CAMBODIA

ACHIEVING THE POTENTIAL OF URBANIZATION

WORLD BANK GROUP

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EXECUTIVE SUMMARY

Urbanization in Cambodia offers the potential for inclusive growth and poverty reduction. The proportion of people living in cities is on the rise, and many of the drivers of growth for the country are urban based industries such as manufacturing, tourism, and trade. This creates an important opportunity for the country, as the decisions made today will affect the urbanization process in significant ways for decades to come.

This report aims to help inform urbanization policy in Cambodia, understand the economic potential of cities, key constraints to realizing that potential, and develop a strategic approach for improving urban growth and resilience in those cities. The report includes three sections, i) an introduction to patterns of urbanization and the economic potential of cities in Urbanization; ii) analysis of key challenges; and iii) policy and program options for achieving the full potential of urbanization

URBANIZATION PATTERNS AND THE ECONOMIC POTENTIAL OF CITIES

Cambodia's level of urbanization, at 21 percent, is lower than what would be expected of a country with similar levels of GDP. Currently urban growth in the country has been uneven, with one large city (Phnom Penh), followed by relatively few secondary cities and many small towns. Phnom Penh dominates with an estimated population of over 2 million, while emerging secondary cities such as Siem Reap, Battambang, and Poipet only have populations ranging from just over 100,000 to under 250,000. The urban growth has been largely unplanned, which can result in sprawl and congestion, slums, vulnerability to flooding, pollution and poor service deliver, and hamper longer term growth.

To assess the economic potential across districts in Cambodia an Economic Potential Index (EPI) is constructed. The index is intended to help shape discussions on the performance of districts and the factors that may be affecting that rather than on identifying lagging or leading regions. The analysis draws on 5 core factors: market accessibility; transport connectivity; economic density; level of urbanization and human capital using both data from Cambodia and from globally available data sets.[1] Together these variables can provide insight into the potential productivity of a district.

Based on the analysis, a total of 27/192 (14%) districts rank in the 'very high' economic potential category. Not surprisingly, Greater Phnom Penh is in this category, with high market access, strong transport connectivity, high urbanization, a high number of firms, and relatively high human capital. Proximity to Phnom Penh and economic corridors contribute to strong EPI districts in the Southeast of Cambodia with equally strong clusters in the South Coastal area, the Northwest, and in some central area districts, particularly those located along economic corridors which have favorable market accessibility despite their inland geographic location.

The study also develops a typology of cities based on the EPI results, city characteristics, and national and regional development strategies to help further analyze their role in Cambodia's urbanization process. The four categories of cities include: Regional Economic Corridor Cities; Gateway Cities; Border City/Towns; and Capital City. While each of the groups has their own opportunities and challenges, notable are the potential in Regional Economic Corridors given strong market access and connectivity and strong incentives for regional cooperation; in Gateway Cities for private sector and international interest; for Border towns for strong incentives for trade facilitation and economic zones; and for the Capital, for strong private sector and foreign investment.

CONSTRAINTS AFFECTING URBANIZATION

There are a number of constraints across many of the cities in Cambodia that affect their ability to fully benefit from urbanization. These include limited infrastructure and services, and weak institutional capacity for policy, financing, planning, implementation, and enforcement.

1 Please see the full report for details on the methodology

Limited Infrastructure and Services. Across urban infrastructure sectors, there are significant deficits that hamper urban development and prospects for growth. This is largely due to under investment, and relates to broader governance issues around financing and institutional capacity. For transport, a substantial growth in the number of vehicles on the road and limited capacity of the road network has contributed to heavy traffic congestion in many Cambodian cities. The increased demand for water has also stressed existing systems, particularly in secondary cities. Drainage and flood protection is particularly important in cities such as Battambang, Sihanoukville, and Kampong Cham which are highly vulnerable to flooding and require urgent investments.

With regard to wastewater, currently there are only 3 operational municipal wastewater treatment plants in Cambodia (Siem Reap, Sihanoukville and Battambang) and no formal wastewater treatment system in Phnom Penh. The untreated wastewater and sewage are discharged into water sources such as canals, ponds, rivers, lakes and wetlands and pose a threat to the urban environment, as well as health risks. Solid waste management is also severely underdeveloped, and similarly has significant consequences on public health, the environment and the economy. For most cites, SWM is outsourced to private companies with various levels of coverage and service standards, an estimated 42 percent of the urban population has no coverage. There are no sanitary landfills in Cambodia and most companies operate under open dumping or controlled dumping.

With an influx of FDI, especially Chinese financing, there has been a real estate boom in cities such as Phnom Penh and Sihanoukville. While this has significantly increased the supply of housing and commercial real estate, there is a risk of a 'real estate bubble' at the higher end of the market, and at the lower end, there is a growing deficit for affordable housing leaving many low-income residents without options beyond slums. It is estimated that 1.7 million people live in slums.[2]

Institutions and finance for urban development. While the framework in Cambodia for urban administration has been defined through a series of laws and the Government's decentralization and deconcentration reform program, important aspects of this policy framework have not been implemented and gaps remain. In practice, governance at the local level is limited due to low capacity and a shortage of trained professionals. With regard to urban financing, a number of biases in the structure affect different urban locations, and overall, levels of available resources are low. Subnational government revenue is quite limited, particularly for districts/ municipalities/khans (DMKs), and does not meet the growing needs of secondary cities.[3] As the capital city, Phnom Penh stands out compared to secondary cities, where the khans receive substantially more per capita than in other municipalities/cities. While there are individual laws and policies,

2 2014, MDG data set: http://mdgs.un.org/unsd/mdg/Data.aspx

3 As per the 2008 Law on Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans, municipalities, districts and khans have roughly the same roles and responsibilities. Districts and municipalities are largely divided along rural and urban lines, respectively, while khans are only present in the capital city of Phnom Penh.

there is no overall framework for subnational finance which means that local governments have limited structure for accountability in how finances should be managed, and on revenue sources there is a bias which favors smaller municipalities and affects their ability to finance urban development. This bias largely results from the formula for sharing tax revenue between provinces and municipalities which allocates 50% of funds transferred on an equal basis and the remaining 50% on the basis of population.

Land use planning for efficient urban growth. Despite the existence of physical, spatial and socio-economic plans, in practice there is relatively little urban planning which has left many cities unable to keep pace with urban expansion and resulted in a haphazard pattern of urban development. Key issues affecting planning efforts include low technical capacity and a shortage of staff in areas requiring specialized skills, a weak regulatory and enforcement framework which creates a disconnect between what plans have proposed and the implementation of these plans, financing shortages, as well as effective implementation of planning at the urban level. Many of these issues are related to institutional capacity.

OPPORTUNITIES FOR ACHIEVING THE FULL POTENTIAL OF URBANIZATION

As Cambodia continues to urbanize, there are enormous opportunities to ensure that urbanization is competitive, sustainable and inclusive. Decisions made now will have lasting impacts for how cities develop. Policy options set forth in "Urban Development in Phnom Penh, 2017" are very much consistent with the needs for other cities as well and would require attention at both the national, provincial and local level. The recommendations included in this report, therefore, draw very much from the companion report and are further adapted below to include some additional elements emerging from the analysis and incorporating the broader spectrum of urban areas in Cambodia.

Investing in sustainable infrastructure. The priority infrastructure needs for Cambodia are currently substantial and necessary to improve access to and quality of basic services, improve living conditions, create employment, foster inclusion, and ensure sustainability and resilience. Among these investments are inter- and intra- urban transport needs, drainage and flood protection, sewerage and wastewater treatment, solid waste management, water supply, affordable housing and community improvements particularly in low income areas. These needs may differ somewhat from city to city, but are fundamental regardless of the city typology or size. Given the limited financial resources and capacity constraints, it is critical that investments are strategically distributed – both sectorally and spatially – to ensure sustainable, inclusive, resilient, and competitive growth of cities across Cambodia. For some strategic areas in the country, investing in connectivity between cities using a territorial development approach can further foster opportunities for growth and competitiveness.

Strengthening Institutions and Financing. The assessment identified critical challenges for sub-national administrations to cope with rapid urbanization and to ensure sustainable urban development within its respective territory. Broadly there is a priority need to clarify roles and responsibilities between line ministries and local government to ensure urban planning and service delivery are integrated and sustainable. This will require capacity building for local level institutions both for technical and implementation capacity. At the metropolitan level, specific to Phnom Penh, there is much room to improve coordination within and across relevant municipalities for key urban infrastructure and services.

In terms of urban financing, the initiatives of the national government to transfer additional funds to sub-national administrations, i.e. districts and municipalities, through increasing the amounts of D/M fund transfers over the next five years, and the upcoming Subnational Investment Facility (SNIF), are stepping stones for strengthening the district/municipal capacity for planning and implementation; delivering services and needed infrastructure facilities to citizens; and ensuring sustainable urban development and economic growth. As a fundamental approach for financing urban development, is ensuring a comprehensive, transparent, and predictable fiscal framework. Beyond that, specific areas that could improve financing and the use of it for secondary cities include specifying urban services to be provided under the DMK general mandate and strengthening technical capacity to deliver these services (i.e. street lighting, public parks, markets, etc.), enhancing the use of own source revenues and the initiation of transfer of conditional grants to municipal accounts for decentralized functions, starting by following through on solid waste management. Implementation of the Social Accountability Framework to all Municipal Councils and introduction of Citizen Report Cards for a few of the largest municipalities would also help to improve the responsiveness and quality of services provided by municipalities to their citizens.

Improving Sustainable Land Use Planning for Efficient Urban Growth. Well integrated, evidence-based urban planning can help to ensure efficient urbanization, and incorporate aspects of sustainability and resilience, which can lead to higher economic growth and improve liveability for urban residents. Prioritizing integration of planning processes is particularly important for Cambodia given its current process of planning which is carried out on multiple levels and not always well coordinated. There are opportunities to strengthen links between national and sub-national entities for vertical integration, to build local-level capacity to develop sustainable, coordinated land use and infrastructure plans including phased plans for investments and implementation, introducing the required laws and codes to facilitate implementation of a detailed land use plan, introducing resiliency in urban planning to reduce risk, build and enforce development control guidelines and building codes, and establish a framework for municipal data collection, sharing and analysis. As a capital/gateway city a set of specific recommendations would be relevant for Phnom Penh given the additional complexities of planning in a multijurisdictional area and have been

provided in *Urban Development in Phnom Penh.*[4]

Ensuring an Inclusive Approach to Urbanization. Issues of inclusion have not been fully anlayzed in this report, however it is important to recognize that despite the known benefits of urbanization, rapid urban growth can result in inequality if not well planned and managed. Other World Bank Reports such as *East Asia Cities: Expanding Opportunities for the Urban Poor* cover these issues extensively using a lens of economic, spatial and social inclusion.[5] A lack of investments in infrastructure, jobs, and services can widen inequalities and may hamper economic growth and lead to social divisions. To address or avoid this, there are many things that governments at the national or local level can do. These include planning for urban expansion to accommodate growing populations of all income levels through investing in basic infrastructure for all, providing access to affordable public transport so people of all income levels can access jobs, enhancing community participation so that priority needs are identified, and investing in quality education to ensure a skilled work force for urban growth.

A PROGRAM TO PRIORITIZE URBAN DEVELOPMENT

The case for investing in cities has been widely demonstrated globally and is equally an important pathway for growth and poverty reduction in Cambodia. Cambodia's relatively early stage of urbanization makes this a critical juncture for ensuring that the essential elements needed to plan, build and maintain cities are in place. The economic potential of specific cities, including several along core economic corridors, have been outlined in this report and show that a number of them hold much promise for future growth. Global evidence also demonstrates the importance of investing in strong institutions for urban planning, finance and management can help to minimize problems of congestion, slums, pollution, inequality and crime.

Given the substantial investment and technical assistance needs that have been identified in this report, a program for strengthening urban development in Cambodia is proposed to supplement ongoing efforts. While the precise modalities of such a program remains under discussion, priorities would aim to strengthen capacity to plan, finance and implement urban investments, and to support urban infrastructure needs in priority cities. Several development partners are active in their support to Cambodia, though the focus on urban development as been limited and thus creates much opportunity for partnerships going forward.[6]

4 World Bank, 2017, Urban Development in Phnom Penh.

5 Baker and Gadgil, 2017, East Asia and the Pacific, Expanding Opportunities for the Urban Poor, World Bank.

6 Only the Global Green Growth Initiative (GGGI) has explicitly focused on the unique needs of secondary cities

SECTION 1

INTRODUCTION AND CONTEXT

1.1 INTRODUCTION

Cambodia's level of urbanization (just over 20%) is lower than what can be expected of a country with similar levels of GDP per capita, suggesting that rapid urbanization may take place in the years to come. Currently, urban growth across the country has been uneven, remaining concentrated in Phnom Penh and its immediate vicinity, which has historically been an attractive location for industrial growth given the capital's international connectivity and the ease of access that it provides to government and administrative functions.

The pattern of uneven city size distribution – one large metropolitan city accompanied by relatively few secondary cities and many small towns – is common in the larger Greater Mekong Sub-region (GMS), and is typically accompanied by large regional disparities. In 2015, Phnom Penh had an estimated population of over 2 million (around 1.5 million registered), while all other urban areas combined had a total of 1.18 million inhabitants.[7] Emerging secondary cities such as Sihanoukville, Siem Reap, Battambang and Poipet are significantly smaller than the capital, each with populations ranging from 100,000 to 200,000.

Reflecting the growing role of export-oriented manufacturing, tourism and border trade in driving economic growth, secondary cities in Cambodia are establishing their own economic trajectory and have witnessed urbanization rates of between 3-5 percent[8].

7 Global Green Growth Institute, 2017. Cambodia Green Urban Development Program, Phase Two (2017-2018) – Program Update.

8 The Urban Initiative, 2012. Growing Pains: Urbanization and Informal Settlements in Cambodia's Secondary Cities.

However, growth is taking place in absence of a national strategic framework to shape national urban development and ensure a more balanced system of spatial growth.

Cities are engines of growth and prosperity, which facilitate industries to grow jobs, services and innovations. Cities are essential for lifting people out of poverty though increased employment opportunities and incomes to citizens. However, if not well managed and planned for, the benefits of urbanization are not realized and can instead result in inequality, congestion, slums, as well as feed social tensions, crime and violence. Rapid urbanization can put stress on physical infrastructure, land use, transportation, basic city services, housing and the environment.

This report aims to help inform urbanization policy in Cambodia, understand the economic potential of cities, key constraints to realizing that potential, and develop a strategic approach for urban growth and resilience in those cities. Section 1 uses an Economic Potential Index (EPI) which analyses spatial patterns of growth and areas of economic potential to categorize a typology of cities. Section 2 includes a detailed city analysis to understand the bottlenecks to improving city competitiveness, sustainable urban planning, and inclusion for greater equity. Field visits to Sihanoukville, Siem Reap, Poipet, Kampong Cham, Battambang, and Chbar Mon also informed the analysis. The analysis draws on a recent World Bank companion report prepared with a specific focus on Phnom Penh[9]. Section 3 discusses policy options and priorities for helping Cambodia to acheive its full potential from urbanization.

1.2 URBANIZATION PATTERNS AND THE ECONOMIC POTENTIAL OF CITIES

1.2.1 Cities in Cambodia

Cities in Cambodia are categorized based on the sub-national governance structure in the country, which is clearly organized into three administrative tiers (Figure 1.1)[10]. There are 24 provinces and one special administrative unit of the capital region which form the top administrative tier. In the intermediate administrative tier, there are 26 municipalities/krongs and 171 districts/khans. Cities refer to either the capital region of Phnom Penh or the 26 municipalities/cities/krongs (which also serve as the provincial capitals in most cases)[11]. Finally, at the lowest administrative tier, there are 1,273 communes/sangkats[12]. The capital region of Phnom Penh is a special administrative unit at the province level.

9 World Bank, 2017, Urban Development in Phnom Penh.

10 Based on the Organic Law on Administrative Management of Capital, Provinces, Municipalities, Districts and Khans (2008).

11 Annex Section 4.1 includes a table with main cities and population from the 2008 Census. This data is outdated but the only official numbers available.

12 GGGI, Sustainable City Strategic Plan 2018-2030 (Draft), 2017.

Figure 1.1: Sub-National Level Administrative Structure of Cambodia

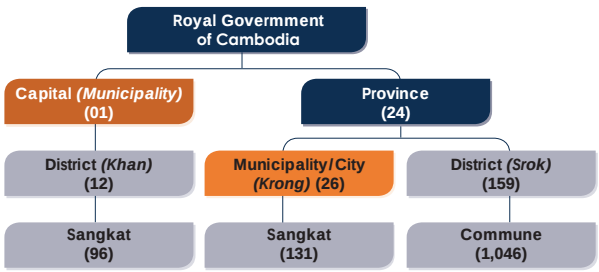
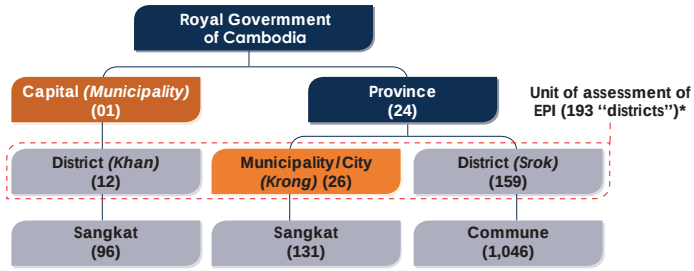


Figure 1.2: Unit of Assessment for EPI



1.2.2 Introduction to the Economic Potential Index

The Economic Potential Index (EPI) analyzes the economic potential across municipalities and districts (herein after collectively called "**districts**") in Cambodia, defined as "the extent to which a district possessed factors which are important determinants of the ability to experience a high level of productivity" (Roberts 2016). The index itself is a composite analysis, based on five indicators which are generally considered to affect levels of productivity. These indicators include market access, transport connectivity, economic density, urbanization, and human capital. Combined, these factors can provide insight into the potential productivity of a district.

The unit of assessment for the Cambodia EPI is the intermediate administrative tier, where the economic potential is measured at the municipality and district level (Figure 1.2). While there are a total 197 municipalities and districts, the EPI uses 193 municipalities and districts due to the availability of data.

The EPI is a tool to help decision and policymakers understand the spatial distribution of potential within the country. While it alone should not be a determining factor in identifying lagging or leading regions, the EPI can help shape discussions on the high/low performing districts, and identify the indicators most affecting each district's final index value. By identifying the strengths and weaknesses of each district, the EPI can serve to notionally identify which factors should be addressed in order for districts to achieve their full potential.

The following sections outline the spatial layers and sources used for the construction of the EPI in Cambodia, a detailed explanation of the sources of each of those layers, the methodology behind the creation of the index, and then the results of the analysis itself.

1.2.3 Factors Influencing Economic Potential

Depending on the country and the time period, there are many different factors which can influence the measurement of productivity of an area. In recent years, significant literature has emerged which has tested a variety of potential factors and their statistical importance in determining

(or measuring) productivity. A challenge is that very few factors are consistent across time and space. The EPI as calculated in this paper, therefore, relies upon datasets that have been identified as reliable in the aforementioned literature, regardless of geographic location or time period of the analysis:

1) ***Market Accessibility:*** measures the proximity of districts to important domestic markets, which generally implies lower trade costs and better access to goods and supplies.

2) ***Transport Connectivity:*** identifies the connectivity between urban and rural locations, thus measuring the ease of travel and flow of goods away from urban centers and movement of skills towards urban centers.

3) ***Economic Density:*** captures the potential of both people and firms/businesses to benefit from agglomeration economies.

4) ***Level of Urbanization:*** similar to economic density in that urbanization rate measures the ability of a district to benefit from agglomeration economies. Additionally, urbanization is related to higher levels of productivity in services and manufacturing, which play an important role in economic potential.

5) ***Human Capital:*** access to a skilled workforce positively impacts both the income potential of those workers and the productivity of firms and businesses.

12. Table 1.1 below expands on the reason for including each factor in the Cambodia EPI analysis and the indicator which was chosen to represent each of the factors. An important note is that many of the data sources are publicly available, global datasets. The methodology found in this analysis can therefore be replicated in other geographies.

Table 1.1: Input Factors for the Cambodia EPI Analysis

Factor	Reason	Indicator Chosen	Data Source
Market Accessibility	High accessibility generally implies lower trade costs and better access to goods and supplies	Access measured by average travel time to market towns, weighted by the population of those towns	Open Street Map road information
Transport Connectivity	Measures the ease of travel and flow of goods away from urban centers and movement of skills towards urban centers	Density of primary, secondary, and tertiary roads per district	Open Street Map road information
Economic Density	Captures the potential of both people and firms/ businesses to benefit from agglomeration economies	Number of establishments in each district	Cambodian 2014 Inter Censal Economic Survey, National Institute of Statistics, Cambodia

Urbanization Rate	Urbanization is related to higher levels of productivity in services and manufacturing	Percent of population living in an urban area	Landscan 2012 population grid, European Commission's urban cluster algorithm
Human Capital	Access to a skilled workforce positively impacts both the income potential of those workers and the productivity of firms and businesses	Education Completion Rate, 2014	The Education Statistics and Indicators 2016-2017, Ministry of Education, Youth and Sport, Cambodia

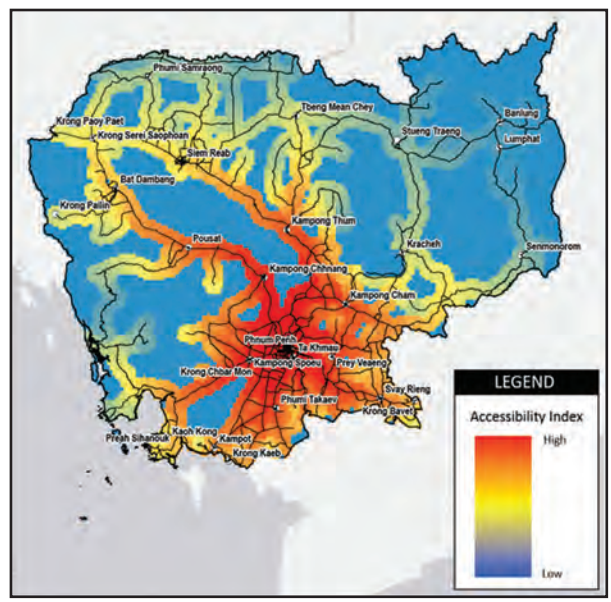
Source: World Bank team

1.2.4 Methodology for the Construction of Each Indicator Dataset

The following section outlines the methodology behind the construction of each dataset used in the EPI analysis which is important to understanding the overall index:

Market Accessibility: Market access is constructed from Open Street Map road information, the location of major market towns (with population information), and a fishnet grid of points (spaced 3km apart) covering the entire country. Accessibility of each grid point is measured using the formula Origin Grid Point X = Population of Market Town Y *e [(-Time between X and Y) / (2* a2)], where a = total maximum travel time in hours across the country. For Cambodia, this value was estimated to be 12 hours. Any grid point located more than 10km from a road was automatically assigned an accessibility value of 0. Final district accessibility was calculated by averaging the accessibility of all grid cells within that district.

Figure 1.3: Market Accessibility

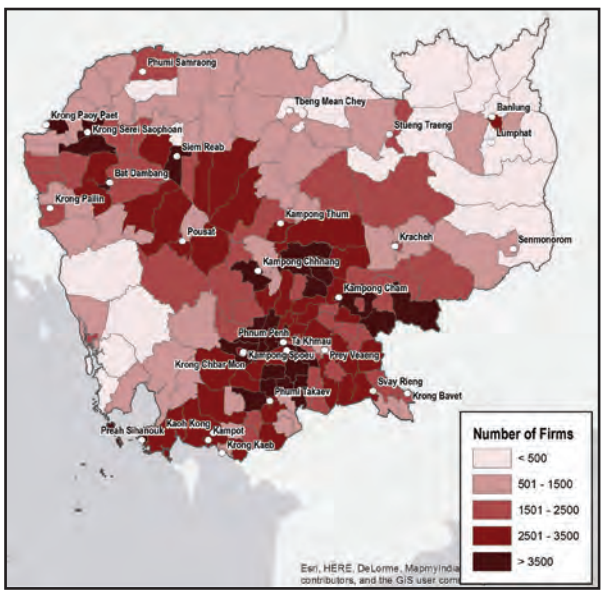


Transport Connectivity: Total length of roads (defined as 'Trunk,' 'Primary,' 'Secondary,' or 'Tertiary' in the Open Street Map database) across each district was calculated, and then was divided by total area of district to produce density of roads (length in kilometers per square kilometers of area).

Figure 1.4: Transport Connectivity

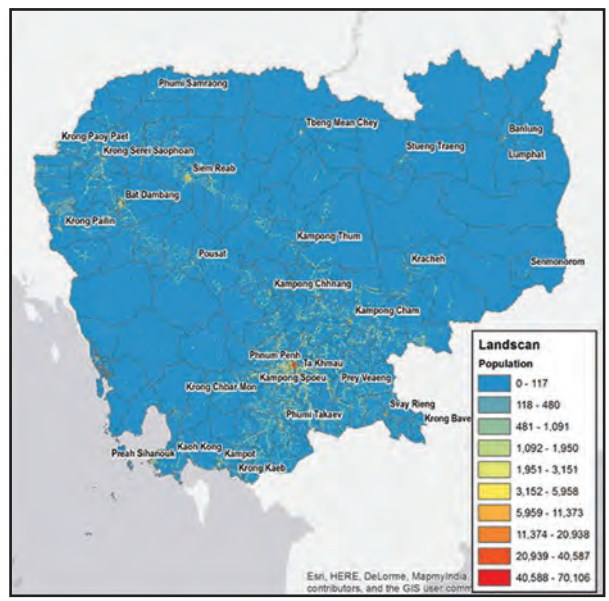
Economic Density: Economic density is represented by the number of establishments in each district. Data comes from the Cambodian 2014 Inter Censal Economic Survey produced by Cambodia's National Institute of Statistics.

Figure 1.5: Economic Density



Level of Urbanization: For each district, percent of population living in urban areas was calculated using Landscan 2012 grid-based population data. Urban areas were defined using the European Commission's clustering algorithm, which states that urban areas are clusters of contiguous grid cells with a density of "at least 300 inhabitants per square kilometer and a minimum population of 5,000."[13] Using these criteria, urban clusters (i.e. footprints) were created from the Landscan 2012 population grid. Then, total population of each cluster was calculated. Cluster population was then summed by district, and divided by total population of that district (also calculated from Landscan 2012), to create the 'percent urban' indicator.[14]

Figure 1.6: Level of Urbanization



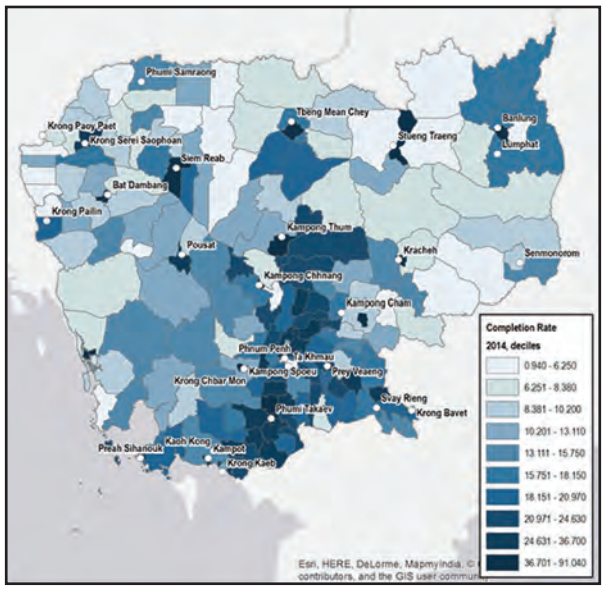
Human Capital: Human capital was measured using the 'Education Completion Rate' by district, from The Education Statistics and Indicators 2014-2015 Book.[15] If a district was missing data, the average completion rate of all districts within the same province was assigned to that district.

13 Dijkstra and Poelman.

14 For more information on the EC's urban clustering methodology: http://ec.europa.eu/regional_policy/sources/docgener/work/2014_01_new_urban.pdf

15 The Education Statistics and Indicators 2016-2017 Book provides basic information regarding public schools including pre-school, primary, and secondary education in Cambodia. The data are collected by schools, and checked and verified by District and Provincial Offices of Education, Youth and Sport.

Figure 1.7: Human Capital



1.2.5 Construction and Categorization of the EPI

First, a histogram was built for each indicator's raw scores, to assess whether the distributions were normal. For Cambodia, the raw score of market accessibility, transport connectivity, and urbanization rate were determined to have a roughly normal distribution. For economic density (firms) and completion rate, natural logs were taken of the raw scores to produce a more normal distribution.

Once normalized, the raw scores were converted into comparable units by calculating the Z-scores. The Z-Scores for all five indicators were then averaged, to create one index score for each district. The raw score was scaled (using the formula EPIi = 50 + [50 /Max (|Zi|)]*Zi ; where Zi is the average Z score) so that the final EPI value is easier to interpret, with the scores for all districts falling between 0 (low potential) and 100 (high potential).

Districts were then grouped into five classes based upon their distance from the mean. For Cambodia, the average EPI score was 49.99, with a standard deviation of 10.58.22. When considering the results, it is advisable to focus on each district's broad classification. This will help prevent placing too much emphasis on the value itself, and instead keep the focus on assessing the district's overall potential.

Table 1.2: Categorization of District EPI Values

Category	Value	Score Range	Number of Districts
Very High	> 1 standard deviation above the mean	60.58 - 100	27
High	Between 0.5 and 1 standard deviation above the mean	55.29 – 60.57	26
Medium	Within 0.5 standard deviations of the mean	44.71 – 55.28	79
Low	Between 0.5 and 1 standard deviation below the mean	39.42 – 44.70	27
Very Low	> 1 standard deviation below the mean	0.00 – 39.41	34

It is also important to remember the EPI is intended to measure the potential for economic performance, not the actual performance. While we expect the EPI score to be positively correlated with an indicator that does represent performance (such as GDP), such results might not always be the case. A district which has high potential, but is not leveraging such potential well, could have a high EPI classification but low GDP.

1.2.5 Results

The raw EPI score results are mapped in Figure 1.6 while categorized EPI results are mapped in Figure 1.7. A table of EPI calculation results can be found in Annex 3.1. The results show the following:

Greater Phnom Penh. Not surprisingly, that Greater Phnom Penh has the highest economic potential, with a number of high EPI districts clustered around the city. There is high market access, transport connectivity, percent urban and number of firms in the region, making it one big high EPI cluster. The urban Khans in Phnom Penh, including 7 Makara, Chamkar Morn, Duan Penh, and Tuol Kuak have the highest EPI scores, all between 80 and 100. Dangkor, Po Senchey, Russey Keo, Sen Sok, and Meanchey are classified as 'very high' but have slightly lower EPI scores, in the 60's, primarily due to weaker values in human capital. Furthermore, there are several districts with 'very high' EPI in clustered around Greater Phnom Penh, including Chbar Morn in Kampong Speu, Krong Prey Veng, Muk Kampoul in Kandal, Kean Svay in Kandal, and Ang Snoul in Kandal. Other districts in Kandal such as Kandal Stueng, Khsach Kandal, Ponhea Leu, Koh Thom, Lvea Aem, and Peam Ror in Prey Veng are classified as 'high' EPI districts with scores ranging from 55 to 60.

