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Industry Agenda

The Future of Urban Development & Services: Urban Development Recommendations for the Government of India

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Foreword

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The World Economic Forum's Future of Urban Development & Services (FUDS) Initiative serves as a partner in transformation for cities around the world as they address urban challenges. This report is the third in the FUDS Initiative. The first two presented the results of the initiative's engagement with three Chinese cities: Tianjin (*Tianjin Champion City Strategy*), and Dalian and Zhangjiakou (*Dalian and Zhangjiakou Champion City Strategy*). With each of these cities, the Forum conducted a "Champion City Activity" in cooperation with the China Center for Urban Development and the World Bank.

The world is experiencing a historically unprecedented transition from predominantly rural to chiefly urban living. In 1950, a third of the world's population lived in cities; today, the proportion has already reached more than a half. By 2050, city dwellers are expected to account for more than two-thirds of the world's population.[1] This rapid rise in urbanization will mainly take place in developing countries.[2] India's urban development is among the most important – the country's urban population is forecasted to almost double from 2014 to 2050.

The urban development plans (for example, the "100 Smart Cities" programme) announced by the new administration in India have attracted global attention. Indeed, action is needed in India: the coverage and quality of urban infrastructure and services are poor, and the acquisition and management of land is also a pressing issue.

Cities are an efficient way of organizing people's lives: they enable economies of scale and network effects, reducing the need for transportation and making economic activity more environmentally friendly. The diversity of talent in close proximity can spark innovation and create employment, as exchanging ideas breeds new ideas. The diversity of cities also promotes social tolerance and provides opportunities for civic engagement. Today, the linkages between cities already form the backbone of global trade, and cities generate a majority of the world's gross domestic product (GDP).

This report offers three recommendations for India to facilitate inclusive growth: India needs to integrate spatial planning at all governmental levels: national, state and city. India should create a stable policy framework for private investment in urban infrastructure. India requires institutions to stimulate capacity building and attract talent to grow businesses.

The Forum's FUDS Initiative aims to make innovation accessible and beneficial to city leaders and businesses alike. Preeminent, multistakeholder thinking should be available to cities of all types, sizes and geographies. New models for urban problem solving are crucial to securing healthy and sustainable urban systems and land-use patterns at a time of changing city dynamics. This report is a first contribution of the Forum and its partners to the positive momentum which the new Indian administration has initiated with respect to Indian urban development.

Executive Summary

India's urban population of 410 million makes it the second-largest urban community in the world. Yet, the urbanization ratio (32%) is still low. Overall, the provision of basic urban services is poor. Total investments of at least $640.2 billion are needed for urban infrastructure and services until 2031 to meet the needs of the growing urban population and improve the standard of living of the existing urban population. The funding gap is estimated at $80–110 billion.[3]

The new administration, in office since May 2014, has announced a number of urban development policies and initiatives in quick succession. This report addresses the issue of how India can unlock the full potential of urban regeneration and development to enable inclusive growth with the participation of the world's leading private sector organizations.

India aims to achieve "Faster, More Inclusive and Sustainable Growth".[4] Achieving inclusiveness involves addressing poverty reduction, group equality, regional balance, inequality and empowerment. To achieve these objectives, however, the country needs to address several challenges: India currently ranks 71 out of 144 countries in the Global Competitiveness Index (GCI) 2014-2015, below its BRIC (Brazil, Russia, India, and China) peers, and scores worst among the BRIC countries in technological readiness (2.7 out of 7.0), innovation (3.5) and infrastructure (3.6). Two recent surveys conducted by the Forum among business leaders and international investors revealed that both groups consider funding and financing, as well as policy and regulation, as main obstacles to investing in India.

The Government of India has sought to foster urban development by introducing legislation such as the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act and through various initiatives, such as the creation of five industrial corridors and, more recently, the launching of the Make in India programme and the 100 Smart Cities programme.

The FUDS Initiative provides three strategic recommendations for the Government of India to advance the debate around the newly announced policies and initiatives on urban development:

- **Integrate spatial planning at all governmental levels: national, state and city**
  Spatial planning is the key instrument for achieving social, territorial and economic development within India and with neighbouring countries. Its primary role is integrating housing, strategic infrastructure and urban infrastructure and improving national and local governance in the context of urban development. Spatial planning has both regulatory and developmental functions. For India to take on board this recommendation, the Government of India should initiate comprehensive work on developing a national spatial strategy by the end of 2015 and link it to the ongoing activities of the industrial corridors programme, the Smart Cities programme, and other urban planning and regeneration initiatives.

