

## URBAN INFRASTRUCTURE PLANNING AND INVESTMENT ISSUES IN NEPAL

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**Abstract:** The intent of this paper is to describe infrastructure planning and investment issues in urban areas of Nepal. The paper explains succinctly the status of infrastructure and investment patterns in urban areas, and the policies and programmes undertaken by the government of Nepal to leverage locally available resources to economic development of the city region. Lastly, the status of the financial sources and investment pattern is exemplified by taking one of the fastest growing cities of Nepal.

**Key words:** urban economy, urban infrastructure, investment issues, financial capacity, Nepal, Pokhara

### 1 INTRODUCTION

Planning for town development involves efforts to put together the human and physical resources to build a sustainable future of the towns. It is largely the formal responsibility of local or national government.

The town planning in Nepal has evolved eminently over the past four and half decades. The early town planning initiatives in the late sixties focused on physical development plans. Since the 1990s, the integrated action plans remained as a major tool of town planning. In the 2000s and onward, the town planning constituted the strategic and periodic plans. Throughout the planning period, the government has continued efforts to build urban infrastructure, but these have lagged behind the rapid growth of urban population. The National Urban Policy (DUDBC, 2007) proposes building the capacity of municipalities to plan and manage integrated local development activities and recognizes the investments being inadequate to the urban growth. The current urban plan stresses inclusive development and increasing public expenditure, building infrastructure, etc. Crucial challenges with the urban sector now include provision of basic infrastructure, and raising municipal revenue and mobilizing funds to respond to growing demands of urban infrastructure and managing haphazard and uncontrolled growth of urban settlements.

## 2 URBAN INFRASTRUCTURE AND SERVICES

Infrastructure is the main driver of urban economy, as it includes strategic assets such as basic and utility infrastructure (transport and communications, drinking water, electricity, sewerage system, waste management, etc.), buildings, and structures necessary for the production and delivery of goods and services. Urban infrastructure is considered for two purposes: livability and competitiveness for urban economic growth.

With an average urban population growth rate of about 6 percent per year since the 1970s and now with 17 percent urban population, the urban areas of Nepal have been transformed rapidly. It is estimated that one-third of Nepal's population will be urban by 2045, if the urban population growth rate continues at 3 percent per year (UNDESA, 2012). This will likely affect to increase demand for basic infrastructure and services.

Migration is an important source of urban growth and is increasing over time. Currently, the inflow of migrants to urban areas represents 45 percent, compared with an outflow of 16 percent of the urban population. During the 1990s, migration contributed 30 percent to total urban growth (ADB, 2010). Rapid urbanization is intensifying the municipal infrastructure deficit. Urban sector initiatives, as indicated by World Bank's study (2013), have taken 10.4 percent of the total budget; the third biggest share after roads (48.2%) and drinking water supply (13.4%), however the latter two are somehow related to urban sector.

The performance of some of the facilities by urban areas is, for instance: access to improved water supply remained at 93 percent and likewise access to electricity and toilet at 96 percent and 85 percent respectively in the same year. Though these levels of access appear to be fairly large by general urban standards, the quality of these services is a critical issue. Supply of the water and electricity services is being inadequate and intermittent. The power outages are at an average of 16 hours per day during winter months. The water availability varies seasonally and the quantity delivered is below 50 liters per capita per day and water quality is the most serious public health issue.

The fact is that water-related diseases (diarrhea, dysentery, cholera, skin diseases, etc.) make up 61 percent of outpatient visits and are among the top 10 diseases in Nepal. Besides, the urban environment is highly degraded because of discharge of untreated wastewater into local water bodies and unmanaged solid waste. These sub-standard services are an obstacle not only for city livability but also for sustainable economic development, including tourism. Furthermore, declining of prominent agricultural land to rapidly spreading urban blight and rising of squatter settlements are conspicuous manifestations of rapid and haphazard urbanization. With the lack of land-use zoning plans and laws, managing haphazard growth in the urban areas remains difficult.

