

A Comparative Analysis of 21st Century Housing Development Planning in Asian Metropolises

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ABSTRACT

Housing development planning in the 21st century involves addressing diverse challenges and opportunities across different regions of the world. Asia is the fastest-growing economic region, with many metropolises containing vast housing and urban development, including high-density living, aging populations, economic disparities, and natural disasters. This article aims to analyze and compare the housing development in the 21st century in major Asian metropolises, including Beijing, Tokyo, Singapore, and Bangkok, specifically in terms of housing policies, housing organizations, and laws and regulations. The study used secondary data from documents, research, theses, and related articles, along with interviews of experts to synthesize the lessons learned, advantages, and limitations in housing development. The results show that each city has faced unique challenges in housing development. Common trends were focused on sustainability, managing urbanization, and addressing affordability that continued from the previous decade. However, the degree of government intervention, market regulation, and emphasis on public housing varies significantly. Singapore stands out for its high level of government control and comprehensive public housing system. Beijing balances state control with market forces, using heavy regulation to manage affordability and urbanization. Tokyo relies more on market mechanisms, with less direct government involvement in housing provision, but a focus on deregulation to stimulate supply. Bangkok still faces challenges with urban sprawl, informal settlements, and balancing regulation with market-driven development. Each city's approach reflects its broader economic, social, and urban policies, with varying degrees of success in meeting the housing needs of its population, and informs housing policymakers, the housing market, and other relevant agencies in promoting sustainable development and inclusiveness—particularly in the implementation of housing solutions across other Asian metropolises.

Keywords: housing development planning, housing policy, housing organization, laws and regulations, 21st century urban challenges

INTRODUCTION

Housing is one of four important basic factors for human beings, as it provides stability to the smallest unit of society and improves the quality of life (United Nations [UN], 2016). Housing construction, meanwhile, is an important mechanism for economic development, as it generates employment and expands related industries (B. Povatong, personal communication, 2024, July 30). For these reasons, many countries prioritize housing development, and have established national housing policies to oversee the development of housing in the country (Phang et al, 2014; Kobayashi, 2015).

The New Urban Agenda (NUA), adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in 2016, is a global framework that guides sustainable urban development for the coming decades. It addresses the challenges and opportunities of urbanization, emphasizing inclusivity, equity, resilience, and environmental sustainability in cities. The concept of housing at the center emphasized the importance of placing housing development at the heart of urban development strategies (Khotcharee et al., 2024). Instead of contributing to urban sprawl, this concept advocated for denser, more compact development in existing urban areas (UN-Habitat, 2016). Almost a decade later, this strategy's outcomes started to bloom in several cities and metropolises, which confirmed the necessity of the housing at the centre concept. It promoted mixed-use developments where people live, work, and have access to amenities within walking distance, which conformed to the concept of job-housing balance (UN, 2016). Cities like Singapore and Tokyo emphasized this concept to create more vibrant and sustainable communities, while also making efficient use of land and infrastructure (United Nations-Habitat, 2017).

As East Asia has experienced high-density living, innovative space-saving housing solutions and micro-apartments have resulted in places like Tokyo, Hong Kong, and Seoul (Peng, 2012). However, an aging population has become a major issue, necessitating adaptable housing for the elderly (Hashimoto et al., 2020). Southeast Asia, on the contrary, is a region with

economic disparities, reflected in the contrast between luxury condominiums and extensive informal settlements (Panitchpakdi & Maglumtong, 2024). In addition to economic challenges, natural disasters have played significant roles in necessitating resilient housing planning and disaster management strategies.

Housing development in countries around the world has been adjusted according to specific situations and housing issues that change according to socioeconomic and housing market systems (Ma & Liu, 2024). Housing policy is a crucial development tool, which, along with housing organizations, as well as laws and regulations, facilitates government intervention in the market system to balance the supply and demand systems for sufficient housing (Panitchpakdi et al., 2022; Yoshino & Helble, 2016).

From the changing urban and housing situations in East and Southeast Asia, this research aims to identify and compare lessons learned, advantages, and limitations in housing development of fast-growing cities that adopted the NUA in their development. We focused on case studies of urban and housing development in the 21st century. The outcomes will provide greater insight into urban and housing development, lessons learned, and guidelines for developing cities in creating urban wellbeing and housing for all.

RESEARCH METHODOLOGY

Case study selection

Four case studies of Asian metropolises, specifically Beijing, Tokyo, Singapore, and Bangkok, were selected as they represented the development under the NUA concept. Beijing emphasized inclusive and affordable approaches through a balanced housing market with an enhanced supply of rental housing and affordable options. Tokyo focused more on sustainability and resilience for its aging society. Singapore exhibited all aspects of the NUA. Bangkok represented the inclusivity and resilience through low-income housing development.

Data Collection and Analysis

From the literature review, we identified four main aspects of the NUA: 1) sustainable development focused on sustainable practices of each city, and if they ensured healthy environmental and social dimensions under the housing development; 2) inclusive urbanization, with consideration to what extent the development ensured equal access to benefits of urbanization, housing, and building construction to all population groups; 3) affordable housing, with further examination focusing on housing finance and housing market, and if mechanisms exist to ensure 'housing for all' as mentioned in the NUA; and 4) resilient cities, and how case studies can highlight current measures that could influence future land and planning changes.

To synthesize the housing development models for comparison, this research adopted documentary analysis to examine the housing development models of four Asian metropolises and analyzed to what extent they are aligned with the NUA regarding the four aforementioned aspects. The degree of alignment was considered from coverage of organizations and collaboration between governments, civil society, and the private sector to effectively implement related laws and regulations in the four aspects of the NUA. Therefore, we focused on housing policy, housing organization, and laws and regulations, since the NUA framework also emphasizes the importance of effective spatial planning, governance frameworks, and local policies to guide urban development.

This research selected related documents from law and regulation papers, organization reports and websites, policy reports, research articles, and academic articles. We only included materials written in English to avoid misinterpretation due to translation. Additionally, to triangulate the analysis, we interviewed four experts in housing development and urban planning, including 1) Mr. Vichai Viratkapan, Acting Director of Real Estate Information Center, Thailand, 2) Assoc. Prof. Bussara Povatong, Ph.D., Head of Department of Housing, Faculty of Architecture, Chulalongkorn University, Thailand, 3) Assoc. Prof. Noppanant Tapananont, Ph.D., Professor Emeritus, Department of Urban and Regional Planning, Faculty of Architecture, Chulalongkorn University,

Thailand, and 4) Prof. Shigeru Fukushima, Ph.D. Faculty of Urban Science, Meijo University, Japan. All research procedures involving human participants adhered to ethical standards, with EC approval number COA006/2565.