- **Create a stable policy framework for private investment in urban infrastructure**
  India, like several countries around the world, faces an acute need to provide new or modernized infrastructure and public services. Once the policy environment is stable and the right conditions for investors have been created, the Government of India needs to look at the various tools available to enable investments in strategic infrastructure and urban development. One such tool is public-private partnership (PPP). This report provides a best-practices framework and checklists to facilitate the review of the Indian PPP model of urban development. PPPs can accelerate infrastructure development by tapping the private sector's financial resources and skills in delivering infrastructure effectively and efficiently on a whole lifecycle-cost basis.

- **Create institutions to stimulate capacity building and attract talent to grow businesses**
  An analysis of India's economic competitiveness reveals two facts: manufacturing accounts for less than 15% of India's GDP, which is low; and India needs to grow its number of white-collar jobs to retain and attract talent. India also needs "lighthouse" projects with the potential for interdisciplinary collaboration in the area of urban development.

As next steps, it is suggested that the Indian administration continue its consultations with industry and infrastructure partners, as well as civil society, to get a balanced view of actions needed to achieve these plans. Fast, measurable and impactful action is necessary.

There is a strong desire on the part of Forum Industry Partners to continue engaging in India on infrastructure and urban development initiatives. The Forum will convene roundtable discussion in India in collaboration with Industry Partners early in 2015 to support the Government of India and its ambitious plans.

Urban Development in India

India's urban population has increased from 222 million (26% of the population) in 1990 to 410 million (32%) in 2014 and is expected to reach 814 million (50%) by 2050.[5] Three of India's cities are among the most populous in the world: Delhi (25 million), Mumbai (21 million) and Kolkata (15 million) rank 2, 6 and 14, respectively. Yet, while India ranks second in the world in terms of urban population size, its current urbanization ratio is low compared to China (54%, 758 million), Indonesia (53%, 134 million), Mexico (79%, 98 million), Brazil (85%, 173 million) and Russia (74%, 105 million).[6]

India's urban growth is largely concentrated in Class I cities with a population of 100,000 or more (see Figure 1). As a result, the number of metropolitan cities (Class IA and IB, with a population exceeding 1 million) has increased from 35 in 2001 to 53 in 2011, currently accounting for 43% of India's urban population (up from 38% in 2001), and is expected to be 87 by 2031. In turn, population growth in smaller cities has tended to stagnate or slow down, with the share of the population in Class II–IV+ cities decreasing from 31% in 2001 to 28% in 2015.

Figure 1: Overview of Urban Agglomerations in India[7]

City class		Population (000)	Cities (number)			Urban population per class (%)		
Census	HPEC		2001	2011	2031	2001	2015	2031
Class I	Class IA	> 5000	6	8	87	21	23	21
	Class IB	1000–5000	29	45		17	20	21
	Class IC	100–1000	359	412	8413	31	28	29
Class II	Class II	50–100	404	7523		10	9	9
Class III	Class III	20–50	1163			12	11	11
Class IV	Class IV+	10–20	1346			9	8	9
Class V		5–10	879					
Class VI		< 5	192					

