

Strategies for strengthening cross-border urban planning coordination between Hengqin, Zhuhai, and Macao Special Administrative Region, China

Jing Song Yang and Bin Li

Institute of Urban and Sustainable Development, City University of Macau, Macao SAR, China, and

Jing Yang

The Hong Kong University of Science and Technology (Guangzhou), Guangzhou, China

Abstract

Purpose – The paper examines the challenges and strategies for cross-border urban planning coordination between Hengqin and Macao, China, under the “One Country, Two Systems” framework. By doing so, it aims to enhance regional integration within the Guangdong-Hong Kong-Macao Greater Bay Area.

Design/methodology/approach – This study employed a qualitative case study approach to analyze the current urban planning systems and practices in Hengqin and Macao, as well as the needs and obstacles associated with cross-border planning coordination. The research data were derived from an examination of national policies, a compilation of data from the National Bureau of Statistics, field research conducted between 2021 and 2024, and an analysis of 14 semi-structured interviews with relevant groups, including urban planners, cross-border commuters, and citizens in both places.

Findings – Significant differences exist in the social, cultural, and institutional systems between Hengqin and Macao, which hinder effective communication and exacerbate disparities in urban planning objectives, priorities, regulations, and technical standards. These challenges have resulted in contradictory planning practices, particularly in transportation and public facilities. Cross-border planning coordination remains in its infancy and requires immediate attention. This study proposes leveraging the “One Country, Two Systems” policy to establish a formal coordination mechanism and foster multi-level, effective communication to address these challenges.

Originality/value – This study explores the cross-border coordination mechanisms between the urban planning systems of Hengqin and Macao, thereby addressing a research gap in cross-border planning coordination under the “One Country, Two Systems” paradigm. It emphasizes the significance of such coordination, a concept that is frequently disregarded in practical applications, and provides pragmatic recommendations for Hengqin.

Keywords Cross-border planning and coordination,

Guangdong-Macao In-Depth Cooperation Zone in Hengqin, Urban planning, Macao, Hengqin

Paper type Research article

Introduction

The Guangdong-Macao In-Depth Cooperation Zone in Hengqin, located to the west of Macao, covers an area of approximately 106 km² and has served as a pilot area for Guangdong-Macao cooperation for a considerable period (Hengqin is part of Guangdong Province, China). In 2021, the State Council of China issued the “Overall Plan for the Construction of the



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This paper forms part of a special section “Special Issue on Guangdong-Hong Kong-Macao Greater Bay Area (GBA) in China: building a world-class finance, innovation and technology hub”, guest edited by Prof Roger C.K. Chan, Prof Peter K.W. Fong and Dr Alice Y.C. Te.

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Guangdong-Macao In-Depth Cooperation Zone in Hengqin". This plan aims to develop Hengqin into a new platform that promotes moderate diversification of Macao's economy (Central Committee of the Communist Party of China, 2021). Under the "One Country, Two Systems" framework, the joint governance of Guangdong and Macao has led to the development of Hengqin as a distinctive cross-border area managed by two different systems. The distinct systems have led to diverse planning approaches on either side, resulting in contrasting metropolitan areas. Various urban development objectives, infrastructure, residents' lifestyles, and other urban planning factors affect Hengqin's urban development and impede cross-border exchange between Hengqin and Macao.

Without a coordinated mechanism between Hengqin and Macao, these disparities will persist, hindering urban vitality in Hengqin and presenting a substantial obstacle to urban growth. However, obstacles inherently introduce new possibilities. When conflicting ideas are resolved and barriers are overcome, the convergence of the two systems will generate a fresh impetus for Hengqin's advancement. Thus, well-organized collaboration between the Hengqin and Macao urban planning systems is necessary to address the obstacles related to systems, institutions, and standards, thereby facilitating cross-border collaboration.

This study examines the features of the existing urban planning systems in Hengqin and Macao, identifies inconsistencies in their implementation, and evaluates the need for cross-border planning cooperation between the two regions. This is accomplished by examining national policies, gathering data from the National Bureau of Statistics, conducting field research between 2021 and 2024, and conducting and analyzing 14 structured and semi-structured interviews with relevant groups. Furthermore, an analysis of the current urban planning systems in Macao and Hengqin, coupled with international case studies, highlights that a cross-border coordination strategy based on effective communication is among the most effective approaches to fostering practical cross-border cooperation. This study provides strategic recommendations to address existing contradictions and enhance the coordination of urban planning systems in Macao and Hengqin.

Cross-border planning coordination

Cross-border planning coordination has been the subject of extensive research since the establishment of the first cross-border zone at the Dutch-German border in 1958. Cross-border spatial planning is defined as the coordination of land development across national borderlands (Medeiros, 2018) to address the socioeconomic challenges faced by border regions and foster sustainable development (Behradfar and Castanho, 2023). The process requires the coordination of activities at the intermunicipal, regional, and local levels to reduce disparities within urban planning systems. However, cross-border collaborations frequently encounter significant institutional, structural, and financial obstacles (Nyamwanza *et al.*, 2022).