The South East. Proximity to Phnom Penh and economic corridors also contribute to strong EPI districts in the South-East of Cambodia such as Svay Rieng and Daunkeo in Takeo.

The South Coast. There is a strong EPI cluster around the South Coast of Cambodia, including 'very high' EPI districts of Kampot, and Khemrak Phoumin in Koh Kong province. Preah Sihanouk in Preah Sihanouk province and Damnak Chang'aeur in Kep also have 'high' EPI scores.

The North West. Several strong EPI districts are observed in the North-West. These districts include the 'very high' potential districts of Battambang and Siemreap, and 'high' potential municipalities of Serei Sophoan, Pailin, and Paoy Paet.

Central. Kampong Cham, Kampong Chhnang, Krong Pursat, and Stung Sen in Kampong Thom have 'high' to 'very high' EPIs. Many of these secondary cities are located along economic corridors, providing favorable market accessibility despite their inland geographic location.

North and North East. Surprisingly, several districts in the north and north east of Cambodia, including Kratie, Preah Vihear, Krong Ban Lung in Ratanak Kiri, and Krong Strung Treng have 'very high' or 'high' economic potential. This perhaps explain

by the existence and growth of economic land concessions in favour of agriculture plantation and agro-industrial processing?

The 'high' potential districts and clusters identified through the EPI are further analyzed in the Detailed City Analysis in the following sections.

Figure 1.8: Map of Cambodia with Raw EPI Scores

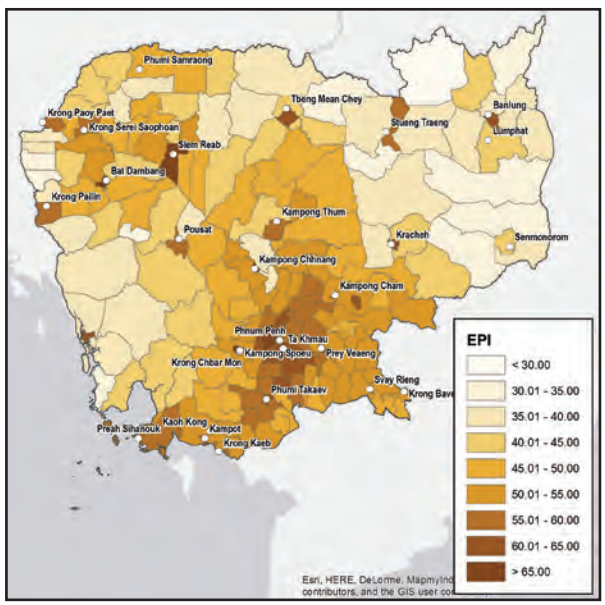
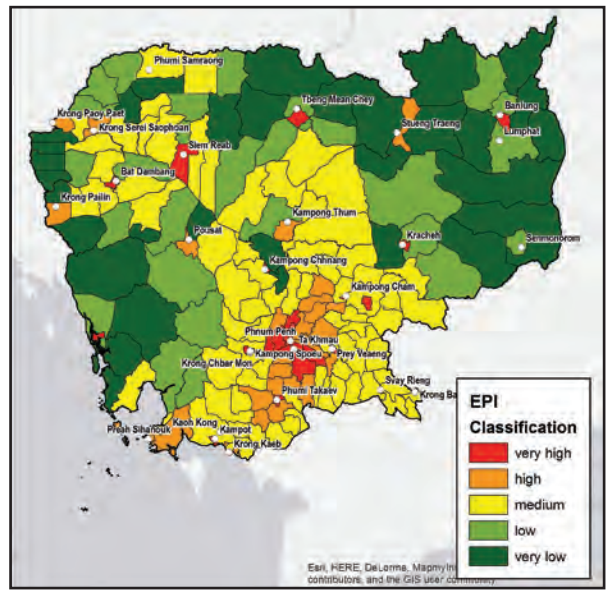
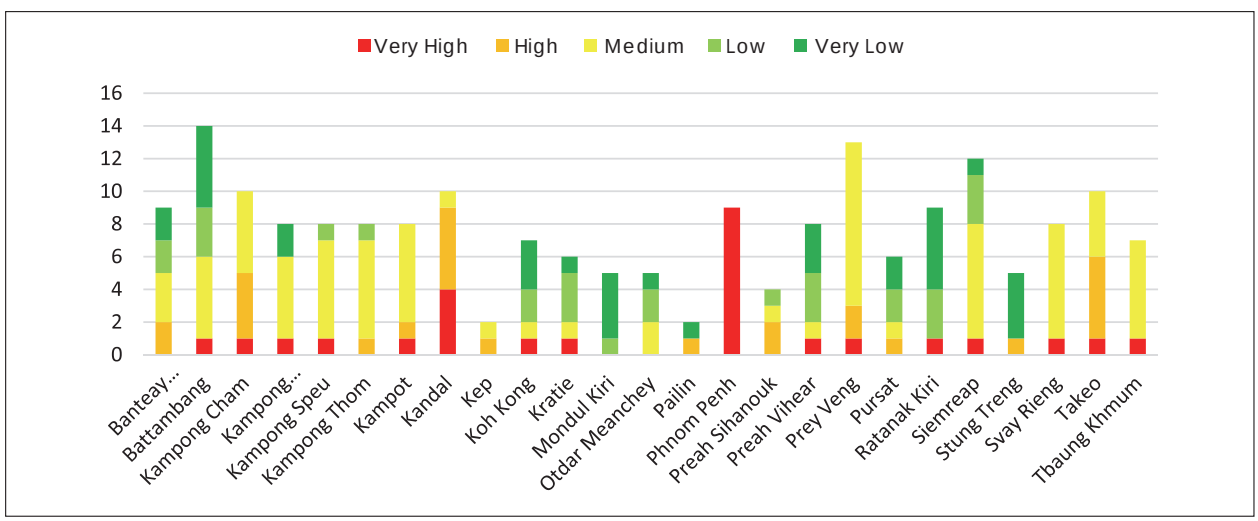


Figure 1.9: Map of Cambodia with EPI Category



EPI results suggest that, in general, all provinces in Cambodia has a 'very high' or 'high' EPI district, with the exception of Mondul Kiri and Otdar Meanchey provinces. These high potential districts often are the provincial capital cities, serving as the administrative and economic center of the province and region. The number of districts within each province and its EPI category are shown in Figure 1.10.

Figure 1.10: Results by Province and EPI Category



1.3 CHARACTERIZING CITY TYPOLOGIES AND ECONOMIC POTENTIAL

1.3.1 Introduction

Given the country's urban growth, the preparation of a "National Strategy on Development of Municipal and Urban Areas" is among the top policy priorities of the Fifth Legislature of the Royal Government of Cambodia (RGC). The National Urban Development Strategy (NUDS), prepared by the Ministry of Land Management, Urban Planning and Construction (MLMUPC), corresponds to the mentioned National Strategy, and is being prepared in line with important urban policy issues highlighted in the RGC Rectangular Strategy for Growth, Employment, Equity and Efficiency, Phase III (RS-III), National Strategic Development Plan (NSDP) 2014-2018, and other relevant policies such as the National Land Policy, National Policy on Spatial Planning, National Policy on Housing, and the Industrial Development Policy.[16] The NUDS Framework (Draft 2015) identifies possible urban typologies in Cambodia as summarized in Table 1.3.

Table 1.3: NUDS – Possible Urban Typologies in Cambodia

	Regional Economic Corridor City	Gateway City	Border City/Town	Capital City
Cities in Cambodia	Battambang, Kampong Cham, Sisophon, Kampong Chhnang, Kampot, Kep, other	Phnom Penh, Siem Reap, Sinahoukville	Poipet, Bavet,	Phnom Penh
Economic Potentials	Cities along a regional economic corridor, which have high economic potential due its strategic location and accessibility to inter-regional (global) trade and value-added industries. Such cities also benefit from intra-regional (local) development though economies of scale and inclusion/ integration.	Cities that serve as primary entry points ("gateway") to a country or region. Gateway cities host international/ domestic hub airport/ seaport (primary arrival/ departure point) and have high economic potential by serving as an anchor/ center for regional economies.	Cities that are located along economic corridors and international border. These cities/ towns have high economic potential to serve as a gateway for cross-border trade, tourism and development of economic zones.	Cities that serve as the primary economic, cultural, intellectual, (and often political) center of a nation. In many cases, Capital cities are the most populous and provide the most attractive employment opportunities.
Challenges	Potential increase in through traffic may lead to stresses on limited infrastructure	Land availability/ cost; resettlement; infrastructure improvements; opportunity cost for other cities	Weaker demand and interest, complexity of cross-border issues including day/ night labor influx	Land availability/ cost; resettlement; infrastructure improvements; opportunity cost for other cities
Key Opportunities	Strong market access and connectivity, strong incentive for regional cooperation	Strong private sector and international donor interest	Strong incentive for cross-border trade facilitation and economic zones	Strong private sector and international donor interest

16 Ministry of Land Management, Urban Planning and Construction. National Urban Development Strategy Framework (Draft), 2015.

The NUDS Framework identifies urban typologies and candidate cities primarily based on population and statutorily declared status, however, it is important to note that cities (and urban areas) differ in many dimensions. As explored in Competitive Cities for Jobs and Growth, there is much diversity in city size (population, area, density, etc.), economic orientation (industries and services), geographic location and accessibility (coastal, inland, land-locked, etc.), endowments (resource rich or barren), income levels (GRDP, GNI, etc.), history (new, old, planned, unplanned), political systems, institutional capacity and autonomy, among others.[17] Most cities have their own set of development concerns based on its distinct urban characteristics, challenges and functions (vision and objectives).

Based on the EPI results, city characteristics, and national and regional development strategies, this section categorizes Cambodian cities can be categorized into four typologies based on its function and economic potential, as summarized in Table 1.4. The city typologies are detailed in the following sections.

1.3.2 Regional Economic Corridor Cities

Regional Economic Corridors serve critical roles in regional economic development and integration. The Greater Mekong Sub-Region (GMS) Economic Corridors, India's Delhi-Mumbai Industrial Corridor (DMIC), China's One Belt One Road Initiative, and Africa's Economic Development Corridors are a few examples of economic corridors that have successfully stimulated economic development through a territorial and regional cooperation strategy. By connecting important economic hubs/nodes (cities, markets, ports, industrial complexes, etc.) though efficient infrastructure networks (hard infrastructure such as roads/railways and soft infrastructure such as trade/transport-agreements and standardization), economic corridors strengthen inter-regional (global) trade facilitation and enhance added-values to value chains, while contributing to intra-regional (local) development though economies of scale and inclusion.

Cambodia is a critical component of the GMS Southern Economic Corridor (SEC), which was adopted by the GMS countries in 1998 to help accelerate the pace of sub-regional economic cooperation. The SEC connects the sub-region, which includes Cambodia, Laos, Myanmar, Thailand, Vietnam, to major markets and hubs/nodes to serve as centers for enterprise development. Table 1.5 and Figure 1.9 shows the four sub-corridors of SEC, which include various Cambodian cities/towns (hub/nodes) along its route.

17 World Bank, Competitive Cities for Jobs and Growth, 2015.

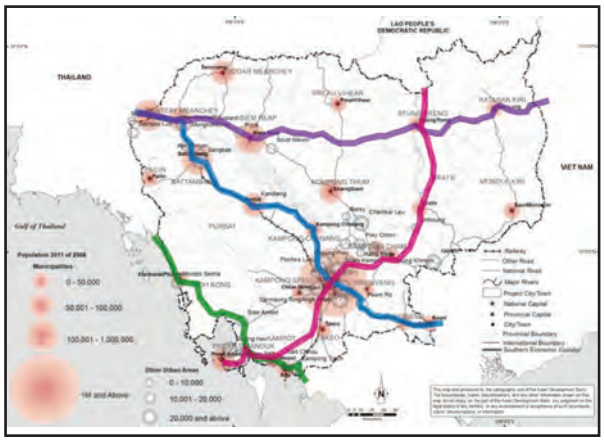
Table 1.4: Greater Mekong Sub-Region Southern Economic Corridor

Sub-Corridor	Capital City
SEC Northern Sub-Corridor (Purple in Figure 1.1)	Bangkok (T) - Paoy Paet (C) - Sisophon (Serei Saophoan) (C) - Siem Reap (C) - Stung Treng (C) – Rathanakiri (C) – Ou Yadav (C) - Pleiku (V) - Quy Nhon (V) (Along National Highway No.6 and No. 64 in Cambodia)
SEC Central Sub-Corridor (Blue in Figure 1.1)	Bangkok (T) - Paoy Paet (C) - Sisophon (Serei Saophoan) (C) - Battambang (C) - Kampong Chhnang (C) - Phnom Penh (C) - Bavet (C) - Ho Chi Minh City (V) – Vung Tau (V) (Along National Highway No.5 and No. 1 in Cambodia)
SEC Southern Coastal Sub-Corridor (Green in Figure 1.1)	Dawei (M) - Bangkok (T) - Trat (T) - Koh Kong (C) - Kampot (C) – Kep (C) - Ha Tien (V) - Ca Mau (V) - Nam Can (V) (Along National Highway No.48 in Cambodia)
Inter-Corridor Link (Pink in Figure 1.1)	Sihanoukville (C) - Phnom Penh (C) - Kampong Cham (C) - Kratie (C) - Stung Treng (C) - Dong Kralor (Tra Pang Kriel) (C) - Pakse (L) – Savannakhet (L) (Along National Highway No. 3 and No. 7 in Cambodia; connects the three SEC sub-Corridors with the East–West Economic Corridor (EWEC))

Note: C = Cambodia, L = Laos, M = Myanmar, T = Thailand, V = Vietnam

Source: ADB, Review of Configuration of the Greater Mekong Sub-Region Economic Corridors, 2016.

Figure 1.11: Economic Corridors and Cities in Cambodia



Source: World Bank Team based on Municipalities and Other Urban Areas (ADB, 2014)

Major cities in Cambodia including Phnom Penh (further described in Capital City Section), Siem Reap and Sihanoukville (further described in Gateway City Section), and Poipet and Bavet (further described in Border City/Town Section) are strategically located along the SEC. However, there are various other corridor cities/towns that have yet to fully realize the benefits of being located along an economic corridor. With the necessary enabling environment in place, including up-to-date urban development plans, appropriate infrastructure and basic delivery, and institutional capacity to finance, plan, and implement policies and projects, these cities/towns may play an important role for the local socio-economic activity and development. Several examples are given below.

Battambang. Battambang is a traditional agricultural trading center, which served as the regional trade center during the French Protectorate (1907-1926), and has high potential to be transformed into an agro-industrial hub. Battambang's EPI is categorized as 'very high' potential, mainly due to its strong transport connectivity, economic density, urbanization rate and human capital. While market accessibility is weaker than the other four factors, the city holds a significant geographic advantage

along the SEC Central sub-corridor, along the National Highway No. 5 which connects to Phnom Penh, and its nearness to the international border with Thailand. Battambang is one of the larger secondary cities with an estimated population of 155,000 in 2015 which is steadily growing, and is anticipated to grow by almost 70,000 people (roughly half of the currently population) by 2030[18]. While approximately 74% of Battambang is agricultural land, the sector constitutes for only approximately 7.3% of employment (2015). As of 2015, 70.7% of employment was in the service sector, and there is potential to develop the local economy in trade, commerce, services and education[19].

While Battambang faces several urban challenges, notably its medium vulnerability to floods and a very high vulnerability to droughts, it is one of the few cities in Cambodia which has a land use master plan. Chosen as one of the pilot district under the Royal Government Decision No. 47 on the formulation of land use planning and with technical assistance from the German GIZ (Deutsche Gesellschaft fur Internationale Zusammenarbeit GmbH), Battambang's Land Use Master Plan 2030 was among the first plans to be adopted by the National Committee for Land Management and Urban Planning (NCLMUP) in December 2015[20]. Currently Battambang faces challenges in seeking technical and financial assistance to implement the Master Plan. Without such, the city infrastructure development is not fully realized as per guidance of the Master Plan.

1.3.3 Gateway Cities

Gateway cities serve as a primary entry point or "gateway" to the country or region. Gateway cities often have an international or domestic hub airport or seaport serving as the primary arrival and departure point and serves as an anchor/center for regional economies.

Siem Reap. A fast-growing city driven by international tourism, Siem Reap serves as the main gateway to one of the most internationally well-known archeological attractions of Angkor Archeological Park, a UNESCO world heritage site. In 2016, the international airport of Siem Reap saw 1.5 million tourist arrivals compared to 1.1 million arrivals at Phnom Penh capital city's airport.[21] Siem Reap's service sector, including tourism, accounts for 68.7 of employment. The city is the second most populous city in Cambodia, with over 240,000 people in 2016 with an average growth rate of over 3.0% annually and expected population of 347,000 in 2030.[22] Siem Reap's EPI is 'very high' potential, mainly due to its strong transport connectivity, economic density, urbanization rate and human capital. Siem Reap's market accessibility is rather weak, however, this is most likely due to the fact that air accessibility (both domestic and international) is not factored into the model.

18 ADB, Case Study 1: Building Urban Resilience in Battambang, Cambodia, 2015.

19 GGGI, Sustainable City Strategic Plan 2018-2030 (Draft), 2017.

20 Phnom Penh Post – Battambang Approves Long Awaited Master Plan, 2016. http://www.phnompenhpost.com/real-estate/battambang-approves-long-awaited-master-plan

21 Tourism Statistics of Cambodia, 2016.

22 GGGI, 2017.

Along with Battambang, Siem Reap was one of two pilot districts selected by the RGC during 2001-2008 to promote decentralization and strengthen district authorities. Under the Royal Government Decision No. 47, and its "Integrated Master Plan for Sustainable Development of Siem Reap and Angkor Town" was completed in 2006 (with follow-up in 2010) with the assistance from the Japan International Cooperation Agency (JICA). However, since the 2006 Master Plan, Siem Reap has observed significant growth fueled by its strong tourism sector. The city doubled its population and added three new districts (Tek Vel, Krabey Real, and Pouk) to its city limits, however, without proper infrastructure mapped out.[23] The city acknowledged the needs to update the Master Plan and is currently in the process of developing its updated Master Plan with the cooperation of APSARA Authority[24], partnered with JICA and the German Development Service (DED).[25]

Sihanoukville. Sihanoukville is home to Cambodia's largest port and four Special Economic Zones (SEZ). Sihanoukville's EPI is categorized as 'high' potential with Krong Preah Sihanouk ranked 'high' and Stung Hav district ranked 'medium' potential. The high EPI scores are mainly due to the districts' strong transport connectivity, economic density, and urbanization rates. Krong Preah Sihanouk has a very low market accessibility, due to the limitation of the data (which does not include international connectivity in market accessibility), which, if factored in, would significantly strengthen Sihanoukville's EPI.

Multiple international donors and the private sector have provided various investments to infrastructure and SEZ development in Sihanoukville. The Sihanoukville International Port (consisting of a 350,000 TEU/year container terminal, 0.9 million ton/year general/bulk cargo terminal, and 270,000 person/year passenger terminal), which occupies more than 60% of total national logistics, was constructed in 1956 as the only deep-water harbor in Cambodia.[26] JICA has invested in the development of the adjacent Sihanoukville Port SEZ which currently consists of 70 Ha with approximately 160 Ha expansion under consideration for future growth.[27] Furthermore, in 2017, JICA signed a loan agreement for a large-scale expansion to the Sihanoukville Port including a new container terminal.[28]

23 Ibid.

24 APSARA authority is the Cambodian management authority responsible for protecting the Angkor Archeological Park.

25 Phnom Penh Post – Siem Reap Expand City While Houses Downtown Remain Undeveloped, 2016. http://www.phnompenhpost.com/post-property/siem-reap-expand-city-while-houses-downtown-remain-undeveloped

26 Korea Ministry of Land, Infrastructure and Transport. Establishment of Master Plan and Pilot Projects for Sihanoukville, Cambodia (Kick-off Meeting Presentation), 2017.

27 Ibid

28 JICA Press Release: https://www.jica.go.jp/english/news/press/2017/170808_01.html

The largest SEZ in Sihanoukville is the Sihanoukville Special Economic Zone (SSEZ, locally known as Betrang SEZ), which at completion is planned to cover 1,113 Ha, house 118 companies (100 from China, 6 from Cambodia and 12 from other countries), and employ approximately 20,000 workers. Phase 1 (528 Ha) of the development was completed in 2008 and is currently in operation under the support of China. Main industries at the SEZ include clothing, textile, machinery & electronic components, and light manufacturing. Phase 2 is currently under construction. Over the next 5 years, the SSEZ targets 500 companies, with an estimated 80,000-100,000 workers.[29]

Aside from its industrial potential, Sihanoukville is also considered one of Cambodia's four tourism poles, which include Phnom Penh, Siem Reap, Coastal Region, and the Northeast Region. The city's natural beach, biodiversity, natural resorts, and accessibility (international airport, international port, and railway services) make Sihanoukville an attractive tourist destination. In 2016, 2 million tourists visited Sihanoukville, of which 1.7 million were local tourists. The service sector in Sihanoukville accounts for 90.1% of employment.[30]

Box 1.1: Special Economic Zones in Cambodia

With the 2005 Decree, Cambodia established the legal framework for SEZs and currently there are approximately 30 SEZs scattered across the country (four in Sihanoukville, three at Bavet, one in Phnom Penh, Paoy Paet, Koh Kong, Kandal, Kampot, among others). SEZs in Cambodia are primarily export-processing zones, where firms import most of their intermediate inputs for export oriented production. Therefore, many SEZs are located in proximity to deep sea ports to allow for convenience in export logistics. The one-stop services provided by the government agencies are aimed to ensure stable business environment, infrastructure, utilities and services as well as privileges (such as guarantees of no price or forex controls, free remittance of foreign currency, exemption from import duty and Value-Added-Tax (VAT), and tax holidays, among others) that can attract Foreign Direct Investments (FDI).[31]

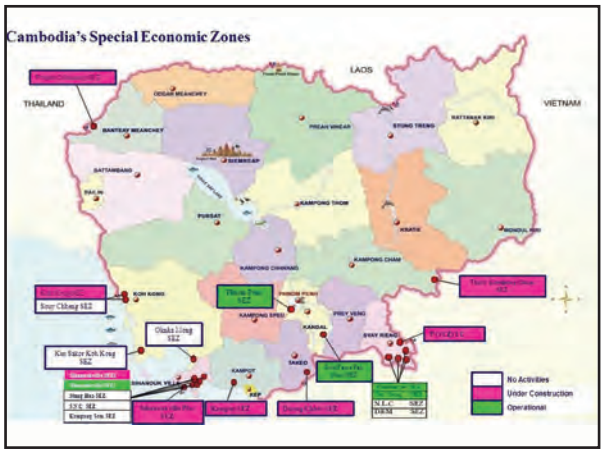
While SEZs in Cambodia have been successful in creating jobs (especially for young women), serving primarily as an export-processing zone, these SEZs have very weak connections to the domestic economy. While most SEZs are located along the GMS economic corridors and have the potential to become a successful Gateway City or regional economic hub, at the moment, they do not necessarily facilitate regional trade and integration.

29 Interview with SSEZ, March 2018.

30 GGGI, 2017.

31 ADB, The Role of Special Economic Zones in Improving Effectiveness of GSM Economic Corridors, 2016.

Figure 1.12: Special Economic Zones in Cambodia



Source: Korea Ministry of Land, Infrastructure and Transport. Establishment of Master Plan and Pilot Projects for Sihanoukville, Cambodia (Kick-off Meeting Presentation), 2017.)

1.3.4 Border Cities/Towns

Strategically located along economic corridors in most cases, border cities/towns may have various role of serving as a gateway for cross-border trade and tourism as well a Border Economic Zones (BEZ) to facilitate production and trade across borders. While these border cities/towns have significant economic potential, weak internal and external coordination (including complex cross border coordination and distance to the central ministries), weak basic infrastructure and services, and weak institutional capacity, prevent these cites/ tows form realizing their economic potential. In the case of Cambodia, the border towns located along the Cambodia-Thailand and Cambodia-Vietnam borders are land-borders, which may be less attractive for private investors who see more opportunities in gateway cities such as Sihanoukville, which have deep sea-port connecting to global markets[32]. Nevertheless, Thailand and Vietnam are important markets, and enabling environments are necessary to develop vibrant border industries along the SEC.

Poipet (Bordering Aranyaprathet in Thailand). Located along the Cambodia-Thailand border along the SEC Northern Sub-Corridor (National Highway No.6) and SEC Central Sub-Corridor (National Highway No.5), Poipet is an important border town growing into an economic gateway for Cambodia. Since the opening of the cross-border trade in 1993, Poipet has emerged as a tourism destination for the Thais and other foreign tourists travelling to Battambang and Siem Reap, and has generated economic activities such as recreation and gaming establishments (casinos), hotels and restaurants, and banking and money exchange shops. The SEZ established in 2010 and several industrial parks (light manufacturing and packaging, including car parts) are expected to facilitate cross-border trade[33]. Poipet is categorized as 'high' potential, mainly due to its strong economic density and urbanization rate.

Among the challenges are a high demand for rental units from migrant workers who have come to work in the industrial parks, and deficits in urban infrastructure (electricity, solid waste and wastewater management). A draft master plan has been developed, but not endorsed which results in haphazard development, and leaves some areas of the city that are flood prone, vulnerable.

32 As stated in Box 1.1, currently SEZs in Cambodia serve primarily as an export-processing zone, with investor preferences for locations near deep sea ports over border areas such as Paoy Paet and Bavet.

33 GGGI, 2017.

Bavet (Bordering Moc Bai in Vietnam). Bavet is an important border town located along the Cambodia-Vietnam border on the SEC Central Sub-Corridor (National Highway No.1). Similar to Poipet, its strategic location along the border as has led to the emergence of recreational/gaming activities such as casinos (12), which attract tourists from Vietnam and China, where casinos are open to non-Cambodian citizens. Aside from casino-led tourism, several industries around textile, bicycle and electronics have developed in the several SEZs, which serve as a major source of employment. The city has 3 dry ports logistics facilities that are being operated by the private sector, which do generate taxes and levies for the government. Bavet's EPI is categorized as 'medium' potential, primarily due to its strong transport connectivity and medium market accessibility and human capital. However, besides the casinos and SEZ, economic development remains weak and the border-town potential is yet to be realized. A key challenge is urban infrastructure – roads, drainage and sewage remain limited, and the city has no wastewater treatment plant which creates environmental problems as the wastewater and storm water is mixed and drained to agricultural areas and rice fields, and further drained to the border areas with Vietnam.

1.3.5 Capital Cities

Capital cities are cities that serve as the primary economic, cultural, and intellectual center of a nation. In many cases, capital cities are also the political center of the nation, housing the seat of government and decision making. Most capital cities are the most populous city in a national providing the most attractive employment opportunities. Naturally, most capital cities also serve as gateway cities. Furthermore, in the GMS region, many capital cities are strategically located along Regional Economic Corridors.

Phnom Penh. As the nation's capital, Phnom Penh is the economic, industrial, and cultural center of Cambodia. Naturally, Phnom Penh's EPI is the highest in the nation, with high scores in most Khans (urban districts) for all five categories (although some Khans have weaker relative human capitals). Phnom Penh is the most populous city in Cambodia with an estimated population of 2 million in 2015, forecasted to become 2.87 million in 2035[34]. Rapid urbanization and the influx of FDI has led to significant commercial development in Phnom Penh. Large scale private sector developments have significantly increased employment opportunities and housing supply, contributing to economic growth of the city. However, such developments have also added stress to the urban infrastructure and service delivery.

34 World Bank, Urban Development in Phnom Penh, 2017.

While international donors have provided substantial amount of technical assistance and grant aid/loans to Phnom Penh, financing, planning, and implementation capacity and speed has not kept up with the rapid urbanization and commercial development. Sectoral coordination and integrated land use planning is necessary to ensure that urban plans are developed to accommodate the range of demands that any city has. Land must be set aside to meet a variety of needs, including industrial, commercial, civic, residential and recreational uses, as well as key infrastructure such as airports and roads. Without a detailed land use plan for the rapidly urbanizing city, Phnom Penh suffers in coordinating sectoral demands.

Greater Phnom Penh (including Kandal). Phnom Penh's rapid urbanization and development continues to force the city to spatially expand to encompass surrounding suburban areas. While 20 communes from Kandal Province were integrated into the city in 2010[35], the remaining districts in Kandal and neighboring provinces constitutes the metropolitan economy of Greater Phnom Penh. Phnom Penh metropolitan region would cover 100km around the current Capital, considering the concentrating of infrastructure, public services and employment opportunities (Phnom Penh Capital, 2017). While many of these districts are classified as 'high' or 'very high' potential districts with EPI scores, these districts are hit with greater stress and strains on urban infrastructure and service delivery.

35 The integration of 20 communes from Kandal Province to Phnom Penh, increased the number of Khans from 7 to 12, and expanding the city area from 376.17km^2 to 678.47km^2

SECTION 2 CONSTRAINTS TO FULLY ACHIEVING ECONOMIC POTENTIAL OF URBANIZATION

While many cities have high economic potential as described in Section 1, there are a number of obstacles that cities face in achieving that potential. These constraints include, a gap in inter-city regional transport to facilitate the flow of goods and services, limited infrastructure and services within cities, and weak institutional capacity in policy, financing, planning, implementation, and enforcement to deliver, as discussed below.

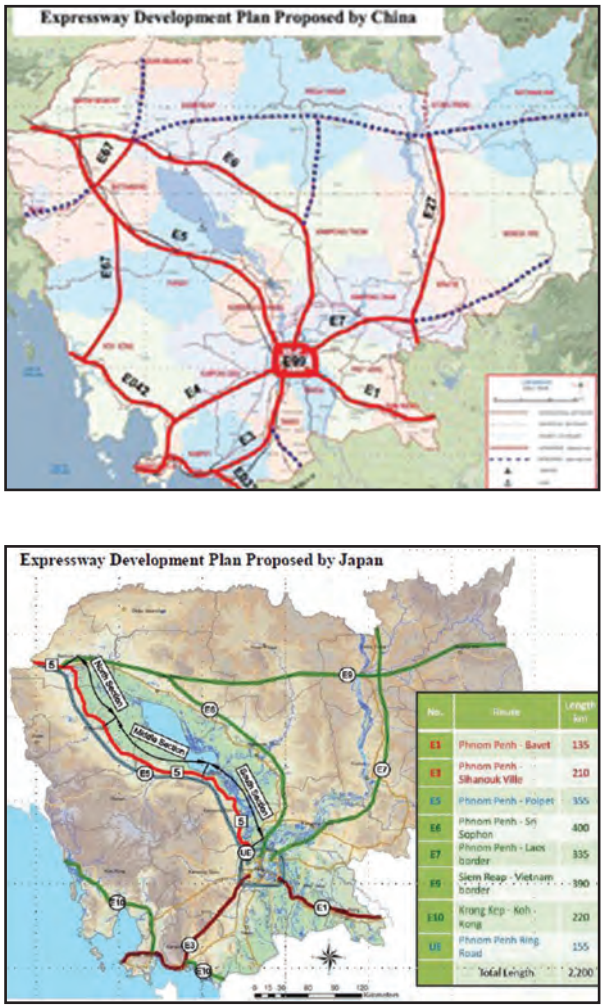
2.1 INFRASTRUCTURE AND SERVICES FOR URBAN DEVELOPMENT

Inter-City (Regional) Transport. Cambodia is a key link of the GMS SEC, and efficient transport infrastructure networks connecting economic hubs/nodes (cities, markets, ports, industrial complexes, etc.) are essential to regional development and competitiveness of corridor cities. To date, most of the transportation requirements in Cambodia continue to be served by road, with 2,200 kilometers and 5,000 kilometers of first and second order national road in 2015, of which 100 and 57 percent were paved, respectively. Cambodia experienced an average annual growth of 14 percent in the number of registered vehicles (with motorcycles growing at 22 percent) during the period of 2008-2013, and the number of registered vehicles in Cambodia reached

approximately 2.5 million in 2013.[36] First and second order roads, which fall under the overall management of the Ministry of Public Works and Transport (MPWT), have undergone significant infrastructure rehabilitation and development with donor support from the World Bank, Asia Development Bank (ADB), AusAid, Japan, China, Korea, Thailand and private sectors.[37] However, tertiary and urban roads may fall under the responsibility of the Ministry of Rural Development, provinces, or cities and often face funding or capacity constraints in maintenance and repair.

