure. However, they did develop the existing cities surrounding trade and exportation of resources. The most significant legacy of colonialism is the establishment of policies and segregated planning.<sup>7</sup> These were subsequently calibrated and adapted by the subsequent government, which had an impact on the fishing villages. It is possible to describe these changes from a larger scale, in terms of their relationship with all aspects of spatial and sectoral planning by the government, and the regional policies which affected their way of life. Kozłowski et al. (2021)<sup>8</sup> observed the 'lack of regional plans, local planning legislation and tropical planning and design guidelines.'

In this case, Kuching serves as a noteworthy example, as it is home to a multitude of fishing villages situated along its periphery, which have undergone significant changes and exhibit divergent trajectories, contingent upon their spatial position and the degree to which they contribute to the city's vitality. The early modern postcolonial urban expansion policies, which included road developments, the allocation of industrial zones, the movement of ports, educational institutions, and the designation of corridors for ecotourism, have had consequences for the village.

Therefore, the objective of this essay is to describe the transformations within the theoretical framework of planetary urbanisation and operational landscapes and contribute to the existing scholarship on urbanism in developing Southeast Asian nations. In particular, the study aims to provide a multi-faceted view of fishing villages as part of the urban narrative. The villages that form the subject of our study are Buntal, Bako, Muara Tebas and Sejingkat. The research questions we aim to answer are as follows:

1. How has the centralised sectoral planning of Kuching affected the morphology and growth trajectory of the fishing villages in Kuching?
2. How has this manifested itself in the socio-spatial production of the village?

This essay comprises four sections. The subsequent section will discuss the underlying concept that informs our understanding of the villages' transformation. Subsequently, the third section demonstrates how these case studies and their morphological development were influenced by territorial planning involving national, local and foreign interests. The fourth section of the essay considers how the urban fabric of these villages was generated as an outcome of these large-scale interventions. The findings presented in this study were derived from a combination of fieldwork, interviews with the village leaders and locals, a morphological study, and an analysis of planning documents. The objective was to gain insight into the complex interplay between infrastructure development, social resilience, and economic viability in the context of urbanisation. It is therefore recommended that a nuanced approach to planning be adopted, with a particular focus on the well-being of peripheral rural communities that are caught in the urban tide.

## COASTAL FISHING VILLAGES AS EXTENDED URBANIZATION AND OPERATIONAL LANDSCAPES OF KUCHING

Studies of agrarian sites and resource extraction in the hinterlands have garnered attention, and the areas previously perceived as non-urban are now being accepted as part of the urbanisation process.<sup>9</sup> Fishing villages on the urban peripheries of Southeast Asian cities have been largely overlooked throughout the discourse of urban studies. Brenner & Schmid (2015) propose three types of urbanisation: concentrated urbanisation within cities and the formation of agglomerations; extended urbanisation, which 'transforms territories in the hinterlands as operational landscapes of global capitalism'; and differential urbanisation, i.e. sites of 'political engagement and social struggle.'<sup>10</sup>

In Sarawak, coastal fishing villages have historically been subordinated to port cities. Their settlement growth reflects the impacts of hierarchical, centralised territorial planning imposed by state regulations, which engender socio-spatial consequences as described by Brenner.<sup>11</sup> The establishment of road networks within these villages, which have become part of the global value chain, has gradually transformed them over time. This is consistent with Henri Lefebvre's theory of the state mode of production.<sup>12</sup> In analysing each case study, it is important to consider the concept of scales and the point at which the urban fabric has crystallised.<sup>13</sup> The state-spatial planning of territories at a large scale has implications for the social production, urbanisation, socio-environmental metabolism and goods circulation insofar as it pertains to the fishing villages and their relationship with the city.