In China, interjurisdictional planning has emerged due to rapid urbanization and the formation of urban agglomerations. Nevertheless, administrative boundaries impede the process of regional synchronization, resulting in the establishment of barriers between cities (Lin, 2009). To address these challenges, local governments have increasingly adopted coordinated planning across administrative boundaries to optimize resource allocation and address common regional issues. The key challenges identified in the literature include unbalanced economic development, spatial demand disparities, and fragmented governance in areas such as transportation, ecology, and infrastructure (Liu, 2022; Zheng, 2019).

Empirical research has examined cross-border cases through lenses such as development models, cooperation mechanisms, decision-making processes, and interregional relations, underscoring the centrality of effective communication. These findings provide robust evidence that coordination strategies rooted in communicative efficacy play a decisive role in the successful establishment of cross-border cooperation (Buursink, 2001; European Commission and AEBR, 1997; Fricke, 2015; Jańczak, 2017; Nelles and Durand, 2014; Perkmann, 2003; Zäch and Pütz, 2014). For instance, in the Bodensee region, informal

communication bypassed formal procedures and facilitated cooperation (Zäch and Pütz, 2014). Conversely, collaboration between the United States and Mexico demonstrates how communication can facilitate the harmonization of disparate legal systems to safeguard mutual interests (Oliveras González, 2016; Peña, 2007). Nevertheless, the failure of cooperation platforms, as evidenced by the example of Lille, demonstrates that inadequate communication can compromise the efficacy of cross-border governance (Nelles and Durand, 2014). As Tölle (2013) contends, when cultural and institutional factors impede communication, even minor discrepancies within the system can lead to failure (Figure 1).

The Guangdong-Macao In-Depth Cooperation Zone in Hengqin is a strategic initiative aimed at promoting economic diversification in Macao and enhancing regional integration. This suggests a trajectory toward a more profound cross-border collaboration; however, Hengqin remains in the preliminary exploratory phase of Nelles and Durand’s (2014) four-stage model of cross-border coordination, which encompasses the stages of “exploration, construction, preparation, and adjustment”. Despite the implementation of favorable policies, inconsistencies in cooperation and conflicting interests have hindered progress (Decoville and Durand, 2021). The absence of a formal planning coordination mechanism has resulted in strategies based more on assumed rather than assessed needs. This has resulted in urban spaces that fail to meet the expectations of Macanese residents, particularly in terms of the availability of amenities. As one resident noted, although housing in Hengqin is affordable, the amenity gap compared to Macao remains significant. As Medeiros (2014) asserts, considerable systemic, economic, and institutional disparities between territories have the potential to render generalized models ineffective. This emphasizes the need for context-specific coordination strategies. In consideration of Hengqin’s distinctive status within the “One Country, Two Systems” framework and the absence of a transferable cross-border planning model, a thorough examination of its planning system, collaborative mechanisms, and practical challenges is imperative to formulate efficacious cross-border coordination strategies.

Current urban planning system of Hengqin and Macao

Currently, Hengqin is included in China’s territorial planning system, whereas Macao is scheduled to complete its urban master plan for the Special Administrative Region in 2022. There are several significant differences between the two, as outlined in the following.

Urban planning system of Hengqin

Urban planning is the governmental management of spatial resources, primarily focusing on the development and utilization of land. Effective urban planning can prevent the spontaneous and disorderly growth of cities and promote the balanced and sustainable development of urban areas (Hengqin New Area Administrative Committee, 2016).

Hengqin adheres to the regulatory framework of mainland China and implements the “one book, two certificates” system. The Hengqin regulatory system ensures the legality of

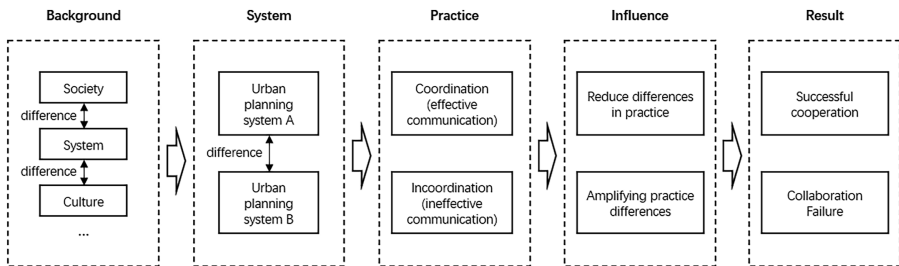


Figure 1. Cross-border planning coordination mechanism. Source: By authors

construction operations by implementing preliminary review and site selection opinions for construction projects, as well as construction land planning permits and construction project planning permits. Meticulous strategic planning regulates urban construction operations. The planning system is extensive and complex (Wu and Li, 2010).

In terms of planning and approval systems, Hengqin is part of China's territorial space planning system and technically part of Xiangzhou District, Zhuhai City. The planning standards, databases, and other content included in Zhuhai's territorial space planning at the county level also apply to Hengqin, which is currently at the provincial administrative level. Therefore, in the current process of creating an all-encompassing urban plan for Hengqin, only the urban space, agricultural space, ecological space, urban development boundary, permanent basic farmland, and ecological protection red line must be submitted to the appropriate authorities for approval. Hengqin is the authority responsible for developing and approving other content, with the Management Committee playing a prominent role. The Urban Planning and Construction Bureau is primarily responsible for this work. Hengqin has a significant level of autonomy and independence in the current planning process. However, the planning process in Hengqin varies from that in Macao in that it does not include legally protected procedures for public engagement and cross-departmental cooperation (Government of the Macao Special Administrative Region, 2014a, 2014b; Urban Planning and Construction Bureau, 2021).

