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# **Investing in Sustainable Cities: Challenges and Opportunities**

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International Development Finance Club  
Special Interest Group on Sustainable Urban Development  
October 2014

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# Investing in Sustainable Cities: Challenges and Opportunities

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## Preface

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The International Development Finance Club (IDFC) has brought together 23 national, bilateral and regional development banks from Africa, Asia, Europe, and Latin America to pool their global expertise, best practices and in-depth local know-how on strategic topics of mutual interest.

By 2050, 67% of the world's population is expected to reside in urban areas. Dynamic transformations will take place in growing cities throughout Africa, Asia and the rest of the developing world. These hubs for innovation and output have already delivered substantial economic growth and helped alleviate poverty. For this reason, it will be vital to continue fostering high-productivity activities that benefit from agglomeration and scale economies in emerging cities. At the same time, managing the likely side effects of urban expansion—congestion and overcrowding, inequality, high prices of land and housing, and environmental degradation will also be necessary to ensure that economic growth is sustainable and benefits are spread widely.

In 2013, the IDFC created the Sustainable Urban Development Working Group, in order to help government officials, development agents and other stakeholders identify bottlenecks, and propose policy solutions to tackle the common challenges of rapid and growing urbanization. This paper, *Investing in Sustainable Cities: Opportunities and Challenges*, was developed by CAF-Development Bank of Latin America and JICA- Japan International Cooperation Agency, in the hopes of promoting more comprehensive dialogue and solution-oriented actions aimed at improving urban planning and policy formulation, management capacities, coordination among stakeholders, and development finance mechanisms.

## Executive Summary

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Cities, home to 67% of the world's population by 2050 (DESA, 2012), serve as a double-edged sword in the context of sustainable development. On one hand, they are important engines of economic growth –producing more than 80% of national income today (UNEP, 2012). On the other hand, cities are vulnerable to a number of social and environmental perils, particularly climate change related risks and other natural disasters. Some one billion people currently live in slums, with limited access to basic services (World Bank, 2013), and this number is expected to rise to two billion by 2030 (UN Habitat). Cities account for the vast majority of global energy use, natural resource consumption, green gas emissions and solid waste. Despite the challenges, well managed urban development could give rise to cities more conducive to economic growth and social inclusion, environmentally sustainable and resilient to climate change.

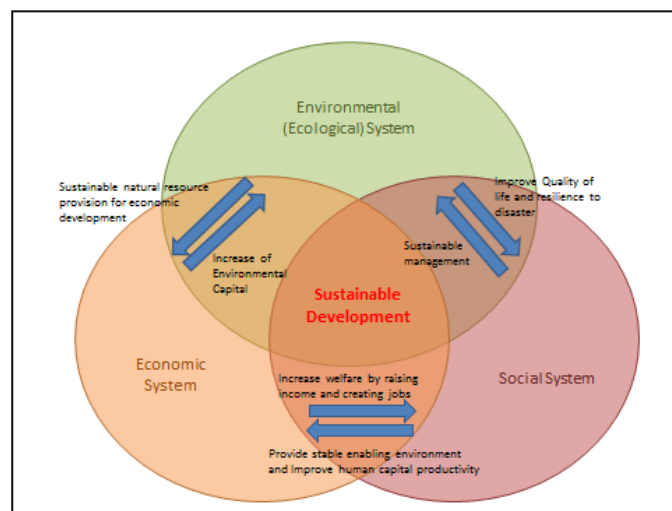
Achieving sustainable urban development will require multidimensional approaches across sectors. Policy formulation should be comprehensive, able to adapt to evolving development needs, and incorporate incentives that promote wide-ranging stakeholder coordination and participation. Strategies must draw on inter-linkages among different and sometimes conflicting demands; co-benefit measures that cater to multiple needs through single policy interventions, using minimal resources, should be emphasized. Improved service delivery and infrastructure optimization not only improve community health and safety, but heighten competitiveness and generate employment. More widespread use of green technologies helps maximize synergies across development sectors, integrating urban activities, increasing access to services and enhancing productivity. Such initiatives will require innovative financing approaches; global need is beyond the means of government spending capacities and official development assistance. Regulatory and financial frameworks must be appropriately designed to attract private sector investors and ensure the continued flow of resources to SUD projects.

Responding to these challenges, the international development community has made headway on a variety of fronts. On-going discussions at the UN suggest that SUD will be an essential pillar of the Post 2015 Development Agenda. A number of international organizations and donors are working towards better defining sustainable urban development and setting standards –initiatives that not only help diffuse the concept but also create new markets and business opportunities. In order to accelerate and broaden support for SUD, the IDFC collaborates and coordinates with central and local governments, international institutions and private sector actors. Building on the Club's extensive partnership network, members provide technical assistance and other tools to guide policy reform, urban strategy formulation and capacity development. They also directly finance SUD projects all over the world, from mass transit systems and eco-cities to violence prevention and CSR recycling programs. IDFC members mobilize a wide range of resources at both international and domestic levels, through the promotion of public-private partnerships, and the advancement of joint financing endeavors, providing partial risk coverage and other cost reduction mechanisms to help attract private capital to SUD projects in developing countries.

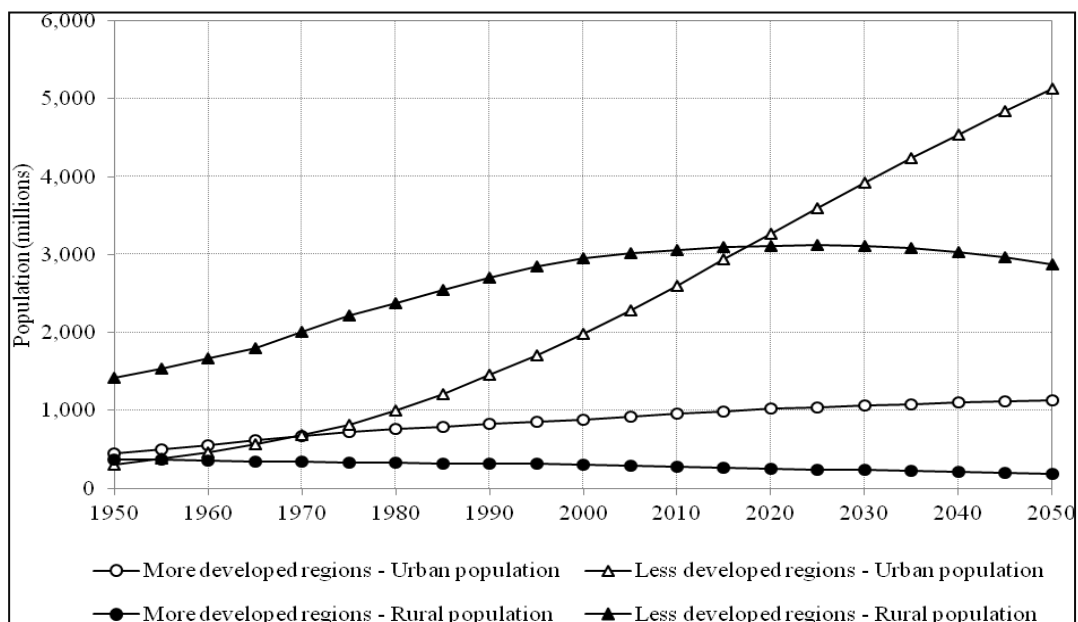
## Chapter 1. Why Sustainable Urban Development Matters

Sustainable development will be at the core of the Post-2015 Development Agenda. Having witnessed alarming environmental degradation and climate change threats, the Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda (HLP) urged the international community to take decisive actions to modify consumption and production patterns and to ensure the integration of the social, economic and environmental dimensions of sustainability in pursuit of poverty eradication and global prosperity.

**Figure 1: System approach towards Sustainable Development**



**Figure 2: Distribution of the World Urban Population by Major Area, 1950, 2011, and 2050**



(Source: UNDESA, 2012)

Achieving sustainable development will require multidimensional approaches across sectors. Among them, improving sustainability of urban development is critical because urban cities, home to 67% of the world's population by 2050 (UNDESA, 2012), serve as a double-edged sword in the context of sustainable development. On one hand, cities function as the main engine of economic growth. Overall, 60% of global GDP can be attributed to 600 cities around the world (Richard Dobbs et al., 2011). In OECD countries, only 2% of their regions, mostly the largest urban areas, generate roughly one-third of all growth (OECD, 2011). In India and China, the five largest cities' economies are responsible for approximately 15% of national GDP (UN Habitat, 2010). In general, there is complex but positive correlation between urbanization and economic growth. Urbanization is often characterized by agglomeration of production, which leads to increased productivity and greater investment interest. Providing more employment opportunities and higher salaries brought by competitive labor market and elevated productivity further helps stimulate economies as a whole. A recent study by Credit Suisse found that every 5% point increase in urban population pushes up per capita economic activity by 10% (Credit Suisse, 2012).

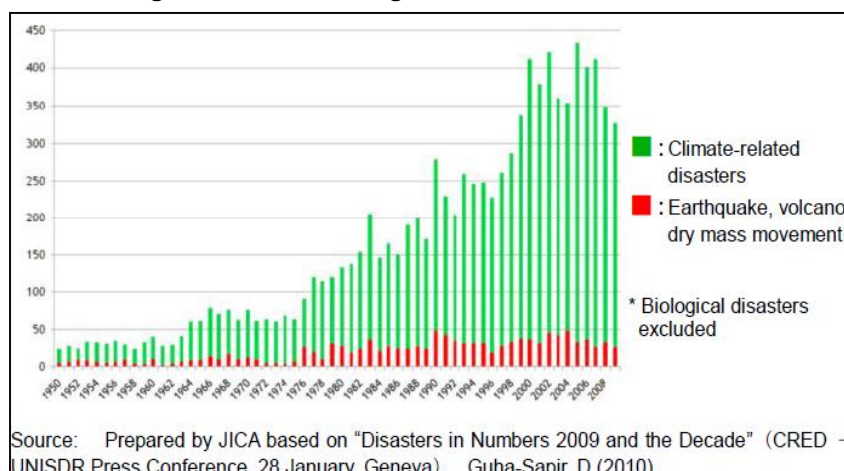
On the other hand, cities face a number of social and environmental challenges, growing in tandem with the today's unprecedented pace of urbanization.<sup>1</sup> Globally, more than one billion people live in slums (World Bank, 2013), with limited access to basic social services, economic activities and, without security of tenure, many of them live under constant threat of eviction. Cities also contribute to global environmental pressures. They account for an estimated 67% of global energy use, and up to 70% of global green gas emissions (IEA, 2008 and 2010), mainly due to the concentration of industrial production, transportation and construction. There are also mounting problems of waste management control and water and air pollution, posing increasing threats to inhabitants' health and well-being. In more than 65% of the cities in developing countries, water is not properly treated. Between 30 to 50% of the solid waste generated within most cities is not collected (UN-HABITAT, 2009). All these challenges are further exacerbated by rapid and unplanned urban expansion that tends to increase resource inefficiencies (e.g. energy and land use) and costs for social service delivery.