## THE EVOLVING PLANNING LANDSCAPES OF KUCHING

Understanding Kuching's current planning landscape necessitates acknowledging its historical context. The Brooke Dynasty era (1841-1946) laid crucial foundations. Charles Brooke, the second Rajah, initiated significant road infrastructure projects that influenced settlement

patterns and economic activity. Additionally, the concept of Native Customary Rights (NCR) land, established during this period, continues to influence development applications today. Following World War II, the urgent need for coordinated development and infrastructure planning in Sarawak became evident. As a British colony at the time, the state implemented the 1947-56 Development and Welfare Plan, a precursor to the Sarawak Development Plan (1964-68). This earlier plan prioritised investment in transportation, agriculture, and rural development sectors, laying the groundwork for more comprehensive development efforts that would follow under Sarawak's own plan. Sarawak's annexation into Malaysia ushered in a new era of large-scale planning efforts fueled by federal grants. Key government ministries like the Ministry of Resource Planning and Environment (then known as the Ministry of Land and Forests) played a central role, working in conjunction with federal authorities in Kuala Lumpur led by Deputy Prime Minister Tun Abdul Razak.

This shift emphasised infrastructure development, evident in projects like the Pan-Borneo Highway and feeder roads connecting rural areas to the broader network. These initiatives aligned with the Malaysia Plan's key objectives of infrastructure development and poverty eradication. Moreover, the New Economic Policy (NEP), the brainchild of Tun Abdul Razak, designed to address economic disparities in Malaysia, significantly impacted the lives of fishermen. Classified as Bumiputera, these communities gained access to various institutions aimed at improving their livelihoods. One such institution, *Lembaga Kemajuan Ikan Malaysia* (Fisheries Development Authority of Malaysia, or LKIM), provided crucial support through programs offering new boats, training initiatives, and resources to increase fishing productivity.<sup>14</sup>

Tun Abdul Rahman Ya'kub, Sarawak's first Chief Minister after Malaysia's formation, played a crucial role in implementing the Sarawak Development Plan. He participated in discussions with the federal government and ensured the plan's alignment with Sarawak's specific needs and priorities, including navigating the complexities of NCR land rights established during the Brooke era. The Plan's emphasis on industrial development undoubtedly impacted the Malay fishing villages in Kuching, as observed in the following case studies.

In terms of planning in Kuching, regional and national plans hold greater weight than small-scale town planning. It is more important to consider the larger picture of how Kuching is integrated within the vast networks of sectoral planning as part of the Malaysian Plan, once Sarawak became annexed to the federal government in 1963. The calibration of the port of Kuching to the needs of the nation, connecting it to West Malaysia via Port Klang became more important, while accommodating to international freight networks.<sup>15</sup> The Malaysian Plans substantially influenced Kuching's port infrastructure, beginning in the 1970s. Previously, cargo movement relied on the Lorna Doone wharf and the Waterfront jetty. However, these facilities gave way to larger and more modern ports like the Biawak Jetty, Pending, and the Damai Kuching Port (DKK Port). This development coincided with the establishment of the Marine Department and the implementation of the Shipping Ordinance, both crucial for regulating and promoting maritime activity. As a result, the Sarawak River transformed into a bustling waterway for cargo ships and containerised vessels, underlining Kuching's growing importance within the national transportation network.



Fig. 3. View of Muara Tebas and the Ching San Yen temple on a hill, while Chinese-owned seafood businesses flank the Sarawak River.

## DESCRIPTION OF THE FISHING VILLAGES MUARA TEBAS

Muara Tebas, a village situated along the Sarawak River in North Kuching, presents a striking case study of historical development shaped by religious practices and economic opportunities. The Ching San Yen temple, a prominent Buddhist landmark overlooking the river, has attracted Chinese visitors for over two centuries (Figure 1). According to local accounts, the temple served early Chinese traders as a place of worship and a source of fresh water until the introduction of piped water in the 1980s.

The village population of over 1,900 is predominantly Malay, with tourism associated with the temple contributing significantly to the local economy. Notably, the village layout reflects a historical shift in demographics. Guided

by the principles of “Fung Shui” in the early 20th century, Chinese settlers established themselves near the seashore, eventually founding seafood restaurants and a processing facility. Land transactions between Malays and Chinese residents further influenced the spatial development of Muara Tebas.