To respond to the country's rapid economic growth and ASEAN integration, the Master Plan for the Cambodia Expressway, which consists of a proposal to develop 2,230 km of expressway network in Cambodia by 2040, has been developed with the support from China. The total investment amount is anticipated at approximately USD 26 billion. Similarly, a study conducted by JICA in 2013 recommended a national expressway network, with a total of 2,200 km.[38] The difference of the expressway networks proposed by China and Japan are shown in Figure 2.1. Ministry of Public Works and Transport (MPWT) anticipates that the expressway will contribute to boosting the local, connecting and facilitating transport of goods. Corridor cities such as Chbarmon are anticipated to no longer be pass-by cities but play a more important role in industrial and economic development. However, it is also recognized that these cities would need to improve local roads, public transport and traffic safety to achieve such anticipated roles.[39]

Figure 2.1: Expressway Network Proposed by China and Japan



Source: Infrastructure and Regional Integration Technical Working Group (IRITWB) and JICA, Overview of the Transport Infrastructure Sector in the Kingdom of Cambodia (5th Edition), 2015. Originally from MPWT.

Aside from its road network, Cambodia has railway networks consisting of the Northern Line (a total length of 386 km linking Phnom

36 World Bank, Cambodia Systematic Country Diagnostic – Sustaining Strong Growth for the Benefit of All, 2017.

37 Infrastructure and Regional Integration Technical Working Group (IRITWB) and JICA, Overview of the Transport Infrastructure Sector in the Kingdom of Cambodia (5th Edition), 2015.

38 Ibid.

39 Based on discussions with Chbarmon Municipality in March 2018.

Penh to Poipet through Kampong Chhnang, Pursat, Battabang, and Sisophon) and the Southern Line (a total length of 264 km linking Phnom Penh to Sihanoukville).[40] The heavily deteriorated track rehabilitation is currently under implementation with funding from the ADB and is privately operated by an Australian company. There has been some initial interest in using these line for passenger purposes, however, details have not been explored.[41] While aviation growth has been strong, especially for tourism, other modes of transport play less of a role.

Intra-City (Urban) Transport. The exponential growth of registered vehicles and limited capacities of road networks have contributed to heavy traffic congestion in Cambodian cities. Majority of urban roads require substantial need for rehabilitation and improvement, however face funding or capacity constraints in maintenance and repair. In Phnom Penh, between 1990 and 2012, the number of registered light and heavy vehicles grew from 4,000 to 268,000, and the number of motorcycles from 44,000 to 951,000, leading to growing congestion throughout the city. Results from traffic surveys conducted by JICA show that travel speeds along major boulevards within the city[42] decreased from an average of 22.9 km/hour in 2001 to an average of 14.6 km/hour in 2012.

Transportation systems in Cambodian cities are not multimodal or integrated. Public transport alternatives have not proven viable in major Cambodian cities, and public transport has only been introduced in Phnom Penh as a pilot, although ridership has been low due to poor traffic conditions, unreliable schedules and the poor quality of the buses used. Furthermore, the lack of first-last mile connectivity is a deterrent to the use of public transport, especially given the convenience of door-to-door transport though motorcycles and tuk tuks. Cities lack modernized traffic management, enforcement of traffic regulations, enforcement of parking regulations, traffic safety measures, and pedestrian friendly environments. Phnom Penh is the only city which has a Comprehensive Urban Transport Master Plan, which was developed in 2014 through the assistance of JICA. Based on the Master Plan, Public Bus Improvement and Modernized Traffic Management Projects are under implementation, which other alternatives such as a tram, water taxi system and sky train are also being explored to ease some of the traffic congestion.[43]

While secondary cities share the concerns of growing traffic congestion and lack of multimodal options, they may face immediate challenges, specific to the city. For example, in the border town of Bavet, approximately 300 container trucks drive though the city per day and approximately 700 trucks transport workers/laborers to and from their factories located around the city. The traffic on the narrow roads of Bavet create noise pollution and traffic congestion. Furthermore, the old sub-standard quality trucks result in air pollution and traffic accidents. On the other hand, the city of Soung lacks basic infrastructure

40 Ibid.
41 World Bank, Urban Development in Phnom Penh, 2017.
42 JICA, The Project for Comprehensive Urban Transport Plan in Phnom Penh Capital City, 2014.
43 World Bank, Urban Development in Phnom Penh, 2017.

such as paved roads. Only 16% of roads in Suong are paved, making it difficult to travel to and between nearby villages.[44] Transport infrastructure in cities such as Battambang and Kampong Chang, and coastal cities such as Sihanoukville and Koh Kong face challenges of flooding and rising sea levels. Overall, the country's transportation systems and networks (both inter-city and intra-city), which is primarily served by road, has not kept up with the pace of its rapid economic growth and require significant improvements.

Water Supply. The provision of potable water supply services in Phnom Penh, is one of the few sectors which has experienced success. The Phnom Penh Water Supply Authority (PPWSA) was founded in 1895 and gained autonomy in 1997. With three phases of sub-sovereign financing from donors including JICA and AFD, the four Water Treatment Plants (WTP) and an extensive distribution network supplies potable water to the whole city of Phnom Penh. Through the commitment of leaders as well as the empowerment from the autonomy, operation of PPWSA is healthy, with a profit margin ranging between 25-26% and a fee collection ratio above 99%.[45] Outside of Phnom Penh, the government faces challenges in replicating the success of Phnom Penh to other provinces due to the lack of strong political commitment, lack of adequate infrastructure (including the limited production capacity and distribution network), and the weak capacity of provincial utilities. New construction or rehabilitation of water supply systems have been carried out in cities including Siem Reap, Sihanoukville, Kampong Cham, Kampong Thom, Kampot, Pursat, Stung Treng, Svay Rieng and Stoung with the assistance of JICA, ADB and the World Bank. Both JICA and ADB have provided substantial capacity building, replicating and building on successful initiatives and experiences of PPWSA, to enhance the operation and maintenance capacity of water supply facilities in secondary cities. However, challenges of financial management, unstable facility management, and lack of adequate infrastructure remain in secondary cities, often resulting in low water supply coverage. Furthermore, legal and institutional frameworks, guidelines, and supervision capacity improvements are necessary.[46]

Rapid urbanization and economic development has also added pressures to existing urban water supply systems. In Sihanoukville, the quickened pace of development has placed even more strain on local infrastructure, including the water supply network. Close to the center of the city, construction recently began on a USD 1 billion, 16.5-hectare mixed-use development project, which is planned to consist of 30 high-rise towers as well as an exclusive gated residential community. Existing establishments in the surrounding area – mostly restaurants and other local businesses – have reportedly had their water supply cut off around the time that construction began, and have had no success in having the supply restored. While water supply has been relatively successful Phnom Penh,

44 GGGI, 2017.
45 World Bank, Urban Development in Phnom Penh, 2017.
46 JICA, The Project on Capacity Building for Urban Water Supply System (Phase 3), 2012.

expansion of the distribution network is required to service new developments in the peri-urban area which still lack access to clean water supply. As reported in The Phnom Penh Post, owners of establishments along Karaoke Street have had to resort to purchasing water from the new construction site, where the supply has remained intact.[47] Though no clear explanations were offered as to why supply was diverted, it appears that the existing network is simply unable to support the new volume of growth and construction. Given the proposed scale of the new development, the water supply situation may be exacerbated when it is completed if no measures are taken to ensure that the network in this area is upgraded to meet new demand.

Outside the publicly served water supply, the domestic private sector has been active in providing water supply services. The Bank's earlier estimate indicates that the private sector is responsible for nearly 50% of the water connections in the country.[48] However, most of the private sector has focused on areas that are commercially viable and have easily available/accessible water sources. Other areas that are either less commercially viable or technically challenging (mainly due to water source risks) remain unserved.

Drainage and Flood Protection. There are several major cities in Cambodia, such as Phnom Penh, Battambang, Sihanoukville, and Kampong Cham, which are highly vulnerable to floods, and require urgent investments in drainage and flood projection. Phnom Penh, which is situated on the banks of Tonle Sap, Mekong, and Baasac rivers and surrounded by a typical alluvial and flood plain area, is vulnerable to floods – both daily rainy season events as well as episodic larger-scale floodplain events. In 2011 and 2013, the city experienced extreme flooding caused by a combination of abnormal level monsoon rains, successive typhoons, and rising water levels in the Mekong River, impacting over 17,000 families in the 2011 floods, and over 3,500 families in the 2013 flood.[49] Since 1998, JICA and ADB have helped to improve flooding in central parts of Phnom Penh which have high density. Central Phnom Penh districts have had significant improvements made to the drainage system and technologies (such as network of drainage channels, sluiceways, pumping stations and retention basins), and are protected from flooding effects by a series of dykes. In contrast, the peri-urban districts and outlying areas currently lack a comprehensive drainage and flood protection system and remain at great risk to more frequently occurring flooding, which are further exacerbated by the rapid development of large scale satellite cities.[50]

Similarly, Battambang, which is located on the northwest corner of Tonle Sap Lake and connected to the lake by the Sangkae River, is significantly impacted by annual rainfall levels. The Province itself has a medium vulnerability to floods and a very high

47 McGrath, Cam (2018). "Chinese property hunters flood into Occheuteal Beach." The Phnom Penh Post. 23 March 2018. https://www.phnompenhpost.com/supplements-post-property/chinese-property-hunters-flood-ochheuteal-beach

48 Source: Tapping the Market: Opportunities for Domestic Investments in Water for the Poor, the World Bank, 2013

49 World Bank, Urban Development in Phnom Penh, 2017.

50 Ibid.

vulnerability to droughts. Official records show that the 2011 Floods, which observed water levels up to 13.95 meters affected 31,458 people (7,111 households in 31 communes in nine districts), inundated 52,503 Ha, and destroyed 36,266 Ha of rice fields. The 2013 Floods, which reached a historical height of 14.2 meters, affected 346,408 people (74,160 families in 132 communes). The 2015 drought also had significant impact on the livelihoods of residents.[51] Under the ADB Greater Mekong Subregion Southern Economic Corridor Towns Development Project, flood control measures are to be developed in Battambang, Bavet, Neak Loeung, and Poipet.[52]

Sihanoukville is vulnerable to floods, affected by the sea-level rise and coastal erosion. Homes in low coastal areas are high exposed to flood-risk, often exacerbated by the poor quality of housing and lack of basic urban infrastructure. Flood problems are also exacerbated by the lack of adequate, drainage, sewerage, and solid waste management.[53] Furthermore, Kampong Chhnang is another city greatly affected by the annual flooding of the Mekong River. The rising water brings large volumes of silt and erosion of the river embankments, causing floods and damages roads and other infrastructure along the river.[54]

Sanitation. Presently there are only three operational municipal wastewater treatment plants in Cambodia, which service Siem Reap, Sihanoukville and Battambang, with a capacity of 3,000m3, 6,900m3, and 1,000m3 per day respectively.[55] While the existing facilities are outdated and insufficient to respond to the growing demand of the cities, it is further alarming that there is currently no formal wastewater treatment system in the capital city of Phnom Penh. In Phnom Penh and cities without treatment facilities (such as Kampong Cham, Soung, Bavet and Kep),[56] untreated wastewater and sewerage from households, commercial enterprises and industries are discharged into water sources such as canals, ponds, rivers, lakes and wetlands.[57] The poor (or lack of) drainage and water treatment infrastructure and the lack of appropriate regulation and enforcement has resulted in the build-up of raw sewage in water bodies. The conditions pose a threat to the urban environment, particularly for residents in low-income areas around canals and lakes.

While the Royal Government of Cambodia (RGC) acknowledges the serious consequences of wastewater problems and the urgent need of adequate sewerage and wastewater management, limited progress has been made in the provision for funding wastewater treatment. The absence of regulation and enforcement has been a major bottleneck, and the formulation and adoption of a Wastewater Management Law in

51 Urban Climate Resilience in Southeast Asia Partnership (URCSEA), Report on Identification of Case Study Site: Battambang Municipality, Battambang Province, Cambodia. 2015
52 ADB, 2017. https://www.adb.org/projects/43319-033/main
53 GGGI, 2017.
54 Ibid
55 Ibid
56 Ibid
57 Sahmakum Teang Tnaut, 2012. Phnom Penh: City of Water.

the immediate future is critical.[58] RGC has recognized the severity and urgency of the issue and is in the process of drafting a sub-decree on sewerage and wastewater management.

Furthermore, in urban areas in Cambodia, only 44% of the population are connected to the sewage network in 2015, and the remaining population rely on septic tanks which would require functioning fecal sludge services as cities grow and develop.[59] Under the Ministry of Public Works and Transport (MPWT) strategy, septic tanks from households are anticipated to be connected to centralized septic tanks by 2030 and wastewater management and sanitation services are anticipated to be provided to all by 2050. While the intentions are there, it is important to note that achieving the goals will require strong political will, stakeholder participation, and implementation strategies including financing schemes, enforcement, and raising public awareness.[60] Furthermore, there is a high priority in establishing guidelines for sewerage and drainage management in large-scale development areas as growth in large-scale satellite cities exceeds the treatment capacities of the city.[61]

For Phnom Penh, JICA completed its Study on Drainage and Sewerage Improvement Project in Phnom Penh Metropolitan Area in 2017. The study identifies the urgency of the development of a modern Wastewater and Sewerage Treatment Plant (STP) at Cheong Aek area and installation of sewage system with various on-site and off-site sewerage treatment options explored.[62] Furthermore, ADB signed a loan agreement in January 2018, committing to improving and expanding sewage infrastructure and water treatment plants in Battambang, Kampong Cham, Siem Reap and Sihanoukville. The ADB loan has been accompanied by a Japanese grant to build an energy-efficient wastewater treatment plant in Battambang.[63]

Solid Waste Management. Solid Waste Management (SWM) in Cambodia is severely underdeveloped with dire consequences to public health, the environment and the economy. Population growth; increased living standards; increased economic activities in tourism, construction, and industry, has resulted in rapid increases in waste generation. It is estimated that nationwide roughly 2.7 million tons of municipal solid waste is generated, about 850,000 tons in Phnom Penh; 600,000 tons in urban areas in secondary cities and the remainder in rural areas (still accounting for almost 80% of the total population). The total waste volume is expected to grow to 3.5 million tons per year in 2030. Weak SWM, lacking adequate systems and operations for collection, segregation, and intermediate treatments (such as composting); and lack of community participation in 3R (reduce,

58 World Bank, Urban Development in Phnom Penh, 2017
59 Source Joint Monitoring Programme for Water Supply, Sanitation and Hygiene, WHO/UNICEF 2017
60 GGGI, 2017.
61 JICA, 2017. Study on Drainage and Sewerage Improvement Project in Phnom Penh Metropolitan Area.
62 Ibid.
63 Phnom Penh Post, 2018. https://www.phnompenhpost.com/business/adb-signs-180m-loans-cambodia

reuse, and recycle) results in that roughly half of the waste is not collected at all. The fraction that is collected has increased from 397,311 tons per year in 2006 to 1.2 million tons per year in 2016[64], but is being disposal in facilities that lack basic control measures such as leachate (wastewater) collection and soil protection..The rapid increase in urban solid waste is a critical challenge for Phnom Penh that struggle with expensive land speculation and insufficient funding to develop adequate waste disposal sites.

Box 2.1: Limited Landfill Capacity in Phnom Penh

The rapid increase in urban solid waste volume is a critical challenge for Phnom Penh. In 2009, the new 31-hectare Dangkao landfill in Phnom Penh opened with a designed lifespan of 25 years. However, just after 5 years of operation, the first phase comprised of 14 hectares had been filled. The second phase comprised of 17 hectares has been in operation since 2015, however, current projections suggest that the remaining capacity of the landfill is only sufficient up to 2020, achieving less than half of its planned lifespan. The city is struggling to keep up with the volume (and composition) of waste deposited every day, which has significantly increased from approximately 800 tons per day in 2009 to 1,475 tons per day in 2014 (with some forecasts estimating that this will increase to 2,200 tons per day by 2020)[65].

Currently, there are no sanitary landfills in Cambodia. SWM in most secondary cities are outsourced to private companies, with varying levels of coverage and service standards, based on the various SWM fee collection processes, economies of scale, accessibility, and the community's willingness to pay (WTP). SWM technologies and management capacity is still weak, with most existing landfill facilities operating under open dumping with some organizational structure at the site but with poor environmental control measures and limited technical design (such as treatments for leachate (seepage from waste materials), odor, vermin, gas, etc.). Urban populations, not covered by existing waste collection, which is estimated at 42 percent commonly practice open burning without prior waste segregation and at low temperature, releasing health hazardous toxic gases and particulates into the atmosphere.[66] Other uncollected waste is either dumped in open public areas or illegally discharged into waterways.

The Sub-Decree No. 113 adopted in August 2015, is an attempt to decentralize waste management and provide a better and clearer mandate on SWM. The sub-decree aims to strengthen the responsibilities of government agencies, assign the task of SWM in urban areas to local government units, increase effectiveness and safety in urban SWM, and increase public awareness and participation in the local SWM including

64 GGGI, 2017. Based on Ministry of Environment, 2017.
65 World Bank, 2017. Based on The Asia Foundation, Overseas Development Institute, 2016. Reforming Solid Waste Management in Phnom Penh
66 GGGI, 2017.

proper waste disposal, waste separation, and 3R. While with good intentions, the implementation of the sub-decree has remained limited, primarily due to the constraints of financing, human resources and sub-national capacity for SWM monitoring and enforcement.[67]

Box 2.2: Solid waste management in Siem Reap

The Siem Reap Province has a total population of 1.06 million and receives around 3 million tourists per year. There is a population of 350,000 living in Siem Reap city. Formalized waste collection is concentrated in Siem Reap city, mainly in the four central districts that cover one third of the city area and that can be considered as the fully urbanized area within the city boundaries with roughly two-third of the city population or over 200,000 people. The outer districts, more rural in nature with over 100,000 people do not have formalized waste collection. Waste collection is fully outsourced with the company GAEA servicing the urban districts. The company services streets where most people pay GAEA directly for the service. In addition, GAEA has contractual obligations to collect all the waste along the main roads of the city and along the river bank. With only about 20,000 households (100,000 people) paying for the collection service, there is much freeriding. The other half of the people who don't pay get their waste collected because they live in streets and roads that are services or they put out their waste along roads that are services and find other outlets, similar to people in districts that do not receive waste collection. Up to 150 tons of waste per day is collected, about an equal amount remain uncollected. The latter is thrown away in public space (e.g. along river bank and along road curbs) at night or on empty land plots.

Overall, roughly 65% of the total city population have direct or indirect access to waste collection with half of them (35% of total city population) paying for it. In GAEA's contract, the local government stipulates that waste fees can be collected with the electricity bill which then through the local government would be transferred to the company. However, the government never took steps to arrange for this as people protested. Hence, the government allows GAEA to collect waste fees directly from customers. Without any local government payments, there is no compensation for the waste that GAEA must collect along roadsides and from public spaces. Not much capacity in the city to manage wastes. Siem Reap province has its own contracted staff to collect wastes in the river water. In overall, Waste disposal and collection is still in poor condition. In addition to the GAEA contract which due to its size has been signed with the Province administration, there is a second contract between the City Hall and the company WeGreen for collecting the waste from the Angkor temple

67 Ibid.

complex, the airport and museums. Also here, the customers pay for the service. Households pay $1.00 per month, small businesses $2.00 -$5.00 per months with hotels paying more (20 room hotel would pay $30.00 month). Tariffs are set by the Ministry of Economy and Finance. All everyone would pay, tariffs for households roughly are equivalent to $10/ton, insufficient to cover full costs including sanitary disposal. Non-paying citizens complicated financing but tariffs for other users are higher on a per ton basis and thus cross-subsidize to some extent. The Ministry of Health manages hospital waste, this is managed separately but ends up at the same disposal site as the waste collected by GAEA.

GAEA uses 5-ton compactor trucks to collect waste and a transfer stations, 10-ton compactor trucks for direct hauling and a few 20-ton trucks for transfer from the transfer station as the disposal site is 35km outside Siem Reap. The company has started pilots in some villages to put an 8m3 container with collection once a week at a charge of $1.00/household per month. Waste disposal is practiced as open dumping in two locations with limited control measures on site. The sites attract around 200 waste pickers. The site used by GAEA is 8ha and has some 5-6 years of remaining disposal capacity.

In March 2015, the government set up a $5.0 million fund to allow sub-national government bodies to take responsibility for waste management in their cities. This initiative is coordinated by the environment, economy and interior ministries and municipalities. Each sub-national authority is given decision-making power for contracting with private waste collecting companies. Given this initiative, in November 2015 a new sub-decree No. 113 on urban garbage and solid waste management was introduced. It aims to strengthen and delegate the responsibilities of sub-national government on managing garbage and wastes in their municipalities. It details the responsibilities of concerned authorities including Ministry of Environment, Ministry of Interior and sub-national governing bodies.

From this fund, the government has provided environmental sanitation budget to sub-national administration to temporarily and partially bridge financing gaps (in 2015 $1.25million and in 2016 $2.0 million). Siem Reap received $200,000 in 2017 and used this for collection services in some districts outside the city center and is now contracting for 2018 with funds of $190,000 from the same fund a new contractor to continue these services.

When asked what are the current needs to improve SWM, two suggestions were proposed by the city representatives. Firstly, it was suggested to focus on community participation to agree on responsibilities and obligations to pay for waste collection services and promote household level waste separation as now they put mixed wastes into the bags. Secondly, to invest in waste collection and disposal facilities. Also interest was mentioned from international companies to invest in small scale waste to energy plants with an eye on the high electricity tariffs in Cambodia.

Source: World Bank Team

Housing. Rapid urbanization and the influx of Foreign Direct Investments (FDI), especially Chinese financing, has led to haphazard real estate development and urban sprawl in various parts of the country including Phnom Penh and Sihanoukville. In Phnom Penh, large scale private sector developments, have significantly increased housing and commercial real estate supply to the market. With a strong growth in credit to mortgage subsector in the last few years, housing demand has also increased.[68] In the case of Sihanoukville, there has been significant growth of Chinese FDI and development since 2017 and land prices and rental costs have exponentially increased since. There is a sense of urgency to development the detailed Land Use Plan, however financial and technical resources are insufficient.[69]

The fast-growing construction and real estate sector in Phnom Penh and Sihanoukville pose a risk of a real estate market bubble. Experience from neighbor countries of China and Vietnam, the "classic bubble" comes from over-supply, especially on high-end condominium, and over-priced due to speculation. There is also a risk on financing and banking sector, evidence of 2008-2009 financial crisis' impacts on real estate in Cambodia and neighbor countries is still valid. Both the World Bank and Asian Development Bank have warned of the increase in credit to the construction and real estate sector, suggesting the strengthening of supervision and monitoring of such lending. Increasing land prices leave low income populations with many challenges in finding affordable housing given the high costs and could lead to growing slum populations. Currently, it is estimated that 1.7 million people live in slums where conditions present a number of health and safety risks to residents.[70]

In 2014, Cambodia adopted a National Housing Policy to promote housing development, and a policy on affordable housing is being developed by Supreme National Economic Council (SNEC) with the technical support from MLMUPC in coordination with MEF. It is expected that affordable housing policy will create a special financing mechanism for low-income families to own their houses. In 2017, several private builders including New Word housing developer (Borei Piphup Thmei) and the VTrust had started the shift in demands, from luxury/high-end apartment toward housing that is more affordable for those in lower-middle income brackets, and in particular, the local market. It also noted that "due to slow demand for luxury housing, developers have shown an interest in the local market and responded by supplying lower priced housing".[71]

68 World Bank, 2017.

69 Based on interviews conducted during field mission.

70 2014, MDG data set: http://mdgs.un.org/unsd/mdg/Data.aspx

71 2017, Housing Market Outlook Report.

Box 2.3: Example of Uncontrolled Real Estate Development in Sihanoukville.

Sihanoukville has undergone a stark transformation from a sleepy, backpacker-friendly beach town to one of Cambodia's largest secondary cities. Housing the country's only deep-water port and several SEZs, the city has also become a major destination for property investment, particularly among foreigners. Sometimes referred to as "Little Macau" or "Macau II", the city has seen a spate of casino development – more than 30 licensed casinos have been built, mostly in the last two years – accompanied by hotels, restaurants, shops and other amenities to cater to tourists and workers[72]. Brick-and-mortar licenses were granted to companies running online gambling platforms, making casinos a viable way for investors to make an initial foray into the Cambodian real estate market. International hotel chains including Marriott International, AccorHotels and Intercontinental Hotels & Resorts are now also entering the Sihanoukville market in response to high tourism arrival numbers and a chronic shortfall in hotel rooms [73].

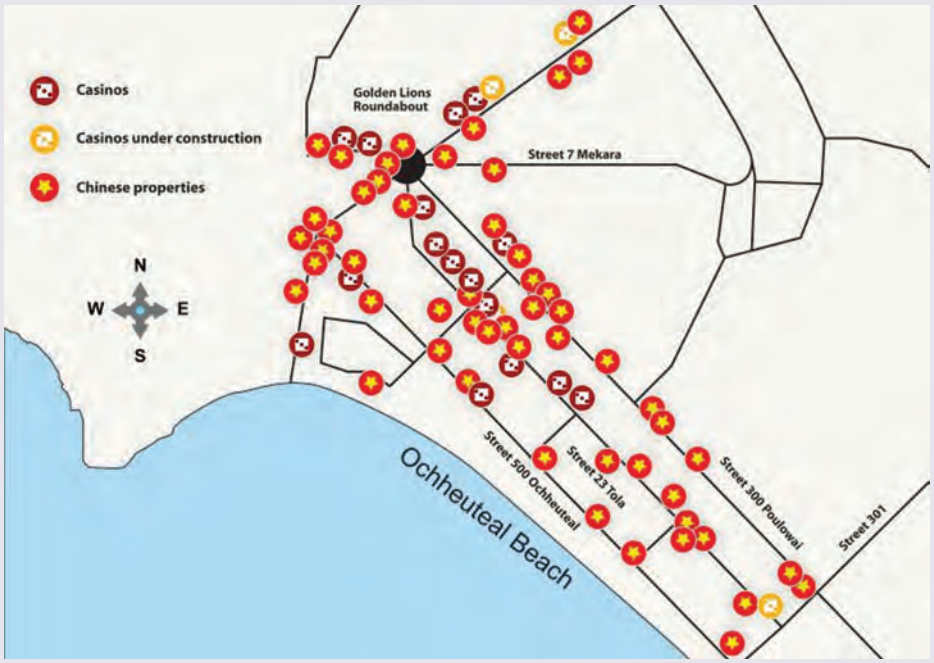
Beyond casinos, investment in property continues to grow at an aggressive pace, especially among Chinese investors. High-rise, luxury developments such as the US$200 million, 38-storey Blue Bay Resort have begun to spring up along otherwise quiet coastlines, offering apartments ranging from US$125,000 to US$500,000 in price[74] . With land and property prices on the rise in Phnom Penh – where foreign investment in real estate has also seen tremendous growth –, Sihanoukville is also viewed as an alternative destination for prospective condominium owners. Chinese investors are bullish on Sihanoukville, which is marketed by developers as the first port of call on China's "One Belt, One Road" initiative. This view is aided by planned expansions of road, air and rail links to Phnom Penh and to China, as well as ongoing expansion of the city's largest SEZ. Figure Box 2.3 shows existing and upcoming casinos and properties in central Sihanoukville, along the popular Ochheuteal Beach coastline.

72 McGrath, 2018.

73 Vin, Vat (2018). "International hotel chains moving into Sihanoukville." The Phnom Penh Post. 30 March 2018. https://www.phnompenhpost.com/supplements-post-property/international-hotel-chains-moving-sihanoukville

74 Tostevin, Matthew and Prak Chan Thul (2017). "Cambodia goes all-in on China in casino port city." Reuters, 7 December 2017. https://www.reuters.com/article/us-cambodia-politics-china-insight/cambodia-goes-all-in-on-china-in-casino-port-city-idUSKBN1E101E

Figure Box 2.3: Real Estate Development in Sihanoukville



Source: Phnom Penh Post (2018)

Rapid real estate development has not come without costs. With no land use plan to guide development, the cityscape has changed dramatically, with new high-rise developments out of place in a traditionally low- to medium-rise urban environment As such the construction permits are granted on a case-by-case basis, often known as "built first, license later". The granting of permits and control of construction is beyond the authority of individual provincial departments and municipality. It remains to be seen whether access to the city's signature beaches will remain open to all with exclusive luxury developments in place. The influx of new buildings, visitors and residents also puts more strain on the city's infrastructure, resulting in worsening congestion and sub-standard delivery of services. Tensions between Cambodian business owners and Chinese investors have also been on the rise, with some locals blaming rising land prices and poor business prospects on investors. While the increases in land prices have been a boon for land owners, renters have borne the brunt of rising business costs. A long term economic adverse effects would be anticipated as renting of units (hotels, accommodations, and housing units) is beyond the affordability of local people. Provincial departments raised concerns that the pollution would be increasing at alarm rate while provision of urban environmental infrastructure (solid waste, wastewaters collection and treatment, etc.) is lag behind. Congestion is obvious as the capacity of the current bus terminal is very limit and unorganized.

Source: World Bank Team

Green Infrastructure. There is growing need for cities in Cambodia to invest in green infrastructure such as green space, public space, and walkability. Flooding has become more serious in major cities such as Phnom Penh, Battambang, and Sihanoukville, where private-sector commercial developments have been constructed in areas that were originally public green spaces, natural lakes or wetlands, which historically served as natural flood control and wastewater management systems.[75] Furthermore, the lack of walkability and absence of first- and last-mile connectivity have become a challenge to achieving urban accessibility and livability. While many sections of Phnom Penh have relatively wide sidewalks (ranging from 2-3 meter sidewalks on local roads to 5 meter sidewalks on major roads) as a legacy of the French colonial development, sidewalks have largely been co-opted for parking and commercial activities, forcing pedestrians to walk on the roadways.[76]

There has been much progress in the advocacy for green growth in Cambodia in the recent years, as detailed in Box 2.4. With the help of donors, larger Cambodian cities have or are in the process of developing strategic plans for green and sustainable urban development. Yet, more is necessary to ensure that sufficient investments are made in green infrastructure. It is important that green infrastructure is designed from the outset with flood management, disaster risk, and climate change objectives or co-benefits in mind, as it may be costly to retrofit or redevelop green infrastructure after basic service needs are met. Furthermore, the economic potentials of Cambodian cities (such as tourism and industries) can be augmented to leapfrog development into green economy models.