Urban areas are also increasingly susceptible to natural disasters, mostly because of their common location along waterways, as well as population and infrastructure densities. As a UNISDR report suggests, the rate of natural disasters in urban areas has increased four-fold since 1975 (UNSDR, 2011), and in many disasters, the poor and vulnerable are disproportionately affected. Furthermore, according to the 2011 UN Report on Urbanization, of the more than 1.4 billion people in the world residing in urban areas of at least 1 million inhabitants, 60 per cent, or roughly 890 million people, were living in areas of high risk of exposure to at least one natural hazard (UNDESA, 2011).

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<sup>1</sup> For example, it took European countries some 150 years to increase urbanization rates from 10 to 50%. Similar urban growth is now happening in some emerging Asian countries in just 55 to 95 years. ([https://www.kfw-entwicklungsbank.de/PDF/Download-Center/PDF-Dokumente-Development-Research/PP\\_-Stadtentwicklung\\_Qualitatives-Wachstum\\_EN.pdf](https://www.kfw-entwicklungsbank.de/PDF/Download-Center/PDF-Dokumente-Development-Research/PP_-Stadtentwicklung_Qualitatives-Wachstum_EN.pdf))

**Figure 3. Climate Change increases disaster risks**



Despite these challenges, well managed urban development could give rise to cities more conducive to economic growth and social inclusion, environmentally sustainable and resilient to climate change, natural disasters and other risks. The Sustainable Development Solutions Network’s Thematic Group on Sustainable Cities, established to facilitate the discussion on the Post-2015 under the UN framework, illustrates the numerous opportunities available to cities if sustainable urban development<sup>2</sup> is realized. Given the concentration of economic activities in urban areas and significant investment opportunities, particularly in emerging and developing economies, there is ample opportunity and motivation to reengineer cities in a more sustainable manner. By all accounts, well-managed cities will use natural resources and technology more effectively, which will have a positive and substantial impact on society, the economy and the environment (Aromar Revi and Cynthia Rosenzweig, 2013).

What is required to achieve sustainable urban development varies from country to country, but comprehensive interventions from up-stream policy and standard setting to down-stream project design and implementation are vital. Responding to these challenges, the international community has made headway on a variety of fronts. Defining sustainable urban development and setting standards is the first step towards widely diffusing the concept. Standard-setting is also instrumental in creating new markets. A number of international organizations and donors are advancing their work in these areas through research and dialogue.

There is also a large funding gap in the urban development sector. Global demand for infrastructure development is enormous, exceeding some US\$ 5 trillion annually under current growth projections. Furthermore, an additional US\$ 700 billion is required to support the ambitious goals of the IEA to limit average global temperature increases to 2°C above pre-industrial levels (WEF, 2013). This large funding gap cannot be met by public spending alone. Unfortunately, securing long-term private finance for infrastructure

<sup>2</sup> A standardized definition of “sustainable urban development” has not yet been established at the international level. As a working definition, the IDFC defines it as urbanization that is underpinned by social, economic and environmental sustainability. It encompasses the development of basic shelters and infrastructures, social service delivery, and the promotion of economic activities including productive transformation at the individual firm level, all with due consideration to issues such as inclusiveness, security, energy and climate change, among others. See Chapter 2 for how the concept emerged and is perceived at the international community.



investment is becoming increasingly difficult due to recent economic downturns. Measures have been taken by various governments to leverage private finance, but scale and pace need to be upgraded significantly. Public-sector support in green investments, if increased up to US\$ 130 billion and targeted more effectively, could mobilize private capital in the range of US\$ 570 billion, which would near the US\$ 700 billion of incremental annual investment required to facilitate greener growth. However, greening the remaining US\$ 5 trillion investment requirement in the business-as-usual growth projects will continue to present a major challenge; comprehensive policy reform and a stronger push toward investment-grade policy initiatives will be required to fully address demand (WEF, 2013).

## Chapter 2. Defining sustainable urban development and setting standards

The concept of the sustainable city first emerged and evolved as Western countries were striving to tackle increasing urban sprawl and environmental issues in the 1970s. The concept, now known as Sustainable Urban Development (SUD), has gained even greater prevalence in recent years, as the world has begun to place increasing emphasis on the importance of controlling the effects of rapid urbanization and climate change.

SUD is commonly understood as an approach that stresses “sustainability” as its main feature, embracing social and economic structures that do not compromise environmental aspects (UN-HABITAT, 2002). SUD is underpinned by mechanisms aimed at producing co-benefits like (i) inclusive economic growth, (ii) competitive economies, (iii) social fairness and equality, (iv) safe, secure and comfortable environments, and (v) environmental friendliness, including conservation of local and global public goods.

Figure 4: Three Pillars for SUD (image)



Source: Extracted from DESA, 2012 and modified by JICA

A recent study identified more than 200 varieties of SUD definitions across the globe (Keivani, 2010). It will be important to establish a clear definition and common standards for SUD if the concept is to be integrated into the mainstream. Efforts are already underway to address this issue, but more work remains to be done.

## I. Global public efforts to define the SUD concept

The concept of SUD has been promoted at the international level through a multitude of forums and conferences, as a part of a global endeavor to help cities cope with emerging development challenges. The Istanbul Declaration on Human Settlements and the Habitat Agenda, adopted at the Second UN Conference on Human Settlements (Habitat II) in Istanbul in 1996, emphasized that urban development should give “full consideration to the needs and necessities of achieving economic growth, social development and environmental protection (*The Habitat Agenda*, 1996<sup>3</sup>). UN-HABITAT has since accelerated its work in monitoring urban conditions worldwide and created the Global Urban Indicators Database, which contains indicators covering 5 functions of cities: shelter, social development and eradication of poverty, environmental management, economic development and governance. It now serves as a global framework for cities to define and monitor their urban issues. More recently, SUD has also been discussed for the Post-Millennium Development Goals (MDGs), the Sustainable Development Goals (SDGs) and the Post 2015 Development Agenda. In fact, “make cities and human settlements inclusive, safe, resilient” was incorporated as Goal 11 of the final proposal by The UN Open Working Group on Sustainable Development Goals in 2014.<sup>4</sup> In tandem with the official negotiation process, numerous proposals for SUD goals and indicators have been put forward. A majority of these proposals consider SUD as a dynamic process and have emphasized the importance of integrating economic, social and environmental objectives and encouraging measures to mainstream comprehensive planning and management.

The Organization for Economic Cooperation and Development (OECD) has also contributed to constructing and promoting international SUD standards. Building on member countries’ abundant experience and knowledge, the OECD has created systems for reviewing city development policies and produced policy papers for public use (OECD, 2012). More recently, it established a Green Cities Programme, which developed a set of indicators and policy recommendations on cities’ environmental performance. The Programme provides insights into the types of green urban policies that are most likely to facilitate certain desired economic results, for example, to incentivize cities to promote SUD. The Programme is now being extended to cities in developing countries to assist them in establishing their urban green growth strategies and relevant indicators.

International organizations have also collaborated with local governments to help establish standards for SUD. One example is the Global City Indicators Facility (GCIF) which was originally created by the World Bank and is now managed by the Canadian Government. The Facility is characterized by its focus on the soft component of SUD, featuring city services and quality of life factors. Establishing this set of indicators under a globally standardized methodology allows for global comparability of city performance -a positive step towards laying a foundation for SUD standards and a useful tool for knowledge-sharing.

Work in the SUD field is also progressing at the regional, national and sub-national levels. The situation is diverse, reflecting complex and distinct histories, political systems and stages of development. One example of evolution at the national level is Malaysia’s Low Carbon Cities Framework, which underpins the

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<sup>3</sup> [http://ww2.unhabitat.org/declarations/habitat\\_agenda.asp](http://ww2.unhabitat.org/declarations/habitat_agenda.asp)

See Appendix 1 for Global Urban Indicators proposed by the Agenda

<sup>4</sup>

[http://sustainabledevelopment.un.org/content/documents/4518SDGs\\_FINAL\\_Proposal%20of%20OWG\\_19%20July%20at%201320hrs.pdf](http://sustainabledevelopment.un.org/content/documents/4518SDGs_FINAL_Proposal%20of%20OWG_19%20July%20at%201320hrs.pdf)

government's target to reduce carbon emissions by 40% by the year 2020. The framework intends to mainstream the concept of low carbon cities, and help local authorities make decisions and design action plans for greener urbanization. The framework employs a monitoring mechanism which contains clear performance criteria and indicators based on the 4 priority aspects of urban development for GHG reduction: (i) urban environment, (ii) urban transportation, (iii) urban infrastructure, and (iv) buildings.

Japan's Comprehensive Assessment System for Built Environment Efficiency (CASBEE) is another interesting example. The system was developed to serve as a tool to assess and evaluate the environmental performance of buildings. The tool has now evolved to contain frameworks to help cities pursue their SUD policies; CASBEE-For Urban Development helps evaluate the environmental performance of areas beyond one specific building, and CASBEE-For Cities provides a framework to evaluate environmental performance with full consideration of both social and economic factors. The system is used by a number of Japanese local authorities and is being rolled out into the entire Asian region.

## II. The private sector

The private sector has also acknowledged the importance of standard setting for market development. Some international corporations are trying to develop their own indicators to define and monitor cities' SUD performance in order to expand and strengthen markets for SUD-related businesses. One example is the International Standards Organization (ISO), which has created Environmental Management Systems (EMS) – voluntary measurement instruments that can be utilized by public and private sector managers to improve environmental performance. The system provides a set of policies and procedures for the supervision, control, reduction and prevention of activities that impact the environment. These kind of tools help communities formulate and implement holistic, cross-sector and area-based approaches to development, and set a solid foundation for progress and sustainability. The ISO is also leading a discussion to establish international standards on sustainable city development through its Technical Committee on Sustainable Development in Communities (ISO/TC 268) and subsidiary bodies which discuss city indicators (ISO/TC 268 WG2) and smart community infrastructures (ISO/TC 268 SC1)<sup>5</sup>. The Committee is currently examining requirements, guidance, and supporting techniques and tools to help cities and other stakeholders realize SUD. Notably, unlike conventional ISO standards that intend to promote product standardizations, the ISO/TC 268's work defines the actual business fields by specifying and standardizing infrastructure related services. This essentially provides an international guarantee to the scope of the business, thereby contributing to market creation. This is indeed a welcoming trend, with the potential to advance SUD through a more market-based approach.

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<sup>5</sup>[http://www.iso.org/iso/home/standards\\_development/list\\_of\\_iso\\_technical\\_committees/iso\\_technical\\_committee.htm?cmmid=656906](http://www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/iso_technical_committee.htm?cmmid=656906)

## Chapter 3. Policy formulation and urban planning

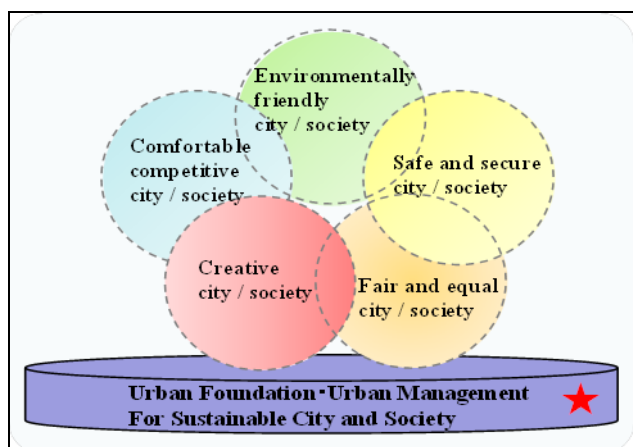
### I. Holistic SUD policies and strategies

Most cities in developing countries face a variety of administrative, technical, and financial capacity limitations that make it difficult to deal with the challenges of rapid urbanization. City managers tend to focus on chronic problems and the day-to-day and sector-to-sector issues. Effective urban planning is often hindered by complex and entrenched interests and relationships among a diverse set of public and private groups. Inefficient institutional structures are also commonly cited as an obstacle to implementing integrated city planning solutions. Separate budgets, timelines and goals often lead to fragmented solutions.