The construction of roads connecting Muara Tebas to Kuching in the 1980s marked a turning point. This infrastructure project led to a change in settlement patterns, with houses gradually spreading outwards along the main road. Essential amenities such as markets, healthcare facilities, mosques, and schools were subsequently established to serve the expanding community. The presence of the Maritime Complex and Marine Department across the highway underscores Muara Tebas’ strategic location as a gateway to Kuching’s maritime activities (Figure 2).

Historically, fishing has been the primary livelihood for a majority of the village population. However, stricter regulations on river navigation implemented since the 1960s have impacted traditional fishing practices. While a contingent of over 200 registered fishermen remains active, a significant portion of the workforce now seeks opportunities in the civilian sector,

private companies, or self-employment. Improved accessibility through road networks has further bolstered the village's economic potential by facilitating the transportation of goods, particularly seafood products, to a wider range of markets beyond Muara Tebas.

## BAKO

Kampung Bako, a village embedded at the mouth of the Tabo River near Muara Tebas, presents a contrasting case study in terms of development and economic activity. The village, named after the abundance of mangrove trees (“bako” in Malay Sarawakian) in the area, is nestled beneath two hills overlooking the river. The surrounding land is managed by various stakeholders, including the Public Works Department, Ministry of Tourism, and Ministry of Forestry, reflecting a diverse range of interests in the area.

Unlike Muara Tebas with its heavy river traffic, Bako experiences less stringent regulations due to the Tabo River's limited capacity for large vessels. This allows 13.6% of the population to continue pursuing traditional fishing and agricultural activities. However, the village economy has undergone significant diversification. While fishing and farming remain a source of income, a larger portion of the workforce, approximately 15%, now finds employment in nearby factories within the Sejingkat industrial estate. In particular, nearly a third of the roughly 1,800 residents are engaged in the service sector, working as tourist guides, clerks, entrepreneurs, or marine officers. Kampung Bako's proximity to Bako National Park has significantly boosted tourism. Villagers benefit from this influx by providing boat transportation for tourists and nature enthusiasts, ferrying them from the village jetty to the National Park headquarters, a 20-minute boat ride away.

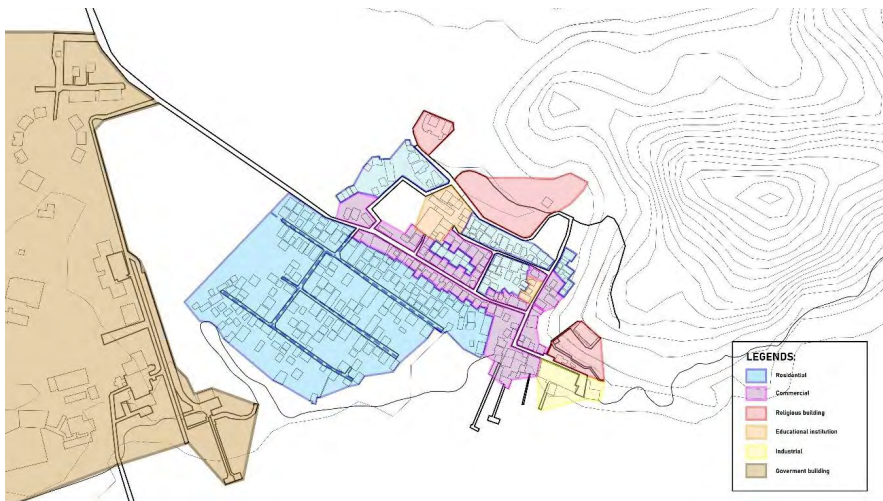


Fig. 4. A land use map of Muara Tebas, featuring the prominent placement of the Maritime Complex and Marine Department adjacent to the highway, bordering the village.