In terms of basic technical planning indicators, Hengqin follows the comprehensive and mature planning system of the Chinese mainland. Land use is divided into 24 primary, 106 secondary, and 39 tertiary categories. Regarding land compatibility, there is no clear stipulation of the compatibility ratio, and considerable flexibility is allowed.

Urban planning system of Macao

Macao is currently undergoing a phase of urban development, with a specific emphasis on enhancing and revitalizing the existing urban environment. This is achieved in a manner that safeguards the rights and interests of the public and carefully regulates the content of construction during the execution phase (Government of the Macao Special Administrative Region, 2022).

The regulatory framework for urban planning in Macao primarily consists of the Urban Building Legal System, the Urban Planning Law, and supplementary administrative regulations, including the Detailed Rules for the Implementation of the Urban Planning Law and the Urban Planning Commission. Additionally, expert panels have been established (Government of the Macao Special Administrative Region, 2013, 2014a, 2014b). In Macao's current urban planning practice, apart from the detailed planning in the "East District-2" area, the other districts rely on the government's internal "Design Guidelines" to establish the planning condition map for each plot. This map regulates urban construction activities. The planning condition map governs the plot ratio, street shadow area, and other relevant information. The indicators in question display significant variation across different places, and consequently, they have not yet been consolidated into a single, standardized framework.

In terms of the planning and approval system, Macao's planning places significant value on public and interdepartmental participation, and the approval process is relatively comprehensive. In practice, the Land, Public Works and Transport Bureau is the primary agency responsible for the overall planning of related matters. Two committees, established by legislation, have been introduced into the preparation process to balance the interests of all parties. The Interdepartmental Committee coordinates the relationships between government departments, including the Construction and Development Office, Transport Bureau, and Tourism Bureau. The Urban Planning Committee coordinates public interests and includes 34 professional members and 27 outstanding individuals recognized by society. Furthermore, the comprehensive and detailed planning of Macao necessitates a period of 60 to 100 days, respectively, for soliciting stakeholder and public opinion, which are then collated to form a public opinion analysis report. Concurrently, a system of observation is established for specific

planning-related meetings, allowing residents of Macao to observe the proceedings after applying for permission to do so (Government of the Macao Special Administrative Region, 2013, 2014a, 2014b). Consequently, the characteristics of Macao's planning and approval system are that the cycle is longer but has the advantages of being fairer, more transparent, and in line with the interests of residents.

Macao's current planning technical indicator system primarily focuses on construction engineering and design, with limited coverage in the field of urban planning, mainly due to delayed initiation. Moreover, the issuing procedure has not been streamlined and is somewhat intricate. The land-use classification is divided into three hierarchical levels: primary, secondary, and tertiary. The main category is further divided into eight subcategories, whereas the secondary category is further divided into 20 subcategories. Additionally, a distinct secondary classification of land dedicated to tourism and entertainment has been created. Land compatibility categorization employs a dual control approach, which encompasses compatible categories and proportions, as well as more detailed requirements (Table 1 and Figure 2).

Differences in planning practices between Hengqin and Macao

The disparities between the two planning systems have already exerted a substantial influence on planning practices in Hengqin, rendering urban spaces incapable of meeting the current living needs of Hengqin residents and those in Macao. Moreover, these inconsistencies could affect the movement of individuals between the two regions. This is particularly evident in two key domains.

The primary distinction lies in the disparities within the transportation system, which are evident in three crucial areas. First, the movement of goods across borders is limited by customs clearance regulations and procedures. For example, the rail transportation system connecting Hengqin and Macao is not fully integrated, which means that passengers must switch at Hengqin Port. Customs clearance examinations are mandatory for cars crossing borders. The requirement for customs clearance processes inevitably leads to a substantial increase in travelers' time expenditure, which may cause them to abandon their planned journey.

Second, there are significant disparities in the core technical indices of the transportation networks in both regions. For instance, Macao uses right-hand drive vehicles (steering wheel on the right) with a left-hand traffic system and a compact road network. Conversely, Hengqin employs left-hand drive vehicles (with the steering wheel on the left) under a right-hand traffic system, supported by extensive road infrastructure that enables high traffic capacity. Data from the Statistics and Census Service of Macao and the Statistics Bureau of Guangdong-Macao In-Depth Cooperation Zone in Hengqin reveal that the road network density in Hengqin's built-up area is 3.95 km/km², significantly lower than Macao's 15.22 km/km².

Third, there is a disparity in travel patterns between the two regions. Macao locals are usually more familiar with a 5-minute walking distance, whereas Hengqin is usually designed for a 15-minute walking radius. Although the travel habits of Macao residents have been considered, the current planning process in Hengqin has led to a strategy of utilizing extensive and all-inclusive service facilities to cater to the residents' requirements. However, this approach has resulted in a lack of ease of access and adaptability among the associated facilities. An example of an optimal public transportation strategy from the New Neighborhood, a significant residential project in Hengqin that collaborates with Guangdong-Macao, is to take a 3.7 km bus journey and then walk 1.2 km to reach the nearest large-scale comprehensive supermarket. This journey takes approximately 30 minutes. In comparison, driving the same distance would take approximately 10 minutes, but this would not meet the expectations of a five-minute living circle. Even when compared to the relatively loose urban spatial layout of the Taipa Peninsula in Macao, the compactness of Hengqin's infrastructure layout remains inadequate to meet the living needs of Macao residents. The number of bus stops and their coverage are significantly lower than those in Macao (Figure 3).