“The Future We Want”, produced by the UN Conference on Sustainable Development in 2012 in Rio de Janeiro, advocates holistic approaches to sustainable cities and human settlements. The document encourages local governments to play a leading role in setting a vision and framework for sustainable urban development throughout the city life cycle; from planning out a new city to the revitalization of older cities. Comprehensive policy formulation and planning is critical because, once developed, urban infrastructure locks in the city’s economic and social patterns, and carry a prolonged impact on the city’s environmental performance. Therefore, policies and strategies can ultimately determine whether the city can successfully use their resources for effective and sustainable development. Second, as noted earlier, local governments in developing countries face a variety of challenges due to rapid urbanization. Consequently, urban development strategies need to take into account a variety of social, economic and environmental issues and set clear priorities among them. Third, urban development involves a diverse set of stakeholders at many different levels. A holistic SUD framework is expected to function as a common platform for these stakeholders to identify their respective roles, including financing, and to collaborate amongst each other.

In the past decades, local governments have often used master planning as a basis for city development. While this approach has evolved significantly in developed countries, conventional master planning remains dominant in developing countries, making it difficult for their cities to address emerging urbanization issues. In its 2009 Global Report on Human Resettlement, UNHABITAT illustrates a number of improved forms of master planning which are underpinned by more bottom-up features, participatory processes and collaboration at the community level. However, it also points to the need to intensify measures to deal with major SUD challenges such as poverty and inequality, environmental issues and climate change, and to establish regulatory and financing systems that can ensure functionality of the plan.

**Figure 5: JICA's 5 main features of sustainable cities**



The difficulties of making successful SUD policies, strategies and planning often lies in how to bring in as many perspectives as possible to ensure the framework can address multifaceted problems, how to identify priorities among a set of needs that are diverse, sometime conflicting, and even changing over a long period of time, and lastly, how to incorporate mechanisms to ensure their enforcement. A quick review on major literature such as the UNHABITAT's 2009 Global Report on Human Resettlement, reveals that cities today are approaching these challenges by the following

- ✓ enriching the content of SUD framework to integrate more proactive and incentivizing measures toward certain urbanization issues of great importance (e.g. poverty reduction or climate change)
- ✓ setting up institutional and regulatory mechanisms to support good planning
- ✓ enhancing the process of city planning through participatory and coordination mechanisms.

**CAF: Integrated Development in Panama City**

CAF's "Ciudades con Futuro" (Cities with Future) Program is a high social impact initiative aimed at improving the quality of life of urban populations through integrated multi - sectoral interventions. The program has four major components: 1) inclusive urban development, 2) productive transformation, 3) environmental sustainability, and 4) institutional strengthening and public safety. The first phase of the program covers five major Latin American cities, including Guayaquil, Quito, Panama City, Fortaleza and Lima.

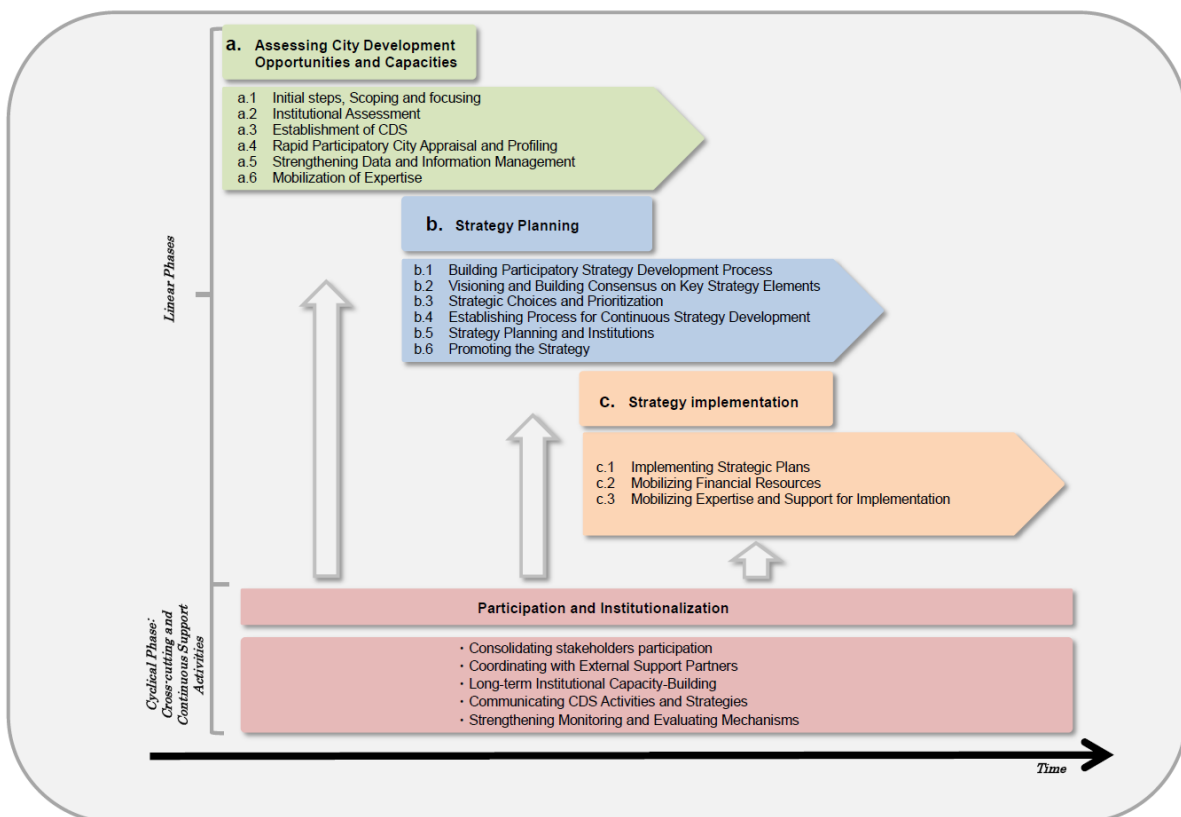
From 1998 to 2012, CAF provided roughly USD 1 billion in funding for critical energy, logistics, transport and water and sanitation projects in Panama City. Notable among these initiatives is the expansion of the Panama Canal, a project aimed not only at increasing logistical capacity but also efficiency, decreasing water use and helping mitigate climate change by reducing global maritime Co2 emissions caused by larger ships required to take alternate longer transit routes. CAF also served as the principal source of external financing (about 32% of the total cost), including USD 1 million in grant assistance and USD 600 million in loans for the construction of Panama City's first metro line. Other international financiers include the Compañía Española de Seguros de Crédito a la Exportación (CESCE), Compagnie Française d'Assurance pour le Commerce Extérieur (COFACE) and the Multilateral Investment Guarantee Agency (MIGA), which issued a guarantee to cover a loan arranged by Citigroup Global Markets. The company responsible for the majority of the engineering, procurement, and construction, Line One Consortium (CLU), is a jointly-owned enterprise of Construtora

Norberto Odebrecht S.A of Brazil and Fomento de Construcciones y Contratas S.A. of Spain. The contract with CLU uses a factoring payment scheme in which the contractor utilizes private commercial bank interim financing, with prior approval of the Ministry of Economy and Finance (MEF) of Panama. The development of these types of new capital structures and public-private financing arrangements make funding long-term infrastructure projects more viable while also optimizing funding costs.

The canal and metro projects will not only reduce vehicle and maritime operating costs and travel times, and decrease greenhouse gas emissions, but also have a direct positive impact on the welfare of Panama City residents, by stimulating economic growth and increasing access to jobs, services and trade.

Thanks to the progress of collaboration among various stakeholders at the international level, more tools to help cities overcome the difficulties in establishing their SUD frameworks have become available. City Development Strategy (CDS) is one such tool developed through international collaboration under the CitiesAlliance, which seeks to support cities in strategic planning, with a strong focus on poverty reduction. It gives cities a clear framework toward the development and implementation of city strategies, which is underpinned by a robust assessment and extensive consultation mechanism. The approach not only enable cities to successfully develop their SUD frameworks, but also facilitates their implementation by catalyzing the process to promote existing sectorial plans and increase their relevance, and to define downstream projects in a structured and transparent manner.

**Figure 6: Typical Phases in a City Development Strategy**



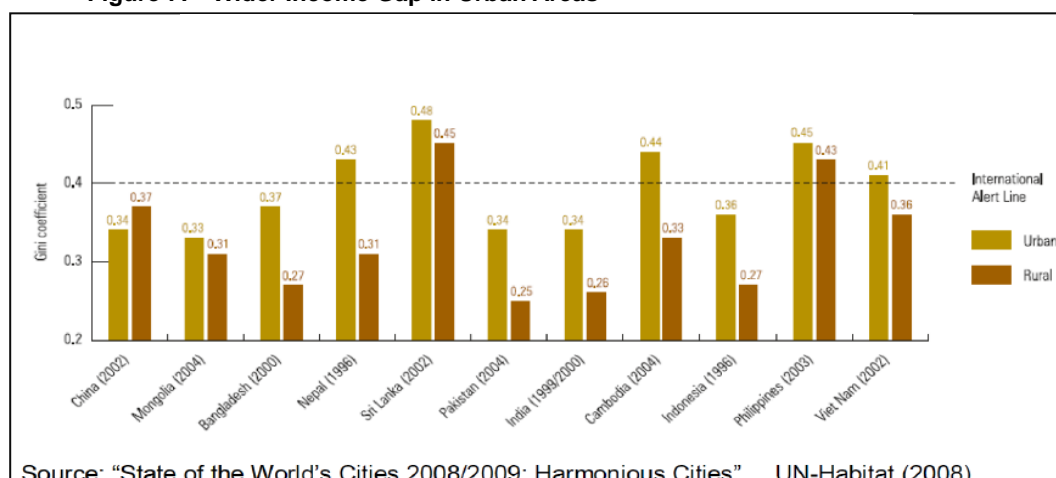
## II. Critical economic, social and environmental challenges

In this sections, we take an in-depth look at some of successful SUD approaches. It discusses a few emerging good practices where developing countries successfully address specific challenges in city development.

### Inclusive urbanization

The Global Risks 2014 report by the World Economic Forum highlights the persisting unemployment and severe income disparity as among the top 5 global risks of concern in 2014. There is an emerging global consensus that inequality must be addressed to achieve sustainable development, and have therefore been integrated into the Post-2015 Development Agenda. The impact of urbanization on unemployment and economic inequality remain unproven and require further study. In most cases, poverty rates are higher in rural areas than urban areas – indeed reaching 60%, by a UNHABITAT study (UNHABITAT, 2010). However, recent studies identify a negative relationship between urbanization and income level (Ravallion, M., S. Chen, and P. Sangraula, 2007). Although the picture varies greatly from country to country (Ravi Kanbur and Juzhong Zhuang, 2013), some of the Asian countries have witnessed growth in the income disparity that went in tandem with urbanization and economic development. A study by Ravi Kanbur and Juzhong Zhuang estimates that cities may become home to more than half of the poor by 2020 if urbanization continues at its current pace and no concerted action is taken (Ravallion, M.). This finding was echoed by UNHABITAT (UNHABITAT, 2010).