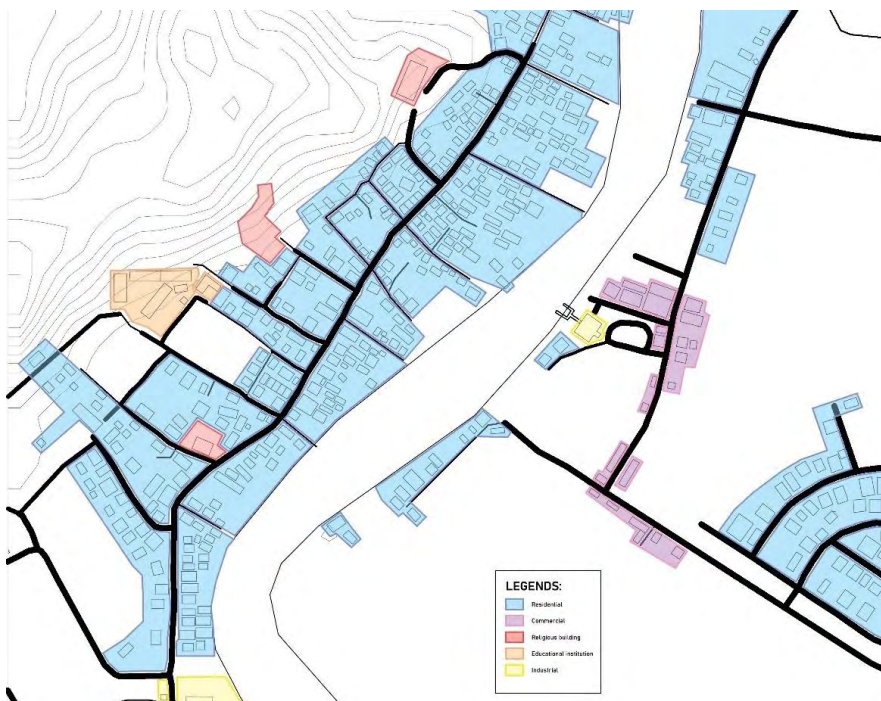


Fig. 5. A map of Bako showing current land uses. The Bako National Park jetty (in yellow), and wet market (in purple) attract local and international visitors.

The land surrounding the village has been designated for both traditional and modern forms of agriculture, with small family-run orchards coexisting alongside shrimp farms and larger plantations. Eco-tourism, the established agricultural sector, and a growing industrial presence have all contributed to Kampung Bako's expansion (Figure 3). This expansion is accompanied by the development of new infrastructure, including a jetty terminal, bus services, a mosque, a clinic, schools, and a community hall.

The newer section of Bako, located in the southeast, was formally planned and is serviced by Kampung Bako Road. This road connects the new development to the original village and onwards to the Bako Causeway, providing a direct link to the city. The village is also known for its vibrant wet market, frequented by visitors seeking fresh fish and seafood.

## BUNTAL

Lying at the mouth of the Buntal River and facing the open sea, Buntal's initial development followed the coastline. However, coastal erosion necessitated a relocation of houses inland onto state-allocated land lots. To combat further erosion, a dyke now protects the coastline. Kampung Buntal Road provides access to these relocated residences (Figure 4).