DISCUSSION

Socioeconomic Development of Asian Metropolises

This literature review of four Asian metropolises- Beijing, Tokyo, Singapore, and Bangkok- provided insight into how their socioeconomic development shaped their housing development. Beijing's socioeconomic context could be described as "command economy meets urban modernization" (Ma & Liu, 2024). It played a pivotal role in the country's transition to a mixed economy and expanded its industries from manufacturing to technology, finance, and services (Deng et al., 2024; Galster & Lee, 2021). Massive investments in infrastructure, i.e., its subway network and high-speed rail links, transformed the city into a global hub for nearly 21 million people. China's Silicon Valley anchors Beijing's role in tech innovation and green technologies (Ma & Liu, 2024). However, there are some challenges, including severe air pollution and environmental degradation due to rapid industrialization, while housing affordability and wealth inequality remain significant issues (Galster & Lee, 2021).

Tokyo has been developed into a resilient and modern metropolis with economic stability. It remains one of the world's largest economies, focusing on finance, technology, and advanced manufacturing (Manda, 2015). While Japan's elderly population has rapidly grown, Tokyo has adapted by integrating elder-friendly infrastructure and health services. Tokyo's flexible zoning laws and private-sector-led housing supply have kept housing relatively affordable compared to other global cities (Yui et al., 2017; Zhang, 2020). Disaster preparedness is also important in Tokyo. Thus, it has invested more in advanced earthquake-resistant architecture and resilient infrastructure (Ministry

of Land, Infrastructure, Transport and Tourism [MLIT], 2015; Statistical Bureau, 2020).

Singapore has become a global hub for finance, trade, and innovation with an open economy, strong rule of law, and strategic location driving its success (Tan et al., 2024). The Housing and Development Board (HDB) provides affordable public housing for over 80% of the population (Lee, 2015), integrated urban planning, and ensures accessibility to blue, grey, and green infrastructures. High-quality education and skills training support the knowledge-driven economy (Lye, 2020). It aims to be a 'city in a garden,' emphasizing environmental sustainability and urban greenery (Sawatthanakoon et al., 2021). It has invested in water self-sufficiency, clean energy, and circular economy initiatives (Heo, 2014). However, some challenges appear related to rising income inequality and maintaining social cohesion in a multicultural society with limited land and resources.

Bangkok is Thailand's economic engine, contributing heavily to GDP through tourism, manufacturing, and services, all while balancing tradition and modernity (Mayakarn, 2013). Rapid urban growth has led to challenges in traffic congestion, with major investments in public

transport aiming to address mobility issues (Community Organization Development Institute [CPUD], 2021). Urban-rural disparities are stark, with wealth concentrated in Bangkok while other regions lag behind (Khotcharee et al., 2024). The Bangkok Metropolitan Administration (BMA) uses the comprehensive plans and master plans for conservation in Rattanakosin Island to manage the cultural preservation and provide tourism infrastructure (Sunanharod et al., 2023). The spatial distribution of cultural, historical, shopping, and recreational activities was developed along the mass transit line within an 800-meter radius from the stations. These activities catalyzed a nexus of the urban growth and economic development of Bangkok (Iamtrakul et al., 2024). Detached houses are mostly located in the high potential areas with well-organized elements of housing projects' common areas, whereas townhouses are located farther from key amenities (Tochaiwat et al., 2023; Tochaiwat & Seniwong, 2024). On the other hand, informal housing and urban poverty remain significant concerns. Still, there are other pressing challenges with severe air pollution, frequent flooding, and waste management issues (Table 2).

Table 2

Socioeconomic Contexts in Four Asian Metropolises

| Context | Beijing | Tokyo | Singapore | Bangkok |
|-----------------------|--------------------------------|-------------------------------|-----------------------------|----------------------------------|
| Culture | Balancing heritage with growth | Modern yet deeply traditional | Multicultural and pragmatic | Strong cultural preservation |
| Economic | Tech, finance, services | Finance, manufacturing, tech | Finance, trade, innovation | Tourism, services, manufacturing |
| Urban Planning | Rapid expansion, mixed results | Resilient, balanced | Highly planned, integrated | Rapid but uneven |
| Sustainability | Emerging focus | Advanced leadership | Global leader | Gradual progress |
| Challenges | Inequality, pollution | Aging population | Income inequality | Urban-rural divide |

Note. This table demonstrates the socioeconomic contexts in four Asian metropolises under the aspects of culture, economics, urban planning, sustainability, and challenges (from the researcher's analysis).

There are several challenges from these cases, including: (1) Sustainability, as all cities face environmental pressures; (2) Population pressures with an aging society, congestion, inclusivity, and quality of life; and (3) Global competition, as these cities compete for global investment. Thus, this paper will focus on comparing these four metropolises and their housing development planning in the 21st century under the New Urban Agenda (NUA).

The research portrayed how the socioeconomic development shaped the housing policies in each case, what the issues were, and how they dealt with these issues through housing policy, organization, and laws and regulations (Figure 1).

Evolution of Housing Policy in Beijing

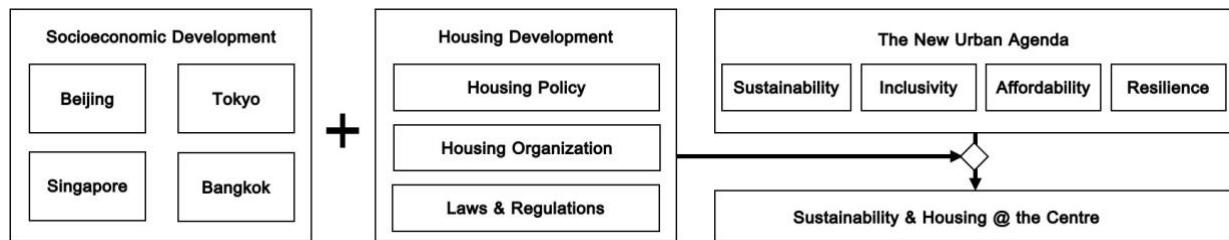
Between the 2000s to 2010s, the housing policy of Beijing mainly focused on inclusive urbanization and affordable housing, aligning with the NUA framework. However, the national trend of transitioning from welfare housing to a market-oriented system, which was initiated in the 1990s, caused a surge in housing development, driven by urbanization and rising demand in 2000 (Deng et al., 2024). To maintain affordability and curb land hoarding and speculation, the national government introduced policies to regulate land supply and prevent overheating in the property market, including the 'Notice on Strengthening Real Estate Market Management' in 2003 (Galster & Lee, 2021). However, the global financial crisis in 2008 briefly softened Beijing's property prices. Thus, the government relaxed some restrictions to stabilize the market, such as tax cuts and reduced mortgage rates (Zhu & Tian, 2024). In 2009, the introduction of the affordable housing system scaled up projects, with a focus on public rental housing and subsidized homeownership for middle and low-income families.

From the 2010s onwards, the government continued to ensure inclusive urbanization and affordable housing by promoting access to housing from the rural-urban immigration population surge, including higher down payments for second-home purchases, and

requirements for developers to build more affordable units (Zhang et al., 2023). Additionally, the major Home Purchase Restrictions (HPR) policy limits the number of homes a household can buy and raises down payment requirements for second properties to 60% in 2010 (Ma & Liu, 2024).