**Figure 7: Wider Income Gap in Urban Areas**



Based on these findings, SUD policies should more rigorously address inequality and unemployment by providing (i) direct support systems to the poor and vulnerable, (ii) mechanisms to cut the poverty spiral, and (iii) measures to redress widening income gaps. While tackling these issues often requires strong coordination with and support from national policies targeting the underlying socio-economic causes, there are some specific issues of great importance that local governments must carefully consider within their SUD policies.

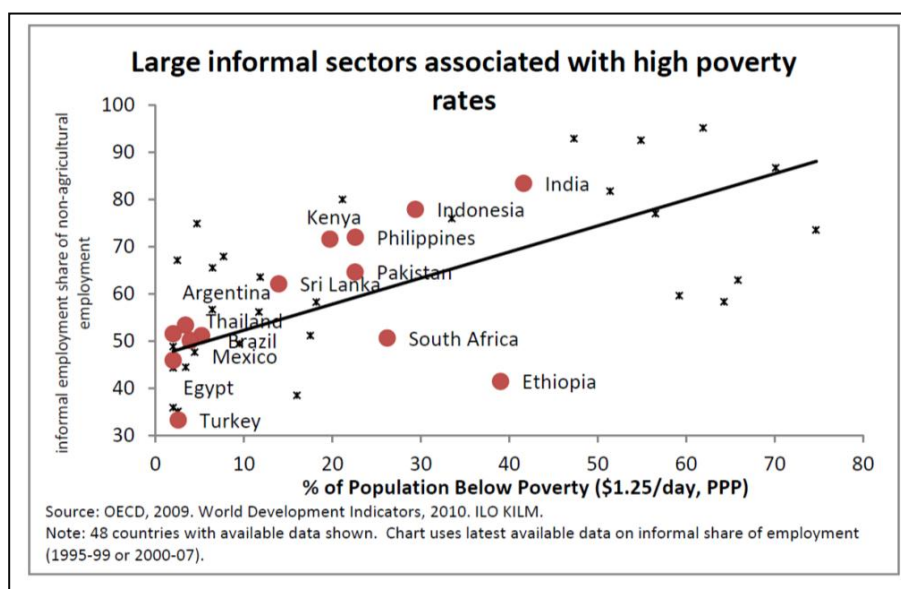
The first issue is unemployment. In many cities, the influx of unskilled populations to urban areas has resulted in higher unemployment and labor market mismatches. Contrary to general expectations, economic growth often fails to fully absorb incoming labor populations, as the growth is realized through increased productivity



rather than enlarged labor forces. As witnessed during the Arab Spring, youth unemployment remains a serious problem in many countries. Cities need to tackle these issues with more comprehensive policy packages in collaboration with national and other relevant authorities and stakeholders. On the supply side, low levels of achievement in formal education among poor urban youth continues to present a major constraint to employment, and should be addressed through enhanced education, vocational training and information-sharing systems. On the demand side, other socio-economic factors such as local market conditions should be tackled through measures to increase the economic competitiveness and job creation. Economic activities are largely influenced by urban planning, particularly infrastructure development, so authorities need to take all these elements into consideration to ensure comprehensive action and well-coordinated SUD policies.

The second issue that has a significant impact on urban inequality is the informal employment sector. In developing countries, the informal sector accounts for more than 50% of non-agricultural employment which is mostly produced in urban areas (Ejaz Chani and Ravi Kanbur, 2013). While some literature argues that the sector creates economic benefits by providing job opportunities, others point to its strong association with higher poverty and lower productivity. Locked into the informal sector, people are often excluded from legal and social protections and have limited access to social and financial services. This is especially problematic in urban areas where family-based welfare systems tend to be weaker, particularly for migrant families; these challenges require careful attention by local governments.

**Figure 8: Large Informal Sectors Associated with High Poverty Rates**



Slums are another important issue. Although slum dwellers are not necessarily a homogenous group with respect to their living conditions, many problems associated with slums are widespread; lack of basic services such as water, sanitation, health and electricity; unfavorable housing conditions; insecurity and overpopulation; insecure tenure's rights. The majority of slum dwellers have limited access to formal jobs and are chronically trapped in social and economic deprivation. Recognizing these issues as a major development challenge, governments committed to improving the conditions of slum dwellers in the MDG 7 manifest.

However, despite the progress made since 2000, the number of slum dwellers remains significant, constituting more than 60% of the African population and 25-45% of the Asian population in 2012 (United Nations, 2013).

***KfW: Violence Prevention through Urban Upgrading***

Kayelitsha is a township about 30 km from the city center of Cape Town, with around 800,000 inhabitants. It has been characterized by high crime rates, widespread poverty, unemployment and high HIV rates. In cooperation with KfW, the City of Cape Town has implemented the VPUU – Violence Prevention through Urban Upgrading program with the support of the German Federal Ministry for Economic Cooperation and Development (BMZ) between 2005 and 2014. Further support has been received by the government of the Western Cape Province and local NGOs. The goal of the program is to improve the perceived and real safety of residents in selected areas of Khayelitsha, provide victim support and crime prevention services, access to social, recreational and commercial facilities, empowerment of people through employment and income, conflict resolution, increase capacity and competency of civil society organizations to promote violence prevention initiatives, and mainstreaming violence prevention principals in urban planning and project implementation mechanisms at municipal and provincial administration levels.

The total cost of the program was EUR 60.3 million, including a EUR 15.5 million grant from KfW, EUR 43 million from partner contributions and EUR 1.8 million in financing from third parties. KfW held a particularly important catalytic role, increasing visibility and interest in participatory urban planning mechanisms and acted as a contract guarantor for continuity. In fact, KfW currently only finances 25% of the overall program budget. KfW also helped coordinate local expertise and bought international consultants and advisors to the project, as well as incorporated bank’s own best practices from other projects to ensure the successful realization of the VPUU program. As a result, local administrations have been trained, safety has been improved and more than 20 public buildings have been completed with more being yet under construction, such as libraries, youth centers, sport sites and others. The VPUU has proved to be a great success and thus will be transferred as an obligatory planning instrument within other townships in the City of Cape Town and in all cities of the Western Cape Province.

As the 2003 UNHABITAT report points out, there has been a significant shift in many governments’ approach to informality and/ or slums, from negative measures such as forced eviction, involuntary resettlement and neglect, to more inclusive and rights-based measures (UNHABITAT, 2003). Recognizing that the conventional approaches to slums -which mainly focused on improvement of physical conditions- failed to address the deep-rooted causes of slum buildup, UNHABITAT encouraged governments to rethink their approaches and take more proactive actions to support the livelihoods of slum dwellers. Doing so has required the integration of the slum issue into broader SUD policies, and more active involvement of slum dwellers in the decision-making process. Use of planning tools such as public investment in trunk infrastructure to direct patterns of development, and guided land development combining strategic planning, land pooling or readjustment are increasingly recognized as instrumental in effectively responding to the issue of informality (UNHABITAT, 2009). Measures to make them an integral and productive part of the entire city development are vital. As a 2013 World Bank study points out, policies to move slum dwellers to better settings outside slums sometimes creates unintended and perverse effects by disconnecting dwellers from job opportunities. Some IDFC members’ policies prioritize situ rehabilitation as a way of informal settlement/slum upgrading. Policy measures taken by cities like Hanoi and Bogota to coordinate land market rules with urban infrastructure development, ensuring connectivity between people and jobs have proven quite effective and can be usefully replicated elsewhere (World Bank and IMF, 2013).

### ***BNDES: Supporting CSR***

BNDES has provided SuperVia a total of R\$ 14.7 million to date for priority projects related to the train company's Corporate Social Responsibility (CSR) Program. The bank provides up to 100% of the project value and 240 month loan terms for projects aimed at income generation and improving the quality of life of the communities around the SuperVia railway network. The Via Limpa (Clean Tracks) Project, for example, aims to clear waste from the railway using clean task forces, the building of eco-points (specific locations for recycling containers), reforestation of areas around the tracks, environmental education programs, and the certification of recycling collectors in training events. The program should increase operation safety, enhance service and track maintenance, as well as offer an alternative source of income and improve the quality of life of the population living in the areas around the track previously lacking regular garbage collection.

BNDES also finances the Via Parceira (Partner Track) Project, aimed at increasing the income of the recycling collectors, providing education events for school students from 21 communities surrounding the rail system, promoting digital inclusion and strengthening the relationship between the company and the surrounding communities. To achieve these goals, the program provides technical support and management assistance to a network of recycling collector co-ops formed by 5 institutions located near the rail system. In partnership with Reação Institute, the Via Parceira Project also supports the construction of sports centers in the Morro de Alemão group of favelas, so that students can have access to a variety of social, cultural and environmental educational activities. The Creative Economy Project also supports socio-productive inclusion and sustainability by fostering a niche market for eco-design products (from recyclable materials) and a productive center to create them. BNDES funds will also be used to help manage the program, including the use of consultants to assist with planning, monitoring and project evaluation.

### **Managing environmental risks**

Cities both create daunting environmental problems and suffer their consequences. Urban environmental issues such as air, water and soil pollution, and waste management are sweeping the globe as the wave of urbanization spreads. Emerging issues such as the depletion of resources, notably water, and risks associated with climate change, such as increased natural disasters, are threaten the future of many cities. In fact, as the "The Future We Want" in 2012 warns, the current world's development pattern is not sustainable. The world needs to take immediate action to reverse current trends. Given that infrastructure development not only locks-in the city's economic and social structure for decades to come, but also creates significant and lasting environmental consequences, SUD frameworks must carefully weave-in forward-thinking environmental considerations. However, tackling urban environmental issues has proven to be an ambitious task for many cities in the past. More often than not, environmental problems are left unattended because the associated risks and costs are not necessarily visible or gains are perceived to be smaller than other pressing concerns, like economic growth. In the case of climate change, the situation is more complex, as the ownership of the problem is not clear-cut and how to allocate the responsibility requires careful policy considerations by the governments.

How can cities effectively address environmental challenges through their SUD policies and strategies? There has been a variety of emerging good practices and innovation on this front in the last few decades. The first step is to identify and quantify risks. Research related to the environmental impact of urban development has become widely available. The World Bank's evaluation of rising sea levels effects (World Bank, 2007), and the World Bank, Asian Development Bank and JICA's collaborative research on climate risks in Asian coastal mega-cities (World Bank, 2010), for example, all provide invaluable insight for developing SUD frameworks.