Box 2.4: Green Growth in Cambodia.

In line with the Royal Government's Rectangular Strategy for Growth, Employment, Equity and Efficiency, Phase III (RS-III) which identifies the importance of environmental and climate change issues in achieving sustainable economic growth, the Royal Government of Cambodia has endorsed green growth principles in the past few years. The National Green Growth Roadmap, established in 2010, has set a path for green growth in Cambodia, and the development of green and sustainable cities has become a key policy priority for the Department of Green Economy of the National Council for Sustainable Development (NCSD) of the Ministry of Environment (MoE).

In this context, NCSD, MoE and relevant local governments, with the support of the Global Green Growth Institute (GGGI), have developed Green City Strategic Plans. In 2017, the

75 GGGI, Phnom Penh Green City Strategic Plan 2017-2026, 2017.
76 World Bank, 2017.

Phnom Penh Green City Strategic Plan 2017-2026 and the Draft Sustainable City Strategic Plan 2018-2030 covering the seven cities of Siem Reap, Battambang, Sihanoukville, Kep, Kampong Cham, Bavet, and Suong, was developed. With a vision to develop Cambodian cities into "resilient, resource-efficient and environmentally-friendly prosperous cities that provide their citizens with high quality public services, decent employment opportunities, good quality of life, social harmony and engagement in decision-making," the green growth efforts aim to i) develop sustainable urban infrastructure, ii) improve the local economy, iii) promote social inclusiveness and access to services and job opportunities for all, and iv) improve the cities' governance. The strategic plans address the various urban service delivery challenges of the Cambodian cities discussed in the previous sections though the lens of environmental sustainability and green growth and proposes a long list of potential green projects in urban planning, urban vulnerability (including sanitation, flood protection, environmental safeguards), energy, transport, built environment, manufacturing solid waste management, public spaces, and cultural heritage.

Furthermore, green growth and green city development has been well aligned with the government's clean city program which aims to improve the beauty, sanitation, good environment, and living standards in cities and attract more tourists. Cambodian cities have a significant opportunity to benefit from a "green economy", particularly from the creation of new green jobs related to tourism and industries. The aim of the green economy is to improve human well-being and social equity, while significantly reducing environmental issues and ecological scarcities. Green economy models have been successfully implemented in countries like Costa Rica, where the country has leapfrogged development through the eco-tourism sector.

Source: GGGI, Phnom Penh Green City Strategic Plan 2017-2026, 2017. GGGI, Draft Sustainable City Strategic Plan 2018-2030, 2017. World Bank, Urban Development in Phnom Penh, 2017.

2.2 INSTITUTIONS, GOVERNANCE AND FINANCE FOR URBAN MANAGEMENT

2.2.1 Introduction

The role of strong institutions, good governance and sustainable finance is critical to the effective management of cities, the delivery of sustainable urban services, and needed for creating an enabling environment for business and job creation. In Cambodia, there is an ever-evolving framework for urban administration driven by a series of laws and the Government's decentralization and deconcentration reform program, but in practice local governance is hampered due to limited implementation of existing policies, limited resources, responsibilities and skilled professionals.

Transfers to the subnational level overall are low and do not meet the growing needs in secondary cities. Secondary cities, in particular, compare unfavorably to the Phnom Penh where the khans receive significantly more per capita than any of the secondary cities. Siem Reap municipality received less than half the average for Phnom Penh khans in 2017. While there are individual laws and policies, there is no overall framework for subnational finance which means that local governments have limited structure for accountability in how finances should be managed, and on revenue sources there is a bias which favors smaller municipalities and affect their ability to finance urban development. This bias largely results from the formula for sharing tax revenue between provinces and municipalities which allocates 50% of funds transferred on an equal basis and the remaining 50% on the basis of population. Initiatives such as the One Window Service Offices (OWSOs) which are aimed at making basic administrative services (e.g. certification of various letters of permits) accessible to citizens, have been effective though the sustainability of these offices is not clear as the revenue generated does not cover costs. The private sector has stepped in to fill some voids in financing urban development, but much of this does not adhere to urban plans and is carried out in a haphazard way, creating a set of other challenges (such as Sihanoukville). This section covers some of the key issues related to the institutional framework and financing related to municipal administration and service delivery.

2.2.2 Legal and Policy Framework

Municipalities sit alongside districts and khans in the middle of the administrative structure of the Cambodian government. The hierarchy flows from the national level down to provinces and the capital city further down to districts, municipalities and khans (for Phnom Penh only) and then to the lowest level of communes and sangkats. Each level of administration is governed by an elected Council with national and commune/sangkat councils directly elected by citizens and the capital, provinces, districts, municipalities and khans elected indirectly by commune/sangkat council members.

The Law on Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans (Organic Law, 2008) provides the main legal and institutional framework for municipalities. The Law describes their administrative, fiscal structures and relationships to other subnational tiers of government. The Law on Public Finance System (2008) builds on the Law on Provincial and Municipal Budgets and Assets Management (1998) and covers all financial aspects of the state (taxes, budget, assets and liabilities) including subnational administrations (i.e. subnational revenues and budgets). There is, however, no specific subnational finance law providing details as to how subnational authorities should operate, their specific revenue sources, and financial management requirements.

There are a range of other legal and policy instruments that further prescribe the activities of municipal authorities, referred to, in descending order of authority, as: laws, royal decrees, sub-decrees and prakas. The most significant of these instruments for municipalities focus on the transfer of government functions from the center to the subnational level, in most cases, to the DM level. Examples include: Sub-decree 68 which covers the general processes for transferring functions and resources to the subnational administrations, including mapping, review and reassignment implementation procedures (2012); Sub-decree 285 on management of permissive functions for subnational administrations, setting out procedures for them to regulate their permissive functions in consultation with ministries (2014); as well as ministry sub-decrees and prakas on delegation and transfer of functions to subnational administrations (Ministries of Tourism; Rural Development; Education Youth and Sports; Social Affairs; and Environment).

There are also several instruments that define financial resources for districts/municipalities such as: Sub-decree 36 establishing the District/Municipality Fund (DMF) and setting out operating procedures, including funding levels and formulae (2012); Sub-decree 32 on establishment and management of the Subnational Investment Facility (SNIF), including institutional, funding and development of the fund portfolio (2016); and Sub-decree 6 on management of conditional grants including procedures to apply to the identification, reassignment and funding of functions to be supported by conditional grants (2017).

The evolving roles of districts/municipalities in Cambodia are being driven largely by the implementation of the government's decentralization and deconcentration reform program, referred to as the National Program for Subnational Democratic Development, 2009 – 2019 (NP-SNDD). The NP-SNDD has been implemented through three, three-year plans, with the last and most recent one being approved in November 2017, Three Year Implementation Plan, Phase Three (IP3–III), 2018 -2020 of the National Program for Subnational Democratic Development. National Committee for Subnational Democratic Development Secretariat (NCDD-S) is responsible for implementation of the strategy and plans.

Key priorities under the IP3-III include:

- Expand the discretionary resources at the disposal of DMs as the resources they receive are mainly funding personnel and administration or are not supporting a full range of services, including social services. This has contributed to SNAs being unable to take a strong initiative in solving local problems.

- Increase the speed of functional transfer, moving from decisions to transfer key functions, to actual transfer, including the flow of resources required to implement such functions.

- Establish clear policies and a vision for decentralized service delivery, to enforce service delivery standards (through inspections, sanctions and rewards), but also to provide SNAs autonomy in day to day management.

- Strengthen the capacity of subnational authorities, especially in terms of leadership and other professional skills.

2.2.3 Administrative Capacity

Powers to appoint, transfer and terminate civil servants working at subnational levels have been delegated to subnational administrations, but these civil servants remain deconcentrated from their national ministries. In 2016, some 24 of the 35 core central ministries had representation in provinces and districts, with a trend towards deconcentrating more staff to the subnational level. Between 2010 and 2016, the total amount of ministry wages spent in provincial (and to a more limited extent, district/municipal) offices went from 39.8% to 48.2% (ADB, 2018). The Ministry of Education, Youth and Sports, Social Affairs and Health represented 88.9% of total provincial wage expenditures. Core municipal staff are currently under the management of MOI, but discussions are underway to transfer/ decentralize around 9,000 of its staff based in subnational administrations to those administrations. This would represent a massive shift in management authority, allowing subnational administrations to make more decisions on the structure of their staff and use of resources. MOI and the Ministry of Civil Service are also considering how civil servants working for ministries at DM level could be subsumed under the management of subnational administrations.

Due to imbalances in the distribution of shared tax revenues and inequitable, unconditional subnational grant financing formulae, larger municipalities tend to have less staffing per head of population and a restricted ability to adjust.[77] As per Table 2.1, below, shows, the country's second largest city, Siem Reap has the lowest per capita expenditure, and the third largest city, Battambang, has the second lowest per capita expenditure. (ADB, Dunn, 2016) Whereas municipalities spend approximately 45% of their funds on salaries and allowances (as per Table 2.3, below), this is also a reflection of more limited staffing and administrative capacity per capita. In addition to the hard constraints placed on municipalities in the amount of funds available for staffing, the complexity of financial regulations and procurement also make it difficult for them to engage contracted staff to meet priority needs as they emerge. Efforts are needed to simplify regulations and build the confidence and capacity of municipal staff to engage contracted staff so that they can be more flexible and responsive to citizen needs.

77 Shared taxes that are transferred from provinces to DMs are comprised of a 50% equal share across all DMs and 50% based on population. This formula favors smaller municipalities as the total value of the equal share is high compared to their relatively small populations. Since most of DM expenditures are for staff and administrative costs this means that smaller municipalities have more staff per capita than larger municipalities.

Table 2.1: Variation in Per Capita Actual Expenditures of Municipalities, Khan, Phnom Penh (Riel), 2016.

Municipality	Population 2016	Per Capita Expenditures (2016)
Ta Khmao	76,733	28,271
Preah Sihanouk	78,380	27,612
Serei Sophoan	91,158	30,707
Battambang	155,584	25,424
Siem Reap	230,157	22,997
Average of remaining 19 municipal province centers	37,904	41,338
Average of 12 Khans within Phnom Penh	120,612	54,157
Phnom Penh city	1,447,340	342,522
Memorandum items		
Median per capita all (rural) districts	n.a.	7,812
Median per capita all provinces (excluding the capital)	n.a.	24,066

Source: Asian Development Bank (Jonathan Dunn). 2016. TA 8159-CAM: Decentralized Public Service and Financial Management Sector Development Project. Subnational Fiscal Data Base for Cambodia. Phnom Penh.

To address gender inequity in staffing, the Strategy to Promote Women in SNA Management Positions, approved in April 2017, proposes the use of quotas and succession planning as means to reach a target of having at least 25% women in district/municipal management positions by 2018. At the moment, less than 4% of District Governors are women, but an effort by MOI has led to a more impressive situation with 30% of deputy governors being women.

To provide concentrated capacity and improve the efficiency of public service provision, the government started to establish One Window Service Offices (OWSOs) in 2008. While OWSOs are aimed at making basic administrative services (e.g. certification of various letters of permits) accessible to citizens, the role of the municipal administration is to plan and manage urbanization over a longer term. By the end of 2017, there were 52 OWSOs in operation, with at least one in each municipality. A 2017 Qualitative Governance Survey conducted by NCDDS found that OWSOs were trusted by people, providing services in a friendly, professional and transparent manner. The service is much faster comparing to service provided by line departments (API, 2012). The sustainability of OWSOs is, however, an issue as the revenue generated does not begin to cover the cost of operations. The IP3-III

includes an assessment of the possibility of devolving OWSOs to subnational authorities as a means of achieving sustainability. It also targets a doubling of people using OWSO services and a modest expansion in the number of services provided from 232 to 255 services.

Citizen feedback on the overall service delivery satisfaction of citizens with DM services, including services such as road construction, development planning and others has improved from 2013 to 2016. The Governance Survey 2016 found the overall mean value of service satisfaction across a range of services jump from a somewhat low score of 48.64 (out of 100) to 56.52, a 12.54% increase. See below for a breakdown of satisfaction ratings by service types (Table 2.2). To strengthen the responsiveness of municipal services to citizens, NCDDS will design and roll-out a new social accountability methodology, building on the methodology currently being applied under the Implementation Plan for Social Accountability (ISAF) in communes, schools and health centers as well as the experience of the Promoting Citizen Engagement in Democratic Development (PROCEED) project implemented by PACT which included a pilot DM Community Scorecard (see Box 2.4). In addition to raising public awareness of the services provided by municipalities and providing feedback on these services, municipalities should also consider the use of citizen report cards which could ask citizens for their views on a range of services provided at the municipal level, or social audits of municipal level service providers such as solid waste contractors, water supply and sanitation providers, public transport, etc. Municipalities may also be further incentivized to perform better through the introduction and use of a performance element of the grants provided through the DM Fund (discussed further below). The recent strengthening of compliance inspection systems by NCDDS creates an entry point for the creation of performance incentives as does the assessment framework of SNIF.

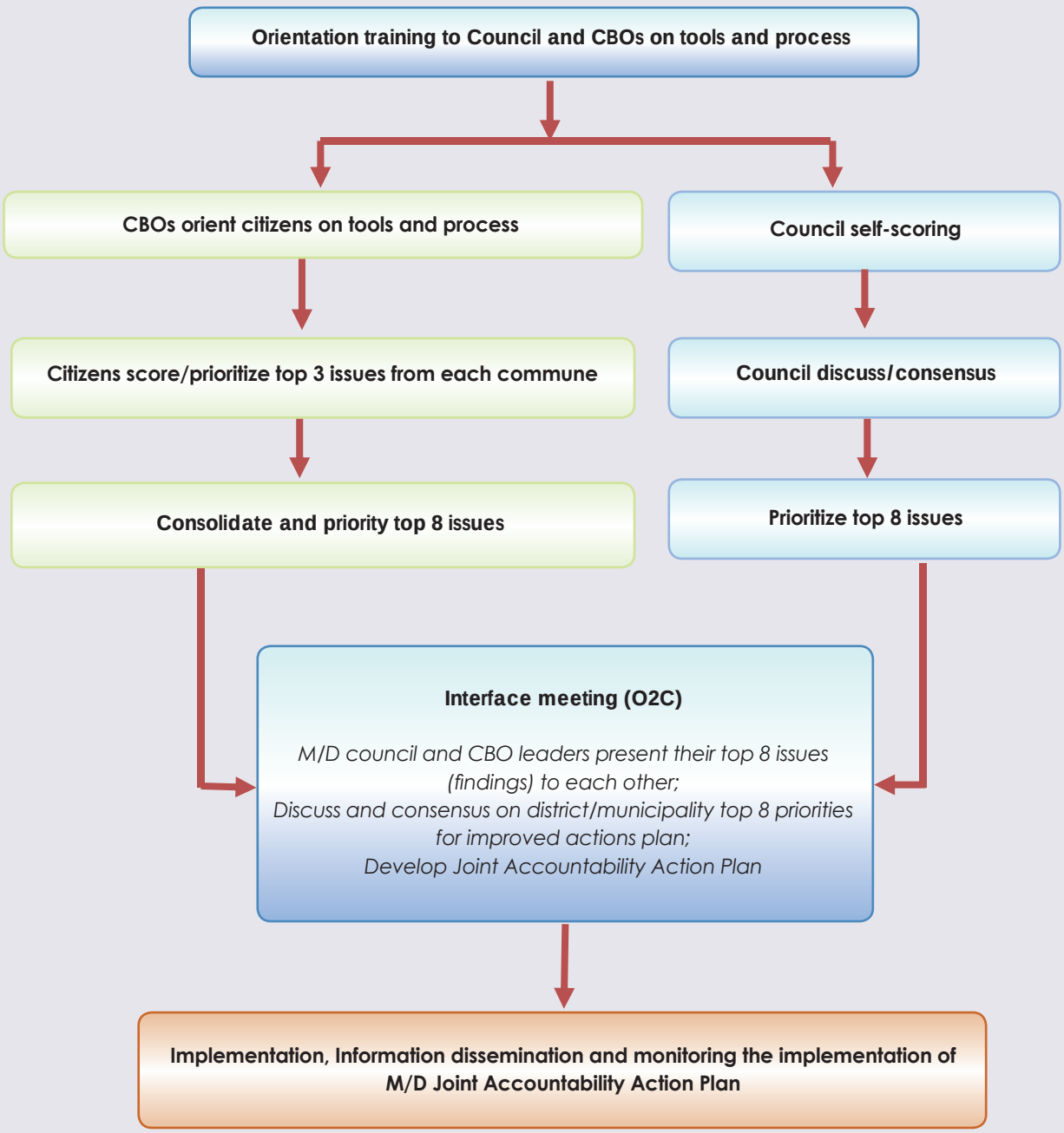
Table 2.2: District/Municipality Service Satisfaction

Item	Mean Value (2013)	Mean Value (2016)	% Increase 2013-2016
Road Construction	52.39	57.05	8.90%
Irrigation Construction	44.42	51.92	16.87%
Development Planning	53.54	59.83	11.75%
Hygiene and Sanitation	52.29	58.63	12.12%
Mediating Disputes/Conflicts	56.55	61.23	8.28%
Water Supply	49.90	59.32	18.87%
Solid Waste Management	40.83	52.77	29.26%
Business Development Services	39.20	51.39	31.10%

Source: Governance Survey 2016, National Committee for Sub-national Democratic Development Secretariat, June 2017.

Box 2.5: PACTs Pilot District/Municipality Council Community Scorecard

The district/municipality community scorecard tool is designed to increase citizen participation in DM Council decision making and to identify areas for improvement in the services provided. Participants include DM councilors and board of governors, community based organizations (CBOs), local citizens (an average of 150 peoples per commune or sangkat, up to 50% female, youth and vulnerable individuals), Commune and Sangkat councilors. The diagram below illustrates the main steps in conducting the scorecard process, including both community and

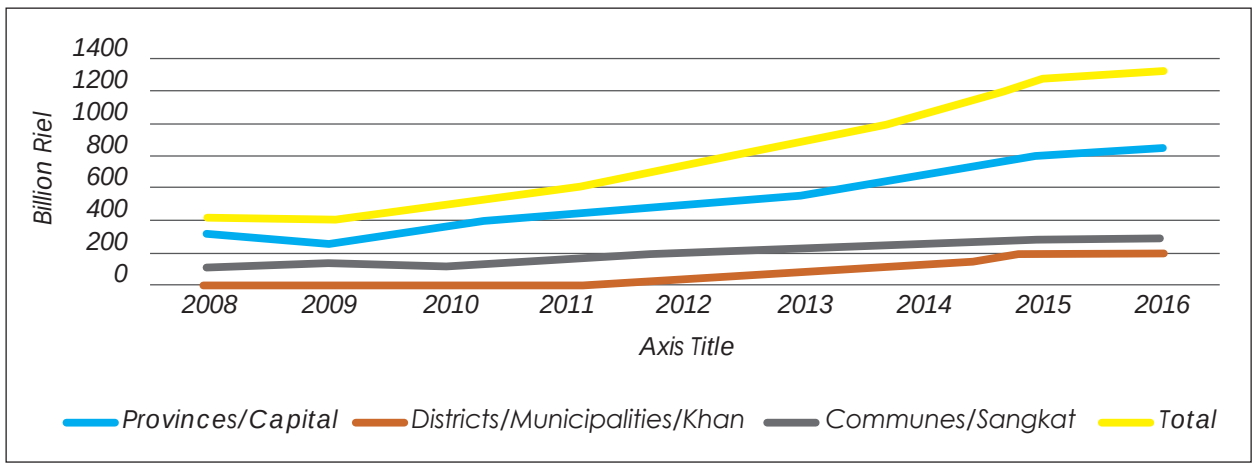


Council self-scoring, an interface meeting and an Action Plan for implementation.

2.2.4 Financing

While districts and municipalities are the focus of efforts to decentralize central ministry functions, this level of government still receives less funds than the provinces and communes/sangkats. As illustrated below in Figure 2.2, DMs only started spending in 2012, and while they still spend less than communes and sangkats, expenditures have increased quite rapidly at a nominal rate of 40% per annum. As illustrated in Table 2.3, below, the bulk of DM expenditures are for salaries and administrative costs, leaving very little for development, investments.

Figure 2.2: Total Actual Expenditures by Subnational Level, 2008-2015, Billion Riels



Source: Asian Development Bank (Jonathan Dunn). 2017. TA 81-59-CAM: Decentralized Public Service and Financial Management Sector Project. Draft Annual Report on Sustainable Administrative Finance. Phnom Penh.

Table 2.3: Actual Expenditure of Subnational Tiers by Type, Average of 2014-16 (%)

Expenditure Type	Commune and Sangkat (%)	Districts, Municipalities, Khans (%0	Provinces and Phnom Penh (%)
Salaries and allowances	42.0	45.0	4.7
Development (capital and maintenance)	50.7	9.6	75.4
Administration (goods and services)	7.3	30.9	12.2
Transfers and subsidies[78]	-	14.2	7.7
Total	100.0	100.0	100.0

Source: Asian Development Bank (Jonathan Dunn). 2016. TA 8159-CAM: Decentralized Public Service and Financial Management Sector Development Project. Subnational Fiscal Data Base for Cambodia. Phnom Penh.

78 Transfers and subsidies are transfers from one level of government to another such as transfers from the Province to the DM and the DM to the CS. These transfers are counted as expenses for the level of government that is transferring them. Transfer financing includes shared tax revenue that flows from the provincial to the DM and CS levels.

There are five types of financing available to municipalities: unconditional transfers, non-tax revenue, conditional and unconditional transfers from provinces, conditional transfers, and project, development partner funding. Subnational government are currently not allowed to borrow from concessional or commercial financiers, so debt financing is not an option. Most revenues for districts and municipalities outside of Phnom Penh come from the District and DMF. There are also additional, unconditional transfers from provinces to their districts and municipalities, mostly from shared tax revenue.[79] Some 93% of total district, municipality and khan revenues, 2014-2016 come from central, Phnom Penh and provincial transfers. While the districts and municipalities have recently started to benefit from tax sharing arrangements, they do not have any tax revenues assigned to them. Table 2.4 shows the types of revenue received by each municipality during 2017. DMF and CSF stand for the District/Municipal Fund and Commune/Sangkat Fund, receptively. LocalRev is nontax revenue mobilized by the municipality. CondFund refers to the conditional financing for waste management. And Resved Fund refers to the budget surplus from the previous year which is carried over. Figure 2.3 below illustrates the different types of financing and the types of functions they are typically identified to finance.

Table 2.4: Municipal Revenue by Source (2017)

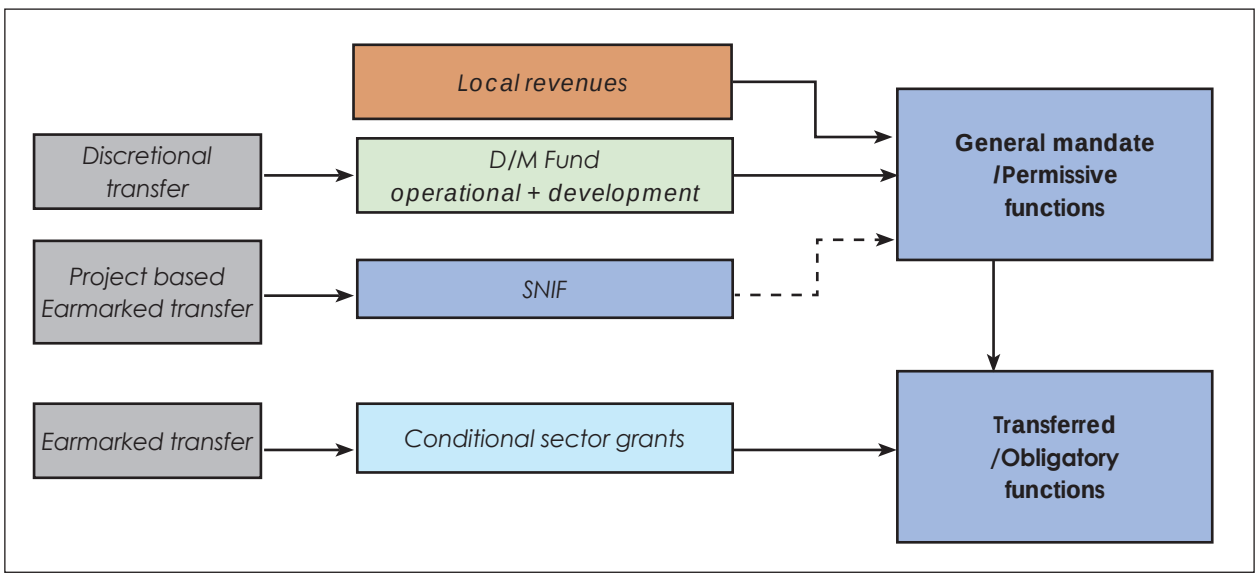
Municipality	2017 Budget Revenue					
	District Municipal Fund (DMF)	Local Revenue	CondFund (waste Management)	Commune/ Sangkat Fund CSF	Resved Fund (budget surplus from previous year)	Provinces and Phnom Penh (%)
Serei Saophoan	764.73	403.31	398	1,641.48	180.96	3,388.48
Paoy Paet	779.90	1013.1	402	1,070.45	-	3,265.45
Battambang	1,011.82	456.33	570	2,530.71	19.85	4,588.71
Kampong Cham	623.94	150.06	261	961.67	-	1,996.67
Kampong Chhnang	612.72	55.89	267	858.68	10.39	1,804.68
Chbar Mon	685.21	123.31	287	1,257.25	27.48	2,380.25
Stueng Saen	894.78	70.22	310	1,463.47	-	2,738.47
Kampot	627.51	142.24	253	867.44	19.25	1,909.44
Ta Khmau	715.08	132.92	359	1,335.56	-	2,542.56
Khemara Phoumin	656.64	175.36	230	599.28	-	1,661.28
Kracheh	614.77	96.23	238	844.00	-	1,793.00
Saen Monourom	535.58	60.42	194	609.18	-	1,399.18

79 These transfers for shared taxes are as per the Prakas on Shared Tax Revenues between Capital/Provincial Administration with District/Municipal/Khan and Commune/Sangkat Administration signed by the Minister of Economy and Finance in December 2017.

Preah Vihear	496.86	65.14	214	523.97	-	1,299.97
Prey Veng	580.49	70.7	224	586.37	14.81	1,476.37
Pursat	811.90	150.1	332	1,634.35	-	2,928.35
Ban Lung	634.76	94.24	239	789.24	-	1,757.24
Siem Reab	1,134.11	1000.89	770	3,300.63	-	6,205.63
Preah Sihanouk	775.13	260.58	364	1,140.75	69.29	2,609.75
Stueng Traeng	608.80	66.78	237	737.49	34.42	1,684.49
Svay Rieng	738.66	100.26	278	1,345.85	55.08	2,517.85
Bavet	654.47	140.41	260	987.60	27.12	2,069.60
Doun Kaev	680.71	100.08	271	902.50	30.21	1,984.50
Samraong	662.57	55.75	330	1,468.33	6.68	2,523.33
Kaeb	536.04	40.98	209	482.59	6.98	1,275.59
Pailin	615.28	90.72	245	932.18	0	1,883.18
Suong	571.93	100.07	258	658.68	2	1,590.68
Total (KHR Million):	18,024.39	5,216.09	8,000.00	29,529.70	504.52	61,274.70
Total (USD Million):	4.45	1.29	1.98	7.29	0.12	15.13
%	29.42%	8.51%	13.06%	48.19%	0.82%	100.00%

Source: Data provided by NCDD-S, based on the 2017 National Budget.

Figure 2.3: Relation Between Types of Funding and SNA Functions



Source: Asian Development Bank (Jonathan Dunn). 2017. TA 81-59-CAM: Decentralized Public Service and Financial Management Sector Project. Draft Annual Report on Sustainable Administrative Finance. Phnom Penh.

Unconditional transfers from central government comprise the majority share of municipal revenue, primarily from the DM Fund. Since the DM Fund (including funds for both municipalities and districts) was established, its resources have increased both in absolute terms (from $US 14.4 Million in 2014 to $US 33.4 Million in 2017) and as a percentage of previous years' recurrent revenues (from 0.8% to 1%). The recently signed Sub-Decree On Resource Transfer from National Budget to DM Fund signed in April 2018 has committed the government to raise the percentage allocated for the DM Fund from 1% of recurrent revenue to 1.6% in 2024. Below, in Table 2.5, is a projection of increases in DM Fund amounts through 2024 based on the increases defined in the Sub-decree on transfers to the DM Fund. Over the next three years, the total amount available would nearly double, increasing the amount of funds available to the DMs. However, the majority of these funds are still likely to be designated from salaries and administrative costs. The target of IP3-3 is, therefore, to increase the development component of the DM Fund as a percentage of recurrent revenue (and as a percentage of DM Fund expenditures as a whole) from the current level of less than .3% to .5% by 2020. However, this has been difficult due to increases in salaries for civil servants and a fixed percentage for other administrative costs based on salary costs.

Table 2.5: D/M fund projections, 2018-2024

DM Fund Projection (2018-2024)

Unit: Million

Year	Estimated Domestic Revenue	%	Amount (KHMR)	Amount (USD)
2018	17,460,006	1.00%	155,015	38.28
2019	19,904,407	1.10%	192,060	47.42
2020	22,691,024	1.20%	238,853	58.98
2021	25,867,767	1.30%	294,983	72.84
2022	29,489,255	1.40%	362,149	89.42
2023	33,617,750	1.50%	442,339	109.22
2024	38,324,235	1.60%	537,884	132.81

Source: Estimates provided by NCDD-S, based on the 2018 Prakas and the 2017 National Budget.

The districts and municipalities do not have any own source, tax or non-tax revenues assigned to them, though from 2017 some municipalities, khans and sangkat will share a proportion of the property tax. All tax and most non-tax revenues are administratively collected by the General Departments of Taxation and Non-Tax Revenues of MEF.

So far, there is only one example of a conditional grant which has accompanied a transferred function from the national to the district/municipal level -- solid waste management. A 2015, inter-ministerial Prakas was signed on the usage of the environmental service fund with an initial amount of USD 5 million allocated to all 26 municipalities across the country with annual amounts per municipality ranging from USD 45,000 to 90,000, depending on their population size. In 2017, each municipality also started receiving about USD 2,000/

year to finance the administrative costs of implementing this new function. However, while formal functions have shifted to the D/M level, funds and contract management responsibilities are still retained at the provincial level, so this new authority has yet to fully come into force. Municipal leaders also have limited knowledge of how to manage such services, including the need to raise public awareness, collection, recycling, landfill management and operation, etc. (See section 2.1, Solid Waste).