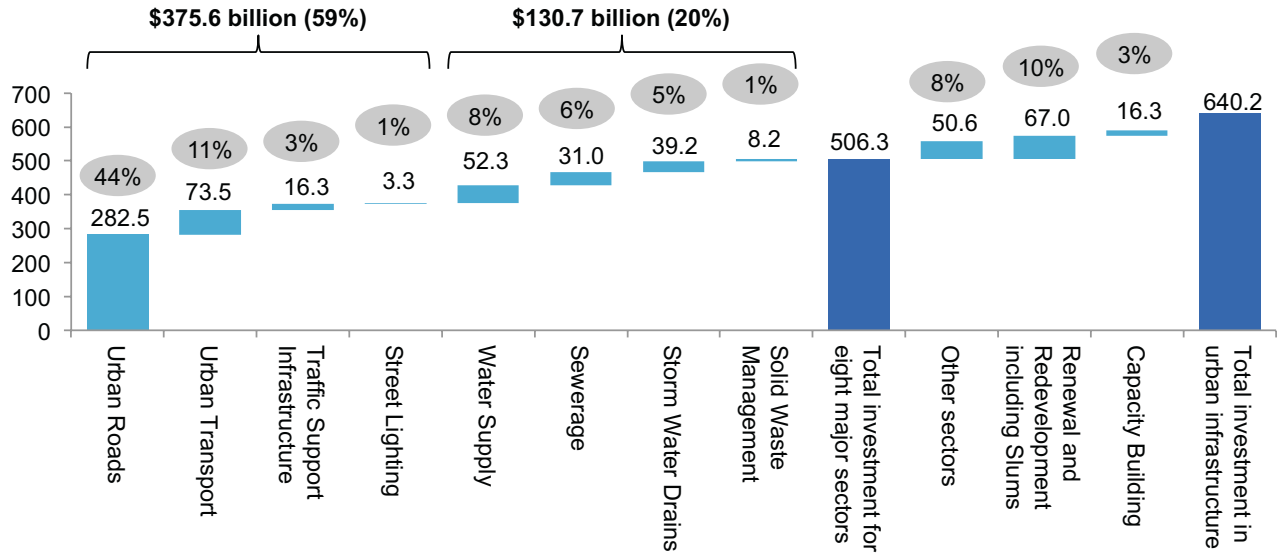
Urban Infrastructure and Urban Services

According to the Government of India's High Powered Expert Committee (HPEC), approximately $640.2 billion is needed until 2031 for investment in urban infrastructure and services if India is to maintain and accelerate economic growth (see Figure 2).[8] The investment required for the eight major sectors of urban infrastructure (roads, transport, traffic support, street lighting, water supply, sewerage, storm water drains and solid waste management) is estimated at $506.3 billion. Approximately half of that amount is needed in Class IA and IB cities alone; Class IC cities require 30% and Class II–IV+ cities 20%. An additional $67.0 billion will be needed for renewal and redevelopments of certain urban areas, particularly slums, and $16.3 billion will be required for capacity building of urban local bodies (ULBs) to ensure the availability of sufficient skills to plan, develop and manage the required infrastructure projects. Given the fact that the public sector is in no position to bankroll investments of this magnitude, a significant funding gap clearly exists for the Government of India for the required investment in (urban) infrastructure. The HPEC estimates the funding deficit at 0.15–0.39% of GDP per annum for the period 2012–2031, which amounts to a funding gap of $80–110 billion. In contrast, the Planning Commission's Working Sub-Group on Infrastructure estimates the funding gap in infrastructure in general to be $238.4 billion for 2012–2017. Obviously the time periods, the assumptions and the scope of infrastructure are different in the two approaches. Yet, both estimates reveal that significant private investment is required to satisfy India's infrastructure needs.[9]

Living standards and business operations have been negatively impacted by India's inability to provide universal access to and continuity of basic urban services. In 35 municipal corporations, the average underspending on capital investments necessary to meet minimum standards of services is 76%.[10]

According to the HPEC, the current deficit in urban infrastructure and service provision can be attributed to a combination of factors such as chronic neglect of urban planning and infrastructure development by state governments, the Government of India's lack of leadership, fragmented and/or overlapping institutional responsibilities, and low recovery of operating and maintenance costs by utilities.[11]

Figure 2: Urban Infrastructure Investment Requirement: 2012–2031



Main Urban Development Challenges

The HPEC, the World Bank and the Confederation of Indian Industry (CII) have each provided an analysis of the challenges affecting urban development in India[12]. The main ones relate to:

- Planning for land use and zoning
- Functioning of the property market and property governance
- Access to serviced land and affordable housing
- Access to mass transit systems and road networks
- Division of power and financial autonomy between ULBs and other levels of government
- Creating a favourable environment for starting, operating and growing a business

According to the World Bank, the challenges have arisen from the following governance deficits:

- *Empowerment deficit:* Limited, overlapping and fragmented functional assignments resulting in unclear accountability at the city level
- *Resource deficit:* Limited revenue-generation powers and inappropriately targeted intergovernmental transfers resulting in inadequate local government financial resources
- *Accountability deficit:* Despite elections and the right to information, transparency structures, roles and mandates are unclear
- *Delivery deficit:* Insufficient provision and maintenance of municipal services and networks

Urban Development Approaches and Projects

In the past, the Government of India as well as Indian states adopted various approaches to tackle the country's urban development challenges. Projects include the development of five industrial corridors, of which only the Delhi-Mumbai Industrial Corridor (DMIC) is under development. Private urban development projects include the building of whole new towns such as Lavasa and Palava.
Since taking office, the new Government of India has announced several policies and urban development initiatives. The most prominent is the 100 Smart Cities programme, although other initiatives have been launched such as the Redevelopment and Urban Renewal of 500 Cities, the Regeneration of Heritage Cities and various country-specific tie-ups. Furthermore, policies relevant to urban development, such as the Make in India programme and the Clean India Campaign, have been announced (see the box "Major Policies Impacting Urban Development in India").

Major Policies Impacting Urban Development in India

74th Amendment to the Constitution[13]
This 1992 amendment requires state governments to modify their municipal bylaws to empower ULBs to function as institutions of self-governance. However, most ULBs suffer from poor institutional frameworks and talent shortages. Moreover, the degree to which decision-making powers have been devolved in practice varies widely from state to state.

Jawaharlal Nehru National Urban Renewal Mission (JNNURM)[14]
The JNNURM (2005–2014) was a programme designed as a partnership between the Government of India, state governments and ULBs to encourage reforms and fast track development in specific cities. It aimed to make urban infrastructure and service delivery mechanisms more efficient, increase community participation and improve the ULBs' accountability to citizens. Although the programme succeeded in securing a commitment to reforms from state and city governments, it was not designed to bind these governments to their commitments.

Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013[15]
This piece of legislation, commenced in 2014, establishes new rules for compensation, resettlement and rehabilitation to facilitate the smooth functioning of the property market. However, the compensation mechanism for public land acquisition has been criticized as being unfair and unclear, while increasing the incubation time and overall cost of projects by as much as 5% in some cases. Since enactment, the majority of states have been unable to complete land acquisition, and the act is currently under review.

Make in India[16]
This programme, launched by the new administration in 2014, aims to facilitate investment, foster innovation, enhance skill development, protect intellectual property and build best-in-class manufacturing infrastructure. It spans more than 30 sectors, from leather to space. As of December 2014, the only project promoted under the Make in India programme is the DMIC. Under the programme, the Government of India has also emphasized sustainability issues by introducing a "zero defect, zero effect" policy.

Clean India Mission[17]
The Swachh Bharat Mission (SBM) ("Clean India Mission") has been launched in October 2014 and will run for five years to mark the 150th anniversary of Gandhi's birthday. "All statutory towns will be covered under the SBM. The objectives of the SBM are elimination of open defecation, eradication of manual scavenging, modern and scientific solid waste management, and generating awareness about sanitation and its linkage with public health."

(Note that this is not an exhaustive selection of acts and policies with impact on urban development in India.)

Existing Indian urban development projects

Industrial corridors

The Government of India plans five industrial corridors that will provide an impetus to planned urbanization and manufacturing (see Figure 3). The DMIC is the only corridor currently under development. A total of 24 smart cities (see "100 Smart Cities programme," below) are proposed under the DMIC, with the first three planned for completion by 2019: Dholera in Gujarat, Shendra-Bidkin in Maharashtra, and Global City in Haryana.[18] The DMIC aims "to create a strong economic base with a globally competitive environment and state-of-the-art infrastructure to activate local commerce, enhance foreign investments and attain sustainable development".[19]

The other four corridors are in the early stages of project development. A master plan has been developed for three cities in the Chennai-Bangalore Industrial Corridor (Punderi, Krishnapatnam and Tumkur). States have been asked to identify cities in the Amritsar-Delhi-Kolkata Industrial Corridor (ADKIC). The project influence areas for DMIC and ADKIC are 150-200 km on either side of their freight corridors.[20] The influence areas for the other corridors are not yet specified.

Figure 3-A: Planned Industrial Corridors (Overview)

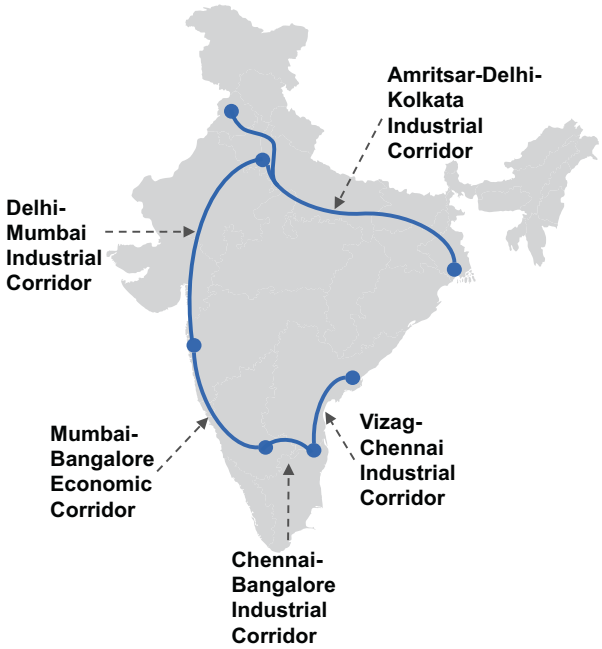


Figure 3-B: Planned Industrial Corridors (Details)

Corridor	Status	Indian states	Key players
Delhi-Mumbai Industrial Corridor (DMIC)	– Under development	– Haryana – Gujarat – Madhya Pradesh – Uttar Pradesh – Rajasthan – Maharashtra	– Equity holdings: Government of India 49%, Japan Bank for International Cooperation 26%, Housing and Urban Development Corporation 19.9%, India Infrastructure Finance Company 4.1%, Life Insurance Corporation of India 1% – Concept: Government of Japan – Master planners: AECOM
Chennai-Bangalore Industrial Corridor	– Interim report on Regional Perspective Plan sent to Government of India – Concept Master Plan and Development Plan expected by June 2015	– Karnataka – Andhra Pradesh – Tamil Nadu	– Equity holdings: (not available) – Developers: Government of India with the support of the Japan International Cooperation Agency – Consultants: PwC (Japan), Nippon Koei Company (Japan)
Mumbai-Bangalore Economic Corridor	– Feasibility study is underway by Egis India Consulting Engineers in JV with IAU Île-de-France and CRISIL Risk & Infrastructure Solutions	– Karnataka – Maharashtra	– Equity holdings: (not available) – Developers: Government of India, Indian State Governments, Government of UK
Amritsar-Delhi-Kolkata Industrial Corridor (ADKIC)	– An inter-ministerial group has submitted feasibility report to Government of India	– Punjab – Haryana – Uttar Pradesh – Uttarakhand – Bihar – Jharkhand – West Bengal	– Equity holdings: Government of India 49%, – Balance equity to be taken by state governments and Housing and Urban Development Corporation (HUDCO)
Vizag–Chennai Industrial Corridor	– Feasibility study underway by the Asian Development Bank (ADB)	– Tamil Nadu – Andhra Pradesh	– Equity holdings: (not available) – Developers: Government of India with support from ADB – Consultants: PwC, John Arnold (consultant working under Government of India)