The second important step is to take measures that directly address environmental threats. In the past, local authorities have taken the lead, often addressing environmental problems prior to national governments by introducing regulatory frameworks for pollution control or GHG emission caps. However, the majority of local authorities in developing countries have limited resources and are short of incentives to prioritize environmental issues over other developmental goals. To overcome this obstacle, some local governments have started to adopt an approach that emphasizes the “co-benefits” produced by environmentally-friendly policies, looking to realize environmental, social and other developmental objectives through a single policy in their SUD frameworks (UN University- Institute of Advanced Studies, 2013). A study by a UN University’s Institute of Advanced Studies in 2013 identified cases where the approach successfully improved regional urban sustainability while simultaneously solving local problems. The Delhi Metro in India, for example, lowered GHG emissions while also reducing congestion and air pollution. Another example is the Community-Based Solid Waste Management project in Yogyakarta, Indonesia, where both solid waste and GHG emissions were lessened. Commending the approach as both technically feasible and economically beneficial, the UN study proposes the “co-benefits” approach be replicated in other cities. The UN recommends that short-term strategies focus on waste management -its urgent health and environmental import and economic feasibility provide strong incentives for cities. Medium to long-term strategies should look to the transportation, industry, energy, and building and land use sectors, all of which involve relatively complex physical and institutional changes but provide robust benefits in the long run.

***AFD : Reconciling climate and social co-benefits in Medellin***

In the early 1990s, the 6,000 violent deaths every year in Medellin, a Colombian city with 2.5 million inhabitants, made it one of the most dangerous city in the world. With successive waves of rural-urban migration, slums had spread on the heights of the city, set in the Andes Mountains, hindering access to entire neighborhoods. Cut off from economic opportunities, public services and local authorities, these neighborhoods had become a breeding ground for social violence and drug trafficking. Since 2004, the Municipality of Medellin has been working to stem this high level of crime by seeking to integrate these vulnerable communities via an ambitious integrated urban development policy.

In 2010, AFD awarded a \$250M direct loan to the Municipality of Medellin to support the implementation of an appropriate public transport network, connecting 30 peripheral neighborhoods in the Ayacucho Valley and surrounding hills to the rest of the city through one tramway line and two metrocable lines. Such public transport infrastructures decrease GHG emissions, while significantly improving access to the city center and reducing travel time for 350,000 local residents.

Combined with a pro-active social policy and simultaneous large-scale investment activities in public spaces and social facilities, this project has facilitated local economic development by encouraging the arrival of businesses and shops. Finally, insecurity has been significantly decreased: since the inception of the Municipality’s pro-active social urban planning policy, the rate of violent deaths is now six times lower in Medellin.

AFD’s financial instruments to support sustainable urban development are tailored to local institutional & regulatory contexts and partners’ needs. Direct loans to sub-national governments (without a sovereign guarantee) are a privileged instrument to support local authorities’ priority urban infrastructure programs, and have been successfully mobilized in contexts as diverse as Medellin (Colombia), Johannesburg & Cape Town (South Africa), Dakar (Senegal), Ouagadougou (Burkina Faso) or Izmir (Turkey).

Many local governments have started eyeing the potential of green growth strategies that pursue economic

growth and social development through urban activities targeting environmental issues. The OECD study in 2013 on “Green Growth in Cities” reveals that many local leaders have started to recognize the utility of the green growth concept, presenting an opportunity to create jobs and attract investment while also improving local environmental performance and addressing climate change (OECD, 2013). Case studies on four major OECD member country cities– Paris, Chicago, Stockholm and Kita-Kyushu - found that policies to promote energy efficiency retrofits for buildings can boost job-creation, while policies to increase transport efficiency can also improve cities’ attractiveness to business firms and skilled laborers. The approach is now being rolled out in many emerging Asian cities.

Cities’ increasing susceptibility to natural disasters is another important risk factor that should be taken into account during city planning. A UNISDR report in 2011 demonstrated that natural disasters in urban areas have increased four-fold since 1975 (UNISDR, 2011), largely due to their proximity to waterways, and high population and infrastructure densities. Over a 35 year period, from 2015 to 2050, the number of people exposed to major natural disasters in large cities is estimated to double to some 1.5 billion (World Bank, 2010) and in many disasters, the poor are disproportionately affected. Governments must ensure that new infrastructure is not built in a way that increases exposure to natural disasters; it should be located in less vulnerable areas and the city must leave enough space for evacuation routes. If this is not possible, new infrastructure should have multiple functions, like some schools in Bangladesh which can serve as shelters in the event of severe flooding and the highways which protected cities from severe tsunamis, functioning like a dike during the Great East Japan Earthquake.

### **Spatial planning and effective land use**

Land use is an important element of SUD, serving as the foundation of spatial planning and infrastructure development. Integrated solutions for appropriate natural resource and land use, hazard risk planning, infrastructure development, and urban transport expansion are critical.

First of all, a clear definition of property rights must be established and underpinned by legal and institutional frameworks with administrative and enforcement mechanisms such as land registration. For example, Curitiba, Brazil, has been well-known for its innovative approach to SUD since the 1960s. However, the city government is currently striving to address emerging issues such as urban sprawl, squatting and increased insecurity by implementing new urban planning measures. In order to assist the city with implementation, JICA provided technical assistance to help the city adapt a Japanese “readjustment” methodology. Through the project, Japanese experts trained local authorities how to hold constructive negotiations with residents by explaining the prospective benefits of land submission, like improved public transport and increased land values due to new infrastructure development. As a result, Curitiba officials successfully obtained part of residents’ lands for public usage, mainly for road and park construction. Curitiba is now drafting its own land readjustment law and a pilot project to test out the new methodology on the ground.

Second, which areas should be designated or (re)developed for residential or business and industrial purposes should be in line with the city’s overall vision, and require careful consideration of multifaceted perspectives. Strategic spatial planning with careful consideration to infrastructure development is also vital. Demographic growth in cities often leads to expansion of urban area, either through merging of several towns or through urban sprawl. Urban sprawl, particularly, entails inefficient use of resources and often higher costs for delivering social services (HABITAT, 2009). Spatial planning should set out how to control and plan

possible city expansion in a sequential manner and ensure that infrastructure development is properly embedded into the city's larger land use planning and management scheme is of particular importance, considering that once it's developed, infrastructure locks in patterns of economic and social activities and their environmental impact for decades (World Bank, 2013).

Effective land use policies allow for people and products to be mobile and efficient. Long-term land use planning helps city administrators monitor and manage the growth of slums. Incorporating larger green spaces in cities can provide "green lungs" that decrease the heat-island effect and lower the amount of energy required for indoor cooling systems. Food production is also a major issue for urban sustainability, and must be taken into consideration at the regional level; growing food in green spaces and backyards increases food security and reduces the environmental impact of importing food from distant regions.

City planners should promote land valuation processes that are systematic, professional, transparent and widely accessible. In developing countries, projects can often be delayed because of land price distortions and asymmetric information (land values may be concealed to avoid high transaction taxes, or help developers acquire land at favorable rates) and this should be addressed by establishing appraised land values that prevent land-related conflict. Density regulations -introduced to limit the quantity of properties that can be developed- should be carefully crafted to prevent land price market distortions. Moreover, they are vital to striking an efficient balance between the cost and benefit of "compact" cities. Urban sprawl often elevates the costs of delivering social services and increases communities' reliance on private vehicles that contribute to GHG emissions, for example. However, there is no one-size-fits-all model for such regulations and many cities are exploring how to optimize their regulations to fit to their individual needs. Legal system also has to be developed to protect residents' basic rights. In addition to established legal system, UNHABITAT proposes introducing more flexible system with easier access to the public, such as litigation measures for dispute resolution and negotiation and more collaborative practices. It also cautions that large-scale developers have become dominant in urban development, and recommends that local governments enhance their legal systems to ensure more inclusive development (UNHABITAT, 2009).

### **III. Stakeholder coordination and participation**

City planners are not only mayors, but also community-based organizations, subnational, national and international policy makers and private sector investors, developers, and service providers. Unfortunately, these actors tend to operate within their own spheres. Urban areas encompass multiple municipalities, but often lack mechanisms to coordinate policy and planning across boundaries despite current efforts to formulate multiple networks and increased presence at international discussions. Furthermore, local governments must be equipped with sufficient authority and human and financial resources to lead the SUD planning process. Architects, engineers, landscapers, hydrologists and officials at all government levels will have to coordinate their efforts if sustainable long-term urban development is to be achieved. Both up-stream policy and standard setting to down-stream project design and implementation are of vital importance, and are challenges that require collaborative approaches. The participation of a diverse set of actors, with distinct perspectives and needs, is critical to ensuring the integrity of urban development.

However many developing countries do not have systems in place for such inclusive processes, and often lack proper information disclosure and education. To ensure citizens' views are duly reflected into city

planning and implementation, accountability mechanisms including transparent decision-making and monitoring are essential. Governments need to undertake a variety of measures to ensure meaningful citizen participation. UNHABITAT emphasizes the importance of the following: (i) political systems that allow proactive participation and genuine negotiation, (ii) legal basis for local politics and planning to ensure citizens' voices are well reflected in decision-making processes, and (iii) delegation of authority, responsibilities and resources to local governments to support participatory planning.

The private sector plays important but unique role in city planning as a stakeholder and beneficiary. The role as investor has been increasingly recognized as essential in the face of public budgetary constraints as well. In addition to PPP projects, there are a number of ways to mobilize private finance through establishment of special funds, taxation schemes, and CSR donation initiatives, and governments are encouraged to set up mechanisms to implement such measures.

***JICA: Promoting Collaboration for Comprehensive Urban Planning***

Metro Cebu is the second largest metropolitan area in the Philippines, composed of 7 cities and 6 municipalities, and a population expected to reach 5 million by 2050. Like other Asian mega cities, Metro Cebu is experiencing steady socio-economic growth but is increasingly constrained by rapid urbanization and consequent resource and infrastructure shortages. In order to meet these challenges, the Japan International Cooperation Agency (JICA), the City of Yokohama, the City of Cebu and the Metro Cebu Development and Coordinating Board (MCDCCB) worked together to formulate a long-term sustainable urban development vision for the city, forging a cross-sectoral and transboundary collaboration among the national government, 13 local governments, the private sector and civil society. The "MEGA CEBU Vision 2050" sets out a strategy for city development, striking a balance between comprehensiveness and sectorial priorities. Part of the plan's success can be attributed to widespread stakeholder participation and consultation, supplemented by policy and technical inputs from JICA and the City of Yokohama. Prioritizing diversified views, a SWOT analysis and comparative studies analyzing international good practice benchmarks, provided a robust framework for the MEGA CEBU Vision. The result of this approach was a city development plan that incorporates various aspects of urban sustainability, including cultural, economic, social and environmental aspects. The MEGA CEBU Vision also sets out clear strategies and development targets. Currently, action plans and road maps are being drafted to support their implementation, assisted by JICA (through technical assistance).

JICA's successful experience in Metro Cebu also demonstrates the usefulness of knowledge-sharing initiatives between cities. The MEGA CEBU Vision setup a mechanism to share best practices among 13 local governments, helping those governments increase their expertise and leading them to take positive actions on the ground for the realization of more sustainable and comprehensive urban development.

**IV. The role of Development Banks**

Working closely with governments, development finance institutions are making efforts to provide a variety of effective financial instruments as well as supporting policy, and institutional and capacity development. Multilateral, regional and national development finance institutions such as the members of International Development Finance Club (IDFC), together with developing country governments can play an essential role in advancing the concept of sustainable urban development. According to IDFC's green finance mapping report (Ecofys, 2012), the Members' contribution in green finance reached a total US\$ 89 billion in 2010. Development finance institutions' also have a strong track record in mobilizing domestic resources and fostering new investments in sectors of strategic importance such as clean energy and environmental conservation projects, as well as general economic and social development projects (World Bank 2012).