In 2011, the HPR policy was expanded, and Beijing further restricted real estate speculation to stabilize housing prices, causing intensified regulation and diversification (Deng et al., 2024). The National Five Measures were then implemented in 2013, raising capital gains taxes on property sales to curb investment-driven purchases (Zhu & Tian, 2024). This implementation resulted in housing supply becoming more diversified with increased focus on affordable rental housing, including public rental programs. Efforts were also made to encourage rural migrants to rent rather than buy (Zhang et al., 2023; Zhu & Tian, 2024). However, a slight policy relaxation occurred to counter slowing economic growth. Mortgage interest rates were cut, and minimum down payments for first-home buyers were reduced in 2015. Beijing emphasized that 'houses are for living in, not speculating' in 2016 (Ma & Liu, 2024). Policy implementation had tightened financing and regulated housing purchases, including extended residency requirements for purchasing properties in Beijing. The government accelerated co-ownership housing projects to make homes more affordable (Galster & Lee, 2021; Zhang et al., 2023).

Public housing construction and urban renewal projects were expanding throughout the 2010s to the 2020s. However, no clear policies indicated environmentally sustainable development or considerations regarding resilient land use in urban areas. Therefore, the policy in Beijing supported social sustainability according to the NUA in two ways. First, they considered mixed-income housing from long-term rentals in 2018 (Zhu & Tian, 2024). Second, they launched a multi-tiered housing system integrating public rental housing partnered with state-owned enterprises, co-ownership housing, and market-oriented supply (Deng et al., 2024; Zhu & Tian, 2024).

Figure 1*Analytical Framework*

Note. This figure demonstrates the analytical framework of this study. Housing Policy.

In line with national strategies, Beijing continues to focus on a balanced housing market with an enhanced supply of rental housing and affordable options, reinforcing the policy theme of housing for residence, not speculation, and strengthened regulation to prevent housing market bubbles in the 2020s. The policies aimed to stabilize land prices, housing prices, and expectations after COVID-19. It expanded public rental housing projects, focusing on low-income groups and migrant workers (Deng et al., 2024; Zhang et al., 2023). Urban renewal programs were also prioritized to improve the older housing stock. In 2023, policies emphasized boosting affordable housing construction and streamlining rental housing processes. Additionally, initiatives were targeted at improving property rights for co-ownership housing (Ma & Liu, 2024; Zhu & Tian, 2024).

Evolution of Housing Policy in Tokyo

Following Japan's 1990s real estate crash, Tokyo focused on stabilizing the housing market and addressing excess housing supply (Kobayashi, 2015). It implemented urban redevelopment programs and loosened restrictions to encourage mixed-use developments and private investments, particularly in central Tokyo (Yoshino & Helble, 2016). Housing loans and subsidies supported families and first-time buyers. During 2003 – 2008, Tokyo focused on the development of compact city policies and urban renewal by the Tokyo Metropolitan Government (TMG), aiming to create concentrated, transit-accessible urban centers (S. Fukushima, personal communication, 2023, November 21; Hashimoto et al., 2020). Projects like Shibuya Redevelopment began reshaping major hubs by building residential and

commercial skyscrapers to maximize land use and reduce suburban sprawl.

The housing policy of Tokyo emphasized inclusive and affordable housing in the 2000s by supporting young families and first-time home buyers. Tokyo combined disaster-resilient housing policy with the urban development plan to address growing aging housing stocks. After the global financial crisis in 2008, Japan strengthened affordable housing initiatives. The Urban Renaissance Agency (UR) expanded efforts to refurbish public housing stock while ensuring disaster resilience, as aging infrastructure became a growing concern (S. Fukushima, personal communication, 2023, November 21; Kobayashi, 2015). The Tohoku Earthquake in 2011 prompted the city to focus more on disaster-proof housing. Policies were revised to improve earthquake resilience standards for new construction and incentivize older housing retrofits (MLIT, 2015).

In the 2010s, the development shifted towards urban renewal projects, such as large-scale redevelopment in the waterfront area for the Tokyo 2020 Olympics (Yoshino & Helble, 2016; Yui et al., 2017). This shift made housing in Tokyo less affordable. Former industrial zones were transformed into high-density residential districts with mostly luxury condominiums. As a result, social housing faced challenges with urban renewal often displacing lower-income residents, sparking concerns about gentrification and housing inequality (Panitchpakdi et al., 2022).

Tokyo's demographic shift due to population aging and population decline intensified housing issues. Policies began targeting vacant homes in suburban and rural areas, offering subsidies for renovations (Panitchpakdi et al., 2022). There was more concern for environmental

sustainability, as the government invested in smart cities, integrating green housing, digital technology, and sustainable infrastructure. Concurrently, high-rise development continued to accommodate growing demand for mixed-use spaces (S. Fukushima, personal communication, 2023, November 21; Panitchpakdi et al., 2022). Redevelopment efforts also focused on improving public transportation links to make central districts more accessible, which supported inclusive urbanization.

Evolution of Housing Policy in Singapore

Singapore closely controls housing affordability and sustainable land use by introducing the Build-to-Order (BTO) system in 2001. The aim is to align housing supply with demand and avoid oversupply issues. The BTO allowed the Housing and Development Board flats (HDB flats) to be built only after sufficient demand was established through balloting (Heo, 2014; Lee, 2015). This helped prevent unsold units, a problem seen in the late 1990s after the Asian Financial Crisis. During 2005 – 2010, Singapore focused on affordability, aging population, and sustainable development to meet growing housing needs for seniors and lower-income groups. In 2009, the Lease Buyback Scheme (LBS) was introduced, allowing elderly homeowners to sell part of their flat's lease to HDB for retirement income (Phang & Helble, 2016). The Sale of Balance Flats (SBF) scheme began in the same year, offering leftover flats from previous projects (Heo, 2014).

The government introduced multiple cooling measures after the global financial crisis in 2008, including tightening mortgage loan rules and Additional Buyer's Stamp Duty (ABSD) for property purchases (Phang & Helble, 2016). To curb speculation in the resale market, more cooling measures were implemented, especially for private property owners purchasing HDB flats during 2016 - 2020. Grants were enhanced to improve housing affordability, including the Enhanced CPF Housing Grant (EHG) in 2019, providing up to S\$80,000 to eligible first-time buyers (Lye, 2020). During the COVID-19 pandemic, construction delays led to a shortage of HDB flats, spiking prices in the resale market. The government responded by ramping up BTO supply and providing assurances to stabilize the market (S. Fukushima, personal communication,

2023, November 21; Tan et al., 2024). Housing grants were further expanded for both new and resale flat buyers, while measures were introduced to slow resale price growth (Panitchpakdi & Maglumtong, 2024).

Inclusive urbanization measures in Singapore were first implemented in 2002 with the Married Child Priority Scheme. The policy encouraged families to live close to each other for mutual support (Lye, 2020). In addition, broader groups of citizens, such as the elderly and young married couples, were supported for greater inclusivity and social sustainability. The Enhancement for Active Seniors (EASE) program upgraded senior-friendly features in older flats in 2012 (Lee, 2015). In 2015, two-room Flexi Flats were introduced, merging small flat options with customizable lease durations for seniors, improving flexibility in public housing options (Lye, 2020). In 2023, the government prioritized younger first-time married couples through an additional ballot chance and priority allocation under the Family and Parenthood Priority Scheme. Sustainability gained focus with Punggol Eco-town in 2010, Singapore's first green housing development, promoting sustainable living and water management (Sawatthanakoon et al., 2021).