Table 1. Characteristics and differences of the Hengqin-Macao planning system

| | Goal | Focus | Regulations | Preparation and approval | Technical specifications | Urban design logic |
|---------|------------------------------|---|----------------------------|--------------------------------------|---|---|
| Hengqin | Economic growth; cooperation | Urban landscape; large space; comprehensive control | one book, two certificates | Process streamlining: fast and short | Mature and comprehensive; land compatibility is more flexible | Large-scale, integrated and comprehensive supporting service system |
| Macao | Urban renewal | Public interest; human scale; meticulous control | Planning condition map | Process improvement: slow and long | Relatively weak; land compatibility regulations are clear | Small-scale, flexible supporting service system |

Source: By authors

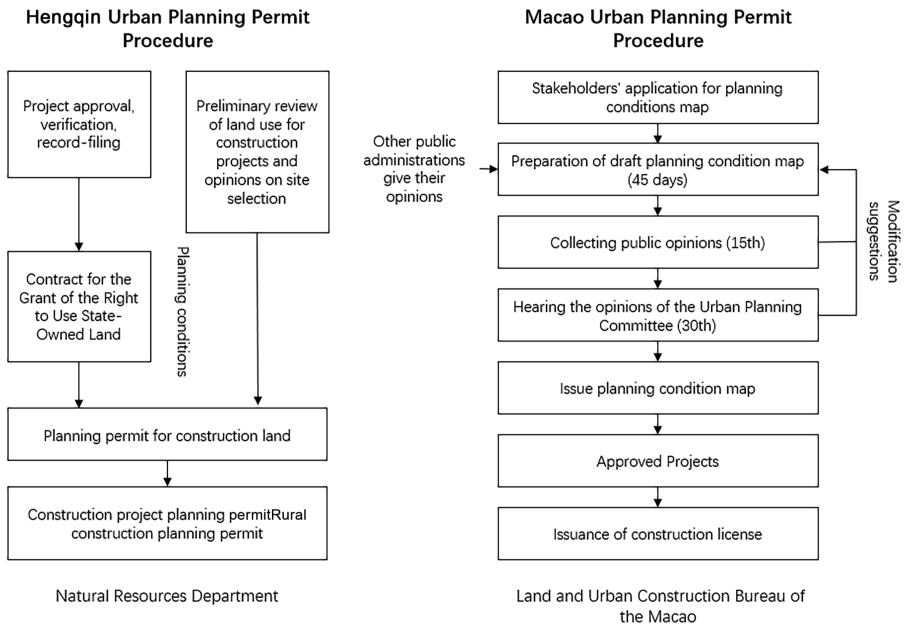


Figure 2. Differences in planning processes between Hengqin and Macao. Source: By authors, based on the 2023 Implementation Assessment of Hengqin’s Urban Planning and Land Use Master Plan

The second distinction pertains to public facilities. The establishment of numerous small and flexible pocket parks, markets, public libraries, and urban squares characterizes Macao’s approach to public needs. By contrast, Hengqin tends to establish expansive urban green spaces and community activity centers that are accessible and concentrated. The design logic of the two approaches is strikingly divergent. As previously stated, numerous Macao residents assert that Hengqin lacks sufficient facilities for leisure and relaxation. This has led to noticeable differences in the living habits of residents in Macao and Hengqin.

The previous planning methods illustrate a significant difference between Hengqin and Macao in the core principles of urban spatial design. Unlike the extensive spatial layout of Hengqin, Macao prefers to create compact and scattered small-scale areas that cater to the everyday requirements of the general population. This design offers greater flexibility and enhanced consideration of human needs.

Current status of cross-border planning and coordination between Hengqin and Macao
Independent planning and lack of communication

The current coordination and communication between Hengqin and Macao remain insufficient and require significant improvement. Hengqin and Macao have previously engaged in in-depth deliberations on the concept and execution of cross-border collaboration. This study’s findings suggest that the urban planning process in Hengqin has begun to integrate and coordinate with Macao’s overall urban planning. However, there is still no official institutional structure for such integration. The implementation of “Hengqin-Macao coordination” throughout the development of Hengqin’s urban plan is primarily unidirectional, with a notable absence of authentic communication and collaboration with Macao. Hengqin has unilaterally responded to Macao’s urban planning by implementing several measures. For instance, in addressing the concerns outlined in the comprehensive plan for Macao, which involves improving tourism and optimizing public service facilities,

