

Doi: <https://doi.org/10.3126/ncwaj.v57i1.93627>

# Insights from Japanese Urban Policies for Sustainable City Planning in Nepal

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## Abstract

Nepal is a landlocked country with a rapidly increasing urban population. It is experiencing crucial challenges in creating sustainable cities. Urban municipalities now account for over 66% of the nation's population. There is a growing demand for adequate infrastructure, affordable housing, and effective disaster management to cater to the needs of the increasing population. Based on the review of the secondary data, this article discusses the most critical urban issues in Nepal, which include climate change impacts, informal settlements and infrastructure deficiency. It highlights the need for integrated urban planning and policy action to make cities more livable and resilient. Nepal can develop approaches to address its urban issues by assembling lessons from Japan's city policies and practices, such as comprehensive land-use planning, community participation, and disaster resilience. Nepal can take advantage of Japan's experience in promoting green spaces and low-cost housing, urban agriculture as the route to climate resilience, inclusive growth, and environmental sustainability. The article advocates making intergovernmental coordination better and emphasizes the collaborative efforts with the private sector to develop creative methods in dealing with urban problems. And finally, through these lessons, Nepal can navigate the way towards sustainable, climate-resilient urbanization, improving the quality of life of the people and achieving its long-term sustainable development objectives.

*Keywords:* affordable housing, climate change, disaster management, green space, land use planning, policy intervention

## Introduction

Nepal is a landlocked country in South Asia situated between India and China. The country has a population of approximately 29.16 million (NSO, 2021) and a population density of 198 persons per square kilometer. It covers 0.03% of the Earth's total area, with an area of 147,181 square kilometers (CBS, 2015). It is also famous for

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its natural and cultural heritage, including Mount Sagarmatha (Everest) and Lumbini - the birthplace of Lord Buddha. Nepal became a Federal Democratic Republic in 2008 and consists of seven provinces and 753 local units (NSO, 2023). According to the 2021 census, urban municipalities account for 66.17% of the population, while rural municipalities account for 33.83% (NSO, 2023). Urbanization has been driven by road expansion, malaria elimination, and rural-urban migration. Nepal has 293 municipalities, of which six are metropolitan cities, eleven are sub-metropolitan cities, and the rest are of municipal status. However, there are rural characteristics in most of the urban municipalities, and it becomes difficult to expect the urban municipalities' population to be urban populations. Therefore, the National Statistical Office defines urban areas based on some categories that cover only 27.07% of the total population (NSO, 2024).

Nepal's urbanization is faced with challenges, particularly in infrastructure, greenery, open spaces, affordable housing, and public transportation. The right to housing is protected as a fundamental right in the Constitution of Nepal, and the National Shelter Policy 2012 expects a secure and affordable housing for the citizens. Despite these arrangements, the country is dealing with a housing shortage, especially for low-income households, as a high percentage of the households live in slums (NPC, 2017).



Photo 1: A Glimpse of Urban Development in Kathmandu Valley

Urbanization trends (Photo 1) demonstrate an amazing transformation from 2.9% urban population in 1954 to approximately 66.2% at present (CBS, 2021). The development has been driven by various factors, of which rural to urban migration has been significant, owing to push and pull elements such as a poor rural setting and an attractive urban setting. The unequal distribution of municipalities in the seven provinces of Nepal clearly establishes the need to achieve balanced rural development. Provinces such as Bagmati and Madhesh have a large percentage of the urban population, while Karnali is far behind.

It is pertinent to discuss the challenges regarding the sustainable development of Nepal. This requires properly planned cities, infrastructure development, and adequate housing for bringing inclusiveness to Nepali cities and upgrading the living standard. Japan, with its fully updated concepts for proper planning and its unique policies, has lessons for Nepali cities in terms of sustainability. This paper provides information regarding sustainable development challenges in Nepali cities and how they can benefit from Japan's urban policies and their successful implementation.

### **Challenges of Urban Development in Nepal**

**Rapid Urbanization:** The rapid formation of new municipalities and increasing rural-urban migration put an enormous strain on infrastructure and services, with approximately 5% of houses lacking electricity and 4% without good toilets (NUDS, 2015; NSO, 2023). Rapid urbanization in the city creates an increase in population density and congestion, which stresses infrastructure and services (Shrestha, 2019). When a city is flooded by people, those who cannot afford the housing facilities are forced to live in slums and informal settlements (Photo 2). Cities have extreme pressure on transportation, water, and sanitation services, which become overstrained. Rapid growth also contributes to environmental degradation, such as deforestation and pollution, and exposes people to natural hazards, particularly in poorly planned slums.