These institutions also often share a close relationship with industrial sector players, and use their access to institutional and regulatory decision-makers to promote institutional legal frameworks that strengthen market investment conditions.

“While 70 percent of high-income countries integrate land use and natural risk management, only about 15 percent of low-income countries are doing so” (World Bank 2012b). Development banks can play an important role in helping city managers and other policy makers identify these types of urbanization bottlenecks and propose policies and strategies to combat them. They can also expand lending linked to comprehensive and multi-sectorial urban development models with special emphasis on housing and slum management and urban mobility programs that help build more inclusive cities.

Development banks can also promote results-based urban planning strategies by supporting knowledge sharing programs, data collection and feasibility studies. Universities will play a key role in preparing young people to deal with new-century and cross-disciplinary challenges --training future architects, engineers and city officials. Development banks can nurture partnerships among these universities, politicians, development agencies and private financiers to not only sponsor co-learning and capacity building, but to build networks to leverage new funding mechanisms.

In order to overcome some of the investment barriers to urban development, IDFC members commonly stress the importance of decentralized urban development management, greater local autonomy over financing, and the inclusion of customers and community members in the decisions making process to promote more service oriented reform and widespread public support for projects. Development banks can also cooperate and help support existing networks, such as the Cities Alliance or the Organization of Local Governments for Sustainability (ICLEI), for example, that assist cities in learning from one another through expert consultation, knowledge sharing, capacity building, access to research and other collaborative aid mechanisms. The Japanese Government has helped connect key regional players in East Asia, for example, through the East Asia Low Carbon Growth Partnership Dialogue -under the East Asian Summit (EAS) framework- and the East Asia Knowledge Platform for Low Carbon Growth, a knowledge-sharing hub that brings together researchers, national policy makers, local governments and service providers to produce both policy and practical research that can be translated into implementable policy reform. Urban learning cannot focus merely on historic models of northern metropolises; the Global South will be home to the majority of the population growth over the next 40 years and greater South-to-South dialogue and collaboration will allow the regions of Africa, Latin America and Asia to learn from each other's methods and capacity to deal with the challenges of rapid urbanization and growth.

Central to sustainable urban development will be an emphasis on integrated planning in the provision of environmental friendly infrastructure, basic services, and other public goods. Development banks should look to support multi-sectorial program approaches that treat urban areas as integrated systems, rather than support individual interventions as single-purpose funding schemes often fail to link project interventions to larger, city-wide program objectives. Well planned timing of interventions that fit into a greater urban planning scheme will be essential, as is reaching out to other development and private sector partners to secure funding.



**CDG: The Eco-city of Zenata**

The Zenata Development Company, a subsidiary of CDG Group, has undertaken the largest integrated urban development project in Africa to date, aimed at making Zenata an attractive, efficient, service-based eco-city in Grand Casablanca. The initiative is guided by the core principles of sustainable development: soft and public modes of transport, optimization of water management, green corridors, low density, and social and functional diversity.

The Zenata Master Plan has divided the city into 14 units of roughly 28,500 people each, designed to reduce travel by providing their own infrastructure, services and equipment for education, health, shopping and leisure activities. The project also builds housing for middle income families and the relocates 7,000 families from onsite slums. A total of 470 hectares of green space is being developed inside the city, irrigated naturally and leading to the sea; these parks have been designed as “ecological corridors” promoting biodiversity and improved ambient temperature control. A multimodal station, subway and tramway line will connect the city into the main mobility network of Casablanca. The Zenata urban planning approach has three priority goals: the rebalancing and revitalization of the city of Casablanca to the east, the creation of jobs and new facilities to achieve a ratio of 130,000 jobs for every 400,000 people, and the creation of a city more accessible to the middle classes, where quality of life and the structure of natural and public spaces are a priority.

CDG’s goal is to make Zenata a model for sustainable urban development. CDG has mobilized substantial French expertise -around fifteen top consulting firms- including urban planner Bernard Reichen (winner of France’s Grand Prix for Urban Planning in 2005) for the study and design of the project. In April 2013, AFD also signed a financing agreement with the Zenata Development Company to help finance the new city.

## Chapter 4. Financial Approaches

The cost of funding sustainable cities is beyond the means of both government funding capacities and official development assistance. Global demand for infrastructure development is enormous, exceeding US\$ 5 trillion annually under current growth projections. An additional US\$ 700 billion is required to support the ambitious goals of the International Energy Agency (IEA) to limit average global temperature increases to 2°C above pre-industrial levels (WEF, 2013). Ensuring the continued flow of finance for sustainable urban investments will require new private sector financial instruments. Fortunately, there is a mounting commitment at the international level to support and finance sustainable cities. The Nantes EcoCity Summit and the Declaration of Mayors and Subnational Leaders on Climate Change was adopted by 50 mayors from 30 countries, and 20 networks of local governments in 2013, affirming their commitment to scale-up climate actions. The declaration calls for enhanced access to finance for local climate projects, including the development of specific funding windows for local climate action and sustainable urban development. And at the UN Climate Summit in September 2014, a network of local governments and international public and private institutions launched the “City Climate Finance Leadership Alliance” to accelerate knowledge-sharing and other actions to mobilize more financing for low-carbon and resilient urban development. In fact, new funding opportunities have arisen for city managers in developing countries who are working towards building more energy and resource efficient urban models. At the same time, new accounting methods are being developed in order to estimate the full costs and benefits of policy and investment initiatives, like life-cycle costing.

Public-sector support for green investments, if increased up to US\$ 130 billion and targeted more effectively, could mobilize private capital in the range of US\$ 570 billion, which would near the US\$ 700 billion of incremental annual investment required to facilitate greener growth. However, there will be another US\$ 5 trillion required for business-as-usual growth projects. Comprehensive policy reform and a stronger push toward investment-grade policy initiatives will be required to fully address demand (WEF, 2013). In order to finance urban development programs, governments should improve creditworthiness by securing cash flows from user fees and taxes. Tax revenue provides the basis for capital expenditure subsidies required for investments that may otherwise not be financially or politically viable. Improved creditworthiness will also help cities borrow money and attract private investment, making financing easier. Many city governments in developing countries struggle to obtain long-term credit due to limited domestic bond markets. In the absence of well-developed capital markets, financial intermediaries and development banks can play a key role in mobilizing resources for urban development financing.

Mechanisms to leverage land assets through property taxes and sales, betterment levies and impact fees and exactions can help governments raise new capital. Tax revenue and fee collection should be planned and implemented in a transparent manner and underpinned by good service delivery. “Fees for service should be claimed by the enterprises providing the service, and any asset sales should provide capital for continuing improvement of the service in question.” (ADB Green Cities, p312). Aside from robust tax collection mechanisms, cities can boost funding by charging users the full cost of services like water and electricity, including environmental damage, and establishing markets for tradable rights to resources and pollutant permits, among others. City planners should also look to find ways to price the full cost of individual motor vehicle use, taking into account congestion, pollution and other negative externalities. Requiring private sector employers to cover employee transport costs, for example, would likely push firms to keep firms in

higher density areas, increasing the overall efficiency of urban hubs. Ration resource pricing for farmers, for instance, not only encourages water conservation, but also promotes recycling and the use of alternative sources like rainwater harvesting.

Ultimately, cities are more accountable for their own development when the funds for are raised locally, rather than at the national level. When possible they should look to tap their own domestic and public financing sources. Land asset-based financing is source of subnational finance for urban development in many countries, as land is often the most valuable asset subnational government balance sheets. Strong institutions are required to oversee land management and sales, tax collection and secure property rights. However, local governments can sometimes lack the financial independence to acquire land or protect rights-of way for infrastructure improvement. Land transactions can also be hampered by poor land-valuation systems, and a lack of transparency and credibility for land titles -dampening incentives for landowners to rent out their property. Furthermore, land development ventures often require high entry costs.

Subnational governments like Mexico, China and Colombia, among others, have been able to issue bond instruments to raise funds. A well-developed domestic financial market lowers costs and increases long-term credit sustainability. Strong securities and financial market regulatory regimes are required to develop diversified and well-functioning local markets. However, strong regulatory frameworks need to be in place to manage subnational debt sustainability. Systems that regulate private capital markets and support their capacity to deploy financial products enhance affordability and access to green finance.

Green funds, like Climate Investment Funds (CIFs), the Global Environment Facility (GEF) and Clean Development Mechanism (CDM) funds are some of the most commonly utilized sources of climate change financing for developing countries. Most development finance institutions have special funds and programs targeting climate change mitigation and adaptation. They also offer grants and technical assistance in climate change project and capacity development.

Development banks can provide governments borrowing from commercial markets with guarantees to help ensure lower interest rates, longer maturities and more flexible debt parameters. Development banks often support local finance institutions by extending lines of credit or partial credit guarantees, as well as provide equity capital and transaction-cost recovery mechanisms to help absorb some of the cost of making small loans. Initiatives for removing or lowering costs could also incorporate capacity-building programs and structuring assistance to help local finance institutions “bundle” their loans and take them to mainstream capital markets.

Development banks can also help structure and promote policy incentives and disincentives such as fuel taxes that include real costs of vehicle use (traffic, pollution) and tax incentives for energy efficient home and building technologies, as well as road user and parking charges and limitations in city centers and peak hours. Furthermore, development banks can also provide the leverage to tap new markets and private investors, as well as help structure pooled initiatives to reduce individual investment costs. One of the primary roles that development banks serve is to improve investment climates by guiding PPP policy and institutional framework reform, backing PPP pilot projects and structuring financing vehicles that help provide the risk/return profile that the private sector expects.

Many subnational governments have created special-purpose vehicles (SPVs) to undertake urban infrastructure investments, often in partnership with private sector financiers and operators. Transferring risk to the private sector, through service contracts, management contracts, leases, and privatization can help financially constrained cities. However, many of these financial arrangements require a commitment to clear and credible property rights, transparent procurement processes, cost covering tariffs and sustainable tax revenue regimes. As governments often face political constraints when attempting to charge service users to cover costs, PPPs are a politically viable alternative and inject much needed capital for infrastructure development. Competitive market selection mechanisms and cost-benefit analyses can also improve project selection and sustainability. To successfully implement PPPs, city managers in many developing countries will have to improve public sector capacity, design and implement comprehensive legal and sector planning frameworks and risk assessment models, as well as ensure transparent and competitive procurement to avoid monopoly service provision.

City services, like trucking, for example, can flourish under competitive markets with free entry to providers and prices that reflect real demand and costs. However, other services, such as bus transportation and garbage collection, may require more nuanced systems, such as auctions, where service contracts are awarded to the provider who offers the lowest price and meets established performance standards. Such concession auctions have succeeded in reducing both costs and prices in many cities (WB, 2013). Improvement of services characterized as natural monopolies or public goods, like water and sanitation, will require larger cross-sector policy coordination. Targeted subsidies and regulated prices may be required in certain service sectors, for both social equity and environmental sustainability purposes, but that means governments will have to set transparent and credible mechanisms to prevent corruption and inefficiency. When possible, city governments should promote market competition and avoid artificial monopolies.