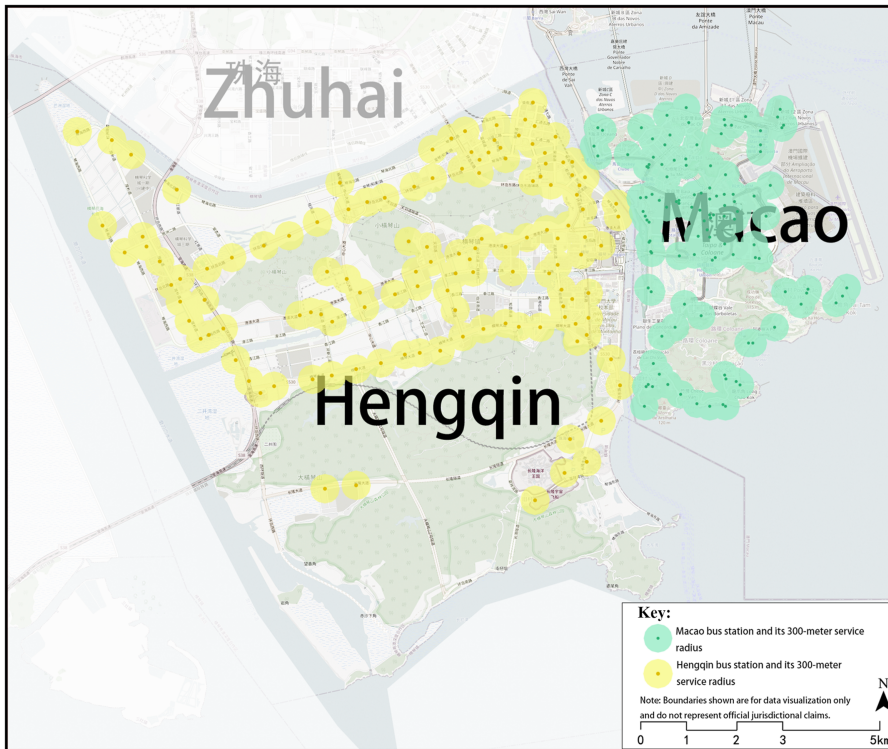


Figure 3. Comparison of public transport stops and 500-meter coverage in Hengqin and Macao’s Taipa district. Source: By authors, based on OpenStreetMap and public transport stop data from the Hengqin and Macao government websites.

Hengqin has considered Macao residents’ travel habits in its planning. It has implemented a plan that ensures that all necessary amenities are within a 5-minute walking distance and has also set aside areas for potential future cross-border transportation connections. Although some Hengqin planners support a stronger integration of Hengqin’s urban planning with that of Macao, the majority of the “Macao demand” information comes from Macao officials who serve on the Hengqin Executive Committee (around 50 percent), unofficial professional discussions suggested by the Macao Planning Institute, and letters sent to Macao’s planning department for consultation once the plan is mostly completed. This reflects the absence of organized and official communication. The planning of Hengqin is solely the responsibility of the Hengqin authorities, and the planning department in Macao is not authorized to have any influence beyond the border. Although important issues have been discussed, there is currently no clear or systematic procedure for consultation in the field of urban planning. Conversely, the master plan for Macao was established without the necessary authorization to plan the border area and without considering the viewpoints of Hengqin residents. Therefore, the urban layout operates as a closed-loop system.

Although there are presently no collaborative planning initiatives between Hengqin and Macao, planners from Macao have emphasized the need for coordination and compatibility in Hengqin’s urban planning, design, and regional policies. They have highlighted that, without such an alignment, conflicts of interest and detrimental competition may arise, hindering the desired integration between the two areas. Regarding public participation in the planning system, which is the most distinct difference between the two sides, one interviewee stated:

“Even if the actual concerns raised by the public are not resolved, Hengqin still requires public participation.”

The government should provide the public with a comprehensive explanation of the ongoing development plan, including implementation strategies and project work schedules. Once Macao citizens become accustomed to the public participation process, they will refuse to accept any planning methods that lack transparency.

Start learning from each other

Hengqin has initiated efforts to leverage Macao’s urban planning advantages during the ongoing process of formulating a comprehensive urban plan and establishing connections with it. Regarding land-use classification, the categorization of land-use functions in Hengqin aligns with those in Macao. Nevertheless, there are still variations in the precise interpretation of the classification. For instance, Hengqin has implemented the tourism land use category seen in Macao, but it prohibits the development of commercial establishments, such as hotels, for tourism purposes, unlike Macao.

Cross-border coordination is required between the two parties

During interviews with planners from both sides of the research team, it was evident that both groups emphasized the necessity and aspirations for cross-border planning collaboration between Hengqin and Macao. Hengqin’s planners aim to leverage the benefits of Macao’s efficient land use and compatibility to expedite the turnover of industrial land. Furthermore, the three control lines governing Hengqin’s ecological protection, permanent basic agriculture, and urban development borders are expected to be linked to both the urban and non-urban regions of Macao. This would enable the coordinated planning of rural areas throughout the region, including Macao. Planners in Macao aim to address the absence of consistent standards in Macao’s planning by utilizing the well-developed planning index system of Hengqin.