City projects

Several new cities have been developed in India in recent years. Prominent examples include Dholera SIR (Gujarat), Gujarat International Finance Tec-City (Gujarat), Lavasa (Maharashtra), Palava (Maharashtra), Gurgaon (Haryana), SmartCity Kochi (Kerala), Haldia (West Bengal), Navi Mumbai Airport Influence Notified Area (Maharashtra) and Wave City (National Capital Region). Dholera SIR and Gujarat International Finance Tec-City (GIFT) are interesting examples of mainly publicly driven urban development projects, while Lavasa and Palava are examples of two privately driven urban development projects.

New Indian urban development projects

100 Smart Cities programme

The 100 Smart Cities programme aims to revolutionize India's urban landscape.[21] The Government of India is currently developing the framework to operate the programme and is holding consultations with key stakeholders, including state governments and ULBs, to enable the identification of potential cities. The documents "Draft Concept Note on Smart Cities" and "Record of Discussion Held with Business and Non-Profit on the Smart City Scheme" were published by the Ministry of Urban Development (MoUD) in September 2014. The draft concept note on smart cities has been updated in December 2014. However, the Government of India has not yet adopted a final definition of a "smart city".[22]

The draft concept note indicates that the focus will be on improving mobility and energy efficiency and on providing access to basic urban services such as electricity, information and communication technology (ICT), water supply, sanitation and solid waste management 24 hours a day, seven days a week. All states and union territories will be part of the programme. The focus is expected to be on brownfield projects (96 cities out of 100).

So far, the indicated city identification criteria include:
- One satellite city for cities with a population of 4 million or more (9 cities)
- Most of the cities with a population of 1–4 million (approximately 35 out of 44 cities)
- All state/union territory capitals, even if they have a population of less than 1 million (17 cities)
- Other cities that are important for tourism or for religious or economic reasons (10 cities)
- Cities with a population of 0.2–1.0 million (25 cities)

Most of the infrastructure is expected to be developed and funded either entirely as private investment or via PPPs. PPPs have been frequently used in India, but have not always been applied successfully or to their full potential.[30] The MoUD has indicated that a new PPP model for developing smart cities will be forthcoming.[23] The contribution from the Government of India and state governments will largely be through viability gap funding. Decisions on the final concept, allocated budget and final city selections are expected in February–April 2015, around the announcement of the national budget.[24]

Redevelopment and urban renewal of 500 cities

The Government of India intends to redevelop and renew 500 cities, although details of the programme have not yet been made public. There are indications that the programme would include developing a comprehensive policy on urbanization and strengthening ULBs to oversee renewal efforts – the HPEC in its 2011 report calls it a New Improved Jawaharlal Nehru National Urban Renewal Mission. Cities with 100,000 inhabitants or less – Class II–IV+ cities, according to the suggested HPEC classification – would be included in the programme (and not covered under the 100 Smart Cities programme).

Regeneration of heritage cities

Recently, the Government of India emphasized the relevance of preserving the cultural and religious heritage of the nation, which was partly addressed by the JNNURM. The MoUD launched therefore the "Heritage City Development and Augmentation Yojana (HRIDAY)" on 21 January 2015.[24.1] At the time of publication of this report no further details have been available. The draft concept note on the 100 Smart Cities Programme mentions religious cities also as potential target cities.