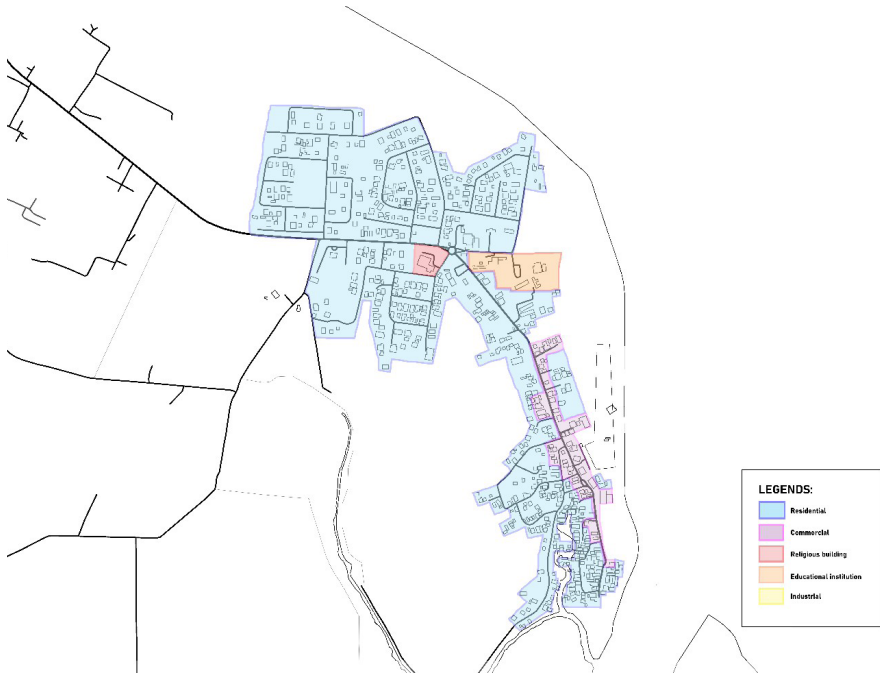


Fig. 6. Map of current land uses surrounding Buntal

Prior to the completion of the Santubong Bridge in 1986, travelling from Buntal to Kuching by boat was a significant journey which can took up to five days. Today, the proximity to the Sarawak Cultural Village in Santubong adds to Buntal's appeal. Similar to Kampung Bako, fishing remains a significant source of income for the village, with unrestricted access to both the river and the open seas. The village name itself, "Buntal," reflects the historical abundance of pufferfish in the area.

With a population of nearly 3,800, Buntal boasts a predominantly Malay community with a small Chinese minority. Chinese residents primarily operate seafood restaurants and convenience stores along the coast. While 60% of the villagers continue to rely on fishing for their livelihood, nearly a third find employment elsewhere, including some who commute daily to the city.

Eco-tourism and seafood tourism is also a growing sector. Buntal Esplanade attracts bird-watchers, while boat tours operate from Buntal Bay. The combination of the bay, wet market, and seafood restaurants has drawn visitors from Kuching since the 1980s, contributing to the village's population growth. To cater to the residents' needs, Buntal now includes mosques, clinics, community halls, schools, and even a Chinese temple. Integration into the Damai-Santubong-Buntal-Pasir Pandak (DSBP) Corridor further enhances Buntal's tourism potential. This regional development initiative was aimed to leverage the collective strengths of these areas to create a more comprehensive and attractive tourism destination.



Fig. 7. Houses of Sejingkat village lining the waterfront.

## SEJINGKAT

Sejingkat is perched on the edge of a steep hill sloping downwards to the Sarawak River and the Brooke Dockyard Engineering Works. Just two decades ago, the village's expansion followed a linear pattern westward with the construction of the road connecting it to the Bako Causeway. However, this growth faced challenges due to the hilly terrain and limited available land (Figure 5).

Sejingkat's location presents a complex situation. The village faces environmental risks of flooding and landslides. Furthermore, multiple stakeholders hold interests in the surrounding lands, including the Ministry of International Trade & Industry, Industrial Terminal and Entrepreneur Development Sarawak, the Public Works Department, the River Board, and private businesses (Figure 6). Regulations, such as the River Ordinance of 1993, have restricted traditional fishing activities. Moreover, the Demak Industrial Estate's ongoing construction of a new terminal for large, containerised vessels further limits access to the adjacent waters.

Since the 1990s, the decline of fishing and related primary activities as a viable source of income has driven villagers to seek employment in nearby factories, entrepreneurial ventures, and the service sector. Fishing has largely become a recreational activity rather than a means of subsistence. Recognizing the village's precarious situation, the state government is currently building a new housing estate to relocate residents to a safer and more stable area.



Fig. 8. A map showcasing the industrial area bordering Sejingkat village. The village itself is nestled beneath a hill on the Sarawak River, adjacent to the industrial zone.