### 3 URBAN INVESTMENT PLANNING AND MANAGEMENT

Urban economy is a vital sector for overall development in Nepal. According to the World Bank's estimate (2011), the urban sector has contributed to about 62 percent of total gross domestic product (GDP). The services sector in the urban areas accounted for 47 percent of GDP, while the contribution of manufacturing to GDP remained at about 15 percent. Likewise the urban sector shared 36 percent of non-farm employment, 28 percent of manufacturing employment, and 39 percent of service employment (World Bank, 2013). But the economic base of both the services and manufacturing sectors is characterized by small wholesale and retail service and small-scale industries. Urbanization is also one of the main drivers of poverty reduction. The incidence of urban poverty declined to 15.46 percent in 2011 from 23.0 percent in 1996, compared to rural poverty at 27.43 percent and 44.0 percent between the same two years (ADB, 2013).

Investment in urban infrastructure is essential for economic and social development. There is a close relation of infrastructure with municipal revenue, as well as with business dynamics. Studies by Wang and Davis (2005) showed that local government expenditures on highway, public safety, and utilities have positive relations with growth. In terms of financing local infrastructure, it is argued that a city's ability to raise its own source revenues by means of local taxes and user fees increases infrastructure supply. The supply of local infrastructure services, such as municipal roads, water supply and drainage, street lighting, etc. in turn enhance competitiveness, but their impacts are comparably much smaller (UDLE, 2008). However, rapid urbanization is placing pressure on an eroding, ageing infrastructure, and raising concerns about declining air and water quality, mounting city wastes, and deteriorating roads. The cities with poor basic infrastructure are greatly disadvantaged when it comes to being competitive. To be competitive, the cities must learn to take a more demand-driven approach to economic development.

Identification of competitiveness of industries or businesses is important for urban areas to increase own revenue source and investment. There have been efforts in ADB study (2010) to identify infrastructure and products in urban areas of Nepal in terms of comparative advantage and competitiveness at international level. There are 18 types of indicators being identified, as most feasible for comparative advantage among the urban areas, the products competitively at international level comprising spices, tourism, carpet weaving, pashmina items, cut flowers, jewelry making, fruits, vegetables, dairy products, grains and cereals, poultry and fishing, and honey, and the infrastructure required for accelerating economic growth (ADB, 2010). However, the infrastructure identified and required varies greatly by municipality, due to their location and resource potentials, but the most common are road and transport networks, electricity, skill and enterprise training, labor-based industries, market expansion, extension services, research and development, and transport with refrigeration. Overall, the level of infrastructure available is fairly poor, below 50 percent.

In Nepal, public capital expenditure in urban areas has different features. First, there is a mismatch between allocation of national expenditure to urban infrastructure and urban growth rates. In 2008, the allocation of national-level expenditure to the urban infrastructure was 18 percent, slightly above the proportion of urban population (16%) but in 2010, the urban share of national-level capital expenditures declined to 12 percent while in the mean time the share of the urban population increased to 17 percent. Second, urban areas are the main recipients of project-based capital expenditures under national-level programs. In 2010, the project-based capital expenditure in urban areas amounted to US\$ 2.7 per capita under national programs, as compared with only US\$ 1.6 in rural areas. Third, public capital expenditure for municipal infrastructure now averaging US\$ 11 per capita that was declined from US\$ 14 per capita in 2008 is already very low base, given urban areas' infrastructure requirement (World Bank, 2013). Fourth, the municipal infrastructure is funded by three main sources of public investments, such as: (i) project-based programs financed by central agencies, which is the largest contributor, sharing about 49 per cent of total capital expenditure, (ii) inter-governmental fiscal transfer system as capital block grants, the second in row in terms of proportion sharing, and (iii) own-source revenues, the lowest at about 8 per cent of total capital expenditure. The project-based programs are the main form of infrastructure-financing modalities in the 53 municipalities, whereas blocks grants prevail in metropolitan (Kathmandu) and sub-metropolitan cities (Pokhara, Biratnagar, Lalitpur and Birganj). On a per capita basis, the municipalities benefit from a higher level of capital expenditure for municipal infrastructure than the metropolitan and the sub-metropolitan cities. For instance, the infrastructure (physical and social) capital expenditure averaged US\$ 11 per capita in the 53 municipalities, due partly to a substantial presence of project-based investments funded by development partners, whereas in the metropolitan and sub-metropolitan cities, spending remained below US\$ 3.0 per capita on average (2010 prices; World Bank, 2013). The level of per capita expenditure on physical infrastructure projects is worryingly low particularly in the sub-metropolitan cities, considering the critical role they play in driving economic growth in country's main extended urban economic regions.