Development cannot keep pace with population growth, and unemployment becomes extremely high with the expansion of the informal sector. Health and education, the two essential public services, are hard to provide properly for urban municipalities because of accelerated pressures. Urban growth is rather unevenly distributed, generating social imbalances and tensions between different groups. Problems of transportation, like congestion and the absence of public transport, restrict mobility and accessibility to opportunities. Lastly, inadequate urban planning results in unsystematic expansion, and it is tough to implement sustainable development practices.



Photo 2: Informal Settlement at the bank of the Bagmati River

**Informal Settlements and Slums:** The growth of informal settlements and slums, which housed about 0.5 million people in 2015 (NPC, 2017), is complicated due to poor basic amenities and lack of legal status. Nepal's informal settlements face numerous issues, including inadequate access to basic facilities like clean water, sanitation, and electricity, which are responsible for poor living standards. Overcrowding and lack of proper sanitation present health risks, including communicable diseases and malnutrition. The residents lack legal land ownership and are therefore at risk of eviction, while poor infrastructure puts them at higher risk in case of natural disasters. Social stigma and discrimination further marginalize the communities, limiting access to services, education, and employment. There is environmental degradation as the residents utilize local resources unsustainably, and the majority of them work in the informal economy with no job security. The presence of informal settlements is an indicator of poor urban planning and community exclusion from governance. This indicates that policies have not been successful in responding to their needs. Finally, such settlements are found in risky areas, and they are highly vulnerable and prone to disaster.

**Affordable Housing:** The Right to Housing Act confirms that every citizen is entitled to decent housing (GoN, 2018). However, rising housing prices and limited availability of land have worsened affordability issues, with many households living in substandard living conditions (NSO, 2023). Nepal is faced with an affordable housing problem due to

fast urbanization, which has resulted in a huge demand that exceeds supply, thus creating a housing shortage. Higher property prices make it impossible for low- and middle-income families to afford decent housing. The government policies in place are not quite effective in addressing affordable housing demand, and most prospective homeowners do not have access to affordable finance, particularly for the weak economic group of people (GoN, 2012). Housing in some of the areas of municipalities is informal and lacks a legal status, and has inadequate living conditions. Insecurity of tenure in such settlements also makes people not want to invest in housing developments. Complex land use regulations and administrative procedures also slow down development processes. Social stigma attached to affordable housing may impact community acceptance, while environmental concerns are raised through development in vulnerable ecosystems. Continued rural-urban migration heightens the demand for affordable housing, further loading pressure on limited resources.

**Infrastructure Deficits:** The majority of the cities lack basic infrastructures, like roads and solid waste management systems, which discourage economic growth and quality of life (MoU, 2015; NUDES, 2015). The cities in Nepal face tremendous infrastructure deficits impacting day-to-day life. Mass transportation networks are less developed, resulting in congestion and low mobility. Most of the municipalities lack access to clean drinking water regularly, and poor sewage systems endanger health through waterborne diseases. There are poor or poorly maintained road systems, and it is difficult to travel and access services.

Power outages are common, disrupting daily life, and accommodation in slums is typically substandard. Sanitation and waste management infrastructure are ineffective, resulting in pollution and health hazards. Emergency services are inadequate, compromising safety in the community. Inadequate planning of infrastructure also increases vulnerability to environmental hazards like landslides and flooding. Lack of maintenance and underinvestment further degrade the quality of existing infrastructure.

**Disaster Resilience:** Nepal's vulnerability to natural disasters, fourth globally in climate change risk and eleventh in earthquake risk, necessitates improved measures of resilience (MoHA, 2015). Nepali urban areas have been experiencing earthquakes and landslides since the nation lies in a seismic belt. Urban areas lack resilient infrastructure in terms of strong buildings, efficient transport systems, and drainage facilities that enhance the impact of disasters. Inability to develop disaster response plans and train local authorities leads to uncoordinated response, thus exposing communities to more risks. Relaxed enforcement of building codes produces inferior construction, especially in cities. Urban concentrations of population complicate evacuation and emergency

response, and the local authorities lack the technical and financial capacity for disaster resilience initiatives. There is also low public consciousness regarding disaster risk. Urbanization results in deforestation and loss of green cover, reducing natural disaster buffers. In addition, the majority of people live in unplanned settlements, which puts them specifically at risk of disasters. There is also limited data availability on risks, which further limits effective planning and investment in resilience measures.