Regarding the increased collaboration between Guangdong and Macao, Hengqin’s urban planning has not yet fully incorporated the concept of cross-border planning coordination. Additionally, the region lacks a cohesive strategy for designing with the Macao side. Nevertheless, owing to its status as a cross-border region, the objective of the development planning in Hengqin is to facilitate the integration of Guangdong and Macao. The planning community in Hengqin and Macao, along with the demands of the local population, underscore the need for a comprehensive cross-border planning coordination mechanism in Hengqin. This mechanism would serve to eliminate any obstacles that arise in the urban space of Hengqin owing to its cross-border nature, enhance connectivity between the cities, and ultimately achieve more seamless integration and development of Hengqin and Macao.

Discussion and conclusion

The research team analyzed the planning systems in Macao and Hengqin, identifying their key features by incorporating the existing state of practice. First, the primary objective of Hengqin is to promote moderate diversification of the Macao economy while improving the lives and employment opportunities of Macao residents. The development of a unique cross-border platform for Guangdong and Macao to engage in joint discourse and governance underscores the necessity of cross-border planning and coordination. Nevertheless, significant discrepancies in emphasis, regulatory controls, preparation and approval processes, technical indicators, and design logic within the current planning systems of both sides have led to substantial differences in transportation and public facilities, thereby hindering Hengqin’s ability to integrate the bilateral space effectively.

Significant disparities exist between Hengqin and Macao’s current planning systems. Differences in planning priorities, regulatory measures, preparation and approval processes,

technical criteria, and design principles have led to significant variations in both parties' planning approaches, particularly in relation to transportation and public infrastructure. Overall, the current planning system in Hengqin offers several advantages, including thorough management of planning materials, efficient approval processes, and a comprehensive planning framework. By contrast, the planning system currently in place in Macao stands out because of its strong emphasis on public rights and interests, its prioritization of cross-departmental collaborative reviews, and its advanced planning management. In reality, Hengqin prioritizes the development of comprehensive support service facilities to cater to the needs of urban residents. Conversely, Macao focuses on the advancement of small-scale, compact, and dispersed areas, specifically planned to meet the everyday needs of the general population. Unlike Hengqin, Macao's urban design concepts are characterized by greater adaptability and a focus on human well-being.

Second, despite efforts to foster collaboration, systemic and conceptual discrepancies, along with intrinsic conflicts of interest inherent in cross-border cooperation, have hindered genuine exchanges between the two parties. Consequently, their coordinated interactions remain superficial and fail to address practical issues effectively. Despite the need for Hengqin to consider the living habits of Macao residents during the planning process, the existing system and traditional concepts have resulted in the persistence of traditional planning and design concepts in most urban construction projects aimed at achieving this goal. This approach sometimes presents a one-sided view, reflecting the needs of Macao citizens as envisioned by Hengqin city planners, which may not accurately represent their actual desires. This method may not align with the expectations of Hengqin citizens and could potentially result in the unintended outcome of "harming with good intentions." Thus, the construction of a formal cross-border planning coordination system is crucial in the context of urban planning for Hengqin. This approach would enable seamless communication between planners, planning departments, and citizens at both ends, fostering a deeper understanding of the disparities and needs of the two parties. A comprehensive understanding is crucial for formulating efficient resolutions through negotiations.

Achieving cross-border planning coordination between Hengqin and Macao

In light of the aforementioned characteristics and issues, this study proposes the following recommendations to facilitate the establishment of a cross-border planning coordination framework between Hengqin and Macao in the future.

First, the centralized coordination provided by the "One Country, Two Systems" policy must be leveraged to establish a formalized cross-border coordination platform and mechanism. The central government plays a crucial role in coordinating and guaranteeing efforts, representing a distinctive advantage granted by the policy to Hengqin over other cross-border regions. On the one hand, it can coordinate and safeguard the interests of both Hengqin and Macao. On the other hand, it can effectively guide actions and resolve disputes in a stable and equitable manner, ensuring fairness, a forward-looking approach, and a proactive stance in urban planning and design.

Second, the establishment of a platform and the implementation of a cooperative policy serve to unify the primary planning entities and enhance effective communication. By bringing together decision-makers, planners, the public, and relevant government departments from both sides for multilevel and multiformat exchanges, traditional conceptual and systemic inertia on both sides can be overcome. These exchanges need not be confined to formal or planning-related topics; informal, non-planning-related exchanges involving cultural customs, living habits, concepts, and values can also play a significant role in fostering comprehensive integration between Hengqin and Macao, thereby laying a robust foundation for collaboration. Coordination based on the effective communication described above provides an efficient approach to breaking down administrative barriers, thus ensuring the smooth and high-quality development of cross-border regional planning, investment, construction, and other core development strategies.

Finally, a key enabler of institutional innovation in the Hengqin–Macao integration process is the “forerunner” policy, which plays a pivotal role in facilitating cross-border coordination and legal adaptation. The establishment of the Shenzhen Special Economic Zone and the Hainan Free Trade Port demonstrates the effectiveness of this policy, which provides administrative flexibility and serves as an experimental platform for piloting innovative legal frameworks, spatial planning instruments, and governance models that diverge from conventional systems. In the case of Hengqin, the forerunner policy has facilitated the convergence of heterogeneous urban planning systems in both Hengqin and Macao within a shared spatial domain. This convergence presents significant challenges due to legal and institutional disparities, but simultaneously offers valuable opportunities for integration and mutual learning. The existence of two discrete planning paradigms within a single region requires negotiation, adaptation, and innovation by both parties to achieve effective coordination. For instance, the establishment of the dual directorship of the Hengqin Cooperation Zone Management Committee, alongside the system for officials with Macao backgrounds to work in Hengqin, illustrates the potential for institutional experimentation. Furthermore, it encourages real-time coordination, iterative policy refinement, and the alignment of infrastructure investment priorities. Furthermore, Hengqin’s symbolic function as a testbed has bolstered stakeholder confidence and prompted administrative actors to adopt a risk-averse approach. This phenomenon remains uncommon in other regions characterized by more stringent regulatory frameworks. Consequently, the forerunner policy not only facilitates local experimentation but also plays an active role in shaping the institutional culture of cross-border governance, thereby laying the groundwork for more ambitious and scalable regional integration models.