#### **4 FINANCIAL CAPACITY AND RESOURCE MANAGEMENT**

The financial capability of the municipalities depends on different revenue sources, but the own revenue source can be considered as the most critical one, because municipal governments which are mostly financed by own resources tend to be less prone to soft budget constraints problems (UDLE, 2008). In accordance with the Local Self Governance Act and Regulation 1999 (MLD, 1999), the municipalities are an autonomy body to levy different types of taxes, fees and acquire different financial/revenue resources including internal (house/land and property taxes, service charges, fees and fines, rent, etc.) and external (grants from central/district go-

vernments, and donor agencies, loans balance forward). But the financial capability of most of the municipalities is depended largely on external source ranging at 60 percent to 78 percent of the total revenues. However, revenue from internal source, particularly in large cities has an increasing trend, in which the contribution of local tax sources appears to be significant and is considered the most sustainable taxes. But the income from the sources like fees, fines and property rental shows high volatility (UDLE, 2008). On the expenditure side, which leverages financial resource to economic growth, a substantial portion of the municipal spending at around three-fifths is used for capital investment in public construction, land/building purchases, infrastructure projects, facilities for waste dumping sites, roads, embankments, community services, etc while the operation expenditures are at around one-third. The budget scenarios of most of medium and small sized municipalities is that the expenditure has exceeded the revenue by 40 percent on average and even consumed development grants allocated for physical development activities. These municipalities also have relatively low economic activity due to limited internal resources and little private sector investment in economic development initiatives. Since 2011, the Ministry of Federal Affairs and Local Development has pushed for increasing in the collection of land and building related taxes – a reliable foundation for municipal revenues in many countries (UDLE, 2008). In recent years, remittance has become an importance source of income and employment, as well as a key for the municipal government to funding urban infrastructure, but it is worth if it is tapped into the potential to turn their comparative advantages into competitive advantages (World Bank, 2013). Though less than one-tenth of remittances are spent on capital formation, including education, the labour migration for jobs has led to a significant loss in the economically active workforce and to an increase in wages because of a shortage of local human resource.

## **5 THE CASE STUDY OF POKHARA CITY: FINANCIAL CAPACITY AND RESOURCE MANAGEMENT**

Pokhara city of Nepal (Fig. 1) is taken as a case study for the study of municipal finance and resources management. Pokhara with a population of 265,000, the second largest city of Nepal has grown rapidly with the rate of 5.3 percent per year since 2001. The economy of Pokhara is mainly based on tourism, which together with service sector and trading activities and others accounts for about 93 percent of the city employment. However, small and micro economic enterprises have dominated its economy and informal activities are growing.