The Sub-National Investment Facility (SNIF) is also a conditional transfer, but it can only be accessed on a competitive basis for the initial years of implementation to begin in 2018. SNIF represents the most significant source of development/investment financing for municipalities with the average amount per district ranging from USD $25,000 to $60,000 per year. In 2017, a review of the capacity of 49 DMs was conducted and 19 DMs were endorsed by the SNIF Board for receipt of financing in 2018. DMs will be subject to an annual screening process to assess the degree of their compliance with a set of pre-agreed eligibility conditions for access to SNIF funding. These conditions are rooted in key legal and regulatory requirements which DMs are already supposed to be in compliance with.

Beyond the funds available through intergovernmental finance systems, DMs may also receive funds from specific government investment projects, including those financed by international development partners. These sources are on a grant basis only, irregular in nature, and cannot include direct borrowing or subsidiary agreements to borrow from the Ministry of Economy and Finance. Funds have been provided to commune/sangkat accounts for specific purposes in the past (i.e. climate resilience and social investment) and this may also provide a model for direct financing to DMs once they build their capacity to manage more significant development financing and implement development activities.

Except for the SNIF and DP-financed projects managed by central ministries, municipalities lack the substantial financing needed to invest in urban infrastructure such as transport, waste management, roads and water and drainage. Even the size of SNIF grants are insufficient for more significant investments, particularly for larger, secondary cities. Private sector financing and national budget allocations can also be used for more significant infrastructure investments, but since most of these investments are led by national ministries, the roles of subnational administrations tend to be limited, including their ability to fit such investments into the spatial, urban development plans that they need to use to ensure that their cities develop effectively.

Due to limited government and development partner resources, the private sector, particularly local private companies are also potentially key partners for municipalities in addressing critical infrastructure needs. The private sector is quite active in Phnom Penh compared to other smaller cities (i.e., former Veng Sreng managed-toll road, and LYP managed-toll road connecting NR5 and NR6). Going forward, there is much opportunity for coordinating with the private sector to ensure that any investments are linked to and follow urban plans and that plans take into account private investments.

This will help to ensure the potential benefits of public-private partnership for urban infrastructure investment and management.

2.3 SUSTAINABLE LAND USE PLANNING FOR EFFICIENT URBAN GROWTH

2.3.1 Introduction

Urban Planning in Cambodia overall has a long way to go. The lack of sound urban planning has left cities unable to keep pace with urban expansion, resulting in sprawl, congestion, and poor delivery of basic urban services. This chapter examines the underlying constraints to developing and implementing land use plans in secondary cities, namely low technical capacity, lack of financing, national vs. city-level decisions and the absence of a robust regulatory environment. Case studies of urban planning in Battambang – widely considered as best practice in Cambodia – and the fast-growing coastal city of Sihanoukville provide further insight into factors impacting the urban planning process. The companion report Urban Development in Phnom Penh (2017) covers issues specific to urban planning in Phnom Penh.

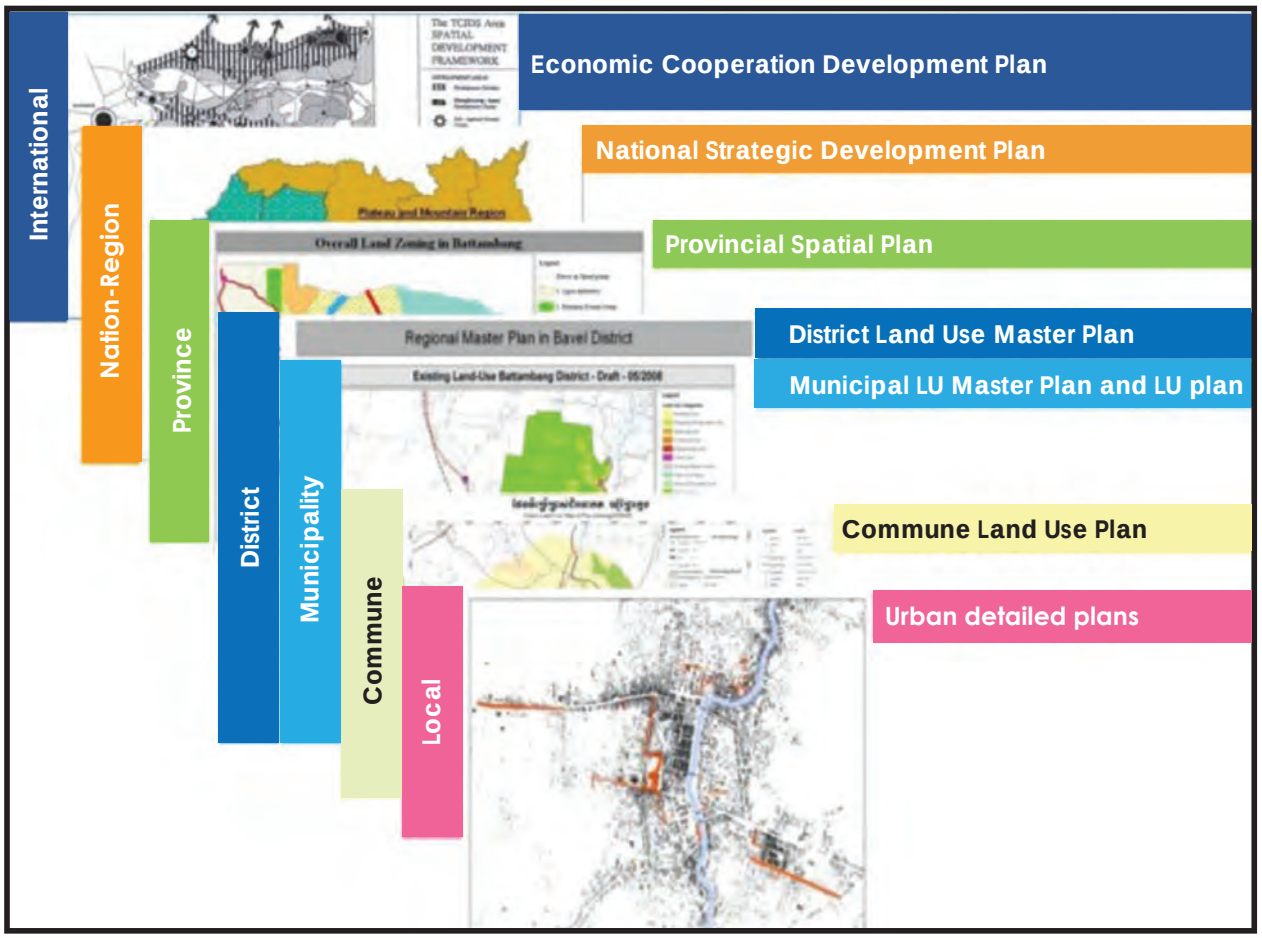
2.3.2 National Planning System

There are two main types of plans prepared by municipal authorities - physical/spatial plans and socio-economic development plans. Guided and overseen by the Ministry of Land, Management, Urban Planning and Construction (MLMUPC), the purpose of spatial plans is to coordinate policies and activities that affect the spatial organization of the municipality. In a separate process guided and overseen by the Ministry of Planning (MoP) in coordination with the Ministry of Interior (MOI), socio-economic development plans identify key development challenges at the municipal level, based on bottom-up inputs from citizens and sangkat councils and top-down guidance from national and provincial policies and priorities. These plans prioritize development actions that the municipality can take a leadership role in implementing together with various partners and financiers (including its own limited development funds). Critically, there is no integration between spatial and socio-economic development plans.

Deconcentration and Decentralization (D&D) Reforms, administered through the 2008 Organic Law, empower provincial, district, khan and municipal administrations to prepare urban plans and budgets, and oversee public service delivery within their areas of jurisdiction[80]. In parallel, a National Policy on Spatial Planning (2013) specifies a hierarchy of spatial plans, from strategic plans at the national- and regional-level down to detailed commune/ sangkat land use plans. At the national level, a national/regional level plan is to be developed by the National Committee for Land Management, Urban Panning (NCLMUP) with a time horizon of 20 years. The NCLMUP consists of 22 national ministries, chaired by MLMUPC. It is to be updated every 10 years. A National Urban Development Strategy (NUDS) Framework is also being developed to provide guidance for the preparation of a full-fledged NUDS, which will devote specific attention to urban infrastructure and economic development needs through industrialisation and modernization as key factors in supporting economic growth and development.

80 Ministry of Land Management, Urban Planning and Construction. 2016. Introduction to the Cambodian Spatial Planning System. Spatial Planning Series No. 1. https://orbi.uliege.be/bitstream/2268/199639/1/MLMUPC_2016_Introduction-Spatial-Planning-Handbook_ENG_Lowres.pdf

Figure 2.4: Hierarchy of Spatial Plans in Cambodia



Source: National Policy on Spatial Planning (2013)

The Capital/Provincial Committee for LMUPC is supposed to develop a Capital/ Provincial level plan every 5 years, however with the exception of Phnom Penh capital, none of these plans have been prepared. Municipal/district/Khan level plans, often called Land Use Plan/Land Use Master Plan, cover a visionary period of 15 years, with 5-year updates, and are intended to provide direction for the further development of detailed plans. Most of the 26 municipalities have drafted and consulted their respective plans. Only the Battambang Municipality Master Plan has been endorsed by the central government, thanks to years of external technical support, described in greater detail in Sections 1.6.3 and 1.6.4. At the lowest tier of spatial planning, a Commune/Sangkat Land Use Plan is also required to manage land use and natural resources within the territory, and it should be aligned with the Commune/Sangkat Development Plan. No records currently exist as to the number of commune/ Sangkat level plans that have been developed. Table 2.6 summarizes the status of spatial planning at the various levels of government.

Table 2.6: Status of Spatial Plans at National and Subnational Levels

Types of Plan	Spatial Plan	Status
National Level	National Policy on Spatial Planning	Adopted in 2013
	National Spatial Plan	Does not yet exist.
Broader Regional Level	Regional Spatial Plans	The only example so far is the Circular on Cambodia Coastal Area Management (February 2012).
Capital/Provincial Level	Capital Land Use Planning and Master Plan	Phnom Penh Strategic Orientation Plan 2035 was approved in principle in December 2015, with a 15 year vision.
	Provincial Spatial Plans	Some provincial land use plans/PLUP are currently being developed in parallel with District/Municipal/ LUP. 6 provincial spatial plans and costal area management plan are being drafted.
Municipal/District/ Khan Level	Municipal Land Use Plans	So far, only the Battambang LUP has been prepared and approved in December 2015.
	District/Khan Land Use Master Plans	Some have been drafted, but none have been endorsed. A total of 23 municipal/district LUP are being reviewed and to be finalized in 2018 (MLMUPC, 2018). 13 others are in the making.
Commune/Sangkat Level	Commune/Sangkat Land Use Planning/CLUP	These plans began to be developed after a 2009 sub-decree came into effect, but there is no record of how many exist.

Source: MLMUPC, 2018 (information updated from National Policy on Spatial Planning)

A set of new guidelines was approved in January 2017 for the preparation of socio-economic development plans, including a Five-Year Development Plan and Three-Year Investment Program. Municipalities will be trained in these new guidelines following the election of new councilors in 2018. Plans developed through participatory methods at the sangkat level, and endorsed by the Sangkat Councils are fed into the Municipal Development Plans and Investment Programs. The Plans and Investment Programs are presented each year at a District/ Municipal Integration Workshop where line ministries are requested to pursue needed resources and development partners are encouraged to support individual activities. Due to the very limited financial resources available for development investments at the district/municipal level, municipal authorities have little ability to finance their own priority activities. Joint Accountability Action Plans (JAAPs) prepared jointly by citizens and service providers for communes participating in ISAF are also fed into the commune and district plans. To date, the focus of ISAF has been on rural areas, but, as suggested above, this should be expanded to cover urban areas and the specific services provided by municipalities.

2.3.3 Challenges to Developing and Implementing Urban Plans

The national planning framework has no shortage of guidelines for the development of plans across different administrative

boundaries[81]. Decision No. 41 on "Detailed Procedure for Development of Municipal, District, Khan Land Use Master Plan and Land Use Plan", for example, lays out a sequential nine-step process to be followed at the sub-national level, including data collection and analysis, vision-setting, plan drafting, public consultation and identification of priority projects. Challenges remain, however, in both realizing and implementing these plans. In this chapter, the team refers specifically to land use plans, which have the potential to guide development and provide a clear and transparent basis on which development decisions are made.

Low Technical Capacity. The critical challenges is a lack of technical capacity and shortage of staff at the sub-national level to prepare detailed land use plans. Much of the professional expertise in urban planning remains concentrated at the central Ministry of Land Management, Urban Planning and Construction (MLMUPC), with local-level departments under-equipped to develop and implement plans that can properly guide urban development. Recognizing the unique challenges faced by urban municipalities, most municipalities began establishing offices of "Urban Development" and "Urban Beautification," starting in 2009, yet these offices have limited resources and skilled professionals. Among other responsibilities, these offices are intended to implement municipal development projects, coordinate with Sangkat councils, and manage land use, control construction projects/activities and urbanization. The Offices are accountable to the Director of Salakrong (the Municipal Administrative Director), and act as secretariats to municipal council and board of governors.

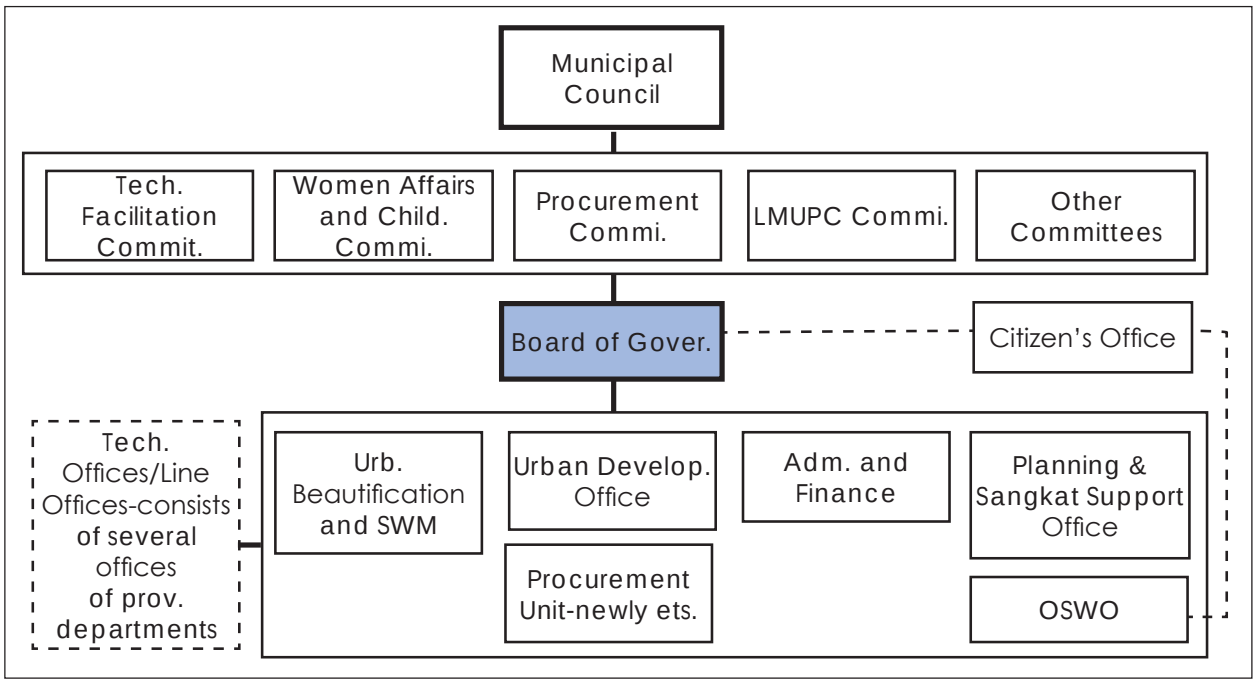
On average, these offices are staffed by 2-4 individuals who are primarily responsible for preparing plans and addressing urban development issues. With average total municipal staffing at 43 per municipality (Battambang), most staff are mapped to five other offices (see example of Battambang Organizational structure below, Figure 2.5. Given limited training and experience of staff in Urban Development units, MLMUPC and other ministries have played significant support roles in the preparation of urban development plans. An earlier study by the World Bank found that only 10 percent of the 50 urban planners hired by Phnom Penh Capital Hall (PPCH) have formal training in urban planning[82]. By and large, the capacity of Urban Development units is still far behind what is needed to respond to the myriad challenges of rapid urbanization.

Currently, there is no separate school or dedicated tertiary education course for urban planning and management, either at the Bachelor's or Master's degree level. Planning courses are only offered as part of undergraduate programs, typically as part of architecture degrees. There is a strong need for specialized skills including mapping, GIS and remote sensing, CAD operations, data analytics, urban planning and management, environmental engineering, natural resources and environmental management. In the early 2000s, the World Bank initiated the establishment of

81 World Bank. 2017. Urban Development in Phnom Penh. Phnom Penh, Cambodia: World Bank.
82 Ibid.

a Faculty of Land Management within the Royal University of Agriculture (RUA), the only long-term training program pertaining to land management and cadastre. MOI is also now pursuing the establishment of a National School of Local Administration (NaSLA) which would match subnational administration staff with the specialized training they need to do their jobs.

Figure 2.5: Organizational Structure of Battambang Municipality and Offices



Source: Redesigned from Battambang organizational structure, 2018

*(Notes: with exclusion of technical line offices in dot box, Battambang has 43 full time staff being employed directly under the municipality, of which 4 staff are working under "Urban Development" office. Within the entire administration, only one staff (vice-governor) obtained bachelor degree in the field of architecture an urbanism). Not every municipality has a completed set of line offices sitting in the municipal administration. *Citizen's office also known as Ombudsman.*

To address weaknesses in planning capacity, donors and development partners have provided various forms of capacity-building assistance at both the national- and sub-national level. However, these have often not had a sustained impact beyond the period of assistance. An Asian Development Bank (ADB) capacity development project in 2015, for example, produced a comprehensive series of training materials that were endorsed by MLMUPC, aiming to strengthen capacity in planning, managing and governing cities to enable better responsiveness to local needs and rapid urbanization[83]. Over 200 officials from central and sub-national levels were trained as part of the project, which covered a broad range of topics from the procedures for developing municipal-level plans to project management and environmental impact assessments. A set

83 Ministry of Land Management, Urban Planning and Construction. 2015. Training Manuals on The Capacity Development for Urban Management in Cambodia. Phnom Penh, Cambodia: MLUMPC.

of 21 training modules were produced, but have since not been systematically adopted to train more officials.

Similarly, the German development cooperation agency Gesellschaft für Internationale Zusammenarbeit (GIZ) completed a series of three country-specific spatial planning handbooks in 2016, focusing on planning at the provincial, district and municipal levels. Drawing on GIZ's engagements with municipal agencies to develop land use plans, the handbooks were intended to provide practical, step-by-step guidance on the planning process. The guidebooks are available online, but were never officially published by MLMUPC or disseminated for use by sub-national officials.

Weak Regulatory and Enforcement Environment. Where municipal plans are in place, there remains a disconnect between what plans have proposed and the reality of urban development on the ground. Several factors are at play here, including the absence of a robust regulatory and enforcement environment. Globally, different degrees of regulation govern the implementation of land use plans; some are statutory plans, while others remain more as guidance documents to be taken into consideration when assessing new development. In countries such as Japan and Singapore, urban developments are governed by two types of regulations – an initial planning/ development permission which ensures proposed uses are in line with the land use plan, followed by downstream building permissions which regulate the form and overall structural safety of new developments. In the Cambodian context, land use plans are rarely referred to in the approval of new developments, and while attempts have been made to develop guidelines on more detailed development factors such as setback and height control, enforcement remains a challenge.

The 1994 Law on Land Management and Urban Planning (LLMUP) remains the most relevant legislation for spatial planning. Sub-Decree No. 86 (1996) also provides guidance for construction permits and the use of land (including setback control) in urban areas. The 1994 Law, however, was developed based on the Land Law 1992, which has since been superseded by Land Law 2001. The LLMUP is now being revised as an Urbanization Law in accordance with the updated Land Law, and MLMUPC has also made an effort to draft a Code on building height control, focusing on Phnom Penh. A joint initiative between MLUMPC and the Ministry of Environment (MoE) on Environmental Impact Assessments (EIAs) for urban development projects also remains under discussion.

The absence of plans and supporting legal frameworks are exacerbated by varying approval processes for development (discussed further below) and poor enforcement of available guidelines. In Sihanoukville, this has resulted in an un-coordinated pattern of urban development, with new developments of varying scales and densities crowding out the city center and occupying prime beachfront locations. This is similar to what has also been witnessed in Phnom Penh, where the lack of adherence to plans and lax enforcement of codes has also resulted in a sprawling, disjointed urban landscape. Given the pace of urbanization in secondary cities and the

lack of plans to guide them, it is hoped that an updated LLMUP and relevant regulations will provide a stronger, more relevant legal basis for provinces, cities and municipalities to develop their own master plans and land-use plans for better management and development of their respective territories.

National vs. City-Level Roles. Although the effort is being made to decentralize decision making process and responsibility and de-concentrate resource in national ministries to sub-national administration (Organic Law, 2008), the concentration of decision-making powers at the central level, particularly for large development projects, also prevents development from taking place in alignment with plans. Anecdotal evidence suggests that municipal governments have little say in the approval of new developments, which only require a building permit for development to commence. Developments under 3,000 square meters in size (or less than 2 million USD) can be approved at the municipal level or provincial level, but larger development are approved by the national government/ MLUMPC[84].

In addition, large foreign investment projects are reviewed and approved by the Council for the Development of Cambodia (CDC), a central, one-stop service center that promotes and facilitates overseas investment. The World Bank's earlier study of urban development in Phnom Penh suggests that the coordination between CDC and the relevant authorities at the local level is not always strong, despite mechanisms put in place to ensure that individual agencies provide approval for new developments before CDC's endorsement is given. The experience in secondary cities appears similar. A Phnom Penh Post article recently reported that local vendors and business-owners in a 5-square kilometer area around Sihanoukville's popular Occheuteal Beach had to make way for a new coastal development, but even the provincial tourism department had no information about the project and what it entailed[85].

Lack of Financing. Financing shortages also prevent development from taking place in line with approved plans. A Prakas on the division of non-tax (property tax) has been issued by MEF (No. 1458, dated December 2017) allowing an allocation of 3% to Municipality/district/Khan and 1% to commune/Sangkat. This may help to meet small-scale infrastructure development and maintenance needs, but larger-scale infrastructure will continue to require funding from other sources[86]. A more in-depth discussion of challenges related to financing is found in Section 2.2.5.

With the continued influx of foreign investment into secondary cities, opportunities exist to tap on investors to contribute to local infrastructure development – for instance, by requiring developers to make improvements to surrounding roads, landscape, connecting to urban drainage or sewerage lines. This, however, is not commonly done. No regulation exists to specify the requirements neither for on-site-development nor for contribution to urban environment and low-income earners. Individual developments

84 World Bank. 2017.

85 Sokhorng, Cheng and Robin Spiess (2018). "Evictions sweep away Sihanoukville beach businesses." The Phnom Penh Post. 8 January 2018. https://www.phnom-penhpost.com/business/evictions-sweep-away-sihanoukville-beach-businesses

86 World Bank, 2017.

may build some infrastructure facilities within the confines of their own sites to attract buyers or to meet own need, but are not compelled to make improvements to the surrounding environment. This has been commonly evidenced in several gated communities (housing development projects) in Phnom Penh and in secondary cities of Cambodia.

2.3.4 Urban Planning in Battambang and Sihanoukville

The following section reviews available urban plans in two secondary cities –Sihanoukville and Battambang – with a view to assessing the state of implementation and the extent to which planning has been able to influence urban development.

BATTAMBANG

Battambang is one of only two cities to have a Municipal Land Use Master Plan endorsed by the central government, the other being Phnom Penh. The result of a long-term engagement with GIZ and previously the German Development Service (DED), the Master Plan was endorsed in 2015, six years after being completed in 2009, and 12 years after the work was initiated as part of a broader land management initiative in 2003. Compared to other cities, Battambang has built significant local-level capacity in urban planning, and has seen tangible results stemming from the development and implementation of various plans as described below[87]. The Battambang model of urban planning is widely regarded as good practice in Cambodia, and the methodology and procedures used have since also been adopted in other provinces, including Kandal, Kampong Chnnang and Takeo.

The Municipal Master Plan was developed as an integrated development plan with a 15-year time horizon and consisted of different interdependent components: (i) Land Use Plan; (ii) Technical Infrastructure Plan; (iii) Social Infrastructure Plan and (iv) Detailed Development Plans[88]. The Master Plan built on the city's Development Vision for 2020, which consisted of six key goals, as shown in Figure 2.6. Most of the work undertaken by GIZ focused on developing the Land Use Plan, which presented zoning of allowable uses based on existing land use, planned development and anticipated future needs. A more detailed description of the plan-making process is provided in Box 2.5.

Figure 2.6: Diagram of Development Vision of Battambang to 2020

Source: Technical Report on the Land-Use Plan for Battambang Municipality (2009)

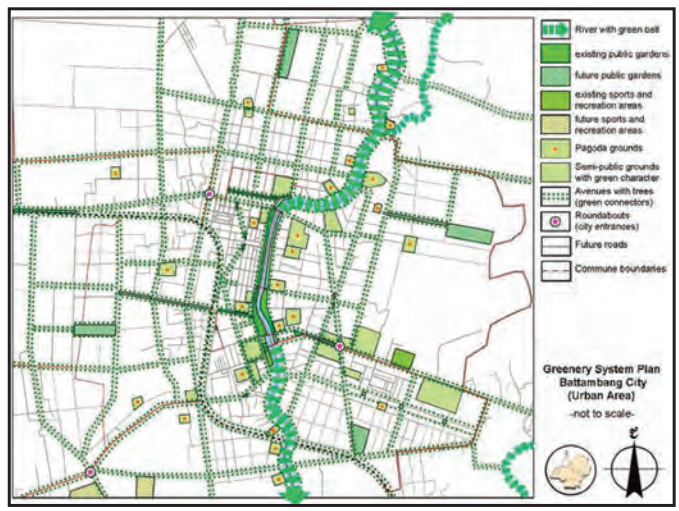
87 Goad, Hallam. 2012. "Growing Pains: Urbanisation and Informal Settlements in Cambodia's Secondary Cities." https://data.opendevelopmentmekong.net/dataset/63c328e1-5665-4e8d-8b66-eaca5df94e28/resource/10962a4b-cea7-4ee6-be9a-4d685c81181a/download/STT-ThreeCitiesReport2012Growing-pains.pdf.

88 Master Plan Team Battambang Municipality. 2009. Technical Report on the Land-Use Plan for Battambang Municipality.

In terms of impact, the Municipal Master Plan has shaped Battambang's urban development in several ways. For one, it has provided a clear basis on which both the government and development partners have made infrastructure investment decisions. An assessment of the city's road network during the preparatory planning stage showed that the existing system was insufficient to meet growing needs, both in terms of local roads serving communities, and larger roads for regional- or national-connectivity. The city also already faced worsening congestion and pollution as a critical ring road connection was missing, leaving heavy traffic from two main arterial roads to pass directly through the city center. The Master Plan, as well as the more detailed Future Road System plan, included the missing ring road as a crucial infrastructure link, and the road has since been built in line with these plans.

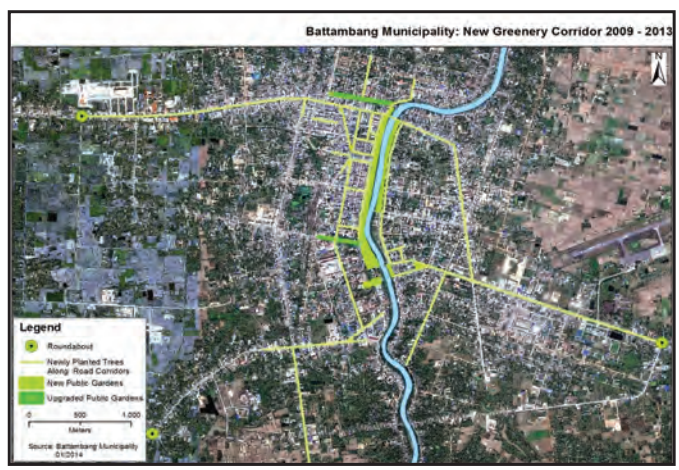
The use of Detailed Development Plans – control plans that supplement the Municipal Master Plan – also shape the city's development. The Future Greenery System plan, initiated during the GIZ engagement, aimed to ensure that the city retained greenery and public spaces even as urbanization continued at a quickened pace. As shown in Figure 2.7 and Figure 2.8 below, the Sangker River and its adjoining streams are seen as the backbone of the city's green network, with landscaped green corridors creating a city-wide network of public spaces. Pagoda grounds and other green public spaces would have their greenery enhanced, and green belts would be preserved on the outskirts of the city. Up to 20,000 trees have since been introduced in line with the Future Greenery System plan, along with new and upgraded public gardens along and around the Sangker River.[89]

Figure 2.7: Detailed Greenery System Plan for Battambang



Source: Technical Report on the Land-Use Plan for Battambang Municipality (2009)

Figure 2.8: Implementation Progress of Greenery Improvement Measures along the Sangker River



Source: Update on GIZ Land Rights Program (2014)

89 Team findings.

Similarly, the Municipality has undertaken work to develop a detailed development plan for Battambang's built heritage, which complements the land use plan's identification of Heritage Protection Zones with more detailed guidelines for the protection and enhancement of architectural heritage. This has been an important component of the city's attempt to develop as a City of Heritage, Culture and Tourism, part of its Development Vision for 2020. Battambang has an estimated 800 heritage buildings in its downtown core, but, as has been the case in fast-growing cities worldwide, has lost some of its distinctive Angkor- and French colonial- architecture over time. Typically, these buildings have made way for modern buildings that are out of character with the traditional feel and form of the city center. To address this, the Master Plan team has carried out surveys of existing heritage buildings, conducted outreach activities and provided guidelines on the treatment of existing heritage structures, as well as the development of heritage-sensitive new buildings within the city center.

Figure 2.9: Guidelines for Urban Heritage Protection

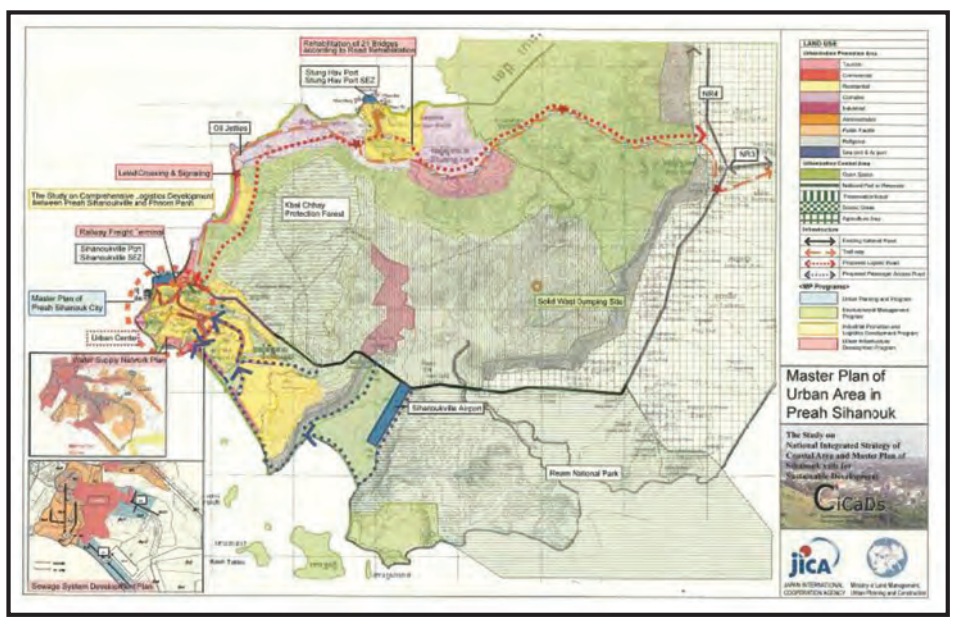
Source: Technical Report on the Land-Use Plan for Battambang Municipality (2009)

Compared to other cities, Battambang has had considerable success with the development of its Municipal Master Plan, and in building urban planning capacity at the local level. However, challenges to full and sustained implementation remain. Given the length of time taken for the plan to be approved, the current Master Plan (2020) will soon require updating to keep pace with the rate of urbanization. Battambang has attracted growing interest from real estate developers given the relatively low cost of land, particularly in developing boreys or gated communities. These have begun to dot the urban landscape in an unregulated way, testing the implementation of the land use plan and the timely development of supporting infrastructure. And, while downstream development controls to regulate building form and density are under development, these will ultimately require accompanying regulatory frameworks to allow enforcement.