Country-specific tie-ups

The new administration has entered into various country-specific agreements since taking office in May 2014. A memorandum of understanding has been signed between India and Japan to turn Varanasi into a smart city with help from the city of Kyoto. The United States has expressed interest in developing three smart cities (Allahabad, Ajmer and Vishakhapatnam).[25] India and China have also signed three Gujarat-specific pacts.[26]

India's Vision of Inclusive Growth and Economic Fundamentals

According to the Organisation for Economic Cooperation and Development (OECD), inequality damages growth. The World Bank adds that "inclusive growth is about raising the pace of growth[27] and enlarging the size of the economy, while levelling the playing field for investment and increasing productive employment opportunities" and "should be broad-based across sectors and inclusive of the large part of a country's labour force."[28]

India's Vision of Inclusive Growth

The Government of India's Twelfth Five Year Plan (2012-2017) articulates the country's official vision and aspiration of "Faster, More Inclusive and Sustainable Growth" Achieving inclusive growth has topped the Indian political agenda for several decades and has recently been reiterated by the new administration.[29] The Twelfth Plan provides the official definition of inclusive growth by outlining separately "growth", "inclusiveness" and "sustainability", and provides core indicators for measuring the nation's performance (see Annex I).[30] India defines inclusiveness by five aspects:[31]

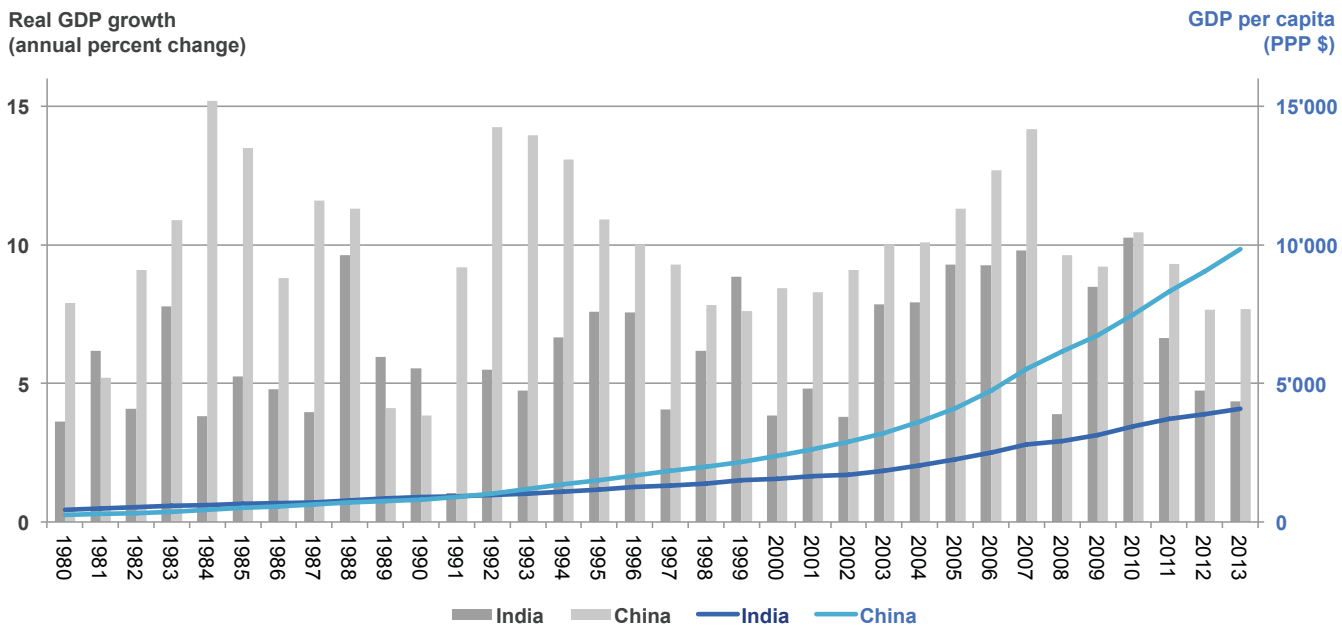
1. **Inclusiveness as poverty reduction** - "ensuring an adequate flow of benefits to the poor and the most marginalised"
2. **Inclusiveness as group equality** – "a growth process which is seen to be 'fair' by different socio-economic groups that constitute [the Indian] society"
3. **Inclusiveness as regional balance** – "all States and […] all regions [… should] benefit from the growth process […]"
4. **Inclusiveness and inequality** – "[…] Inequality must be kept within tolerable limits. […] An increase in inequality with little or no improvement in the living standards of the poor is a recipe for social tensions. […] [We need to give] every child in India a fair opportunity in life, i.e. access to good health and quality education."
5. **Inclusiveness as empowerment** – "[…] People […] demand […] opportunities as rights and […] want a say in how they are administered. This brings to the fore issues of governance, accountability and people's participation [… and] covers access to information about government schemes, knowledge of the relevant laws and how to access justice. The growing concern with governance has also focused attention on corruption."

The Indian definition of "group equality" and "regional balance" can be read as a relative definition of pro-poor growth, which would "require the incomes of poor people to grow faster than those of the population as a whole."[32] Yet, according to the World Bank, an economy is better off with an absolute pro-poor growth approach. A full macroeconomic assessment of this is beyond the scope of this report, which can only try to raise awareness of this observation.[33] If the World Bank's observation is correct, subsequent policies and their implementation could result in lower investment in urban infrastructure than needed.