Currently, remittance money is being the potential source of investment for Pokhara city. The financial capability of Pokhara city depends on two types of revenue sources, such as internal (house/land and property taxes, service charges, fees and fines, rent, and others) and external (grants from central and district governments, and donor agencies, loans balance forward, etc.). Of these two, the external source revenue is larger than the internal source, which has contributed 60-78 per-

cent over the past three fiscal years (Fig. 2). However, revenue from an internal source (house and/or land, property and professional tax) has an increasing trend, rose to over 40 percent in 2012/13 from 27 percent in 2010/11. Expenditure is important to leverage of financial resource to economic growth in the Pokhara city. In terms of expenditure, the municipality's substantial portion of spending at around three-fifths is used for capital investment in public construction, land and/or building purchases, infrastructure projects and other developments such as facilities for waste dumping sites, roads, embankments, and community services, while the operation expenditures are at around one-third. But the trend of capital expenditure has a declining trend (Fig. 3), due to operational expenditure (on salary, office maintenance, etc.).

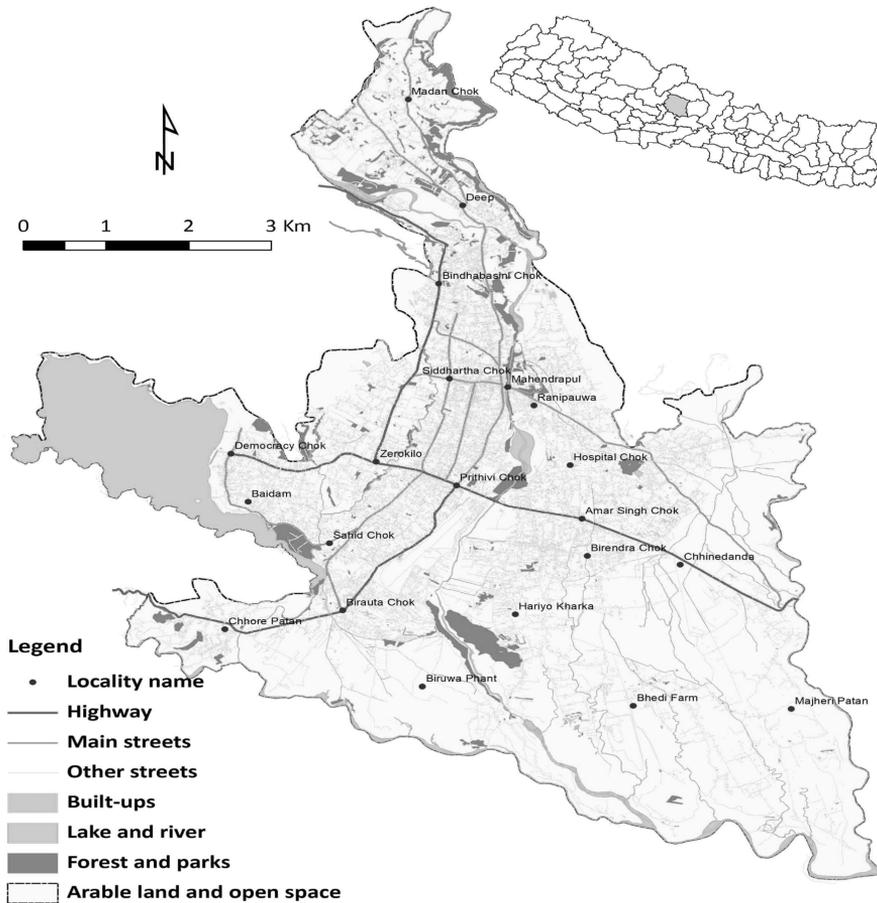


Figure 1 Pokhara city, Nepal

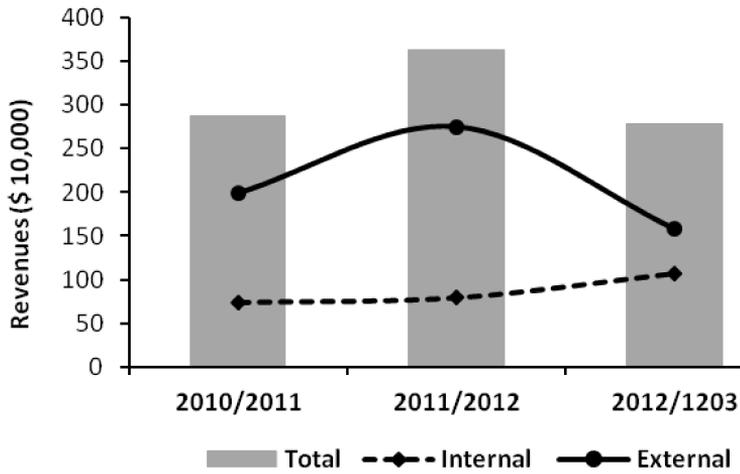


Figure 2 Trend of revenues by sources, Pokhara

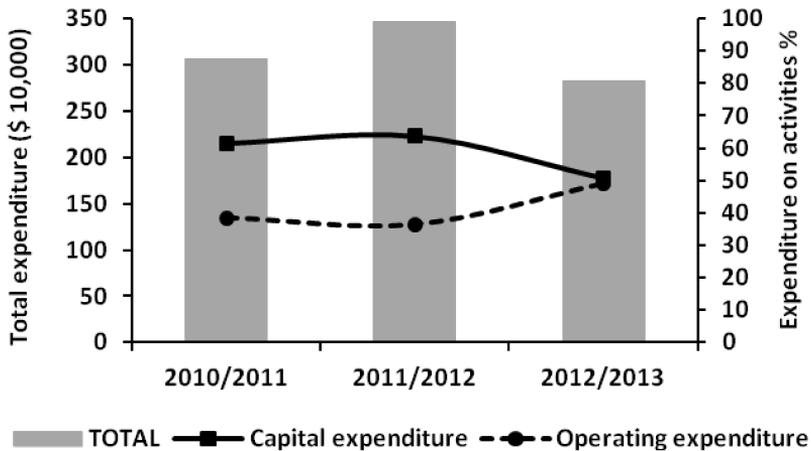


Figure 3 Expenditure patterns and trend, Pokhara

While compared the total revenue with the total expenditure of Pokhara over the past three fiscal years, the latter has exceeded the former by about 6 percent in 2010/11 and again the deficit found at mere 1.2 per cent in 2012/2013 (tab. 1). In the fiscal year 2011/12, total expenditure was less at 5 percent of total revenue. The volatility of the budget raises questions about how this has happened.