SIHANOUKVILLE

Historically, there have been several urban development plans in Sihanoukville including the Vann Molyvann's Plan (1959), the Ariston-ACER (Malaysian Company) Plan (1995), Sihanoukville Development Plan by the RGC (2002), the Sihanoukville Coastal Development Plan by RGC (2003), the Stueng Hav Development Plan (2003), the Vinci (French Company) Plan (2006), and the Draft Master Plan of Sihanoukville (as part of the South Coastal Area Development Plan) supported by JICA as part of the study on national integrated strategy for costal development and master plan (2010)[90]. The draft Master Plan by JICA, shown in Figure 2.10, is the most recent and most comprehensive plan available, however, significant development has occurred unregulated, and much of the data and recommendations in the master plan may be obsolete.

Figure 2.10: JICA Draft Master Plan of Sihanoukville



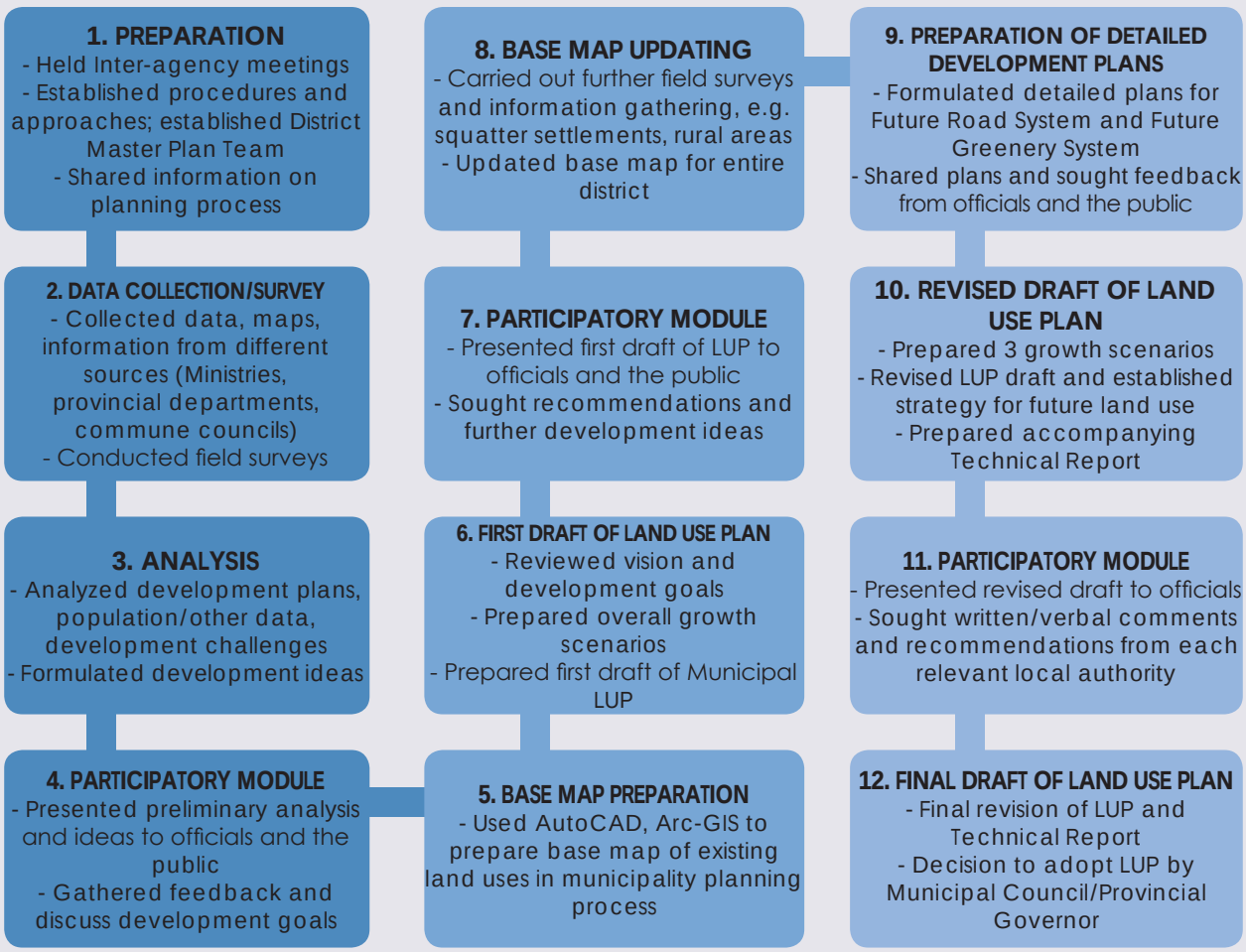
Source: JICA, The Study on National Integrated Strategy of Coastal Area and Master Plan of Sihanoukville for Sustainable Development, 2010.

90 Korea, 2017.

Box 2.6: Long-Term Capacity-Building for Urban Planning: The Case of Battambang

The drafting of the Battambang Municipal Land Use Plan took approximately six years to complete, and involved a comprehensive, iterative process with regular engagement of stakeholders. Figure A below broadly illustrates the steps taken, beginning with a participatory preparation phase and extensive collection of data, through to analysis, scenario planning, drafting of an overall land use plan and the preparation of more detailed, sector-specific development plans.

Figure Box 2.5A: Steps Involved in Formulation of Battambang Land Use Plan



Source: Adapted from Technical Report on the Land-Use Plan for Battambang Municipality (2009)

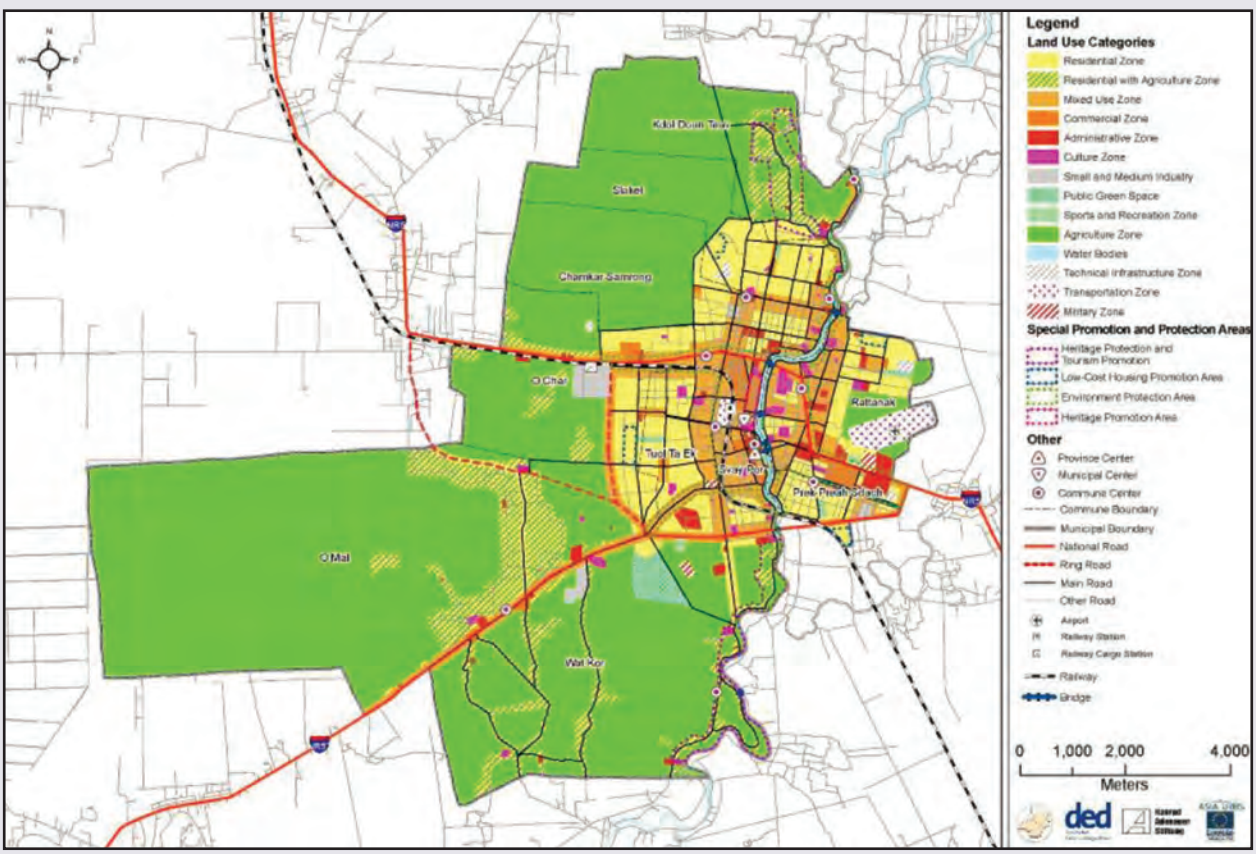
At the start of the engagement with GIZ (then DED), there was no prior experience of developing urban plans at the municipal level in Battambang. Technical capacity had to be built almost from scratch, and baseline information had to be collected, mapped and analyzed in preparation for developing a land use plan. This included, for example, a survey of all existing roads in the city and an assessment of the carrying capacity of the road network in

relation to urbanization demands. Similar stock-taking and analysis was carried out for other infrastructure sectors, as well as for different land use types.

The work was undertaken by an inter-disciplinary group, with close guidance by experts from GIZ and a committee of senior government officials. A core District Master Plan Team was formed, consisting of up to 10 technical staff from both municipal and provincial departments. A handful of team members had received prior training in GIS, engineering and architecture, but the remainder had no planning-related expertise. The team worked together three days a week to formulate the land use plan, with regular engagement of both government officials and members of the public to share preliminary findings and recommendations, and to gather feedback for further iteration of the plans.

The final draft of the Land Use Plan was developed based on an assumed growth rate of 2.5%, one of three alternative scenarios considered by the Master Plan Team. It defined 14 separate land use types, and specified Special Protection Areas for heritage, low-cost housing provision and the environment. A comprehensive Technical Report also accompanied the Plan; this included information on the analysis of different infrastructure and land use types, as well as further steps to be taken to enable effective implementation of the land use plan.

Figure Box 2.5B: Future Land Use Plan of Battambang Municipality until 2020



Source: Technical Report on the Land-Use Plan for Battambang Municipality (2009)

Several lessons can be learned from the Battambang experience of developing a Municipal Master Plan.

- Building capacity through on-the-job training. The District Master Plan team benefitted from being part of the entire land use planning process. While other capacity-building engagements have tended to end at the strategic visioning stage, or rely heavily on external consultants to develop master plans, the GIZ engagement retained a focus on building urban planning capacity at the local level through continuous on-the-job training. This helped to address the shortage of technical expertise at the city level - a major challenge in the sub-national urban planning system that continues to be highlighted by the central government today.

- Formation of an inter-disciplinary, multi-sectoral District Master Plan Team. The core Master Plan Team consisted of working-level officers from municipal and provincial departments, including the Departments of Planning, Public Works and the Environment. Prior to the planning exercise, it was common for different departments to have little, if any, interaction with one another. To conduct a thorough analysis of current and future land use needs, and to assess the various urban development challenges faced in the city, a multi-sectoral approach was critical. While capacity-building was focused mostly at the municipal level, the Master Plan Team also ensured that decision-makers at more senior government levels were involved at key feedback or decision points, such as workshops when draft plans were shared.

- Adoption of a participatory approach. The planning process involved regular consultation with both government officials and members of the public. Given the lack of familiarity with master plans, a concerted effort was made to share the objectives of the planning exercise at early stages of the process, and an iterative process of sharing drafts and seeking feedback was adopted in the formulation of the plan. Importantly, a Master Plan Forum was formed for gathering of feedback, consisting of 60 – 70 participants from public, private and people sectors. The cross-sectoral nature of the Forum helped to ensure that a more complete spectrum of views could be heard, an important consideration given the far-reaching implications of a new master plan.

- Building a practical, Battambang-specific plan. Interviews with experts involved in the engagement revealed that a key factor for success was building a plan that was appropriate for Battambang, given the level of technical capacity available at the city level. The engagement emphasized building a strong foundation to carry out urban planning, with a view to sustaining the impact by providing guidance on follow-up actions in the Technical Report.

Source: Team findings based on interviews with GIZ experts and information obtained from Technical Report on the Land-Use Plan for Battambang Municipality (2009)

The master plan is envisioned to 2030 covered important aspects such as socio-economic strategy, industrial development strategy, land use concept plan, proposed transport, utilities, and infrastructure plans. The plan was built around Sihanouk Ville as national gateway for international trade and concentrating, and an economic development strategy base around export oriented strategy (SEZ), resource based-investment and industry based on agriculture, agro-processing and marine fisheries; and tourism. The proposed strategy put strong emphasis on environmental and bio-diversity conservation/protection to large concession areas given to private sector, fresh water zone, protected forest, etc. development is restricted to south-western part (the beach areas). The railway line has been rehabilitated to serve cargo transport to and from Phnom Penh. the NR highway 4 will serve tourist arrivals, and car transport.

At city level, LUP is being drafted (step 3 of 9 of planning cycle) and expected to be finalized before the National Election scheduled for July 2018. With only two architects/ planners in the provincial department of LMUPCC, the making of the plan is highly dependent on the support from national ministry (MLMUPC). The role of municipal "Urban Development Division" in planning is limit or non-existence, primarily due to the limit resource (HR and finance). The ministry of Land Management, Urban Planning and Construction (MLMUPC) endorsed the circular on beach development that prohibited all illegal land/beach grabbing, introduce setback, and require permit for construction. The Sarachor on costal area development has provided good platform for controlling building density and height. A multi-stakeholders provincial committee has been established to enforce the planning regulation, but its efficiency is highly questionable. Recently, the MLMUPC and the Government of Korea through KOIKA has jointly initiated a consortium on "Smart City" project, supporting Sihanoukville municipality in developing master plan for Stung Hav district; Sihanouk Ville and area around airport. The authority planned to include two additional communes, namely Ream and Betrang in Prey Nub district, into the Sihanouk Ville Municipality.

2.3.5 Conclusion

Confronted with rapid urbanization, the challenge for cities is to go beyond increasingly common piecemeal development patterns towards longer-term, sustainable growth, underpinned by robust, implementable urban plans. This is the case for Phnom Penh, and secondary cities. The challenges identified in this section – insufficient infrastructure investments, low technical capacity, a lack of clarity over roles and responsibilities, a weak regulatory environment and shortages in financing – have resulted in planning falling behind urban development in Cambodia, rather than leading it. As urban development continues to take place in an unregulated manner, the concept of a systematic, planning-led development process risks becoming increasingly removed from the realities of urban governance.[91] With little or no evidence of how good planning can benefit a city, the perceived need for urban planning and interest in capacity-building is diminished.

91 Goad, 2012.

SECTION 3 OPPORTUNITIES FOR ACHIEVING THE FULL POTENTIAL OF URBANIZATION

3.1 INTRODUCTION

The economic potential of a number of cities in Cambodia provides much opportunity for Cambodia's future growth, competitiveness, and poverty reduction. At the same time, several challenges related to the provision of infrastructure, urban planning and management, and financing, hamper that opportunity.

Creating liveable, sustainable and inclusive urban centers of economic growth will be core to Cambodia's future development. No country has achieved middle income status without urbanizing, and the path that the urbanization takes can very much be positively influenced by investing in sustainable infrastructure, urban and land use planning, capacity for local governments, and strengthening institutions and expanding opportunities for financing urban development. Ensuring an inclusive approach is also critically important so that low income populations are not left behind.

The sections below present a set of priority policy recommendations for urbanization that will be required by all urban areas. This is then followed by more specific

recommendations aligned with the typology of cities for Cambodia -- Regional Economic Corridor Cities, Gateway Cities, Border Cities/Towns and the Capital City, along with examples of approaches for implementation. Given that cities differ in many dimensions (from city size, economic orientation, geographic location and accessibility, endowments, income levels, history, political systems, institutional capacity and autonomy, among others), approaches to investments and assistance will need to be tailored to specific needs.

3.1.1 Priorities for Strengthening Cambodia's Urban Development

Policy options set forth in Urban Development in Phnom Penh, 2017 are very much consistent with the needs for other cities as well and would require attention at both the national, provincial and local level. These recommendations are adapted from the recent report and summarized in Table 3.1, and include some additional recommendations emerging from the broader analysis incorporating secondary cities as well. While many of the policy options are broad in nature, they are fundamental priorities to sustainable and inclusive urbanization. The Table also indicates some of the specific prioritization for the 4 typologies of cities. Many of the fundamentals, however, such as investing in sustainable infrastructure, strengthening institutions and finance, and ensuring an inclusive approach are essential for achieving the full potential of urbanization across all urban areas.

Table 3.1: Summary of Priority Policy Recommendations

Policy Area	Recommendations	Time frame (S, M, L)	Capital City	Gate-way City	Region-al Eco-nomic Corridor City	Border City/ Town
			Of highest relevance for specific city typology			
Investing in Sustainable Infrastructure	• Increase investments in priority infrastructure sectors: urban transport; drainage and flood protection; sewage and wastewater treatment; solid waste management; affordable housing and community improvements • Initiate an integrated, neighborhood revitalization approach in strategic areas of larger cities • Ensure stakeholder engagement in prioritization and design of infrastructure investments	M/L S S				

Promoting a territorial approach for key corridors	• Enhance inter- and intra- connectivity of cities to strengthen competitiveness of cities through investing in efficient infrastructure networks. • Adopt a territorial approach with strategic distribution – both sectorally and spatially – of infrastructure for inclusive and sustainable growth.	S/M M/L				
Strengthening Institutions and Finance for Urban Development	• Clarify roles and responsibilities between line ministries and local government to ensure urban planning and service delivery are integrated and sustainable • Provide capacity building as needed for local level institutions, includes technical and implementation capacity • Improve coordination within and across relevant municipalities particularly for the larger cities (Phnom Penh metropolitan area) for key urban infrastructure and services • Align legal, regulatory and enforcement framework for urban development with urban planning (see below) • Provide a comprehensive, transparent and predictable fiscal framework for cities • Explore new approaches to strengthen the scope, effectiveness and accountability in the use of municipal financing: ➢ Initiation of transfer of conditional grants to municipal accounts for decentralized functions, starting by following through on effective management of solid waste grants ➢ Implementation of the Social Accountability Framework to all Municipal Councils and introduce Citizen Report Cards for a few of the largest municipalities ➢ Introduction of performance grants as a portion of the DM Fund transfers • Explore use of Land Value Capture for city financing • Maximize the potential for own source revenue • Introduce additional opportunities for maximizing finance for development through private sector involvement	S M M M/L M S/M S/M S S/M				

Improving Urban Planning and Implementation	• Strengthen links between national and sub-national entities to enable more coordinated urban development • Build local-level capacity to develop sustainable, coordinated land use and infrastructure plans including phased plans for investments and implementation • Introduce the required laws and codes to facilitate implementation of a detailed land use plan. • Introduce resiliency in urban planning to reduce risk • Establish framework for municipal data collection, sharing and analysis.	S M M/L S S/M				
Ensuring an Inclusive Approach	• Ensure sustainable infrastructure investments reach the poor • Ensure that economic benefits are realized by the local economy (intra-city transport, job training) • Scale up job training, micro enterprise and other programs for the urban poor • Enhance community participation through increased community involvement in the Commune Sangkat Fund decision making process.	S S S S				

Source: Adapted from World Bank 2017, Phnom Penh Urban Development, World Bank Team. S-Short term (18 months), M-Medium Term (2-5 years), L-Long term (5 years +)

Capital City: Phnom Penh

Gateway City: Phnom Penh, Siem Reap, Sinahoukville

Regional Economic Corridor City: Battambang, Kampong Cham, Sisophon, Kampong Chhnang, Kampot, Kep, other

Border City/Town: Poipet, Bavet

3.2 INVESTING IN SUSTAINABLE INFRASTRUCTURE

A number of priority infrastructure needs have been identified in Chapter 2 to improve access and quality of basic services, improve living conditions, create employment, foster inclusion, and ensure sustainability and resilience. Among these investments are inter- and intra- urban transport needs, drainage and flood protection, sewerage and wastewater treatment, solid waste management, water supply, affordable housing and community improvements particularly in low income areas. Given the limited financial resources and capacity constraints, it is critical that investments are strategically distributed – both sectorally and spatially – to ensure sustainable, inclusive, resilient, and competitive growth of cities across Cambodia. For some strategic areas in the country, investing in connectivity between cities using a territorial development approach can further foster opportunities for growth and competitiveness.

As described in Section 1.2, the EPI results suggest regional clusters of cities

throughout Cambodia which have strong economic potential, as measured by market accessibility, transport connectivity, economic density, level of urbanization, and human capital. The regional clusters of high potential cities/districts identified by the EPI are Greater Phnom Penh (consisting of all districts in Phnom Penh, Chbar Morn, several districts in Kandal Province, and several districts in Prey Veng Province); the South East (consisting of several districts in Takeo Province), the South Coast (consisting of several districts in the provinces of Koh Kong, Preah Sihanouk, and Kep); the North West (consisting of Battambang, Siem Reap, Serei Sophoan and Poipet), Central (consisting of Kam Kampong Cham, Kampong Chhnang, Pursat, and Stung Sen); and the North and North East (consisting of Kratie, Preah Vihear, Ratanak Kiri and Krong Strung Teng). Furthermore, Section 1.3 categorizes the major secondary cities (which are also high potential cities within regional clusters) into four typologies based on their functions: regional economic corridor city, gateway city, border city/town, and capital city. It is important to acknowledge each cities' functions and strength to build on, while identifying key infrastructure and other investments of strategic priority.

3.3 PROMOTE TERRITORIAL DEVELOPMENT WITH STRATEGIC DISTRIBUTION – BOTH SECTORALLY AND SPATIALLY – OF INFRASTRUCTURE INVESTMENTS

All major secondary cities in Cambodia are strategically located on the GMS Southern Economic Corridor, which connect the country domestically as well as internationally to major markets in neighboring Laos, Myanmar, Thailand, and Vietnam. By connecting important economic hubs/nodes though efficient infrastructure networks, Cambodia's economic corridors have strengthened inter-regional (global) trade facilitation and enhanced added-values to value chains, while contributing to intra-regional (local) development though economies of scale and inclusion. However, much of the Cambodian economic corridor connectivity is based on a single mode – the road network. The national road networks have undergone significant infrastructure rehabilitation and development with support from the World Bank, ADB, AusAid, Japan, China, Korea, Thailand and private sectors. Furthermore, the rehabilitation of railway networks along the economic corridors are also underway through ADB and Australian assistance. On the contrary, intra-city connectivity is a major bottleneck for cities to achieve their economic potential. The exponential growth of registered vehicles, limited capacities of road networks, and the lack of public and other modes of transport have contributed to heavy traffic congestion in Cambodian cities. It is essential that both inter- and intra- connectivity, accessibility, and mobility are strengthened.

Given substantial need and limited resources – both financial resources and capacity constraints – it is recommended that Cambodia develop concrete strategies to enable prioritization and distribution of investments for balanced territorial and regional development. The National Urban Development Strategy Framework (NUDS

Framework) highlights the need for "supra national, regional development and planning cooperation requirements and factors (including planning coordination between neighboring regions/cities and distribution of employment and population)" including a "broad conceptual division of the national territory into a number of possible development areas (agricultural, tourism, industrial, Special Economic Zones, and urban settlements) and protected areas (national parks, nature reserves, other biodiversity conservation areas, as well as for heritage and cultural conservation)."[92] A territorial development plan (which currently does not exit) can provide the basis for identifying essential infrastructure that is needed to maximize the transport corridors and enhance economic development. The EPI results suggest the beginnings of regional clusters of cities that may benefit from synergies derived from regional and territorial development strategies.

Box 3.1: Using a territorial development approach

Territorial development has proven to be an effective development approach at various levels. At a national level, territorial development allows the national government to focus on the development of lagging regions, which are homes to the poorest and marginalized communities. At a sub-national level, governments (i.e. provinces and states) can realize synergies from development along corridors, zones and formations of new clusters of employment opportunities. At the local level, governments (i.e. cities, municipalities, and districts) are enabled to approach development challenges straddling "administrative" boundaries such as infrastructure development in metropolitan regions. Having a territorial lens allows development policies to be coordinated across sectoral interventions and for investments to be better tailored to local endowments and constraints.

Territorial approaches have been implemented through corridor development coupled with investments to boost tourism and opportunities for local economic development in Georgia, and through investments in physical infrastructure and technical assistance in strengthening the business environment in a lagging region in Upper Egypt to foster economic development.

Source: World Bank, 2012, Kakheti Regional Development Project, and World Bank, 2016, Upper Egypt Local Development PforR

92 NUDS Framework (Draft), 2015.

3.4 STRENGTHENING INSTITUTIONS AND FINANCING

The assessment identified critical challenges for sub-national administrations to cope with rapid urbanization and to ensure sustainable urban development within its respective territory. Broadly there is a priority need to clarify roles and responsibilities between line ministries and local government to ensure urban planning and service delivery are integrated and sustainable. This will require capacity building for local level institutions both for technical and implementation capacity. At the metropolitan level, specific to Phnom Penh, there is much room to improve coordination on within and across relevant municipalities for key urban infrastructure and services.

In terms of urban financing, a comprehensive, transparent, and predictable fiscal framework is an essential starting point for cities. The initiatives of the national government to transfer funds to sub-national administrations, i.e. districts and municipalities, through D/M fund transfer, is a stepping stone for strengthening the district/municipal capacity for planning and implementation; delivering services and needed infrastructure facilities to citizens; and ensuring sustainable urban development and economic growth. Specific areas that could further improve financing and accountability particularly for secondary cities include:

a. Initiation of transfer of conditional grants to municipal accounts for decentralized functions, starting by following through on solid waste management. So far, funds are only beginning transferred to municipalities for one function, solid waste management. To perform this function, they are starting to receive USD 2,000/year. However, the funds for paying contractors to manage solid waste services are still not being transferred to municipalities for their use. Provincial government continues to manage these contracts. These funds need to be under the control of the municipalities, in order for them to be held accountable for the quality of services provided. As such, the Ministry of Economy and Finance should begin to direct funds allocated to the financing of solid waste to the district accounts. Provincial governments should, in turn, train district administrations in the management of such contracts, including procurement and financial management. As there are existing district accounts, such transfers could be affected at any time. After solid waste management funds are fully in the control of municipalities, the focus should shift to, other services which have been agreed with line ministries, and specified in the IP3-III, that should be transferred to municipalities, such as pre-primary education, supervision of orphanages, management of parks and protected areas, etc. As these functions are transferred, the funds will need to follow. Box 3.2 provides an example of how the Philippines has structured vertical integration for the delivery of services.

Box 3.2: Decentralizing Service Delivery Functions to Local Governments in the Philippines through a Vertically Integrated Approach

The Philippine Development Plan (PDP) 2017-2022 is the first medium-term plan that takes off from the country's long-term vision and socioeconomic agenda. The PDP aims to "lay down a solid foundation for more inclusive growth, a high-trust and resilient society, and a globally competitive knowledge economy", through three pillars: (i) enhancing the social fabric; (ii) reducing inequality; and (iii) increasing growth potential.

Acceleration of infrastructure development is viewed as vital in achieving the PDP goal. The strategic distribution – both sectorally and spatially – of infrastructure is deemed essential for inclusive growth and sustainable development. With the rapid population growth and urbanization, and in accordance with the National Spatial Strategy (NSS), PDP emphasizes the need for more strategic infrastructure investments particularly for connective infrastructure such as transport and telecommunications to connect lagging regions to regional economic hubs outside of the National Capital Region (NCR). Furthermore, PDP also stresses that there will be greater complementation of different modes of financing for infrastructure projects – locally-funded, foreign assisted, and projects under PPP. To facilitate effective infrastructure development, PDP encourages more PPP, better planning aligned with land use plans and regional development plans, improved project implementation capacity, and stronger asset management.

The PDP 2017-2022 aligns with the NSS, which recognizes the role of cities as engines of economic growth and highlights the need for infrastructure to link lagging regions to growth centers. NSS consists of three components: (i) regional agglomeration with growth in key centers; (ii) connectivity; and (iii) vulnerability reduction. NSS has provided a list and functions of metropolitan centers, regional centers, and sub-regional centers that require different strategies.

In delivering local infrastructure, the Government of the Philippines has emphasized that "local governments should be empowered to become able partners in development," with the notion that the local governments know best the problems on the ground, and that they are in the best position to address problems urgently and effectively. However, it has also been noted that most local governments remain heavily dependent on inter-governmental fiscal transfers and are unable to generate enough resources and deliver the basic services under their mandate. Even so, the Government is committed to strengthen the local governments to be the first line of service delivery to citizens, through programs such as the Assistance for Disadvantaged Municipalities (ADM) program and the provincial road rehabilitation program (KALSADA), on the condition of adherence to good governance standards, generation of higher own-source revenues, and stronger ability to deliver basic services.