Specific coordination content

The precise nature of coordination in practical applications is more intricate than it may initially seem. First, to prevent conflicts arising from differences in systems and laws during the cooperation process, the specific content of planning and construction regulations in the cooperation zone must be clearly defined. This includes identifying user groups, application scope, regulatory authorities, jurisdictions, and other relevant factors. Second, in terms of the planning and authorization process, the future development of Hengqin, which aims to improve the quality of life and job prospects of Macao residents, must integrate public involvement and collaboration between different government departments during the preparatory phase. This would increase its appeal to Macao. The flexibility of the planned revision process must be maintained to prevent getting caught up in a complicated review and editing procedure similar to that encountered in Macao. Third, the technical standards used in the planning phase must be ensured to align precisely with the existing technical indicators of both parties. This is necessary to prevent any possible misunderstandings or errors during implementation. However, the current technical planning indicators for Hengqin are complete. Based on these indicators, planning coordination can be achieved using Macao’s expertise in maintaining a high-quality living environment. This will result in the creation of a macro-micro cooperative zone planning technical indicator system. Ultimately, it is essential to prioritize the sharing of information, ideas, and experiences between the two parties in all planning practices, at both formal and informal levels. This interaction can foster trust and comprehension between the two parties, consequently diminishing the likelihood of misunderstandings arising from divergent thought processes. It is vital to quickly incorporate and merge the sophisticated and human-centered urban design principles of Macao into urban design. It is also crucial to accomplish the strategic goal of serving Macao and fully transition the design rationale from large-scale to a more human scale. As a cross-border region, Hengqin should strive to achieve greater integration between the two sides by overcoming the limitations of conventional planning concepts. For instance, the boundary river, which defines the border between the two sides, can be designed as an inland water landscape corridor, thereby enhancing connectivity and facilitating circulation between Hengqin and Macao.

Building on these ongoing efforts and future aspirations, the Hengqin-Macao case offers valuable insights into cross-border planning coordination within the “One Country, Two Systems” framework, illustrating how top-down policy incentives can shape urban space in complex cross-border collaborations, while also nurturing bottom-up cooperation through the creation of spatial environments conducive to cross-border activities. Future research on the influence of Hengqin’s distinctive legal and planning regimes on cross-border metropolitan development could yield important implications, particularly for addressing governance asymmetries in regions such as the Qianhai–Hong Kong interface. More broadly, such insights may inform the design of institutional mechanisms and planning strategies in other transboundary areas, particularly those emerging within the broader context of the Belt and Road Initiative. In this regard, Hengqin is a significant testbed for scalable and adaptive models of cross-border governance and regional integration.

About the authors

Jing Song Yang is a PhD candidate at the Institute of Urban and Sustainable Development, City University of Macau. He has a master degree of Urban Planning and Design from City University of Macau. His research focuses on cross-border planning coordination.

Bin Li is an Assistant Professor at the Institute of Urban and Sustainable Development, City University of Macau. He has a PhD in Urban and Regional Planning from University of Birmingham, U.K. His research focuses on urban regeneration.

Jing Yang is Head of the Research Construction and Development Department of the Hong Kong University of Science and Technology (Guangzhou), Vice President of the Macao Urban Planning Institute Council. She has a PhD in Urban System Engineering from Wuhan University, China. Her main research areas are smart cities, data governance, and urban renewal.

Ethical statement:

This study was approved by the Ethics Committee of Institute of Urban and Sustainable Development, City University of Macau (Approval No. RE-IUSD-202501). All procedures were conducted in accordance with the Declaration of Helsinki, and written informed consent was obtained from all participants prior to data collection.

References

- Behradfar, A. and Castanho, R.A. (2023), “Cross-border cooperation in spatial planning: facts and future lessons from European borderlands”, Castanho, R.A. (Ed.), *Handbook of Research on Current Advances and Challenges of Borderlands, Migration, and Geopolitics*, ICI Global, Hershey, PA, pp. 24-70.
- Buursink, J. (2001), “The binational reality of border-crossing cities”, *GeoJournal*, Vol. 54 No. 1, pp. 7-19.
- Central Committee of the Communist Party of China (2021), “Overall Plan for the Construction of the Guangdong-Macao In-Depth Cooperation Zone in Hengqin: No. 26”, State Council, PRC, available at: https://www.gov.cn/zhengce/2021-09/05/content_5635547.htm (accessed 4 December 2024).
- Decoville, A. and Durand, F. (2021), “An empirical approach to cross-border spatial planning initiatives in Europe”, *Regional Studies*, Vol. 55 No. 8, pp. 1417-1428.
- European Commission and Association of European Border Regions (AEBR) (1997), “Practical Guide to Cross-border Cooperation, Association of European Border Regions, Enschede”, available at: https://www.gov.cn/zhengce/2021-09/05/content_5635547.htm (accessed 4 December 2024).
- Fricke, C. (2015), “Spatial governance across borders revisited: organizational forms and spatial planning in metropolitan cross-border regions”, *European Planning Studies*, Vol. 23 No. 5, pp. 849-870.
- Government of the Macao Special Administrative Region (2013), “Urban Planning Law”, Government of the Macao Special Administrative Region, Macao, available at: https://bo.io.gov.mo/bo/i/2013/36/lei12_cn.asp (accessed 4 December 2024).