**Table 1** Revenue and expenditure trend, Pokhara (US\$ 10,000)

Titles	2010/2011	2011/2012	2012/1203
Revenues	287.4	363.7	278.8
Expenditure	306.3	346.3	282.2
%	-6.2	5.0	-1.2

Source: Pokhara Sub-Metropolis, 2013

On the whole, these patterns of the budget balance of Pokhara seem to be satisfactory, if compared to the budget scenarios of other municipalities of medium and small sizes of Nepal in particular, where the expenditure has exceeded the revenue by 40 percent on average and even consumed development grants allocated for physical development activities. These municipalities also have relatively low economic activity due to limited internal resources and little private sector investment in economic development initiatives and urban services. Since 2011, the Ministry of Local Development (now MFALD) has pushed for increasing the collection of land and building related taxes – a reliable foundation for municipal revenues in many countries (UDLE, 2008).

## 6 CONCLUSION

Urban sector in Nepal has contributed to 62 percent of total GDP, but the investment in urban infrastructure is quite low, ranging from below US\$ 3.0 to US\$ 11 per capita. Overall, the level of infrastructure available at the urban areas is fairly poor, below 50 percent.

Of many, own revenue source can be considered as the most critical one for the financial capability of the municipalities, but it is still dominated by external source. In recent years, remittance has become an importance source of income and employment, as well as a key for the municipal government to funding urban infrastructure, but it would be worth if it is tapped into the competitive advantages of the resources.