**Limited and Integrated Urban Planning:** Lack of urban planning results in haphazard urban growth and wasteful land use, which makes effective development challenging (Photo 3). Planning is carried out in an isolated manner, with different government agencies and stakeholders working independently, and this weakens the effective development strategy. Lack of coordination between local, provincial, and federal governments, as well as the private sector, leads to contradictions and inefficiency in planning.



Photo 3: Urban Growth of Kathmandu Valley

**Insufficient Investment:** Urban development initiatives often face budget constraints due to a lack of government funding, which hinders the development of necessary infrastructure and services. It is estimated that covering gaps in 58 municipalities will cost \$4.425 billion (TDF, 2016). There is not sufficient investment in urban infrastructure; as a result of this, there are inadequate services in most of the municipalities.

**Demographic Transition:** Nepal's demographic window of opportunity for economic growth, which will stay open till 2047, is faced with the challenge of an aging population and rising dependency ratios (NPC, 2017a). While the country is transitioning towards an aging population, its urban areas are experiencing greater needs for old-age-related services, such as housing and healthcare. The aging old-age

dependency ratio will put additional pressure on the working-age population to support the old-age population, straining economic as well as social resources. Meanwhile, rural-urban youth migration in search of greater opportunities is heightening the demand for affordable housing, rendering decent shelter even more complicated to attain (Shrestha, 2024). The shifting demography can also lead to greater job competition among the youth if the economy fails to generate enough employment.

**Community Engagement and Private Sector Involvement:** Lack of engagement of local citizens in planning of the urban space causes projects not to represent true residents' needs, and therefore, incompatibility between realities on the ground and urban policy. Understandably, there is a lack of close cooperation between the government and the private sector, slowing effective urban growth and losing potentialities of new innovative thinking and funds. Furthermore, complexity in regulations and bureaucratic hurdles generally discourage private investment in urban developments, and as a result, decrease the degree of urban infrastructure.

**Coordination among the Three Tiers of Government and Development Agencies:** Inconsistency in policy and legislation among the governments hinders the initiation of synchronized urban development by bringing in mismatched priorities and interests. Uncertainty regarding the mandates and roles of local, provincial, and federal governments brings confusion and inefficiency into the operations of planning and developing urban areas.

Poor communication and information sharing among these levels typically means an inability to coordinate, resulting in the duplication of efforts or service delivery loopholes (Shrestha, 2024). Besides, subnational governments lack the technical capabilities and resources to effectively work with provincial and federal governments, thus limiting their contribution towards development planning. The funding of urban development strategies tends to be derived from multiple sources with differing requirements, thereby making budget coordination and resource allocation a difficult task.

These challenges highlight the urgent need for sustainable and inclusive urban development strategies in Nepal.

### **Urban Policies of Japan: Lessons for Nepal**

**Constrained and Coordinated Urban Planning:** Japan has been focusing on coordinating urban planning through its National Spatial Strategy, where land use, transportation, and environmental considerations are combined in harmony (NSS, 2015). The coordinated approach ensures that the urban expansion follows national policy goals and regional needs. Nepal can adopt similar integrated planning systems with all elements like land use, transportation, environment, and physical planning, with a national spatial strategy for the urban development of the country. It is preferable

to have a people-participating national urban policy that links national goals with local plans and, through this linkage, is able to make better use of resources and foster sustainable development.

**Rapid Urbanization:** Japan experienced rapid urbanization and rural-to-urban migration of population, which called for balanced development of the regions. Planning is aimed at building transport infrastructure connecting urban and rural regions (Photo 4) and bringing industry to move out of cities (NSS, 2015). In order to address urbanization, Nepal would also have to develop policies encouraging balanced development of the provinces. Investment in infrastructure enhancing inter-urban-rural connectivity can distribute opportunities and resources evenly, which will help in having sustainable development in all provinces.



Photo 4: A Preview of Urban Development in Japan

**Informal Settlements and Slums:** The old slums in the past were addressed by Japan with an active policy of redevelopment involving the cheap provision of housing as well as improvement of living standards (NSS, 2015). The state steps forward in

combined action with citizens for upgrading infrastructure and facilities. Nepal should undertake slum upgrading programs on a priority basis with consideration to people's participation. Low-cost shelters can transform the informal settlements into sustainable communities and neighborhoods.