- Government of the Macao Special Administrative Region (2014a), “Urban Planning Committee”, Government of the Macao Special Administrative Region, Macao, available at: https://bo.io.gov.mo/bo/i/2014/08/regadm03_cn.asp (accessed 4 December 2024).
- Government of the Macao Special Administrative Region (2014b), “Implementation Rules for the Urban Planning Law”, Government of the Macao Special Administrative Region, Macao, available at: https://bo.io.gov.mo/bo/i/2014/08/regadm05_cn.asp (accessed 4 December 2024).
- Government of the Macao Special Administrative Region (2022), “Master Plan of the Macao Special Administrative Region (2020-2040)”, Government of the Macao Special Administrative Region, Macao, available at: https://urbanplanning.dsscu.gov.mo/download/20220214_tech_cn.pdf (accessed 4 December 2024).
- Hengqin New Area Administrative Committee (2016), “Master Plan of Hengqin New Area (2014-2020)”, Hengqin New Area Administrative Committee, Hengqin, available at: <https://www.hengqin.gov.cn/ghhjsj/index.html> (accessed 4 December 2024).
- Jańczak, J. (2017), “Town twinning in Europe: understanding manifestations and strategies”, *Journal of Borderlands Studies*, Vol. 32 No. 4, pp. 477-495.
- Lin, T. (2009), “Development and planning of urban systems across administrative regions: a case study of the Yangtze River Delta”, *Urban Problems*, Vol. 165 No. 4, pp. 23-29.
- Liu, J. (2022), “Technical rationality and interest game: reflections on collaborative planning in cross-border regions”, *Shanghai Urban Planning Review*, Vol. 164 No. 3, pp. 101-108.
- Medeiros, E. (2014), “Is there a new ‘trust’ in inner Scandinavia? Evidence from cross-border planning and governance”, *Geographical Annals: Series B, Human Geography*, Vol. 96 No. 4, pp. 363-386.
- Medeiros, E. (2018), “Erratum to: European Territorial Cooperation”, *European Territorial Cooperation*, Springer, Cham, p. E1.
- Nelles, J. and Durand, F. (2014), “Political rescaling and metropolitan governance in cross-border regions: comparing the cross-border metropolitan areas of Lille and Luxembourg”, *European Urban and Regional Studies*, Vol. 21 No. 1, pp. 104-122.
- Nyamwanza, S., Bikam, P. and Chakwizira, J. (2022), “Trans-border spatial planning: assessing the Musina-Beitbridge twinning agreement between South Africa and Zimbabwe”, Chavunduka, C., De Vries, W.T. and Duran Diaz, P. (Eds.), *Sustainable and Smart Spatial Planning in Africa*, CRC Press, Boca Raton, pp. 69-86.
- Oliveras González, X. (2016), “Initiatives of cross-border regional planning in Matamoros-Brownsville (Mexico-United States)”, *Geographical Investigations*, Vol. 89, pp. 154-167.
- Peña, S. (2007), “Cross-border planning at the US-Mexico border: an institutional approach”, *Journal of Borderlands Studies*, Vol. 22 No. 1, pp. 1-18.
- Perkmann, M. (2003), “Cross-border regions in Europe: significance and drivers of regional cross-border co-operation”, *European Urban and Regional Studies*, Vol. 10 No. 2, pp. 153-171.
- Tölle, A. (2013), “National planning systems between convergence and incongruity: implications for cross-border cooperation from the German - Polish perspective”, *European Planning Studies*, Vol. 21 No. 4, pp. 615-630.
- Urban Planning and Construction Bureau (2021), “The main responsibilities of the Urban Planning and Construction Bureau”, available at: http://www.hengqin.gov.cn/macao_zh_hans/hzqgl/zzjg/znjs/content/post_2990085.html (accessed 24 July 2024).
- Wu, Z. and Li, D. (2010), *Principles of Urban Planning*, China Architecture & Building Press, Beijing.
- Zäch, C. and Pütz, M. (2014), “Regional governance in cross-border cooperation: an analysis of the Interreg programme ‘Alpenrhein-Bodensee-Hochrhein’”, *disP - The Planning Review*, Vol. 50, No. 4, pp. 29-42.
- Zheng, W. (2019), “Spatial governance demands and coordination paths in cross-border regions”, *Planners*, Vol. 35 No. 2, pp. 32-37.

Corresponding author

Bin Li can be contacted at: binli@cityu.edu.mo

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