One of the best or sustainable ways to provide better services by the municipalities is through increasing local revenues from direct taxes or own source revenues through mobilizing resources. However, this requires financial devolution from central government to municipalities at much higher than the current level.

Secondly, municipal investments have to be increased far above the current level, but large capital investments face several problems, such as funding capacity, institutional capacity, etc. Public-Private Partnerships (PPPs) are considered an alternative and innovative means for capital intensive infrastructure projects. Thus, improving essential requirements over the existing PPP provisions should pave the way for PPP applications at municipal level.

Lastly, the municipal governance needs to be tuned to facilitate more of their resources potential based income-generating opportunities and for prioritizing infrastructure investment to jump-start growth. The competency and skilled of human re-

sources of the municipal government should be improved as well as its commitment should be revealed for mobilizing different direct and indirect revenue sources.

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## Plánovanie a investovanie do mestskej infraštruktúry v Nepále

### Resumé

Plánovanie miest prešlo v Nepále za posledných vyše štyridsať rokov zásadnými zmenami. Kým skoršie iniciatívy v plánovaní (od druhej polovice 60-tych rokov) sa zameriavali skôr na fyzické prostredie miest a súvisiace plánovacie dokumenty, od 90-tych rokov sa presadzovali komplexnejšie integrované akčné plány, ako hlavný nástroj územného plánovania. V období po roku 2000 sa v plánovaní miest definovali strategické a periodické plány. V rámci jednotlivých plánovacích období vláda pokračovala v úsilí budovať mestskú infraštruktúru, ale táto systematicky zostávala za rýchlo rastúcim počtom obyvateľov. Národná politika mestského rozvoja (The National Urban Policy – DUDBC, 2007) navrhla rozvoj kapacít miestnych samospráv v plánovaní a riadení integrovaných aktivít miestneho rozvoja

a uznala nedostatočný rozsah investícií do rozvoja miest. Hoci štatisticky vykazujú mestské oblasti pokrytie základnou infraštruktúrou (napr. pitná voda a elektrická energia) vyše 90 %, je v kritickom stave vďaka nízkej kapacite a prerušovaným dodávkam.

Súčasný plánovací dokumenty už zdôrazňujú inkluzívny rozvoj, potrebu rastu verejných výdavkov, či samotné budovanie infraštruktúry. Stále však zostáva medzi kľúčovými úlohami miest poskytovanie základnej infraštruktúry, zvýšenie príjmov miestnej samosprávy a mobilizácia externých fondov na pokrytie rastúcich nárokov na infraštruktúru, v kombinácii s riadením nekontrolovaného šírenia mestských sídiel. Kritickým problémom financovania infraštruktúrnych potrieb miest sú nedostatočné vlastné zdroje miestnych samospráv v mestách. Dôležitým zdrojom príjmov a generátorom zamestnanosti v mestách sa stávajú remitancie (finančné zdroje posielané domov v zahraničí pracujúcimi Nepálcami). Tie posilňujú aj možnosti investovať do rozširovania mestskej infraštruktúry. Z ostatných zdrojov sa do centra pozornosti dostávajú majetkové dane a ich potenciálne zvýšenie. Výraznejšie zlepšenie finančnej situácie a zvýšenie zdrojov na infraštruktúru v mestách by si však vyžadovalo decentralizáciu častí daňových právomocí a príslušných zdrojov z národnej úrovne. Keďže časť investičných projektov je finančne veľmi nákladná, jednou zo zvažovaných možností je aj využitie partnerstiev verejného a súkromného sektoru (PPP). V tejto oblasti je potrebné vyjasnenie podmienok pre využitie takýchto postupov. Nakoniec nemôžeme obísť potrebu kompetentných a profesionálne zručných pracovníkov na úrovni miestnych samospráv v mestách, schopných mobilizovať zdroje a plánovať adekvátny rozvoj infraštruktúry vo veľmi rýchlo rastúcich nepálskych mestách.