Due to global economic downturns caused by the 2007 global financial crisis, fewer resources have been available for urban development initiatives. Even if local banks and other financial intermediaries were able to fill the funding gap, development banks play a uniquely “additional” role as financial catalysts, drawing private capital into large, long-term projects in countries and sectors where significant development results are likely, but the market perceives high risk. Development banks also often offer below market interest rates, longer terms and flexible repayment schedules. They can also provide risk mitigation through political or partial risk insurance or guarantees that attract a wide variety of market players, and provide local funding partners with an improved level of creditor status. Development banks can also deliver design and project selection additionality, offering technical assistance and other tools for capacity building that promote transparency, accountability, cost-effective service delivery and program sustainability.

The lack of finance for municipalities in developing countries is a crucial bottleneck identified by all IDFC members. KfW, for example, addresses the problem by providing credit lines and grant funding for community infrastructure development via intermediary structures. These Municipal Development Funds provide capacity building and incentives for good local governance, by providing clear and standardized criteria for project design and infrastructure maintenance and operation. Local participation is also encouraged with the use of transparent planning and investment prioritization. KfW also supports existing commercial bank markets by offering credit lines and technical assistance to enhance their outreach to municipalities. In Serbia, for

example, from 2009-2012, commercial banks provided 113 loans to 74 municipalities, funding some 300 projects. This mechanism was implemented under an existing legal framework for municipal debt (with central government guarantees), significant municipal income from taxes and fees, multi-year investment plans and the supervision of municipal indebtedness by commercial banks and central governments.

AFD, for its part, has long recognized their key role as catalysts for innovative urban development. AFD works with local financial institutions to mobilize adequate financing and technical cooperation, especially in smaller, secondary towns, where an important part of future urban growth will be concentrated. In Brazil, for instance, AFD extends financing to the public state bank of Paraná, Fomento Paraná, to support the upgrading of municipal solid waste facilities throughout the whole state. The EUR 45 million credit facility is dedicated to developing the new regional solid waste plan and incentivizing local authorities to improve (i) the waste sorting process and selective collection, with the participation of cooperatives or other forms of association of waste pickers, (ii) the waste recycling process, by composting or methanation or other technologies defined by Brazilian law, and (iii) the final disposal of waste by closing and rehabilitating inappropriate landfills or using sanitary landfills. The program is also directed at helping Paraná state improve its environmental and climate change policy, and helps promote mitigation projects that have a positive impact on greenhouse gas emissions. As a complement to the credit facility, a technical and institutional cooperation has been established between Brazilian local authorities, urban and environmental Paraná institutions, and French peer institutions.

#### ***KoFC: Promoting PPPs in Jeju***

As part of its mandate to extend Korea's infrastructure and promote a balanced regional development, KoFC took part as a financial investor in a project to build Aqua Planet Jeju, Asia's largest aquarium in Korea's southern island of Jeju. The total cost of the project was KRW130.1 billion (excluding government subsidy); KoFC contributed KRW41.2 billion, or 32%, via indirect investments through a fund set up for the project. Taking 30 months to complete, the aquarium began operating in April 2012, and will be privately operated for the next 30 years before it is transferred to the Jeju Municipal Government.

The Aqua Planet Jeju project represents a good case practice in sustainable urban development by KoFC on several grounds. First, it represents Korea's first build-operate-transfer PPP project (based on the Act on Public Private Partnership in Infrastructure), drawing a substantial portion of private investments at a time when the country's infrastructure market struggled to secure financing for large-scale infrastructure projects. Because it is a BOT, the government was free from the burden of a minimum revenue guarantee, which can often erode a project's long-term profitability and sustainability. Capitalizing on the merits of a BOT, the Jeju Municipal Government endeavored to bring the project to the island, where the level of urban development had long been inadequate compared to other parts of Korea. Although Jeju is one of the most popular tourist destinations in the country, it still lacks the necessary infrastructure to attract tourists on a continuous basis. By utilizing Jeju's unique and rich marine resources, the aquarium represents a sustainable source of income that will contribute to the long-term growth of the local economy.

The project has also opened the door to a new industry in Korea, where only a handful of aquariums of scale exist. In fact, after seeing that Aqua Planet Jeju had the potential to generate sufficient profits, the private operator of the project went on to build two more aquariums in two different cities in Korea, and has plans to expand overseas. These aquariums have helped expand employment opportunities in surrounding areas, and increased demand for specific and rare job segments, such as animal curators, veterinary technicians, conservation biologists, aquarist, and docents.

## Chapter 5. Service delivery and infrastructure management

Today, cities are home to more than half of the world's population, and this proportion is expected to grow to two-thirds, or 6 billion people, by 2050 (UN-HABITAT). Twentieth-century cities face numerous challenges to building and maintaining the basic physical infrastructure needed to ensure the safety, mobility, health, and progress of these massive populations; sustainable cities require adequate roadways, public transit, railroads, seaports, airports, water and sewage treatment systems, electric grids, schools, and hospitals. Ensuring better service delivery to communities and citizens is the ultimate goal of sustainable urban development; it provides the very tax revenue and fees that can be leveraged to acquire additional financial support for city development and management.

Infrastructure facilitates progress in all sectors and is commonly identified as one of the major drivers of change towards a more green and sustainable economy. In addition to the potential supply-and-demand-side impacts of infrastructure optimization on economic growth, the infrastructure services - water systems, solid waste management, sewer systems, power generating plants, roads, mass transportation, electricity generation, and telecommunications- also play a significant role in the distribution of income. Roughly 1 billion of the world's population currently reside in slums, and that number is projected to increase to 3 billion by 2050 if left unchecked (UN-HABITAT). These massive slum-dwelling populations constitute roughly half of city populations in many developing countries, and lack access to adequate shelter, water and sanitation –essential to environmental sustainability, social cohesion, health and human capital productivity. One example of an innovative solution to poor service delivery is Curitiba's garbage collection system. The city's program targets low-income areas, and is designed to clean sites which are difficult for conventional waste management systems to reach, by encouraging local residents to exchange garbage bags for food and public transportation tickets. Thanks to this initiative, more than 31,000 families have collected some 11,000 tons of garbage. This has reduced the cost of the city's solid waste management, created employment, and contributed to the overall cleanness and wellness of the city.

Many workers in developing countries commute into cities using collective taxis, which are slow, expensive and contribute to climate change. Roads are often insufficiently designed or maintained to handle the current high density traffic that continues to escalate with greater urbanization. Often, workers must transfer several times to reach their destination. Buses present a similar challenge. Improved service delivery and lower capital costs are needed in most developing cities. Furthermore, the transport sector represents one of the fastest growing sources of GHGs in the world (ADB, 2012) and represents 23% of global fossil fuel emissions. To achieve a significant reduction in GHG emissions, it will be important to promote efficient and integrated public transport systems that incentivize widespread use and reduce the growth of the auto sector, particularly by private individual users. Regional and national governments should look to adopt initiatives that support urban transformation (efficient distribution of populations) and generate strategies that promote non-motorized transport aimed at reducing GHGs like electric vehicles.

“Deficient infrastructure can raise the costs of doing business in urban areas and reduce firm productivity by as much as 40 per cent” (UNHABITAT, 2012). Many developing countries have industrial clusters that fail to provide results due to poor planning, inadequate and environmentally hazardous facilities, but above all, weak infrastructure services that fail to link clusters together and to essential markets. Urbanisation actuality

facilitates agglomeration economies as the rapid and easy exchange of technology and information opens up new opportunities for both labour and production. Cluster economies help create internationally connected cities, concentrate production efficiently and further facilitate economic growth. As cities catalyse agglomeration, they are important engines of employment and investment, and improved public service provision that help contribute to quality of life.

Building competitive and sustainable cities require a plan that identifies and mitigates major internal and external connection bottlenecks and exorbitant transport costs. City connectivity planning must find a balance between expanding the supply of affordable transport options, and reducing negative externalities caused by increased congestion and pollution. Much of the quality and sustainability of infrastructure is also in their construction and design consideration of externalities; infrastructure should avoid excessive fragmentation of wetlands and other strategic ecosystems, and take into account debris and pollution levels. New standards and incentives have surfaced encouraging the establishment of more efficient buildings and eco-homes. With the increase in urban expansion and the need for new cities and homes, developing countries have a prime opportunity to take advantage of new efficient and green construction practices when expanding their building stocks. Smart city development requires coordination among national and local governments, businesses, and residents to deliver intelligent solutions for reducing infrastructure and service costs, while at the same time improving quality of life.

The challenge for many developing countries will be to choose between infrastructure expansion to support growing economies and the negative impact of accelerated urbanization. In this area, development banks can help support governments during the decision making process, and help formulate sustainable long-term city planning strategies. Policy makers should promote the development of integrated eco-efficient social and physical infrastructure that takes into account future expansion and maintenance plans, improved population distributions and land use, and multi-sectorial and systemic interventions that generate widespread positive externalities.

## Chapter 6. Promoting clean and sustainable technologies

Cities consume an estimated 67% of global energy and account for roughly 70% of global greenhouse gas emissions (IEA, 2008 and 2010), mainly due to the concentration of industrial production, transportation and construction. Unfortunately, cities are commonly locked in to antiquated and inefficient technologies as a result of past capital investments in facilities that are yet to realize returns and the ongoing need to please entrenched and diverse stakeholder groups. The productive sectors in many developing countries, for example, have access to abundant supply of water and energy resources, and continue to use technology that emits high levels of greenhouse gases (GHGs). It will be of vital importance to promote changes and innovation in technology associated to renewable energy. However, there continues to be a lack of awareness about green industries, financing instruments or fiscal incentives, as well as limited access and incentives to develop cutting-edge technology tools and services in many developing countries. Ultimately, building sustainable cities will necessitate both improved demand side management—such as smarter buildings and better light bulbs—and supply side developments —like more efficient energy production and distribution.

According to the IEA, buildings represent an important source of GHG emissions and account for roughly 40% of primary energy consumption in most countries<sup>6</sup>. Green architecture, including water harvesting and sustainable urban drainage, energy-efficiency designs – optimized orientation, use of heat-reflecting and solar materials, green roofs and walls – and decentralized electricity generation are the backbone of energy-efficient building practices. There has been a significant uptake in energy-efficient engineering and construction technologies in many developed countries, and governments have promoted the sector with tax incentives and building codes for retrofitting and new construction. Such initiatives are also starting to take-off in developing cities like Bangkok, Delhi and Seoul, among others. “From 2010 to 2050, worldwide investment in buildings will range from \$300 billion to \$1 trillion per year” (UNEP, 2011b). Creating more efficient buildings will help ensure the reduction of energy consumption and costs over the long-term.

The promotion of greener transport can improve access to services, help reduce pollution levels and health inequalities for city residents. Expanded green urban areas can also promote social cohesion, as the negative environmental externalities of rapid urbanization affects the poor the most. Semi-treated wastewater can be used to water public parks and greenery and waterless urinals and toilets promoted to decrease the overall utilization of water. Promoting community-based waste processing and recycling programs, and providing storage facilities and markets for compost and recyclable materials can help reduce the amount of waste directed to landfills. Emerging cities should look towards circular development models, in which water, waste and energy output is recycled, so that sewer water, for example, can be used to cultivate fish and plants, or solid wastes recycled to create methane gas. These initiatives not only decrease harmful environmental effects, but enhance city beautification and contribute to social capital through improvements in quality of life. Human and social capital development, in turn, is essential to workforce productivity, innovation, and competitiveness.