Source: World Bank, Philippines Urbanization Review II: Policy Note on Local Governance and Service Delivery – Assessment of the Assistance to Disadvantaged Municipalities (ADM) Program

b. Implementation of the Social Accountability Framework (SAF) to all Municipal Councils and introduce Citizen Report Cards for a few of the largest municipalities. To effectively implement the SAF program, the tools piloted by PACT would benefit from being reviewed, revised and adopted as a new service to be assessed (i.e. through new public information provision and community scorecards). As there is already a team in NCDDS supporting the implementation of SAF on the "supply-side," these tools can be developed quite soon and rolled out progressively by the end of 2018. Beyond the assessment of municipal council services, new multi-service Citizen Report Cards could also be introduce based on successful models in other countries such as India (i.e. Bangalore) and Kenya. The report cards could cover a range of basic services delivered by various service providers such as water supply, solid waste management, sewage, traffic management, electricity, and even health and education, etc. A CRC tool can be developed within the context of the SAF work program either in 2018 or 2019, and rolled out in 2-3 secondary cities, to demonstrate the benefits of the tool and then expanded to other municipalities if there is significant interest and the approach proves to be effective. The results of the Report Cards would allow municipalities to hold these other service providers accountable for the quality of their services.

c. Introduction of performance grants as a portion of the DM Fund transfers and increase in the size of DM transfers. The use of performance grants in other countries (i.e. Uganda, China, Nepal, etc.) has proved to be an effective means of incentivizing municipalities to meet and exceed minimum performance standards and to allow for the benchmarking of performance across municipalities.[93] Performance criteria can be drawn from the assessment methodology utilized for the SNIF to determine whether DMs are prepared to receive larger amounts of development funds for local economic investment. Assessment and verification tools can be developed jointly between NCDDS and the Ministry of Economy and Finance, piloted and progressively applied as part of the public financial management and decentralization reform programs. To allow for more meaningful development investments, and also building on SNIF experience which is anticipated to accumulate through implementation in 2018, more funds could be made available for the financing of medium-large scale infrastructure investments that are prioritized by municipalities and which engage municipalities more actively in the design, construction and maintenance of new services and infrastructure. To use the funds effectively, training to strengthen municipal capacity is needed, as well as simplification of financial regulations and helping municipalities to expand their menu of investment activities to be more responsive to local needs. Box 3.3 describes the experience of providing capacity and incentives to local governments for delivering results through programs in Tanzania and Uganda.

93 See "Performance-Based Grant Systems Concept and International Experience" (UNCDF, 2010), for examples of performance-based grant systems. Although the use of incentives in intergovernmental fiscal transfers is not new, their systematic inclusion as an integral part of the grant allocation process is relatively recent. Uganda was an early innovator, and at least 15 countries have since begun using a performance-based grant approach, either on a pilot basis or nationwide.

Box 3.3: Capacitating Local Governments to Perform Decentralized Functions through Performance Based Grants in Tanzania and Uganda

There is a growing demand for development programs that deliver sustainable results and strengthen institutions as countries and governments develop and mature. Program-for-Results (PforR) caters to such demands by utilizing the country's own institutions and processes, and links disbursement of funds directly to the achievement of specific program results, thereby building capacity within the country and enhancing effectiveness and efficiency while achieving tangible and sustainable program results. Projects such as the Tanzania Urban Local Government Strengthening Program (ULGSP) and Uganda Support to Municipal Infrastructure Development (USMID), have successfully utilized PforR to deliver small-scale infrastructure projects while strengthening the local government's (LG's) capacity in fiscal management and accountability.

While having the relative flexibility of finance allocation, the emphasis on LG performance and accountability has set a positive spiral by allowing LG to increasingly demonstrate their ability to deliver urban services. In the case of the Uganda PforR, two project components were emphasized during implementation to ensure the effectiveness and transparency of the process: i) capacity building for LGs to be able to respond to the performance incentive mechanism, and ii) independent annual performance assessment to determine the annual disbursement for the LGs.

A Performance Assessment Manual (PAM) was produced and disseminated to facilitate the efficient and effective operation of the Urban Performance Grant System and the assessment process. The PAM ensured that all involved urban councils were aware of the process in advance to focus their efforts on improving institutional performance and effective use of the Program grants. Furthermore, external Performance Assessment Teams (PATs) consisting of experts in: i) urban/town planning, ii) procurement, iii) local government financial management and revenue mobilization, iv) civil/infrastructure engineering, v) environmental and social management systems, and vi) institutional strengthening and capacity building, were established to perform the Annual Performance Assessment (APA) of the participating LGs.

Source: World Bank, Philippines Urbanization Review II: Policy Note on Local Governance and Service Delivery – Assessment of the Assistance to Disadvantaged Municipalities (ADM) Program

While the role of the private sector in urban financing is still limited in Cambodia, it is important to explore and collaborate with the private sector in areas that can maximize and leverage its finance, technologies, and experiences. Private sector mobilization may be especially targeted to cities with high economic potential such as Phnom Penh, Siem Reap, Battambang, and Sihanoukville, which already attract strong

private sector interest, both domestic and international (FDI), through their strong business environment, tourism assets, ports, and SEZs. Utilities and other urban infrastructure and services that are well-functioning and bankable/profitable may be privatized or provided autonomy, similar to the PPWSA model. Dialogue with private sector stakeholders should be conducted frequently at a technical level to understand the barriers to entry and the necessary capacities to be augmented by the public sector or technical assistance.

Furthermore, it is important to align and strengthen the legal, regulatory and enforcement frameworks for urban planning and development to ensure that large scale private sector developments are accountable for their developments and that they do not contribute negatively to the existing stress and strains of cities. Recent uncontrolled real estate developments in Phnom Penh and Sihanoukville, have been adding to the city's already strained infrastructure, resulting in worsening congestion and sub-standard delivery of services. It is essential that the negative externalities and socio-economic impacts from such private sector developments are appropriately addressed and accounted for. Once the legal, regulatory and enforcement frameworks are in place, cities may explore infrastructure financing mechanisms such as "developer exactions and impact fees" which can be designed to make urban growth "pay its way" by requiring developers to pay for the expansion in infrastructure capacity that growth necessitates (details are further discussed in Box 3.4 on Land Value Capture Schemes).

Many competitive cities have utilized Land Value Capture (LVC) schemes and other city financing mechanisms to generate funds for their urban infrastructure (such as urban transport). Phnom Penh and a few other rapidly growing cities in Cambodia have the conditions to introduce LVC, including strong economic growth, rising real incomes, and increased motorization and congestion, which are all factors that may contribute to land value appreciation around improved urban infrastructure. If adapted well to local contexts, LVC schemes have the potential to become an important strategic apparatus of urban financing for cities in Cambodia[94]. In doing so, it is important that regulations and enforcements on urban planning and development are strengthened to ensure that large scale private sector developments are in line with the cities' development vision and land use plans and regulations/codes.

94 World Bank, Financing Transit-Oriented Development with Land Values – Adapting Land Value Capture in Developing Countries, 2015.

Box 3.4: Global Examples of Land Value Capture Schemes.

Many schemes and techniques have been utilized to tap into urban land values to support urban infrastructure finance. While Asian cities have learned greatly from the land readjustment schemes from Japan and Korea, Latin American cities draw their contribución de valorización (betterment levies) mechanisms directly on principles incorporated in the Spanish Law, and India bases their new town movement from that of Great Britain. It is essential that the various LCV schemes are explored and adapted appropriately to the Cambodian context and needs.

- Betterment Levies: Captures part of the land value gain attributable to the infrastructure investment by imposing a one-time tax or charge on the land-value gain (example: Contribución de Valorización in Colombia).

- Developer Land Sales: Requires subdivision developers to provide their own internal infrastructure and to recover their costs through land sales. As the scale of new development increases, this policy shifts an ever-larger share of total infrastructure investment to private developers (example: Orestad New Town and connecting metro in Copenhagen).

- Value Capture via Project-Related Land Sales: Involves the sale of land whose value has been enhanced by infrastructure investments or zoning changes. If the public sector owns the land, it can internalize the benefit of public investment and capture the gains through land sales (example: highway and infrastructure investments in China).

- Sale of Development Rights: Allows public authorities to sell development rights as an alternative to the sale of land to capture incremental value generated by public infrastructure projects. Development rights fall into two categories: the right to convert rural land to urban use and the right to build at greater densities than normally would be allowed by zoning rules or height restrictions (example: sale of additional construction rights in São Paulo and Tokyo).

- Developer Exactions and Impact Fees: Approaches land financing from the cost side, unlike value capture. They are one-time, up-front charges designed to recover the infrastructure costs associated with growth. Developer exaction requires developers to install at their own expense the internal infrastructure needed to meet development standards or to pay for infrastructure elements provided by public authorities. Impact fees are designed to cover the external infrastructure costs caused by new development (example: cities in the United States and Mumbai)

- Land Asset Management: Allows public authorities to exchange land assets for infrastructure assets, in cases where the balance sheets of many public entities are top heavy with urban land and property assets but the cities where the property is located suffer acute shortages in infrastructure. Public authorities may sell or lease publicly owned land and

use the proceeds to finance infrastructure investment. Rather than using land-financing instruments to finance individual investment projects, public entities undertake a balance sheet adjustment, in which they modify the overall composition of publicly held assets (increase public infrastructure assets and reduce land assets) (example: New York World Trade Center, Cape Town Waterfront, Istanbul Municipal Bus Station, and Metro Manila former US Military Compound).

Source: World Bank, Public-Private Infrastructure Advisory Facility, Unlocking Land Values to Finance Urban Infrastructure, 2017.

3.4 IMPROVING SUSTAINABLE LAND USE PLANNING FOR EFFICIENT URBAN GROWTH

Well integrated, evidence-based urban planning can help to ensure efficient urbanization, and incorporate aspects of sustainability and resilience, which can lead to higher economic growth and improve livability for urban residents. Prioritizing integration of planning processes is particularly important for Cambodia given its current process of planning, which is carried out on multiple levels and not always well coordinated. There are opportunities to strengthen links between national and sub-national entities for vertical integration, to build local-level capacity to develop sustainable, coordinated land use and infrastructure plans including phased plans for investments and implementation, introducing the required laws and codes to facilitate implementation of a detailed land use plan, introducing resiliency in urban planning to reduce risk, build and enforce development control guidelines and building codes. and establish a framework for municipal data collection, sharing and analysis. A set of specific recommendations has also been provided for Phnom Penh as the capital city additional complexities of planning in a multijurisdictional metropolitan area in the companion document (See Urban Development in Phnom Penh).[95]

a. Strengthen links between national and sub-national entities to enable more coordinated urban development. Sub-national governments are responsible for developing their own land use plans, but decisions on land use take place at different levels depending on the size of each new development. While mechanisms exist for checking and coordination among entities at different levels – the CDC, for example, is meant to endorse developments only with the agreement of all concerned agencies – it is unclear whether these are effectively put in place. The inability of infrastructure to keep pace with development is symptomatic of mismatched plans, development and infrastructure growth. For more coordinated urban development, links and approval processes governing new developments should be tightened.

95 World Bank, 2017, Urban Development in Phnom Penh.

b. Build local-level capacity to develop sustainable, coordinated land use and infrastructure plans. Both in the capital of Phnom Penh and in secondary cities, there is a demonstrated lack of capacity for the development of implementable land use plans, with planning now falling behind the pace and scale of urban growth. An integrated land use and infrastructure planning system would better enable cities to develop in sustainable ways. Given the good practices established in urban planning in Battambang, cities can explore twinning arrangements to draw on the city's capacity in this area, particularly in terms of establishing an iterative, consultative planning process, integrating land use needs in a multi-sectoral way, and developing sector-specific plans for parks and cultural heritage. The Battambang experience, for instance, is already being drawn on in other provinces such as Kandal, Kampong Chnnang and Takeo. Using material created in previous donor support programs – such as that of ADB and GIZ – MLUMPC could also introduce a systematic training program for all local urban development staff, to establish a common understanding of the local planning system as well as processes for developing local plans. Finally, while on-the-job training is critical for developing planning capacity, establishing a tertiary-level program centered on urban planning and urban design would also help to establish a ready pool of technical specialists in the field. In the case of Cambodia given the risks of flooding in many cities, an approach to risk-informed urban planning would help to minimize impact. Vietnam offers an interesting approach which could be adapted to the Cambodia context (Box 3.5)

Box 3.5: Supporting Risk-Informed Approaches in Urban Planning and Investments through Technical Assistance in Vietnam

World Bank investment projects are accompanied by technical assistance (TA) which are designed to complement its physical investments. The Can Tho Urban Development and Resilience Project (CTUDRP) in Vietnam aims to improve connectivity between the city center and the new low risk urban growth areas, reduce flood risk in the urban core area, and enhance the capacity of city authorities to manage disaster risk in the City. While the project contains two physical investment components consisting of i) urban corridor development, and ii) flood risk management and environmental sanitation, the third component involves a comprehensive package of TA to help enhance the City's capacity to manage urban development in a climate and risk informed context, thereby reinforcing physical, financial and social resilience to climate induced hazards.

The TA consists of four components: i) Urban Resilience Planning and Development, including the establishment of Spatial Data Infrastructure (SDI); ii) Public Transport Improvement and Urban Corridor Development; iii) Integrated Urban Flood Risk Management and Early Warning System, including development of the Flood Risk Management Information System (FRMIS); and iv) Establishment of a Disaster Responsive Safety Net System (DRSN).

Under the Urban Resilience Planning and Development TA, the city has established a working group on Spatial Data Infrastructure (SDI), led by Department of Information and Communication (DOIC), to coordinate and oversee the work related to spatial data. SDI strategies and policies, including Data Custodianship Guidelines, Data Framework, and Data Release Policy, and the development of a Spatial Planning Platform (SPP) are underway. The Open Cities (OC) work under the TA has received strong commitment from the City and several training workshops and social mapping event (Mapathon) have been organized in the City with participation from the Can Tho University, various departments, and other stakeholders. A Data Capture Strategy detailing approaches of collecting data for OpenStreetMap (OSM) has been drafted and shared with the City stakeholders. In addition to building capacity within institutions to support the risk-informed approach in the urban planning and investments, the TA has enhanced awareness by engaging stakeholders in a participatory dialogue.

Source: World Bank, Can Tho Urban Development and Resilience Project (CTUDRP), PAD 2016.

c. Establish a framework for municipal data collection, sharing and analysis. Sound plans are formulated on an understanding of a city's current and future needs. To achieve this, data relating to different facets of urban life – demographics, service delivery, economic growth, land ownership and land use needs – must be systematically collected and analyzed, as an initial step in the urban planning process. Data should be made accessible among various government agencies, to allow for a comprehensive and holistic view of a city's needs. MLUMPC, in close consultation with the Ministry of Interior (MoI) and municipal administrations, could take the lead in establishing a framework for building Municipal Spatial Data Infrastructure (MSDI) – this would include creating standardized data management systems and establishing institutional frameworks for data sharing, as well as technical capacity-building – and for the analysis of data in the process of urban planning. This is a necessary building block for creating robust urban plans, and will be of relevance not only in planning but also in infrastructure development and provision of services across multiple sectors. Box 3.6 provide details on such efforts in Singapore which could be effectively implemented in Cambodia.

Box 3.6: Singapore's Experience in Data-Driven Urban Planning

Analysis of spatial data has a multitude of potential uses, and can enable informed decision-making in various ways. In Singapore, urban planners are making use of data and analytical tools to improve the way land use decisions and plans are made, both in the short- to medium-term, as well as in longer-term scenario planning. This has been enabled by strong government support for standardizing spatial data collection and the sharing of data among agencies, as well as investments in capacity-building for planners.

At the Urban Redevelopment Authority (URA), an in-house analytical tool known as ePlanner integrates data from different sources for analysis and visualization. Created in-house by URA, the tool pulls together information from over 90 different datasets, and is used by more than 25 other government agencies to inform service delivery and facilities planning, such as the provision of childcare centers. Demand for such centers varies from one town to the next, depending on the existing number of facilities as well as the demographics of the neighborhood. By overlaying demographic information with data on waiting lists and the number of vacancies, ePlanner can show both the location and severity of existing shortages. This points to where new facilities are most urgently needed, enabling the Housing & Development Board (HDB) to factor in the provision of childcare centers in upcoming developments. Planners can also determine whether more immediate measures might be needed, such as the conversion of state-owned properties into childcare centers.

Figure 3.1: Spatial Analysis for Provision of Childcare Centers

Source: Urban Redevelopment Authority, Singapore.

Similar spatial analysis can also be carried out for the provision of other amenities such as parks and green spaces. With a performance target in mind – in Singapore, the goal is to 90% of households within a 10-minute walk of a park by 2030 – planners use spatial analysis to determine areas that currently fall short of the target, and can prioritize the provision of green spaces in these locations.

For longer-term scenario planning, URA planners have GEMMA, or the GIS-Enabled Mapping, Modelling and Analysis platform. This allows planners to develop different land use scenarios as potential growth strategies for the city and assess their impact on the environment and supporting infrastructure in conjunction with other agencies. For example, if a new public housing estate is built, what major road infrastructure is required, and how will these impact noise levels in the neighborhood? In this way, planners have a more complete sense of the implications of different future land uses and are equipped with the information needed to ensure that infrastructure is developed at a scale and pace that can fully support the future use. Considering the opportunities, tradeoffs and costs between different scenarios can lead to better outcomes in terms of linking land use and infrastructure development.

Sources: Centre for Livable Cities (2016), Urban Redevelopment Authority (2016).

Develop and enforce development control guidelines and building codes. Even with robust plans in place, a supportive institutional framework for developing land in accordance with plans must be put in place. Beyond land use plans, development control guidelines shape the built environment by regulating the form and density of buildings, uses allowed within buildings, as well as the spatial relationship between buildings and the surrounding environment - setback distances between buildings and the street, for example. To this end, it is recommended that agencies such as MLUMPC and MoE work towards a set of transparent development control guidelines that can be enforced on the ground.

3.5 ENSURING AN INCLUSIVE APPROACH

Though this report has not directly covered issues of inclusion, despite the benefits of urbanization, rapid urban growth can exacerbate issues of inequality if not well planned and managed. Other World Bank Reports such as East Asia Cities: Expanding Opportunities for the Urban Poor cover these issues extensively using a lens of economic, spatial and social inclusion. A lack of investments in infrastructure, jobs, and services can widen inequalities and may hamper economic growth and lead to social divisions. To address or avoid this, there are many things that cities can do. Such approaches, as with the other recommendations, would be best tailored to city needs, along the lines of the typologies presented.

For example, the smaller border cities, gateway cities, or regional economic corridor cities that may growing quickly, will benefit from investments in affordable housing that plan for future growth as compared to the capital city which would also need to particularly focus on affordable transport so that people can access jobs, and upgrading of existing areas that do not have access to basic services. Secondary cities in Cambodia such as Siem Reap and Sihanoukville have strong economic drivers including tourism assets, an international port, SEZs, and casinos, however many of its economic benefits are not realized at the local level. For example, while SEZs in Cambodia have been successful in creating jobs, however, serving primarily as an export-processing zone, the SEZs have very weak connections to the domestic economy. In addition to investments in inra-city transport, it is also important to ensure that investments are made in services to foster local markets, as well as strengthening the One Window Service Offices to make basic administrative services accessible and efficient for citizens and local small-to-medium enterprises (SMEs).

One of the core indicators in the EPI is human capital – investing in quality education for all, and job training, can help to ensure a well-skilled labor force that is needed for urban industries. There are numerous examples of successful programs aimed at promoting inclusion for the urban poor from the East Asia Region that have been compiled and would be useful for exploration in the Cambodian context.[96]

96 See World Bank, 2017, East Asia Cities: Expanding Opportunities for the Urban Poor.

3.6 PROPOSED PROGRAM TO PRIORITIZE URBAN DEVELOPMENT

The case for investing in cities has been widely demonstrated globally and is equally an important pathway for growth and poverty reduction in Cambodia. Cambodia's relatively early stage of urbanization makes this a critical juncture for ensuring that the essential elements needed to plan, build and maintain cities are in place. The economic potential of specific cities, including several along core economic corridors, have been outlined in this report and shows that several cities hold much promise for future growth. Global evidence also demonstrates the importance of investing in strong institutions for urban planning, finance and management, which can help to minimize problems of congestion, slums, pollution, inequality and crime.

Given the substantial investment and technical assistance needs that have been identified in this report, an operational World Bank program for strengthening urban development in Cambodia is proposed to supplement ongoing efforts. While the precise modality for such a project remains under discussion, it is envisioned that the program would create an enabling environment for financing sustainable and resilient urban infrastructure, by prioritizing infrastructure needs and strengthening institutional capacity in planning, financing and implementation. A brief review of existing development partner activities in the urban sector, as well as potential project models based on existing World Bank experience, are discussed in sections 3.7.1 and 3.7.2 below.

3.6.1 Development Partner Activities

Currently, a number of development partners (DPs) are active in their support to cities through technical assistance or infrastructure projects, as summarized below. Most DPs do not specify urban development as an investment sector, nor do they focus on secondary cities as a financing theme. Only the Global Green Growth Initiative (GGGI) has explicitly focused on the unique needs of secondary cities in Phase II of its Green Urban Development Program. Nonetheless, there are considerable investments in infrastructure which fall within the geographic area of secondary cities and is helpful for understanding current efforts to help cities in Cambodia reach their full potential.[97]

Given the scale of urban infrastructure needs and the ongoing activities of several DPs, any proposed World Bank program would require robust coordination with other donors. While platforms for information-sharing and discussion of key issues amongst DPs exist in sectors such as water, sanitation and hygiene (WASH), land and subnational governance, a dedicated platform for urban sector issues has not yet been formed. The creation of such a platform – potentially involving both DPs and key agencies such as the Ministry of Land Management, Urban Planning and Construction (MLMUPC) and the Ministry of Public Works and Transport

97 While there are other public and private sector investments that also focus on infrastructure and services in secondary cities, these were not reviewed within the scope of this study.

(MPWT) – is a key initial step towards developing an operational program that more holistically considers strategic needs and the work of other donors. Partnerships could also be considered where priorities are aligned; for example, funding of infrastructure could be undertaken by one, while institutional development is handled by another.

World Bank. After reengaging in a new investment program in 2016, after a period of modest activity, the World Bank has focused its financing on agriculture, fisheries and rural development, health, education, disaster risk management, and national road upgrades. One project, the Livelihood Enhancement and Association of the Poor (LEAP) project is making small infrastructure investments in Phnom Penh and Siem Reap (mostly rural) to improve connectivity and access to services. Pipeline projects include an upgrade to National Road 4 (which connects Phnom Penh and Sihanoukville, through Chbar Mon) and network expansions for water and sanitations systems in Siem Reap, Sen Monorom (Mondulkiri Province), and others. An urban development investment is also foreseen, but has not begun detailed planning as yet. This report is, in fact, a contribution to the definition of any such investment.

Asian Development Bank (ADB). The bulk of ongoing ADB investment in secondary city urban development is on water management, including water supply, sanitation, flood protection and wastewater systems (i.e. Poipet, Battambang, Bavet, Sihanoukville, Kampot, etc.). Some more modest investment is around transport infrastructure, including roads in Bavet and a pier in Kampot. There are also pipeline projects focused on "corridor towns" and tourism infrastructure with specific infrastructure and locations to be determined. Additional investments are ongoing in solid waste management in Kampot and environmental management in Kampong Chhnang and Pursat. All of this investment is targeted at the provincial level, but tends to be focused on the provincial center/municipality as this is where most major infrastructure is located. ADB also complemented its infrastructure investments through technical assistance provided to municipalities under the "Capacity Development for Urban Management" program, which is discussed briefly in Section 2.3.

Japan International Cooperation Agency (JICA). Over the last 25 years, JICA has made significant investments in urban infrastructure. In Phnom Penh, the transport system has been improved through a major bridge across the Mekong, traffic management, public transport and the port of Phnom Penh. Significant upgrades to the city's electricity grid, water supply and waste water systems. Beyond Phnom Penh, JICA financed preparation of the "Study On National Integrated Strategy Of Coastal Area And Master Plan Of Sihanoukville For Sustainable Development" which has led to significant investments to enhance the capacity of the Sihanoukville port and the nearby Special Economic Zones. Several secondary cities either have already, or will, benefit from road network rehabilitation and upgrades, in particular, Battambang, Serei Sophorn, Paoy Paet, Kampong Cham and Siem Reap. Several projects have also invested in improved and expanded water

supply systems with a particular focus on Siem Reap, Kampong Cham and Battambang.

Korean Economic Development and Cooperation Fund (ECDF). Most EDCF investment is in the national road network, and only one of the ongoing EDCF investments explicitly focuses on a secondary city, Ta Khmau, to upgrade the city sewage system.

AfD. Historically AFD has worked in the water supply sector in Phnom Penh. Currently water supply and sanitation projects are under implementation in provincial cities – Siem Reap, Battambang, Kampong Cham, and Sihanoukville. In the urban development sector, AFD has financed a project in Siem Reao to develop tools for sustainable development of the Angkor-Siem Reap zone, in the context of sky-rocketing tourist flows and rapid urban expansion. In Phnom Penh, AFD financed the rehabilitation of and reform of the management of the central market. AFD is also launching a fesibility study on "Sustainable Development of Cambodian Cities: implementation of inclusive urban projects for 3 secondary cities (Battambang, Kampot, Kratie/Chhlong)."

GIZ. Since 1998, GIZ has been providing capacity development to the Ministry of Land Management, Urban Planning and Construction (MLMUPC) and land departments at the sub-national levels. In January 2016, the MLMUPC conducted an Introductory Training Course for Urban Planning with the support of GIZ aimed at providing insight into urban planning in general and to the first steps of an urban master planning process in particular. Participants were representatives of the 25 provincial spatial planning committees. From 2016 through the end of 2018, GIZ also has implemented, and will continue to implement, the "Decentralisation and Administrative Reform" (EU DAR) program, with the aim of supporting subnational authorities and line agencies in partner districts and municipalities (in Kandal and Battambang Provinces) to deliver public services in a more harmonized, responsive and accountable manner.

Global Green Growth Institute (GGGI). While GGGI is not an investment agency, it does play a significant role globally in identifying high priority urban development investments which can contribute to climate change mitigation through reduced carbon emissions. In 2018, GGGI published the Cambodia Sustainable City Strategic Plan, 2018-2030, aimed at promoting the green growth of strategically important secondary and tertiary cities in Cambodia, selected as priority cities for green city development by the national government. These included Battambang, Siem Reap, Sihaounkville, Kampot, Kep, Soung and Bavet. Multi-stakeholder consultations and capacity-building workshops were held as part of the development of the Sustainable City Strategic Plan, which included the prioritization of green city projects in sectors such as wastewater and sanitation, solid waste management and transport.

3.6.2 World Bank Experience in Urban Sector Projects

There are many approaches that have been successfully implemented in other countries through World Bank and other programs which provide useful lessons for adaptation

in the Cambodia context (Box 3.7, 3.8, 3.9). Most include both sustainable infrastructure investments and capacity building based on specific needs. Some approaches focus on improvements in a few neighborhoods or cities, while other approaches use national platforms to improve overall systems for urban development. Any approach would be tailored to the needs in Cambodia and would benefit from consultation with key stakeholders.

Box 3.7: Tanzania Strategic Cities Project – Improving Urban Infrastructure and Urban Governance

Targeting seven fast-growing medium-sized cities, the World Bank's Tanzania Strategic Cities Project (TSCP) has invested in the improvement of basic urban infrastructure, while also strengthening the management and fiscal performance of participating cities. In Arusha, one of the project cities, officials identified strategic road connections around the central business district for improvement. By making improvements to road conditions – including paving, installing street lighting, introducing pedestrian walkways and putting a drainage system in place – tangible impacts have been felt. Aside from improving the downtown urban environment and making the roads accessible both to traffic and to pedestrians, city officials have also noted increases in property prices around the improved roads. Improved drainage has helped to address flooding risks, which previously deterred people from walking downtown when it rained.

In addition to basic infrastructure improvements, an innovative feature of TSCP has been the adoption of GIS technologies to map and assess all taxable property in each municipality. GIS information has allowed the Local Government Revenue Collection Information System (LGRCIS) to assess each city's tax base in a more transparent manner, addressing the problem of inaccurate and incomplete information that typically resulted from manual surveys and assessments. With better identification of taxpayers and defaulters, as well as a simple, accessible electronic payment system, LGRCIS has been successful in enabling cities to increase their own source revenues through tax collection. The seven TSCP cities saw an average increase of 30% in own source revenue one year after the system was implemented.

Source: World Bank

Box 3.8: Karachi Neighborhood Improvement Project – Investing in Public Spaces Using a Participatory Approach

As Pakistan's economic and political hub, the megacity of Karachi has seen its population and economy grow significantly in the last fifty years. With a current population of 16 million, Karachi has struggled to keep pace with physical growth and infrastructure demands, and is ranked among the least liveable cities in the world. Satellite imagery indicates that the amount of green cover in the city has fallen from 4.6% in 2001 to 3.7% in 2013. In downtown Karachi, sidewalks are unsafe for pedestrians as they have either been degraded or co-opted for unregulated parking.

The World Bank's Karachi Neighborhood Improvement Project (KNIP) aims to benefit one million residents, business owners and commuters by improving urban living conditions in selected areas. In parallel, the city will also receive institutional support to enhance the capacity to administer services, such as issuing construction permits and providing business licenses. A participatory approach will be adopted to allow communities to identify and design investments that will have the greatest impact in their neighborhoods. These may include, for example, pocket parks or green spaces, improvements to enhance walkability and mobility, infrastructure to encourage street-level activity or improvements to basic municipal services. This inclusive approach is critical for Karachi given the spatial inequalities identified in the World Bank's Transforming Karachi into a Livable and Competitive Megacity: A City Diagnostic and Transformation Strategy. By recognizing the role of local communities and providing them agency in improving their own neighborhoods, KNIP takes a crucial first step to demonstrate the value of an inclusive, consultative planning approach, as part of a longer-term strategy for transformation of the city.

Source: World Bank

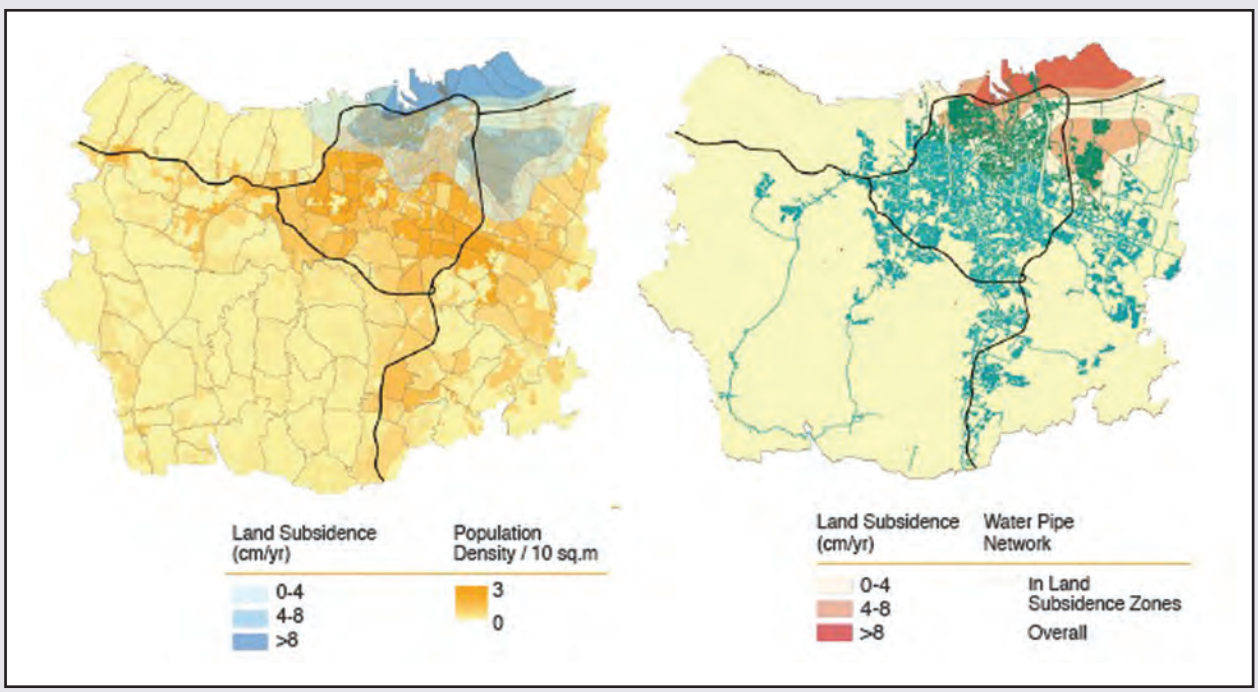
Box 3.9: City Planning Labs (Indonesia) – A World Bank Project to Develop Municipal Spatial Data Infrastructure

The World Bank's City Planning Labs (CPL) initiative supports cities in Indonesia to develop a unified spatial data infrastructure, with a view to improving data-informed urban planning. Challenges faced by cities in Indonesia are not dissimilar to those in other fast-urbanizing areas, including uneven service delivery and the need for increased resilience to climate change risks. In line with Indonesia's ambitious One Map Policy to build a national integrated spatial data system, CPL works closely with municipal governments to establish the necessary policies and procedures for agencies to collect and share data, develop the tools needed for data collection and analysis, and build capacity of city-level staff to understand and

make use of the data available. The long-term goal of CPL is for Municipal Spatial Data Infrastructure (MSDI) to be managed and maintained independently by local governments.