**Housing Affordability:** Japan has various housing policies, such as public housing schemes and publicly operated rental houses under subsidies for poor households, to provide affordable housing facilities (NSS, 2015). Nepal needs to give top priority to housing affordability by implementing low-income family-based policies, particularly publicly operated rental houses. Public-private financing and development facilities can be employed to construct affordable housing schemes.

**Infrastructure Shortfalls:** Japan makes significant investments in infrastructure so that cities have decent transport, sanitation, and utility facilities. Now and then, the government reviews and upgrades infrastructure based on emerging needs (NSS, 2015). To mitigate the absence of infrastructure, Nepal needs an infrastructure development plan with regular review and upkeep. More investments in core services will make city life habitable.

**Disaster Resilience:** Japan, having experienced many natural disasters in the past, has applied strict disaster preparedness and resilience measures in the guise of strict building codes and community capacity development and training activities (NSS, 2015). Nepal may improve its resilience against disasters through improved building codes and public awareness campaigns. Integration of risk-sensitive land use planning for disaster risk reduction can save communities from future disasters.

**Investment:** Japan promotes investment through public-private partnerships and incentives for private sector involvement in city development (NSS, 2015). To attempt to attract investment, Nepal has to create an attractive business climate with clear rules and incentives for private sector involvement in urban programs.

**Demographic Transition:** Japan's urban strategy deals with population changes through proactive age-friendly urban development environments and fulfilling the needs of an emerging aging society (NSS, 2015). Nepal needs to address its demographic changes in urban planning so that facilities and accommodations are made available to different age groups, especially older people, in the context of the increasing trend of an aging society.

**Community Participation and Private Sector Engagement:** Citizen Participation is a central element of Japan's city planning strategies, where people in the local community participate in decisions regarding urban expansion (NSS, 2015). Nepal can improve

local participation in city development and policymaking with a voice through increased participation of the private sector. Investment and innovation promotion can also be achieved through private sector engagement.

**Expansion of Green Spaces:** Integration of parks and open spaces (Photo 5) in city planning for multipurpose use is emphasized (NSS, 2015). A similar strategy can be replicated in Nepal to create cities with accessible parks, thereby increasing biodiversity and improving living conditions for the populace. Parks designed for various uses (recreation, ecology, and agriculture) can maximize land and public use.



Photo 5: Green spaces in Osaka city

**Promotion of Urban Agriculture:** Japan’s policy focuses on a citizen-oriented approach to establishing community gardens as a remedy for local food production and social interaction (NSS, 2015). Japan also utilizes available city land for rooftop and vertical gardens. The people-oriented approach can be adopted by Nepal to initiate community gardens for urban agriculture. Urban agriculture in Nepal can be promoted through more productive use of small urban areas, vacant land, institutional wasteland, and riverfronts, among other spaces, by way of hydroponics on rooftops (Shrestha, 2020), rooftop farming, kitchen and vertical gardening, community farming, and

commercial farming integrated within the urban plan, as outlined under the Food Green City Concept (Shrestha, 2021).

**Coordination among all levels of Government:** Japan encourages national, regional, and city levels of the government to work together for collective urban policymaking and quality implementation (NSS, 2015). Nepal must enhance coordination among its three levels of government to ensure effective urban governance. If there are efficient communication channels and cooperative structures, it can help to encourage policy enforcement and resource sharing.

## **Conclusion**

The sustainable urban development of Nepal is a complex challenge, worsened by rapid urbanization, weak infrastructure, and the propagation of informal settlements. However, lessons that can be assembled from the urban policies and strategies of Japan, centered on comprehensive urban planning, resilience against disasters, coordination among stakeholders, and community involvement, can be very useful to achieve the goal of sustainable urban development in Nepal. By incorporating multipurpose green space, improving transport infrastructure, and mitigating the effects of climate change, Nepal can make cities more livable. In addition, through policy interventions focused on affordable housing and strengthening waste management, the living standard of its people can be improved considerably.

Japan's experience highlights the importance of land use planning and infrastructure investment, which are critical to serving the needs of an expanded urban population. In addition, fostering community engagement and private sector participation can drive creative solutions for sustainable urban development. As Nepal is transitioning to sustainable urbanization, the implementation of the above-mentioned lessons will be critical in the development of sustainable cities that will not only accommodate the current but also the future generations. It is with the implementation of the above intervention measures that Nepal will achieve major milestones in the satisfaction of sustainable development goals for the improved well-being of the Nepali.

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