The renewable energy sector – solar, wind, hydroelectric, geothermal and bio-fuel – continues to attract huge investment. By 2010, a total US\$243 billion had been committed to this sector worldwide; 51 and this is

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<sup>6</sup> <http://www.iea.org/topics/sustainablebuildings/>



projected to rise to US\$630 billion by 2030, in the process creating as many as 20 million jobs. Although much of this has concentrated on developed countries, investment in renewable energies is beginning to materialize in the developing world as well” (UN-HABITAT 2012). The employment potential of environmental sustainability is huge, in the production and deployment of new technical systems: renewable energies, sustainable urban transportation, waste recycling, retrofitting old buildings, new sustainable buildings and infrastructures, and other environmental services. Innovative measures like micro-generation of renewable energy through wind-power and solar-power technologies as well as combined heating/cooling plants and decentralized energy plants are being assessed for urban development strategies. Expanded networking of locally generated low-carbon energy will be vital for the sustainability of cities of the future.

Information technology systems integrate urban development activities, increasing efficiencies and cost recovery across sectors, and enabling improved service delivery and management. Using ICT as an instrument for integrated urban development not only improves information collection but also provides more efficient services, reduces waste and informs residents about resource consumption and how to improve their quality of life. One example is smart grid. It is computerized electric utility grid, which can optimize the use of power and reduce loss by not only monitoring the energy coming in from diverse sources but also detecting where energy is needed through a two-way communication system that collects data about power usage by consumers. ICT expansion can also help centralize city governance and help manage infrastructure development as demand increases. E-governance tools, such as the internet and mobile computing improve public sector information and service delivery, encourage citizen participation, and help make governments more accountable and transparent. ICT development also contributes to local competitiveness prosperity by making cities more efficient and business friendly, as well as attracting green industries. Furthermore, ICT promotes greater social inclusiveness, by opening up channels for greater resident participation in city management and public service provision.

“The greening of cities will require some, or preferably all, of the following: (i) reduction of chemical and physical hazards, (ii) control over environmental impacts on health, (iii) creation of quality environments for all, (iv) minimized ecological footprints outside the urban area, (v) ensured sustainable consumption, and (vi) adaptation to climate change impacts” (Satterthwaite, 1997). Building green cities will require overcoming disjointed governance structures, affordability and consumer preference issues that decrease investment interest in green technologies. Smart technology helps enable synergies across development sectors. Urban growth boundaries, land-use and density regulations and bonuses, traffic and vehicular control, car-fee developments, and emission controls, are some examples of regulations and planning mechanisms that can help achieve greener cities. Additionally, widespread information relating to environmental performance of cities can help promote greater policy reform.

## Chapter 7. Conclusion and way forward

The world is in the midst of a sweeping population shift from the countryside to the city. Urban dwellers will likely account for some 86 per cent of the population in more developed regions and for 64 per cent of that in less developed regions (UNDESA 2012). This transition presents many challenges including slum build-up, income inequality, increased consumption and solid-waste, intensified use of natural resources and greenhouse gas emissions, among others. And these challenges are exacerbated by unplanned city expansion and urban sprawl. Consequently, the choices that city planners make to manage the process of rapid and increasing urbanization will have profound consequences for citizens' well-being and economic future. Urban professionals must collaborate with architects, engineers, landscapers, transportation coordinators and land lawyers, as well as environmentalists and community members to ensure a holistic and inclusive approach to city design and management in the Post-2015 era.

Cities in developing countries face a wide range of administrative, technical, and financial limitations that make it difficult to deal with the challenges of rapid and increasing urbanization. Inefficient institutional structures and disjointed budgets, timelines and goals have often led to fragmented urban planning solutions. With limited access to finance, governments in many developing governments must look to improve their investment environments through macroeconomic policy and regulatory reform and by securing project cash flows. Better service delivery and infrastructure management will help increase public support for user fees and tax collection mechanisms. There is an urgent need to capture more private sector resources; funding SUD is beyond the means of public expenditure. More innovative financial products will be required, as well as greater support from development banks that can mobilize a wide range of domestic and international resources, provide the leverage to tap new markets and private investors, not only providing country risk guarantees to help ensure lower interest rates, longer maturities and more flexible debt parameters, but also helping structure pooled initiatives that reduce individual investment costs. Development banks can also help improve investment climates by guiding PPP policy and institutional framework reform, backing PPP pilot projects and structuring financing vehicles that help provide attractive risk/return profiles for private investors. In addition to their financing support, development banks can offer technical assistance for policy, institutional and capacity development and promote knowledge sharing programs and networks, data collection and feasibility studies that can help governments design and apply comprehensive and effective urban growth strategies.

The importance of Sustainable Urban Development (SUD) has gained substantial momentum in recent years; measures to mainstream comprehensive planning and management, incorporating economic, social and environmental factors are now widely promoted in the international development community. Standard setting will continue to be instrumental in diffusing the concept, as well as creating new markets for integrated interventions that attract private sector actors. Although many useful city planning tools are available, there is no one-size-fits-all approach to accommodate the diverse set of challenges and threats cities face. However, the following have been identified as key factors in SUD strategy and policy formulation:

- ✓ ensure comprehensiveness and incorporate more proactive and incentivizing measures for local authorities to tackle high priority issues (e.g. poverty reduction or climate change)
- ✓ promote stakeholder coordination and participation to ensure the integrity of urban development,

- ✓ identify inter-linkages among different and sometimes conflicting needs, maximize synergies between them where possible, mitigate unintended consequences of a policy and address problems in a sequenced manner,
- ✓ encourage “co-benefit” measures that can cater to multiple needs through a single policy intervention and utilize fewer resources,
- ✓ effective regulatory and financial frameworks to enhance implementation, and
- ✓ built-in mechanisms to monitor and revise strategies to accommodate changing needs

Urbanization is advantageous in many ways. As cities grow, they increasingly benefit from agglomeration or economies of scale that improve productivity in many industry and service sectors. In fact, delivering basic services such as water, housing and education is less costly in concentrated population centers than in sparsely populated areas (Richard Dobbs et al., 2011). Large cities also attract the most talent and inward investment, and are often at the center of a cluster of smaller cities, which creates network effects that spur even greater economic growth and productivity. However, leaders must be able to respond to the increasing complexity of cities, and provide effective planning and management capable of both mitigating the risks and exploiting benefits of urban growth. SUD strategies should give rise to cities more conducive to economic growth and social inclusion, environmentally sustainable, and resilient to climate change, natural disasters and other risks.

The IDFC will do its part to accelerate and expand support for SUD by scaling-up its collaboration with central and local governments, international institutions and private sector actors using its broad partnership network. It will beef up its efforts to endorse knowledge-sharing networks, exchange best practices and promote member experiences and expertise with city planners and urban development agencies. IDFC members will also continue provide technical assistance and other diagnostic tools to help city planners improve their urban policies and development strategies. For all that, financing SUD will remain one of the most critical challenges in developing countries. IDFC members are in a position to use their comparative advantage in the sector to help improve cities’ access to funding. The IDFC will bolster its efforts to promote and develop innovative mechanisms and financial products to help mobilize resources and draw more private capital to SUD projects and initiatives.

## Appendix 1 The Habitat Agenda: Global Urban Indicators – Selected statistics

Chapter/ Goals	Indicators
<b>1. Shelter</b>	
<b>Goal 1</b> : Promote the right to adequate housing	<b>Indicator 1.1: durable structures</b> <b>Indicator 1.2: overcrowding</b> <b>Indicator 1.3: housing price and rent-to-income</b> <i>Indicator 1.4: right to adequate housing</i>
<b>Goal 2</b> : Provide security of tenure	<b>Indicator 1.5: secure tenure</b> <b>Indicator 1.6: authorized housing</b> <b>Indicator 1.7: evictions</b>
<b>Goal 3</b> : Provide equal access to credit	<i>Indicator 1.8: housing finance</i>
<b>Goal 4</b> : Provide equal access to land	<b>Indicator 1.9: land price-to-income</b>
<b>Goal 5</b> : Provide access to basic services	<b>Indicator 1.10: access to safe water</b> <b>Indicator 1.11: access to improves sanitation</b> <b>Indicator 1.12: connection to services</b>
<b>2. Social development and eradication of poverty</b>	
<b>Goal 6</b> : Provide equal opportunities for safe and healthy life	<b>Indicator 2.1: under-five mortality</b> <b>Indicator 2.2: homicides</b> <b>Indicator 2.4: HIV prevalence</b> <i>Indicator 2.4: urban violence</i>
<b>Goal 7</b> : Promote social integration and support disadvantaged groups	<b>Indicator 2.5: poor households</b>
<b>Goal 8</b> : Promote gender equality in human settlements development	<b>Indicator 2.6: literacy rates</b> <b>Indicator 2.7: school enrolment</b> <b>Indicator 2.8: women councilors</b> <i>Indicator 2.9: gender inclusion</i>
<b>3. Environmental Management</b>	
<b>Goal 9</b> : Promote geographically-balanced settlement structures	<b>Indicator 3.1: urban population growth</b> <b>Indicator 3.2: planned settlements</b>
<b>Goal 10</b> : Manage supply and demand for water in an effective manner	<b>Indicator 3.3: price of water</b> <b>Indicator 3.4: water consumption</b>
<b>Goal 11</b> : Reduce urban pollution	<b>Indicator 3.5: wastewater treated</b> <b>Indicator 3.6: solid waste disposal</b> <b>Indicator 3.7: regular solid waste collection</b>
<b>Goal 12</b> : Prevent disasters and rebuild settlements	<b>Indicator 3.8: houses in hazardous locations</b> <i>Indicator 3.9: disaster prevention and mitigation instruments</i>
<b>Goal 13</b> : Promote effective and environmentally sound transportation systems	<b>Indicator 3.10: travel time</b> <b>Indicator 3.11: transport modes</b>
<b>Goal 14</b> : Support mechanisms to prepare and implement local environmental plans and local Agenda 21 initiatives	<i>Indicator 3.12: local environmental plans</i>
<b>4. Economic Development</b>	
<b>Goal 15</b> : Strengthen small and micro-enterprises, particularly those developed by women	<b>Indicator 4.1: informal employment</b>
<b>Goal 16</b> : Encourage public-private sector partnership and stimulate productive employment opportunities	<b>Indicator 4.2: city product</b> <b>Indicator 4.3: unemployment</b>
<b>5. Economic Development</b>	
<b>Goal 17</b> : Promote decentralization and strengthen local authorities	<b>Indicator 5.1: local government revenue</b> <i>Indicator 5.2: decentralization</i>
<b>Goal 18</b> : Encourage and support participation and civic engagement	<b>Indicator 5.3: voters participation</b> <b>Indicator 5.4: civic association</b>

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*Indicator 5.5: citizens participation*

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**Goal 19:** Ensure transparent, accountable and efficient governance of towns, cities and metropolitan areas

*Indicator 5.6: transparency and accountability*

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MDG Goal 7, Target 7D

**Goal 7:** Ensure environmental sustainability

**Indicator 7.10: Proportion of urban population living in slums**

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Source UNHABITAT <http://www.unhabitat.org/content.asp?typeid=19&catid=646&cid=8383>

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