Evolution of Housing Policy in Bangkok

Bangkok largely implemented a policy focusing on affordable housing and inclusive urbanization targeted to low- and middle-income groups. Since the 1970s, Thailand has addressed low-income housing and informal settlements issues using four policy strategies by the NHA, including land-sharing, re-blocking, reconstruction, and relocation (Viratkapan & Perera, 2006). During 2000 – 2003, Bangkok attempted to clear slum housing. As it experienced large-scale rural-urban migration, informal settlements surged. Thus, the Baan Mankong Program was launched in 2003 and managed by the Community Organizations Development Institute, which, by 2004, had provided secure housing to over 130,000 urban and rural households (CODI, 2022). This government-led initiative empowered slum communities to upgrade housing through collective ownership, loans, and subsidies (Panitchpakdi & Maglumtong, 2024).

Later, in 2004 – 2010, housing and urban development in Bangkok was focused on urban

renewal and evictions. Several urban beautification projects in Bangkok intensified (National Housing Authority [NHA], 2017; Department of City Planning and Urban Development [CPUD], 2021) and led to the clearing of informal settlements along the Chao Phraya River and the city's clogged canals, while Baan Mankong offered solutions for security of tenure for the squatters in the same location (CODI, 2022).

Housing policy in Bangkok did not begin climate change mitigation until canal-side residents vulnerable to flooding and evictions were impacted (Marks, 2019; B. Povatong, personal communication, 2024, July 30). The devastating 2011 Bangkok floods highlighted the dangers of unplanned housing in flood-prone zones. There was a dire need for an overhaul of the land use planning system in Thailand, particularly the institutional arrangement and capacity (Ratanawaraha, 2016). Policies shifted to prioritize relocating communities at risk of climate impacts (Marks, 2019; N. Tapananont, personal communication, 2024, November 22). Urban canal restoration plans were introduced to improve drainage and reduce flooding, though this often displaced vulnerable populations.

After the recovery from economic and flood crises in 2011, Bangkok saw increases in condominium projects, which later caused gentrification during 2016 – 2019. During that period, developers focused on building high-rise condominiums targeting middle-income and foreign buyers (Tochaiwat & Seniwong, 2024). Downtown areas saw soaring land prices, as well as worsening housing affordability for low-income families (Panitchpakdi & Maglumtong, 2024). Efforts to expand affordable housing continued, but urban policies often favored commercial developments (V. Viratkapan, personal communication, 2024, November 22). However, the spread of COVID-19 in 2020 caused a huge change in later housing policies. There was rising demand for low-rise housing, as residents prioritized larger living spaces and suburban lifestyles (Tochaiwat et al., 2023). Developers responded with luxury and mid-range housing projects in suburbs (Panitchpakdi & Maglumtong, 2024), as healthy housing development for all highlighted the wellbeing trends in the contemporary world (Jarutach, 2023). Meanwhile, the government continued initiatives under Baan

Mankong to relocate canal-side dwellers, and tensions between city beautification and housing for the poor remain prominent (B. Povatong, personal communication, 2024, July 30), as shown in Table 3.

Housing Organizations

Housing Organizations in Beijing

In Beijing, several housing organizations and agencies assist with various aspects of housing, ranging from affordable housing and public housing projects to private real estate services. Public organizations mainly support inclusive urbanization and affordable housing by overseeing public housing projects and housing quality (Beijing Municipal Commission of Housing and Urban-Rural Development: B1), while Beijing Public Housing Center (B2) manages affordable and public housing initiatives by providing housing to low-income families, elderly citizens, and other groups in need of housing support. Private organizations have less responsibility for inclusive urbanization and affordable housing. They focus on the promotion of best practices and standards in the real estate market (Beijing Real Estate Association: B4), by offering data, research, and consulting services related to the housing market (China Real Estate Information Corporation: B5), as well as providing comprehensive services, including buying, selling, and renting residential and commercial properties (Homelink (Lianjia): B6).

There is no clear indication that housing organizations in Beijing fully promote sustainable development and resilient city initiatives. As a public organization, B1 is also responsible for urban planning, but it did not provide details on promoting environmental sustainability. Another organization that may have a supporting role in sustainable and inclusive urbanization is (B3) Beijing Urban Construction Group Co., Ltd. (BUCG). It is a large state-owned enterprise, which is involved in urban construction and real estate development in Beijing, playing a key role in housing construction and infrastructure projects. Lastly, one private organization, (B7) Beijing Property Management Association, focuses on property management services to ensure high standards in property maintenance and services.

Table 3*Housing Policy in the 21st Century in Four Asian Metropolises*

| Period | Beijing | Tokyo | Singapore | Bangkok |
|--|--|---|--|---|
| 2000 - 2004 | Housing commercialization & market development | Recovery from the lost decade | Managing demand & Build-to-Order implementation | One-million housing - slum clearance |
| 2005 - 2009 | Controlling market overheating & promoting affordability | Compact city policies & urban renewal | Affordability, aging population & sustainable development | City beautification - urban renewal & slum evictions |
| 2010 - 2014 | Intensified regulation & diversification | Post-financial crisis adjustments | Cooling measures & flexibility | Post-flood recovery & resettlement |
| 2015 - 2019 | Houses are for living in, not speculating – stricter restrictions | Urban resilience – environmental sustainability & disaster readiness | Managing speculation & enhancing grants | Rising of the condominium market & gentrification |
| 2020 - 2024 | Ensuring stability & promoting rental markets | Aging population & smart cities | Family & parenthood priority scheme | Luxury condominiums & canal-side dwellers relocation |
| Influencing factors on housing policy | Economic development & housing market – housing ownership shifted from owner-occupier to rentals | Demographic changes, natural disasters, & environmental issues – shrinking cities required high-density development | Housing supply, affordability, & demographic changes – prioritize young families and the elderly | Private developers & mass-transit development heavily affected the housing market, while informality remains a huge concern |

Note. This table demonstrates the development of housing policy in four Asian metropolises from 2000 to 2024 (from the researcher's analysis).

Housing Organizations in Tokyo

Tokyo has a range of organizations and agencies dedicated to different aspects of housing, including affordable housing, urban planning, and real estate services. However, both national and local authorities in Tokyo mostly focus on inclusive urbanization and an affordable housing scheme. Public organizations include (T1) Tokyo Metropolitan Housing Supply Corporation (TMHC), which provides affordable rental housing and supports housing development projects aimed at low-income households, young families, and the elderly; and (T2) Urban Renaissance Agency (UR), which is a national

public corporation responsible for providing affordable and quality housing across Japan, and managing rental housing, urban redevelopment, and disaster recovery projects. On the other hand, private organizations target growth and quality real estate development, and do not clearly state housing affordability at all: (T5) Real Estate Companies Association of Japan (RECAJ) promotes the healthy development of the real estate market and addresses industry-related issues, while (T6) Japan Property Management Association (JPMA) focuses on the property management, and (T7) Tokyo Real Estate Association supports real estate professionals in real estate services.