India's Economic Fundamentals[34]

Despite India's immense potential, a third of the country's population lives in extreme poverty – possibly the highest incidence outside sub-Saharan Africa. Many of its citizens still lack access to basic sanitation, healthcare and quality schooling. Improving the standard of living of the Indian population will require acceleration in growth. However, India has experienced a slowdown since 2011. In 2013, its economy grew by a modest 4.4% (see Figure 4). Improving competitiveness to put growth on a more stable footing should therefore be a priority for the new administration.

Figure 4: India's GDP Performance



Dropping for the sixth consecutive edition, India ranks 71 out of 144 economies in the GCI 2014-2015 (down 11 places from 2013-2014; see Figure 5). It is ranked the lowest among BRIC economies. The rank differential with China (28) has grown from 14 places in 2007 to 43 today. While India's GDP per capita was higher than China's in 1991, today China is four times richer.[35] This competitiveness divide helps to explain the different trajectories of these two economies.

Figure 5: Performance of India and Peers on Global Competitiveness (Note: higher value means better rank)

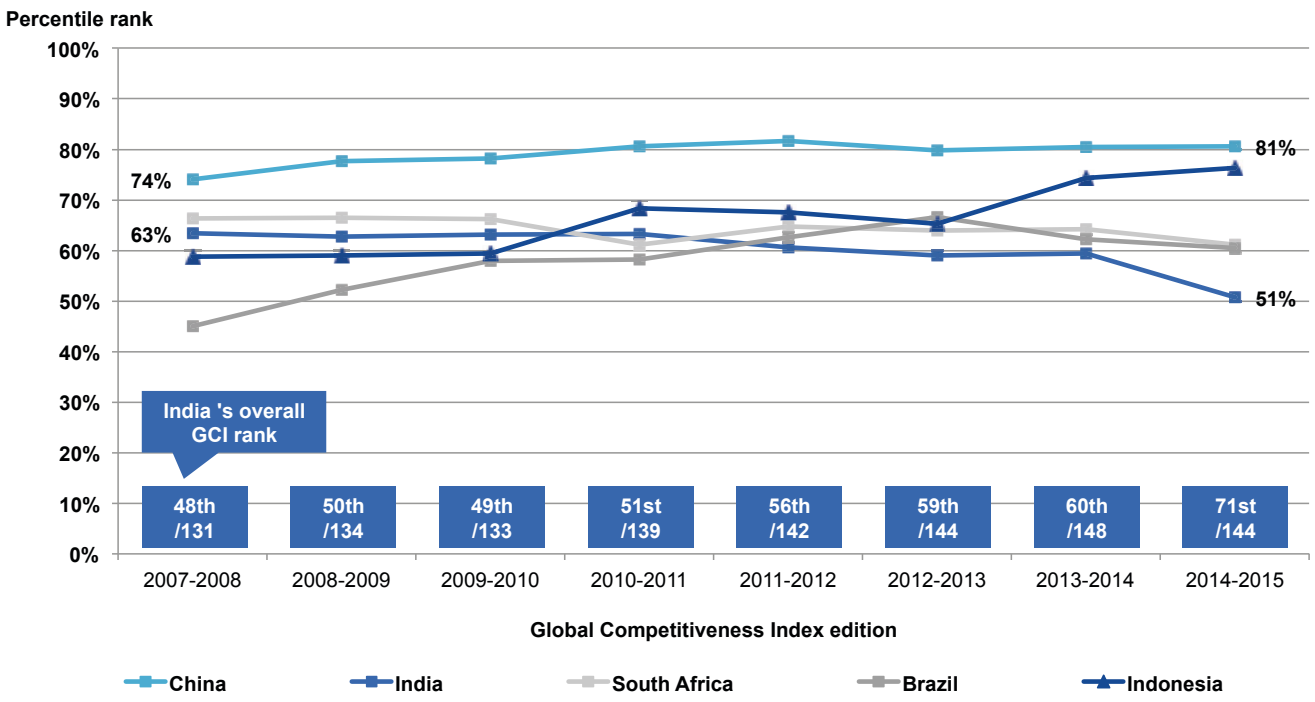
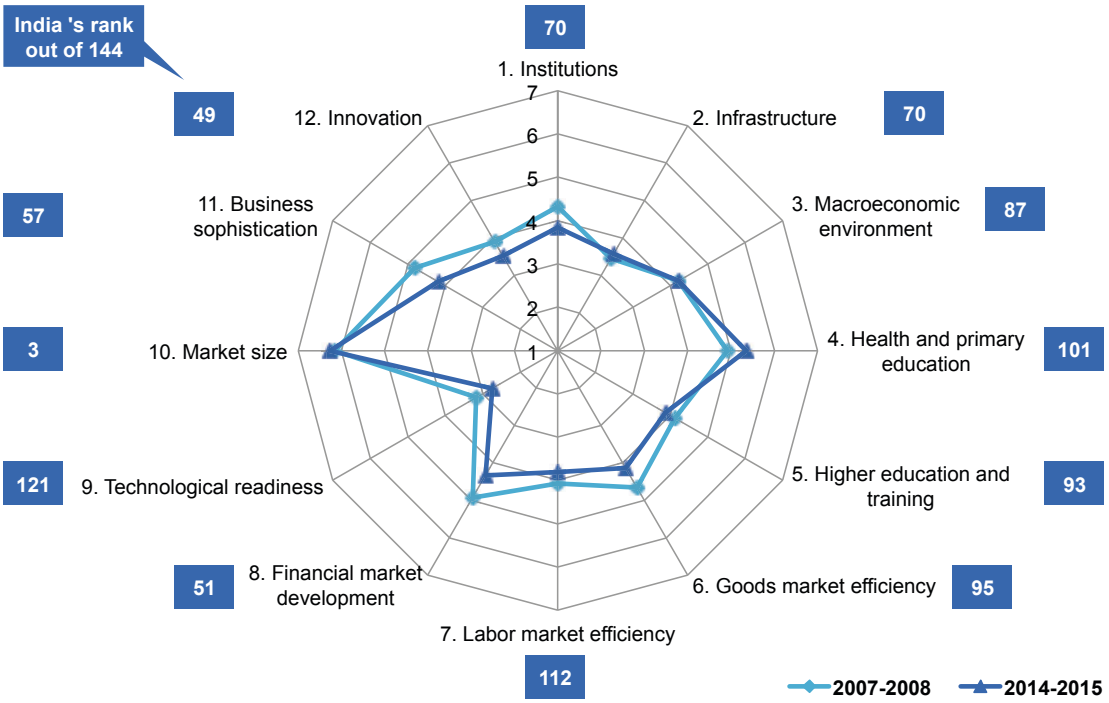