## IMPACT OF PLANNING POLICIES ON VILLAGE DEVELOPMENT

A number of observations can be made from this study of the four Kampung. The differential growth trajectories of the villages are not solely a consequence of their topography. Rather, they are largely influenced by the sectoral planning policies that have been implemented in the lands surrounding them. Two of the villages, Muara Tebas and Sejingkat, are situated on the Sarawak River at different points along its course. Muara Tebas is perceived to be more economically successful due to its land availability, religious and food tourism. In contrast, Sejingkat is arguably marginalised and does not attract sufficient interest to be considered a priority for redevelopment. The villages of Buntal and Bako have experienced significant growth due to their popularity among nature lovers and seafood enthusiasts. The trajectories of these two villages depend greatly upon the state and national policies of sectoral planning, as outlined in the NEP.

In parallel with the growth of the industrial sector, which included planned estates such as Pending and Sejingkat, the Isthmus was constructed, effectively short-circuiting the route of cargo ships and ferries along the Sarawak River. Due to the coastal villagers being classified as Bumiputeras, they were provided with vocational training for self-development. This subsequently led to their employment in the surrounding industrial estates. The current generation has increasingly opted to pursue employment in the industrial estates, rather than continuing with their cultural fishing practices. This was because the monthly income in the industrial sector was more stable in comparison to the seasonal nature of fishing.

State-led sectoral planning and established institutions, though offering continued support for fishing activities, significantly impacted the lives of villagers. The rise of nearby industrial sectors, improved road access, and evolving socio-economic demands all contributed to this change. Villagers were forced to adapt their way of life, working beyond the primary sector. This shift ultimately led to the expansion and transformation of village settlements.

In accordance with the theory of planetary urbanisation, we posit that state regulations and centralised territorial planning in Sarawak have subordinated coastal fishing villages to port cities. This top-down approach has resulted in the transformation of these villages through infrastructure development, which connects the villages to the urban fabric and integrates them into the global value chain. Furthermore, the villages have become integrated into a system that facilitates the movement of goods, labour, and raw materials for urban consumption. The state-mediated planning decisions at a large scale have had a significant impact on social production, morphology patterns and the environment.

## CONCLUSION

The studies cited above provide a foundation for an analysis of the impact of centralised sectoral planning on the growth of fishing villages in Kuching. Two key factors influence the aforementioned villages: infrastructure development and a focus on efficiency.

Large-scale projects, such as road networks in the 1980s, has resulted in the fragmentation of traditional settlement patterns in the village landscapes. This phenomenon can be observed in the case of Buntal and Bako. The traditional compact and dense settlement patterns around rivers and the coast have been replaced by a more linear and dispersed pattern along the roads. Conversely, the prioritisation of efficient resource extraction and the movement of goods has led to the prioritisation of land for industrial uses, logistics hubs and marine departments in close proximity to villages. This has resulted in a reduction in the availability of land for traditional fishing activities and village expansion. This is also true of Sejingkat and Muara Tebas.

In terms of the socio-spatial production of the village, this has had an impact on the livelihoods, social mobility and environmental impact of the villagers. While integration into the global value chain may have lifted them out of poverty, by shifting from traditional subsistence fishing to supplying large-scale markets or catering to tourism, it has resulted in a decline in traditional fishing practices and knowledge, which were more sustainable. While Bako and, to a large extent, Buntal have retained their cultural fishing practices, Muara Tebas and Sejingkat have seen a decline due to the monopoly of fishing vessels and the restrictions of waters. Furthermore, the increased shipping traffic on the Sarawak River has resulted in pollution and the degradation of the coastal ecosystems, which are vital for the fishing communities.

The significance of fishing villages as part of the broader urbanisation and operational landscape of cities in Borneo warrants further investigation. In conclusion, it can be argued that centralised sectoral planning in Kuching plays a significant role in shaping the morphology

and growth trajectory of surrounding fishing villages. Nevertheless, further research is required to analyse specific case studies and gain a deeper understanding of the diverse experiences of different fishing villages. In light of the above, it is imperative that alternative planning approaches are considered that prioritise community engagement, sustainable development and empower fishing villages to maintain their unique cultural heritage and traditional ways of life.

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## DISCLOSURE STATEMENT

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## NOTES ON CONTRIBUTOR(S)

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## IMAGE SOURCES

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