Sustainable development and resilient city framework are overseen by public organizations, including (T3) Tokyo Metropolitan Government Bureau of Urban Development and (T4) Japan Housing Finance Agency (JHF). T3 supports public housing projects, urban redevelopment, and initiatives to improve living conditions in the city. T4 is a government-affiliated organization that provides financing and support for housing development, offering mortgage loans, promoting disaster-resistant housing, and supporting energy-efficient homes.

Housing Organizations in Singapore

Singapore has a well-structured housing system that provides and manages housing for its residents, especially for affordable pricing to all population groups. Various agencies ensure the availability of public housing and promote home ownership, including: (S1) Housing & Development Board (HDB), (S2) Urban Redevelopment Authority (URA), (S3) Central Provident Fund (CPF), and (S7) National Housing Fund (NHF). S1 is responsible for planning, developing, and managing public housing estates. S2 plans and facilitates sustainable urban development. S3 is directly making homeownership more accessible by providing various saving schemes to the citizens, along with S7, which provides financial support for housing development and maintenance in Singapore.

For sustainable development and resilient city initiatives, public organizations show primary responsibility by managing state land and properties for housing development with (S4) Singapore Land Authority (SLA). In addition, (S5) Building and Construction Authority (BCA) sets standards for construction and building practices, green building initiatives, and the overall sustainability of buildings. (S6) Council for Estate Agencies (CEA) is a statutory board that regulates the real estate agency industry in Singapore to ensure that real estate agents and agencies adhere to professional standards. Meanwhile, private organizations (S8) Real Estate Developers' Association of Singapore (REDAAS), represent the interests of real estate developers in Singapore. It promotes the development of the real estate industry and

advocates for policies that support sustainable growth in the housing market.

Housing Organizations in Bangkok

In Bangkok, several organizations and government agencies focus on housing development, urban planning, and affordable housing initiatives. Public organizations at the national level advocate for affordable housing and inclusive urbanization, including (K1) National Housing Authority (NHA), (K2) Community Organizations Development Institute (CODI), (K3) Government Housing Bank (GH Bank), and (K5) Social Security Office (SSO). K1 is the primary government agency that focuses on providing affordable housing options for low- and middle-income citizens in urban areas. K2 provides financial assistance and technical support to help low-income communities develop and improve their housing conditions, particularly in slum areas. K3 is a state-owned financial institution that plays a crucial role in making homeownership more accessible, while K5 provides housing loans and support for low-income workers to help them secure affordable housing. Similar to Tokyo, private organizations in Bangkok focus on the growth of the real estate market more than on the affordability of housing. (K7) Thai Real Estate Association advocates for policies that promote the growth of the real estate sector.

Local level public organizations show more responsibility for sustainable development. (K4) Bangkok Metropolitan Administration (BMA) is responsible for the overall administration and development of Bangkok, including housing and urban planning. It works on various slum redevelopments and infrastructure improvements to support urban living. Moreover, the implied responsibility of (K6) Department of Public Works and Town & Country Planning (DPT) targets resilient development through overseeing zoning regulations, land use planning, and infrastructure development that impacts housing development projects. A private organization, (K8) Thai Condominium Association, provides guidance and support to condominium developers and owners, ensuring compliance with regulations and promoting sustainable development, as well as environmental impact assessment (Suttipun & Stanton, 2012).

In conclusion, for housing organizations, Beijing's housing organizations have shaped the housing landscape from policy and development to market regulation and service provision. The Chinese government has implemented various policies to make housing more affordable, sustainable, and inclusive, but challenges still remain. In Tokyo, its housing policies have offered a range of services from affordable housing and financing to real estate development and property management. In Singapore, the government has collectively contributed to ensuring affordable housing options, effective urban planning, and a high quality of living for its residents. In Bangkok, the government has addressed the housing needs of the growing population and attempted to identify affordable housing solutions for urban planning and real estate development (Table 4).

Laws and Regulations in Housing Development

Laws and Regulations in Housing Development in Beijing

In Beijing, all land is owned by the state, and individuals can only lease land use rights for a specified period (Ma & Liu, 2024). Any conversion of land type requires government approval. Laws and regulations under the sustainable development aspect ensure that urban development is sustainable and minimizes environmental impacts (B1). For inclusive urbanization, Beijing focuses on ownership rights, the use of property, and the responsibilities of property owners and managers (B2), as well as (B3) standards for construction quality, safety, and the responsibilities of developers and contractors (Deng et al., 2024). Additionally, they support inclusivity by implementing (B4) to provide low- and middle-income residents with eligibility criteria and allocation of government subsidies (Galster & Lee, 2021). The legal framework (B5),

Table 4

Housing Organizations in Four Asian Metropolises

| Organizations and focus | Beijing | Tokyo | Singapore | Bangkok |
|-------------------------|---|--|---|---|
| Public | B1, B2, B3 (Housing policy, urban planning & affordable housing) | T1, T2, T3, T4 (Housing policy, urban planning, financing & support for affordable, & adequate housing) | S1, S2, S3, S4, S5, S6, S7 (Housing policy, urban planning, financing, support for affordable & adequate housing, housing market control & regulations) | K1, K2, K3, K4, K5, K6 (Land-use planning, public housing development and support, financing for low-income housing, & community-driving initiatives) |
| Private | B4, B5, B6, B7 (Enable market mechanism & quality services using data) | T5, T6, T7 (Enable a healthy and quality development & management) | S8 (Advocate for policies & sustainable development) | K7, K8 (Advocate for policies & the growth of real estates & sustainable development) |

Note. This table demonstrates the analysis of housing organizations in four Asian metropolises between public and private, and their focuses (from the researcher's analysis).

qualifications, project approvals, and construction standards (B6), registration and transactions (B7), and speculation control (B8) are addressed to ensure the stability of the real estate market, which contributes to more affordable housing in the market. Meanwhile, there is a support regulation (B9) to protect fair rental agreements for owners and tenants (Zhu & Tian, 2024). Lastly, the Land Administration Law (B10) regulates the use, development, and management of land at the national level, while the local level oversees housing policies, including public housing management, housing quality standards, and urban development projects (B11) (Table 5).

Laws and Regulations in Housing Development in Tokyo

For sustainable development, Tokyo strictly requires that large-scale housing and urban development projects undergo impact assessments (T1) before project approval to minimize negative effects. In addition, there are

incentives for building energy-efficient and durable homes, and tax benefits and subsidies for long-life housing projects (T2). For inclusive development, Tokyo addressed zoning, construction, safety, and quality standards (T3), as well as (T4) a 10-year warranty on structural defects for new homes, standards for housing construction and materials, and quality evaluations (Manda, 2015). The promotion of inclusive urbanization also addressed urban reconstruction for revitalization or disaster resilience improvements (T5), barrier-free housing (T6) for elderly and disabled persons in residential buildings and public spaces (S. Fukushima, personal communication, 2023, November 21), and safe, comfortable, and affordable housing for all citizens (T7).