In Semarang, one of two pilot CPL cities, spatial analysis has enabled planners to understand how poverty distribution, land subsidence and infrastructure gaps interact. The city has long faced challenges relating to land subsidence, with impacts that include increased vulnerability to flooding, as well as physical damage to buildings and infrastructure. Figure Box 3.2 below illustrates two overlays of spatial data – one showing land subsidence and population density, and another showing the distribution of the water supply pipe network. In areas that are underserved by the existing network, land subsidence is higher, likely as a result of residents continuing to tap on the local groundwater supply. With higher levels of land subsidence, land in these areas is also more affordable than in other parts of the city, leaving more low-income families to settle there. Planners can make use of this information to plan an expansion of the water supply network, in order to improve basic service provision and break the cycle continued groundwater usage causing further land subsidence.

Figure 3.2: Land Subsidence, Population Density and Water Supply in Semarang



Source: World Bank.

SECTION 4

ANNEX

ANNEX 4.1: MUNICIPALITIES AND NON-MUNICIPAL URBAN PLACES IN CAMBODIA

Urban centres by population size (based on Urban Reclassification, 2011)

City size	Name of Province	Municipality	Population reclassification 2011 of 2008 data
A. Municipalities			
1M and above		Phnom Penh Capital	1,501,725
Large: >100,000	Siem Reap	Siem Reap	230,714
	Banteay Meanchey	Paoy Paet	107,989
	Battambang	Battambang	144,323
Medium: 50,00-100,000	Kandal	Takhmao	80,141
	Banteay Meanchey	Serei Sophoan	90,279
	Kampong Thom	Krong Stung Saen	54,033
	Outdar Meanchey	Krong Samroang	51,414
	Pursat	Pursat	58,846
	Preah Sihanouk	Preah Sihanouk	91,284
Small: <50,000	Kampong Cham	Kampong Cham	47,300
	Svay Rieng	Suong	35,896
		Svay Rieng	40,536
	Prey Veng	Krong Bavet	37,123
		Prey Veng	23,890
	Takeo	Takeo	41,383
	Kg. Chhnang	Kg. Chhnang	43,130
	Pailin	Pailin	36,355
	Kampot	Kampot	36,367
	Koh Kong	K. Phumin	25,957
	Kep	Kep	19,573
	Kampong Speu	Chbar Mon	46,850
	Kratie	Kratie	30,544
	Mondulkiri	Saen Monorom	12,340
	Preah Vihear	Preah Vihear	21,179
	Rattanakiri	Ban Lung	28,982
	Stung Treng	Stung Treng	30,959

Source: Reclassification of urban areas in Cambodia, 2011 (NIS, Ministry of Planning), based on 2008 census
Note: Planning for a new census is underway, this is the most current data available.

ANNEX 4.2: EPI CALCULATION RESULTS AND DISTRICT RANKINGS

Annex Table 4.1 EPI Calculation Results

Province	District	EPI	Classification
Banteay Meanchey	Malai	38.62374853	Very Low
Banteay Meanchey	Mongkol Borei	54.13119959	Medium
Banteay Meanchey	O Chreuv	46.64416982	Medium
Banteay Meanchey	Phnom Srok	36.49676774	Very Low
Banteay Meanchey	Paoy Paet	56.03269622	High
Banteay Meanchey	Preah Net Preah	46.78185498	Medium
Banteay Meanchey	Serei Sophoan	59.53737511	High
Banteay Meanchey	Svay Chek	41.5649899	Low
Banteay Meanchey	Thmar Puok	44.44838693	Low
Battambang	Banan	48.95152935	Medium
Battambang	Battambang	68.09033601	Very High
Battambang	Bavel	43.64727384	Low
Battambang	Ek Phnom	41.89542957	Low
Battambang	Kamrieng	34.69077644	Very Low
Battambang	Koah Kralar	42.47239314	Low
Battambang	Moung Ruessei	45.1663137	Medium
Battambang	Phnom Preuk	34.02814877	Very Low
Battambang	Ratanak Mondul	46.20679102	Medium
Battambang	Rukhak Kiri	32.50150973	Very Low
Battamban	Samlaut	38.46868188	Very Low
Battambang	Sampeuv Loun	38.91439522	Very Low
Battambang	Sangker	45.87623497	Medium
Battambang	Thmar Kaul	52.08157308	Medium
Kampong Cham	Batheay	54.28352045	Medium
Kampong Cham	Chamkar Leu	54.92798985	Medium
Kampong Cham	Cheung Prey	54.83765866	Medium
Kampong Cham	Kampong Cham	64.61128601	Very High
Kampong Cham	Kampong Siem	53.7031773	Medium
Kampong Cham	Kang Meas	56.67979726	High
Kampong Cham	Koh Sotin	57.10464128	High
Kampong Cham	Prey Chhor	57.08820313	High
Kampong Cham	Srey Santhor	56.39803345	High
Kampong Cham	Steung Trang	47.26669482	Medium
Kampong Chhnang	Baribo	50.86196245	Medium
Kampong Chhnang	Chul kiri	35.86013391	Very Low
Kampong Chhnang	Kampong Chhnang	65.80862313	Very High
Kampong Chhnang	Kampong Leng	36.45832759	Very Low
Kampong Chhnang	Kampong Tralach	53.52167339	Medium

Kampong Chhnang	Rolea Pa-ir	54.75531805	Medium
Kampong Chhnang	Samaki Meanchey	45.95837384	Medium
Kampong Chhnang	Teuk Phos	45.58378987	Medium
Kampong Speu	Barset	49.46911405	Medium
Kampong Speu	Chbar Morn	65.62297594	Very High
Kampong Speu	Kong Pisei	54.55683603	Medium
Kampong Speu	Korng Pisei	42.76560322	Low
Kampong Speu	Oudong	53.92885153	Medium
Kampong Speu	Phnom Sruoch	48.66890927	Medium
Kampong Speu	Samrong Torng	52.30205421	Medium
Kampong Speu	Thporng	46.51149766	Medium
Kampong Thom	Baray	54.37302528	Medium
Kampong Thom	Kampong Svay	44.49513482	Low
Kampong Thom	Prasat Balaing	45.0482731	Medium
Kampong Thom	Prasat Sambo	50.72574538	Medium
Kampong Thom	Sandann	45.0517479	Medium
Kampong Thom	Santouk	49.04089844	Medium
Kampong Thom	Staung	45.64946583	Medium
Kampong Thom	Stung Sen	55.56906627	High
Kampot	Angkor Chey	55.68601487	High
Kampot	Banteay Meas	52.42461496	Medium
Kampot	Chhouk	46.72271761	Medium
Kampot	Chum kiri	45.86169598	Medium
Kampot	Dangtung	52.41646777	Medium
Kampot	Kampong Trach	54.63883223	Medium
Kampot	Kampot	63.75057807	Very High
Kampot	Teuk Chhou	51.43015052	Medium
Kandal	Ang Snuol	60.69088528	Very High
Kandal	Kandal Stung	60.31690772	High
Kandal	Kean Svay	61.99187707	Very High
Kandal	Khsach Kandal	59.0261803	High
Kandal	Koh Thom	59.61042009	High
Kandal	Leuk Dek	54.37083747	Medium
Kandal	Lovea Em	56.05970775	High
Kandal	Muk Kampoul	62.17545553	Very High
Kandal	Ponhea Leu	59.90412627	High
Kandal	Sa-ang	61.70340072	Very High
Kep	Damnak Chang'aeur	55.89209732	High
Kep	Krong Kaeb	51.34742834	Medium
Koh Kong	Botum Sakor	44.75441635	Medium
Koh Kong	Khemrak Phoumin	62.54519098	Very High
Koh Kong	Kiri Sakor	34.10319327	Very Low
Koh Kong	Koh Kong	38.1733665	Very Low

Koh Kong	Mondul Seima	39.68012051	Low
Koh Kong	Sre Ambel	42.52844857	Low
Koh Kong	Thmar Baing	35.96119619	Very Low
Kratie	Chhlaung	48.9763091	Medium
Kratie	Chith Borei	42.0047826	Low
Kratie	Kratie	61.42790657	Very High
Kratie	Prek Prasap	39.20169789	Very Low
Kratie	Sambo	39.49303165	Low
Kratie	Snuol	44.68913684	Low
Mondul Kiri	Keo Seima	33.02639532	Very Low
Mondul Kiri	Koh Nhek	33.87921749	Very Low
Mondul Kiri	Krong Saen Monourom	41.93667187	Low
Mondul Kiri	O Raing	35.90756436	Very Low
Mondul Kiri	Pichreada	34.02871306	Very Low
Otdar Meanchey	Anlung Veng	45.39111225	Medium
Otdar Meanchey	Banteay Ampil	41.62099147	Low
Otdar Meanchey	Chong Kal	35.50912186	Very Low
Otdar Meanchey	Samrong	49.53646658	Medium
Otdar Meanchey	Trapaing Prasat	42.83183043	Low
Pailin	Pailin	55.71869943	High
Pailin	Sala Krao	36.10047128	Very Low
Phnom Penh	7 Makara	100	Very High
Phnom Penh	Chamkar Morn	86.60794319	Very High
Phnom Penh	Dangkor	63.60465274	Very High
Phnom Penh	Daun Penh	84.47715883	Very High
Phnom Penh	Meanchey	63.29801983	Very High
Phnom Penh	Po Senchey	65.9051748	Very High
Phnom Penh	Russey Keo	64.88049524	Very High
Phnom Penh	Sen Sok	68.55060448	Very High
Phnom Penh	Tuol Kauk	84.01624624	Very High
Preah Sihanouk	Kampong Seila	42.19304121	Low
Preah Sihanouk	Preah Sihanuok	57.86655173	High
Preah Sihanouk	Prey Nup	55.41622041	High
Preah Sihanouk	Stung Hav	54.75046278	Medium
Preah Vihear	Chey Sen	43.04803179	Low
Preah Vihear	Chheb	34.72243612	Very Low
Preah Vihear	Choam Ksan	38.82548987	Very Low
Preah Vihear	Koulen	38.91060973	Very Low
Preah Vihear	Preah Vihear	61.08959258	Very High
Preah Vihear	Rovieng	48.24249475	Medium
Preah Vihear	Sangkum Thmei	43.07034426	Low
Preah Vihear	Tbeng Meanchey	42.19878703	Low
Prey Veng	Ba Phnom	53.38486609	Medium

Prey Veng	Kamchay Mear	50.98758025	Medium
Prey Veng	Kampong Leav	52.44143918	Medium
Prey Veng	Kampong Trabek	53.27762027	Medium
Prey Veng	Kanhchreach	49.75471094	Medium
Prey Veng	Mesang	53.01245562	Medium
Prey Veng	Peam Chor	45.80082806	Medium
Prey Veng	Peam Ror	57.59053323	High
Prey Veng	Pearaing	56.58416698	High
Prey Veng	Preah Sdech	53.7701935	Medium
Prey Veng	Prey Veng	64.48692152	Very High
Prey Veng	Sithor Kandal	52.26754895	Medium
Prey Veng	Svay Antor	50.62028219	Medium
Pursat	Bakan	44.24796042	Low
Pursat	Kandieng	39.08497373	Very Low
Pursat	Krakor	49.49850574	Medium
Pursat	Phnom Kravanh	43.78653463	Low
Pursat	Pursat	57.09848617	High
Pursat	Veal Veng	35.78379701	Very Low
Ratanak Kiri	Andaung Meas	38.59581979	Very Low
Ratanak Kiri	Banlung	60.80729404	Very High
Ratanak Kiri	Barkeo	38.98712331	Very Low
Ratanak Kiri	Kaun Mum	38.03337232	Very Low
Ratanak Kiri	Lumphat	43.873487	Low
Ratanak Kiri	O Chum	39.96698167	Low
Ratanak Kiri	O Yadav	38.76500791	Very Low
Ratanak Kiri	Taveng	30.57423408	Very Low
Ratanak Kiri	Veunsai	40.19565606	Low
Siemreap	Angkor Chum	48.02191199	Medium
Siemreap	Angkor Thom	42.82372399	Low
Siemreap	Banteay Srey	50.0544737	Medium
Siemreap	Chi Kreng	43.30114653	Low
Siemreap	Kralanh	46.14635904	Medium
Siemreap	Prasat Bakorng	46.75406498	Medium
Siemreap	Puok	50.14604989	Medium
Siemreap	Saut Nikum	45.90128132	Medium
Siemreap	Siemreap	66.1415019	Very High
Siemreap	Srey Snam	45.56032404	Medium
Siemreap	Svay Leu	38.20923486	Very Low
Siemreap	Varin	43.2064747	Low
Stung Treng	Sesan	36.7200221	Very Low
Stung Treng	Siembauk	34.3634845	Very Low
Stung Treng	Siempang	25.77151488	Very Low
Stung Treng	Stung Treng	59.66077993	High

Stung Treng	Thala Barivat	36.93626862	Very Low
Svay Rieng	Chantrea	45.29062064	Medium
Svay Rieng	Kampong Rou	48.79663194	Medium
Svay Rieng	Krong Bavet	50.91510994	Medium
Svay Rieng	Krong Svay Rieng	67.541001	Very High
Svay Rieng	Romeas Haek	50.95860134	Medium
Svay Rieng	Rumduol	54.81756571	Medium
Svay Rieng	Svay Chrum	53.26462821	Medium
Svay Rieng	Svay Teab	50.14617529	Medium
Takeo	Angkor Borei	49.25600417	Medium
Takeo	Bati	58.52838403	High
Takeo	Borei Chulsa	47.41365518	Medium
Takeo	Daunkeo	61.5193073	Very High
Takeo	Kiri Vong	54.16411181	Medium
Takeo	Koh Andet	47.21998257	Medium
Takeo	Prey Kabas	60.09237813	High
Takeo	Samrong	59.69132837	High
Takeo	Traing	57.78286307	High
Takeo	Tramkak	56.41733927	High
Tbaung Khmum	Dambe	49.14217416	Medium
Tbaung Khmum	Krauch Chhmar	49.30211196	Medium
Tbaung Khmum	Memot	53.91277336	Medium
Tbaung Khmum	O Raing Euv	50.87928857	Medium
Tbaung Khmum	Ponhea Krek	53.44011584	Medium
Tbaung Khmum	Suong	60.79002686	Very High
Tbaung Khmum	Tbaung Khmum	52.21227865	Medium

ANNEX 4.3: CLUSTER AND OUTLIER ANALYSIS RESULTS

Given a set of input features (districts) and a field upon which to base the analysis (in this case EPI values), the Anselin Local Moran's I statistic identifies statistically significant clusters of features (at the 95% confidence level) with high or low values. Outliers are also identified.

Results from the Cluster and Outlier Analysis Results are shown in Annex Figure 4.1. The greater Phnom Penh region is the single high value cluster, with three districts along the edge of the cluster identified as low value outliers. Three of the four low value clusters are all located in the North-West region. The three high value outliers are spread throughout the country.

It is important to note that it is possible for a single district to be identified as part of a 'cluster' by having a statistically significant local Moran's I value, but being surrounded by districts with statistically insignificant values. This is the case for six districts, individually identified as being part of a low-low cluster: Botum Sakor, Mong Ruessei, Chheb, Siembauk, Andaung Meas, and Lumphat. As single-district 'clusters,' they have been removed from the results map in Figure 1.10 to avoid confusion.

Annex Figure 4.1: Cluster and Outlier Analysis Results

Province	District	EPI Score	Cluster/Outlier Type
Banteay Meanchey	Malai	38.62374852770	Not Significant
Banteay Meanchey	Mongkol Borei	54.13119958620	Not Significant
Banteay Meanchey	O Chreuv	46.64416981840	Not Significant
Banteay Meanchey	Phnom Srok	36.49676773530	Not Significant
Banteay Meanchey	Paoy Paet	56.03269622020	Not Significant
Banteay Meanchey	Preah Net Preah	46.78185498400	Not Significant
Banteay Meanchey	Serei Sophoan	59.53737510610	Not Significant
Banteay Meanchey	Svay Chek	41.56498990460	Not Significant
Banteay Meanchey	Thmar Puok	44.44838692830	Not Significant
Battambang	Banan	48.95152935500	Not Significant
Battambang	Battambang	68.09033601210	Not Significant
Battambang	Bavel	43.64727383960	Not Significant
Battambang	Ek Phnom	41.89542956630	Not Significant
Battambang	Kamrieng	34.69077643600	Low Low Cluster
Battambang	Koah Kralar	42.47239313610	Not Significant
Battambang	Moung Ruessei	45.16631369960	Low Cluster (single district)
Battambang	Phnom Preuk	34.02814876570	Low Low Cluster
Battambang	Ratanak Mondul	46.20679102460	Not Significant
Battambang	Rukhak Kiri	32.50150973000	Not Significant
Battambang	Samlaut	38.46868188330	Not Significant
Battambang	Sampeuv Loun	38.91439521970	Low Low Cluster
Battambang	Sangker	45.87623497430	Not Significant
Battambang	Thmar Kaul	52.08157307680	Not Significant
Kampong Cham	Batheay	54.28352045320	High High Cluster
Kampong Cham	Chamkar Leu	54.92798985070	Not Significant
Kampong Cham	Cheung Prey	54.83765865800	High High Cluster
Kampong Cham	Kampong Cham	64.61128600550	Not Significant
Kampong Cham	Kampong Siem	53.70317730040	High High Cluster
Kampong Cham	Kang Meas	56.67979725540	High High Cluster
Kampong Cham	Koh Sotin	57.10464127890	High High Cluster
Kampong Cham	Prey Chhor	57.08820313330	High High Cluster
Kampong Cham	Srey Santhor	56.39803345440	High High Cluster
Kampong Cham	Steung Trang	47.26669482140	Not Significant
Kampong Chhnang	Baribo	50.86196245140	Not Significant
Kampong Chhnang	Chul kiri	35.86013391310	Not Significant
Kampong Chhnang	Kampong Chhnang	65.80862312960	Not Significant
Kampong Chhnang	Kampong Leng	36.45832758780	Not Significant
Kampong Chhnang	Kampong Tralach	53.52167338570	High High Cluster
Kampong Chhnang	Rolea Pa-ir	54.75531805270	Not Significant
Kampong Chhnang	Samaki Meanchey	45.95837384120	Low High Outlier
Kampong Chhnang	Teuk Phos	45.58378986920	Not Significant
Kampong Speu	Barset	49.46911405450	Low High Outlier
Kampong Speu	Chbar Morn	65.62297593740	Not Significant

Kampong Speu	Kong Pisei	54.55683603450	High High Cluster
Kampong Speu	Korng Pisei	42.76560321640	Not Significant
Kampong Speu	Oudong	53.92885152860	High High Cluster
Kampong Speu	Phnom Sruoch	48.66890927090	Not Significant
Kampong Speu	Samrong Torng	52.30205421150	High High Cluster
Kampong Speu	Thporng	46.51149765910	Not Significant
Kampong Thom	Baray	54.37302528200	Not Significant
Kampong Thom	Kampong Svay	44.49513482230	Not Significant
Kampong Thom	Prasat Balaing	45.04827310220	Not Significant
Kampong Thom	Prasat Sambo	50.72574537790	Not Significant
Kampong Thom	Sandann	45.05174790310	Not Significant
Kampong Thom	Santouk	49.04089843690	Not Significant
Kampong Thom	Staung	45.64946582580	Not Significant
Kampong Thom	Stung Sen	55.56906626590	Not Significant
Kampot	Angkor Chey	55.68601486810	Not Significant
Kampot	Banteay Meas	52.42461496360	Not Significant
Kampot	Chhouk	46.72271761470	Not Significant
Kampot	Chum kiri	45.86169598110	Not Significant
Kampot	Dangtung	52.41646777480	Not Significant
Kampot	Kampong Trach	54.63883223080	Not Significant
Kampot	Kampot	63.75057806910	Not Significant
Kampot	Teuk Chhou	51.43015051590	Not Significant
Kandal	Ang Snuol	60.69088528430	High High Cluster
Kandal	Kandal Stung	60.31690771800	High High Cluster
Kandal	Kean Svay	61.99187706680	High High Cluster
Kandal	Khsach Kandal	59.02618030090	High High Cluster
Kandal	Koh Thom	59.61042009180	High High Cluster
Kandal	Leuk Dek	54.37083746900	High High Cluster
Kandal	Lovea Em	56.05970775340	High High Cluster
Kandal	Muk Kampoul	62.17545553210	High High Cluster
Kandal	Ponhea Leu	59.90412626530	High High Cluster
Kandal	Sa-ang	61.70340071510	High High Cluster
Kep	Damnak Chang'ae-ur	55.89209731610	Not Significant
Kep	Krong Kaeb	51.34742834260	Not Significant
Koh Kong	Botum Sakor	44.75441634970	Low Cluster (single district)
Koh Kong	Khemrak Phoumin	62.54519098030	Not Significant
Koh Kong	Kiri Sakor	34.10319326760	Not Significant
Koh Kong	Koh Kong	38.17336649950	Not Significant
Koh Kong	Mondul Seima	39.68012050870	Not Significant
Koh Kong	Sre Ambel	42.52844856550	Not Significant
Koh Kong	Thmar Baing	35.96119618860	Not Significant
Kratie	Chhlaung	48.97630910380	Not Significant
Kratie	Chith Borei	42.00478259980	Not Significant
Kratie	Kratie	61.42790657160	Not Significant

Kratie	Prek Prasap	39.20169789080	Not Significant
Kratie	Sambo	39.49303164680	Not Significant
Kratie	Snuol	44.68913684380	Not Significant
Mondul Kiri	Keo Seima	33.02639531810	Not Significant
Mondul Kiri	Koh Nhek	33.87921748670	Not Significant
Mondul Kiri	Krong Saen Mon-ourom	41.93667186550	Low Low Cluster
Mondul Kiri	O Raing	35.90756435920	Not Significant
Mondul Kiri	Pichreada	34.02871306160	Low Low Cluster
Otdar Meanchey	Anlung Veng	45.39111224530	Not Significant
Otdar Meanchey	Banteay Ampil	41.62099146590	Low Low Cluster
Otdar Meanchey	Chong Kal	35.50912185920	Not Significant
Otdar Meanchey	Samrong	49.53646657990	Low Low Cluster
Otdar Meanchey	Trapaing Prasat	42.83183042780	Not Significant
Pailin	Pailin	55.71869943390	High Low Outlier
Pailin	Sala Krao	36.10047128120	Not Significant
Phnom Penh	7 Makara	100.00000000300	High High Cluster
Phnom Penh	Chamkar Morn	86.60794318670	High High Cluster
Phnom Penh	Dangkor	63.60465273820	High High Cluster
Phnom Penh	Daun Penh	84.47715882630	High High Cluster
Phnom Penh	Meanchey	63.29801982830	High High Cluster
Phnom Penh	Po Senchey	65.90517480010	High High Cluster
Phnom Penh	Russey Keo	64.88049523590	High High Cluster
Phnom Penh	Sen Sok	68.55060448440	High High Cluster
Phnom Penh	Tuol Kauk	84.01624623570	High High Cluster
Preah Sihanouk	Kampong Seila	42.19304121340	Not Significant
Preah Sihanouk	Preah Sihanuok	57.86655172770	Not Significant
Preah Sihanouk	Prey Nup	55.41622041490	Not Significant
Preah Sihanouk	Stung Hav	54.75046278380	Not Significant
Preah Vihear	Chey Sen	43.04803178540	Not Significant
Preah Vihear	Chheb	34.72243612280	Low Cluster (single district)
Preah Vihear	Choam Ksan	38.82548987080	Not Significant
Preah Vihear	Koulen	38.91060972920	Not Significant
Preah Vihear	Preah Vihear	61.08959258430	Not Significant
Preah Vihear	Rovieng	48.24249475090	Not Significant
Preah Vihear	Sangkum Thmei	43.07034425690	Not Significant
Preah Vihear	Tbeng Meanchey	42.19878703350	Not Significant
Prey Veng	Ba Phnom	53.38486608840	High High Cluster
Prey Veng	Kamchay Mear	50.98758024620	Not Significant
Prey Veng	Kampong Leav	52.44143918370	High High Cluster
Prey Veng	Kampong Trabek	53.27762026930	Not Significant
Prey Veng	Kanhchreach	49.75471094100	Not Significant
Prey Veng	Mesang	53.01245561940	High High Cluster
Prey Veng	Peam Chor	45.80082806310	Not Significant
Prey Veng	Peam Ror	57.59053323460	High High Cluster

Prey Veng	Pearaing	56.58416697530	High High Cluster
Prey Veng	Preah Sdech	53.77019350320	Not Significant
Prey Veng	Prey Veng	64.48692151960	High High Cluster
Prey Veng	Sithor Kandal	52.26754894940	High High Cluster
Prey Veng	Svay Antor	50.62028218740	High High Cluster
Pursat	Bakan	44.24796041580	Not Significant
Pursat	Kandieng	39.08497373070	Not Significant
Pursat	Krakor	49.49850573630	Not Significant
Pursat	Phnom Kravanh	43.78653462730	Not Significant
Pursat	Pursat	57.09848616640	Not Significant
Pursat	Veal Veng	35.78379701260	Not Significant
Ratanak Kiri	Andaung Meas	38.59581978520	Low Cluster (single district)
Ratanak Kiri	Banlung	60.80729404440	High Low Outlier
Ratanak Kiri	Barkeo	38.98712330620	Not Significant
Ratanak Kiri	Kaun Mum	38.03337232350	Not Significant
Ratanak Kiri	Lumphat	43.87348699590	Low Cluster (single district)
Ratanak Kiri	O Chum	39.96698166720	Not Significant
Ratanak Kiri	O Yadav	38.76500790580	Not Significant
Ratanak Kiri	Taveng	30.57423407780	Not Significant
Ratanak Kiri	Veunsai	40.19565606080	Not Significant
Siemreap	Angkor Chum	48.02191199440	Low Low Cluster
Siemreap	Angkor Thom	42.82372398620	Not Significant
Siemreap	Banteay Srey	50.05447370070	Not Significant
Siemreap	Chi Kreng	43.30114652550	Not Significant
Siemreap	Kralanh	46.14635904280	Not Significant
Siemreap	Prasat Bakorng	46.75406497710	Not Significant
Siemreap	Puok	50.14604988660	Not Significant
Siemreap	Saut Nikum	45.90128131830	Not Significant
Siemreap	Siemreap	66.14150190100	Not Significant
Siemreap	Srey Snam	45.56032404050	Low Low Cluster
Siemreap	Svay Leu	38.20923485870	Not Significant
Siemreap	Varin	43.20647469830	Not Significant
Stung Treng	Sesan	36.72002210270	Not Significant
Stung Treng	Siembauk	34.36348450480	Low Cluster (single district)
Stung Treng	Siempang	25.77151487610	Not Significant
Stung Treng	Stung Treng	59.66077993450	High Low Outlier
Stung Treng	Thala Barivat	36.93626862160	Not Significant
Svay Rieng	Chantrea	45.29062063740	Not Significant
Svay Rieng	Kampong Rou	48.79663194280	Not Significant
Svay Rieng	Krong Bavet	50.91510993600	Not Significant
Svay Rieng	Krong Svay Rieng	67.54100099930	Not Significant
Svay Rieng	Romeas Haek	50.95860133690	Not Significant
Svay Rieng	Rumduol	54.81756571000	Not Significant
Svay Rieng	Svay Chrum	53.26462820540	Not Significant
Svay Rieng	Svay Teab	50.14617529300	Not Significant

Takeo	Angkor Borei	49.25600417220	Low High Outlier
Takeo	Bati	58.52838403310	High High Cluster
Takeo	Borei Chulsa	47.41365518160	Not Significant
Takeo	Daunkeo	61.51930730210	High High Cluster
Takeo	Kiri Vong	54.16411180840	Not Significant
Takeo	Koh Andet	47.21998256740	Not Significant
Takeo	Prey Kabas	60.09237812920	High High Cluster
Takeo	Samrong	59.69132836820	High High Cluster
Takeo	Traing	57.78286307350	Not Significant
Takeo	Tramkak	56.41733926610	Not Significant
Tbaung Khmum	Dambe	49.14217416340	Not Significant
Tbaung Khmum	Krauch Chhmar	49.30211195550	Not Significant
Tbaung Khmum	Memot	53.91277335610	Not Significant
Tbaung Khmum	O Raing Euv	50.87928856600	High High Cluster
Tbaung Khmum	Ponhea Krek	53.44011583800	Not Significant
Tbaung Khmum	Suong	60.79002685910	Not Significant
Tbaung Khmum	Tbaung Khmum	52.21227864570	Not Significant

Annex Table 4.3: Socio-Economic Statistical Information of Selected Cities 1

City	Phnom Penh	Siem Reap	Battambang	Preah Sihanouk (Sihanoukville)	Kampong Cham
Province	**Phnom Penh**	**Siem Reap**	**Battambang**	**Preah Sihanouk**	**Kampong Cham**
General					
Year of Data	2015	2016	2015	2010	2016
Population	1,501,725	240,648	155,584	2015	40,925
Population Density (Person/km^2)	2,213	549.48	1,347.75	73,380	1847,63
Area (km^2)	678.46	424.71	115.4	400.1	22.15
Poverty Rate		15% (2014)	-	195.90	2%
# HH in Slum/Informal Settlements		2,962	2,631	6.81%	92
Economy					
Key Economic Sector	Services	Tourism	Trade	Service & Port Four SEZ	Service, trade and tourism
Employment by Sector					
Agriculture	10%	28.6%	7.3%	6%	16.1%
Manufacturing	2.6%	2.7%	1.9%	3.9%	2.5%
Services	87.4%	68.7%	70.7%	90.1%	81.4%
Basic Services					
% HH access to Electricity		94.6%	97.7%	98%	99.5%
% HH access to Piped Water		19.18%	55.7%	63.08%	97.16%
% HH access to Sanitation		82.6%	81.1%	83.89%	75.08%
% HH access to SW Collection		73.68%	19.18%	40%	56%
SW Generation Per Day		380 tons	140 tons	150 tons	

Source: GGGI, Sustainable City Strategic Plan 2018-2030 (Draft), 2018.

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