Transparent transactions protected the rights of buyers and sellers under the law (T8), and controlled leases, maintenance, and termination of leases for landlord and tenants' rights (T9) were addressed to support affordable housing. Also, issues related to condominiums were

Table 5

Laws and Regulations Related to Housing Development in Beijing

| Law type | Control | Support |
|--------------------------------|--|---|
| Sustainable development | B1: Environmental Protection Law | - |
| Inclusive urbanization | B2: Property Law B3: Construction Law | B4: Regulations on the Administration of Affordable Housing |
| Affordable housing | B5: Urban Real Estate Administration Law B6: Regulations on the Administration of Development & Operation of Urban Real Estate B7: Beijing Municipal Real Estate Registration Regulations B8: Regulations on the Prevention & Control of Urban Real Estate Market Risks | B9: Regulations on the Leasing of Urban Housing |
| Resilient cities | B10: Land Administration Law | B11: Beijing Municipal Housing & Urban-Rural Development Commission Regulations |

Note. This table demonstrates the analysis of laws and regulations related to housing development in Beijing between control and support under the sustainability aspects (from the researcher's analysis).

mentioned (T10). Lastly, Tokyo amended laws and regulations (T11) to manage urban growth and land use efficiently (S. Fukushima, personal communication, 2023, November 21, 2023). Land use was specified (T12) where housing developments can take place, as well as the density and type of housing allowed (N. Tapananont, personal communication, 2024, November 22). Moreover, a framework (T13) for large-scale housing and mixed-use projects, with procedures for land readjustment, financial support, and public-private partnership opportunities in urban development, is applied (S. Fukushima, personal communication, 2023, November 21). The TMG Ordinances (T14) addressed support for both resilient and sustainable development of Tokyo through local regulations on building density and green spaces, disaster-resilient building codes, and special incentives for sustainable and community-focused housing projects (Table 6).

Laws and Regulations in Housing Development in Singapore

Due to limited land resources and high population density, the Singapore government has implemented stringent measures to ensure

efficient land use and well-planned urban development. Singapore also sets environmental standards (S1) to minimize environmental impacts from all developments. Moreover, energy consumption standards and incentives for energy-efficient retrofitting of buildings (S2), and eco-friendly practices in urban planning and housing development (S3) were addressed to promote sustainable development. Known as an inclusive city, Singapore regulates building safety, design, and construction standards (S4), the management and maintenance of strata-titled properties (S5), and fire safety standards with Earthquake-Resistant Building Regulations (S6). Regulating rental prices for certain residential properties helped protect tenants from excessive rent increases (Phang & Helble, 2016); hence rent control (S7) was amended. The repeal allowed for more flexible and market-driven rental arrangements. Regarding affordable housing, Singapore citizens and permanent residents are prioritized (S8) for residential property ownership (Heo, 2014) along with buyers and sellers' rights protection (S9). In addition, HDB Policies (S10) administered a range of policies for public housing, including eligibility criteria for purchasing HDB flats, grants for first-time buyers, and schemes for upgrading older flats (Mayakarn, 2013).

Table 6

Laws and Regulations Related to Housing Development in Tokyo

| Law type | Control | Support |
|--------------------------------|---|--|
| Sustainable development | T1: Environmental Impact Assessment Law | T2: Act on the Promotion of Long-Life Quality Housing T14: TMG Ordinances |
| Inclusive urbanization | T3: Building Standards Act T4: Housing Quality Assurance Act | T5: Act on Special Measures Concerning Urban Reconstruction T6: Act on Promotion of Barrier-Free T7: Basic Act for Housing |
| Affordable housing | T8: Real Estate Transaction Business Act T9: Act on Land & Building Leases | T10: Act on the Promotion of Smooth Distribution of Condominiums |
| Resilient cities | T11: City Planning Act T12: Land Use Zoning Regulation | T13: Urban Redevelopment Law T14: TMG Ordinances |

Note. This table demonstrates the analysis of laws and regulations related to housing development in Tokyo between control and support under the sustainability aspects (from the researcher's analysis).

Finally, the long-term plans and strategies were outlined in the Master Plan (S11) for a resilient city for all developments. Also, there is a legal framework (S12) for the rights and responsibilities of owners and management corporations. The major support for the resilient city of Singapore is the establishment of HDB, supported by (S13). The agency governed the development, management, and sale of HDB flats, which house the majority of Singapore's population (Sawatthanakoon et al., 2021). The Land Act (S14) empowered the government to acquire land – a critical tool in facilitating urban renewal and infrastructure projects (Phang & Helble, 2016), where URA Guidelines (S15) governed development from conservation of heritage buildings to the development of green buildings (Table 7).

Laws and Regulations in Housing Development in Bangkok

Overall, laws and regulations in housing development in Bangkok aim to control urban

growth, ensure building safety, protect the environment, and provide affordable housing options. For sustainable development, the larger housing projects nationwide have to assess environmental impact (K1), including pollution, waste, and resource use. At the local level, the BMA (K2) issues additional regulations specific to Bangkok, e.g., special zoning regulations in high-density areas or requirements for public green spaces in new developments. Building control (K3), especially high-rise accommodation (K4), assure the inclusive urbanization addressing construction standards, building safety, the issuance of building permits, development of the project, sale, and management. Moreover, homebuyers are protected from low-quality housing (K5), while low- and middle-income households are supported [K6] by the Thai government through initiatives by the NHA and GH Bank. These programs often involve subsidies, low-interest loans, or public-private partnerships (NHA, 2017; V. Viratkapan, personal communication, 2024, November 22).

Table 7

Laws and Regulations Related to Housing Development in Singapore

| Law type | Control | Support |
|--------------------------------|---|--|
| Sustainable development | S1: Environmental Protection and Management Act (EPMA) (Ch. 94A) | S2: Energy Conservation Act (Ch. 92C) S3: Sustainable Singapore Blueprint |
| Inclusive urbanization | S4: Building Control Act (Ch. 29) S5: Building Maintenance & Strata Management Act (BMSMA) (Ch. 30C) S6: Fire Safety Act (Ch. 109A) | S7: Rent Control Act (Ch. 274A) |
| Affordable housing | S8: Residential Property Act (Ch. 274) S9: Conveyancing & Law of Property Act (Ch. 61) | S10: HDB Policies |
| Resilient cities | S11: Planning Act (Ch. 232) S12: Land Titles (Strata) Act (Ch. 158) S6: Fire Safety Act (Ch. 109A) | S13: Housing and Development Act (Ch. 129) S14: Land Acquisition Act (Ch. 152) S15: URA Guidelines |

Note. This table demonstrates the analysis of laws and regulations related to housing development in Singapore between control and support under the sustainability aspects (from the researcher's analysis).

For affordable housing, Thailand permits foreign ownership of up to 49% of the total floor area of a condominium building (Panitchpakdi et al., 2022; B. Povatong, personal communication, 2024, July 30) to maintain access to home ownership for Thais and to prevent speculation by foreigners (K7). In addition, the government introduced a new tax structure (K8) based on the property's value and use, especially for second homes. For the local level, BMA regulations (K2) also give incentives of a Floor to Area Ratio (FAR) bonus for private developers who include affordable housing units in their development. However, Thailand does not have comprehensive rent control. Finally, national law (K9) governed land use planning and urban development across Thailand. It provided the legal foundation for zoning regulations, which dictate land use in different areas of Bangkok (CPUD, 2021), where the land code (K10) governed land ownership, use, and transfer of all land in Thailand. For more efficient urban development and optimal use for housing, particularly in urban renewal projects in Bangkok, the law (K11) facilitated the reorganization of land parcels. Also, the Land Allocation Control Act (2000) (K12) regulated the subdivision of land for housing development, ensuring that developments meet minimum standards for lot sizes, infrastructure, and public services,

including roads, drainage, and utilities in new housing projects (Ratanawaraha, 2016), as shown in Table 8.

Alignment with the New Urban Agenda

Beijing's housing policies reflected the NUA's goal of providing affordable housing by controlling housing prices, coupled with policies to provide affordable housing for low- and middle-income groups through several controls and supports by both national and local government. These various policies aligned with the NUA's emphasis on inclusive urban development. The Chinese government had increasingly focused on sustainable urban development, promoting green buildings and reducing carbon emissions through the Environmental Protection Law. This is consistent with the NUA's goals of environmentally sustainable cities. Beijing's efforts to modernize infrastructure and improve resilience to natural disasters were in line with the NUA's call for resilient urban environments. Although Beijing had policies aimed at providing affordable housing, challenges remain in ensuring that all urban residents have access to adequate

Table 8

Laws and Regulations Related to Housing Development in Bangkok

| Law type | Control | Support |
|--------------------------------|--|--|
| Sustainable development | K1: Environmental Quality Promotion Act (1992) & Environmental Impact Assessment (EIA) | K2: BMA Regulations |
| Inclusive urbanization | K3: Building Control Act (1979) K4: Condominium Act (1979) | K5: Housing Development Act (2000) K6: Affordable Housing Programs |
| Affordable housing | K7: Foreign Business Act (1999) K8: Land & Building Tax Act (2019) | K2: BMA Regulations |
| Resilient cities | K9: Town & City Planning Act (1975) K10: Land Code (1954) | K11: Land Readjustment Act (2004) K12: Land Allocation Control Act (2000) |

Note. This table demonstrates the analysis of laws and regulations related to housing development in Bangkok between control and support under the sustainability aspects (from the researcher's analysis).

housing (Zhu & Tian, 2024). Also, Beijing still faces the challenge of controlling urban sprawl (Yoshino & Helble, 2016), a key concern of the NUA, which advocated for compact cities and efficient land use.

Tokyo focuses on green building practices and disaster preparedness, including earthquake-resistant structures. Additionally, the Act on the Promotion of Long-Life Quality Housing ensures the sustainable use of materials. These policies and regulations align with the NUA's emphasis on resilience and sustainability. The city's integration of public transportation with housing development also reflects the NUA's principles of sustainable mobility and compact urban forms. Even though Tokyo's market-driven approach may not fully align with the NUA's focus on social inclusion, the city's policies have gradually addressed issues of housing affordability through deregulation and increasing housing supply. The government controls transparent transactions, fair leases, fair prices, and protects the rights of buyers and owners using several laws. Also, vacant houses in Japan are one of the major issues that need to be solved, an issue that comes with an aging population (Panitchpakdi et al., 2022). Although it has taken steps to increase housing supply, challenges remain in ensuring affordable housing for all residents, particularly in the market-driven environment.

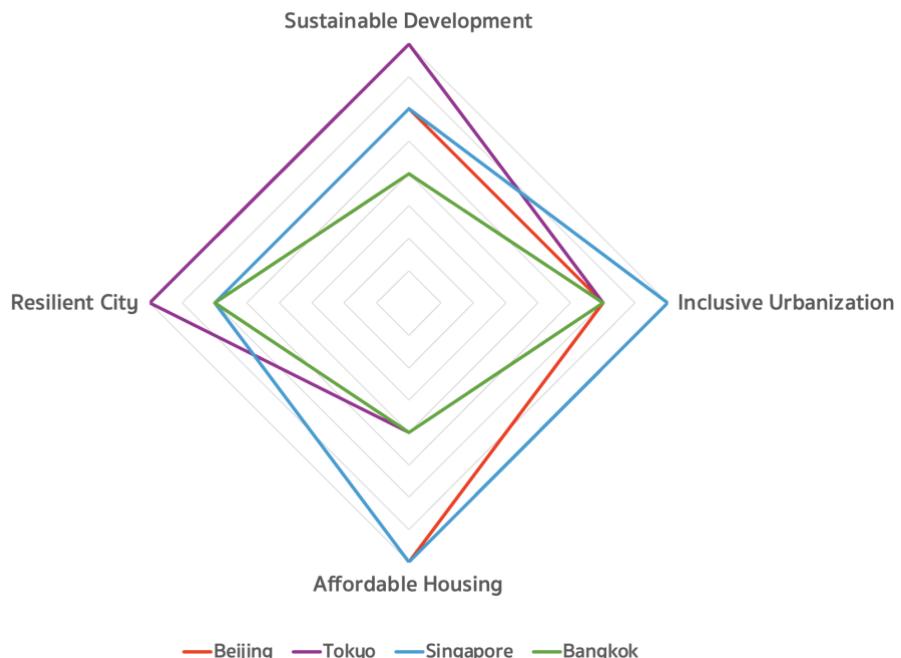
Singapore is a global leader in providing affordable housing through its Housing and Development Board (HDB). It enforced the legislation for clear control on price, rents, and distribution, especially for HDB properties. Its policies align with the NUA's goal of ensuring access to adequate, safe, and affordable housing for all. Singapore also emphasizes sustainable urban development, green buildings, and efficient land use through its new town development (Sawatthanakoon et al., 2021). The Green Mark certification and integration of green spaces into urban planning showed how Singapore is advancing the NUA agenda. Social inclusion is also promoted through public housing that caters to a broad spectrum of the population, ensuring that housing is not only affordable but also

equitable (Sawatthanakoon et al., 2021). However, there are some challenges in density and urban pressure related to the NUA's emphasis on maintaining livability in high-density environments. Managing urban heat and ensuring that high-density housing remains livable are critical areas for continued focus.

Bangkok's efforts to address environmental challenges, especially flooding, align with the NUA's focus on urban resilience. Initiatives in the BMA's regulations and comprehensive plan to improve drainage and reduce flood risk have been critical in making Bangkok a more resilient city. Bangkok started integrating sustainability into its urban planning, including green building initiatives and efforts to reduce pollution, even though several developers believed there was no environmental impact from their projects (Suttipun & Stanton, 2012). This enforcement aligns with the NUA's sustainability goals. However, affordable housing is still a challenge because there are no direct laws or regulations for price and rent control to maintain the affordability of housing as part of a dire land use planning system (Ratanawaraha, 2016). Although Bangkok has made strides in developing affordable housing, particularly for low-income individuals, the scale of government intervention is much smaller compared to cities like Singapore, as only 15% of housing stock is from public providers (Panitchpakdi & Maglumtong, 2024). It still has problems with urban sprawl. Despite this, the upgrading of informal settlements seems to be thriving, with several recent Baan Mankong projects and canal housing upgrading (Khotcharee et al., 2024). This issue conforms with the NUA as it was specifically addressed through its emphasis on compact urban growth and the upgrading of informal settlements. However, more comprehensive policies are needed to tackle these issues effectively. Finally, the city's housing policies need to place a stronger focus on inclusivity, ensuring that all residents, including migrants and the urban poor, have access to adequate housing (Figure 2).

Figure 2

Alignment with the New Urban Agenda



Note. This figure demonstrates how each metropolis aligns with the New Urban Agenda. In comparison, Beijing and Singapore align most closely with the NUA's emphasis on affordable housing and sustainable urban development.

Both cities have robust government intervention in housing and urban planning, with clear policies aimed at achieving these goals. However, Beijing still faces challenges related to social inclusion and controlling urban sprawl. Tokyo focused on resilience and sustainability, particularly in the context of natural disaster preparedness, which aligns with the NUA's goals. However, its market-driven approach means that it has faced challenges in ensuring housing affordability and inclusivity. Bangkok has made progress toward sustainability and resilience, but struggled with issues like affordable housing, urban sprawl, and informal settlements. The city's policies need to be more aligned with the NUA's emphasis on inclusivity and sustainable urban growth. Beijing, Tokyo, Singapore, and Bangkok have each adopted different approaches to housing development, reflecting their specific, unique contexts. While there is significant alignment with the NUA in areas such as sustainability and resilience, challenges remain, particularly in addressing affordable housing and social inclusion.

CONCLUSION

A comparative analysis of housing development planning in Beijing, Tokyo, Singapore, and Bangkok reveals how each city approaches housing development in response to its unique social, economic, and urban challenges. Several similarities and differences across these four cities under four aspects of the NUA and three housing development mechanisms were synthesized and concluded into five mechanisms, including: (1) government involvement, (2) land use and zoning, (3) affordable housing programs, (4) regulation on housing markets, and (5) sustainability initiatives.

For the government involvement, Beijing had high government involvement through both central and local authorities to control prices, manage urbanization, and ensure affordable housing. Thus, strict land use policies and a dual-market system prevented property bubbles with intensified regulations and ensured the stability of housing development. Singapore also had extremely high government involvement, with the

HDB overseeing the development of public housing for over 80% of the population. It fully provided affordable housing under strong regulations on land use and development through the URA. On the contrary, Tokyo's government had limited involvement in housing provision compared to Beijing or Singapore. It focused on deregulation in the 1990s to stimulate housing supply and affordability, with private developers dominating the market. Meanwhile, Bangkok had moderate government involvement with policies focused on regulating land use, building standards, and infrastructure development. It relied on the private sector for most housing development, as the NHA plays a smaller role in affordable housing provision when compared to Singapore's HDB.

Land use and zoning are ordered by the level of control. Singapore had a highly structured land use planning, with the government controlling over 90% of the land to balance residential, commercial, and industrial needs, emphasizing green spaces and sustainable urban planning. Beijing also had several strict land use policies with a focus on preserving agricultural land and controlling urban sprawl. Priority on industrial and commercial development in certain areas led to high land costs. Tokyo had more flexible zoning regulations, allowing for mixed-use development and high-density construction, as well as extensive public transportation integration with urban planning. Bangkok also had less rigid land use and zoning when compared to Singapore and Beijing. Thus, urban sprawl was a challenge, with less emphasis on high-density development. Land use policies were often influenced by market forces and informal settlements, with under-regulated development issues remaining.

Affordable housing programs vary by how supportive the governments are. Beijing has the most affordable housing program by implementing a dual-track housing system with significant state involvement. Policies included subsidized housing, price controls, and restrictions on property speculation. Yet, the demand and supply were still mismatched. Singapore's HDB provided affordable flats for the majority of citizens. The CPF Housing Grant and Proximity Housing Grant supported first-time buyers and families. The government tightly controlled resale prices and eligibility to maintain affordability. On the contrary, Tokyo had limited

public housing, with affordability challenges addressed mainly through market mechanisms. The government provided rental assistance and housing loans, but there was no large-scale public housing program like in Singapore or Beijing. While Bangkok's affordable housing was primarily provided by the NHA, its reach was limited compared to Singapore's HDB. The government offered housing loans and incentives for low- and middle-income families, but still faced challenges in meeting demand.

Regulations on housing markets range by the most effective housing market. Hence, real estate in Beijing was seen as a tool for economic control, with frequent policy shifts to manage bubbles and cooling measures. It had heavy regulation to control property prices, speculation, and housing affordability, including purchase restrictions, higher down payment requirements, and mortgage limits to stabilize the market. Singapore also had a strong regulatory framework with a focus on preventing property bubbles and ensuring long-term affordability. Policies included eligibility criteria for public housing, restrictions on resale, and a robust system of grants and subsidies. Bangkok had moderate regulation, with a focus on building standards, land use, and environmental impact. Tokyo had relatively light regulation, with the government focusing on increasing supply rather than controlling prices. Housing market policies emphasized flexibility and deregulation, and there was a focus on maintaining a healthy rental market through market mechanisms.

For sustainability initiatives, Singapore is the leader in sustainable urban development, with a strong focus on green building standards and environmental sustainability. The Green Mark Scheme incentivized developers to build energy-efficient and eco-friendly buildings. Comprehensive urban planning integrates green spaces, public transportation, and sustainable infrastructure. Tokyo, meanwhile, emphasized earthquake-resistant buildings and disaster preparedness, with increasing focus on green buildings, energy efficiency, and sustainable urban planning that integrated with housing development to reduce environmental impact. Beijing also became increasingly focused on green building practices and sustainable urban development with energy efficiency, reduction of carbon emissions, and improved air quality in

housing projects. Bangkok also emphasized sustainability in response to environmental challenges such as flooding and pollution, with regulations encouraging green building practices, but implementation is still inconsistent (N. Tapananont, personal communication, 2024, November 22; Viratkapan, 2024).

While each city faced unique challenges in housing development, some common trends were a focus on sustainability, managing urbanization, and addressing affordability issues that continued from the previous decade. Their approach reflects their broader economic, social, and urban policies, with varying degrees of success in meeting the housing needs of their populations. However, the degree of government intervention, market regulation, and emphasis on public housing varies significantly. Singapore stands out for its high level of government control and comprehensive public housing system. Beijing balances state control with market forces, using heavy regulation to manage affordability and urbanization. Tokyo relies more on market mechanisms, with less direct government involvement in housing provision but a focus on deregulation to stimulate supply. Bangkok still faces challenges with urban sprawl, informal settlements, and balancing regulation with market-driven development. This leads to suggestions for further research in the field of affordability, as it has been one of Bangkok's long-term struggles.

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