Figure 6: India in the 12 Pillars of the GCI 2014–2015



India's slide in competitiveness rankings began in 2009, when its economy was still growing at 8.5% (it even grew 10.3% in 2010). However, even in 2009, doubts were cast about the durability of this growth. Since then, the country has struggled to achieve even 5% growth. The country has declined in multiple areas assessed by the GCI since 2007, most strikingly in institutions, business sophistication, financial market development and goods market efficiency.

Figure 6, which presents India's performance along the GCI's 12 measured dimensions, sheds light on the main strengths and weaknesses of the country's competitiveness. Overall, India ranks best in the more complex areas of innovation (49) and business sophistication (57) but receives low marks in the more basic and fundamental drivers of competitiveness. For instance, India ranks 98 on health and primary education. On a more positive note, India is on track to achieve universal primary education, although the quality of primary education remains poor (88), and it ranks a low 93 in higher education and training. Furthermore, transport and electricity infrastructure needs upgrading (87). Given the country's strained public finances, addressing the infrastructure gap will require very strong participation by private and foreign investors.

While the institutional framework needs to improve for these investments to materialize, there are encouraging signs. India has achieved progress in combating corruption and now ranks 65. The country's overall business environment and market efficiency (95, down 10 places) are undermined by protectionism, monopolies and various distortionary measures, including subsidies and administrative barriers to entry and operation. It takes 12 procedures (130) and almost a month to register a business (106). In addition, average taxes for a typical registered firm amount to 63% of its profits (130). Furthermore, the labour market is inefficient and rigid (112). These factors contribute to the high cost of integrating more businesses into the formal economy. According to some estimates, the informal sector accounts for half of India's economic output and 90% of its employment.[36] Therefore, it is imperative that the Government of India create the right incentives for businesses to contribute their fair share to the provision of public services.[37]

India achieves its lowest rank among the 12 dimensions in technological readiness (121). Despite mobile telephony being almost ubiquitous, India is one of the world's least digitally connected countries. Only 15% of Indians access the internet regularly, and broadband internet remains the privilege of a very few. India's knack for frugal innovation should contribute to providing cheap solutions to bridge this digital divide.

The financial resources required to deliver basic services such as sanitation and healthcare and to improve India's physical and digital connectivity are considerable (see Chapter 1). But India's fiscal situation remains a concern. With the exception of 2007, the Government of India has consistently run deficits since 2000. And given the huge size of the informal sector, the tax base is relatively narrow, representing less than 10% of GDP. In addition, over the past several years India has had persistently high – in some years near double-digit – inflation, reaching 9.5% in 2013. The Reserve Bank of India, the country's central bank, is torn between keeping interest rates low to stimulate the faltering economy and tightening monetary policy to stem inflation.

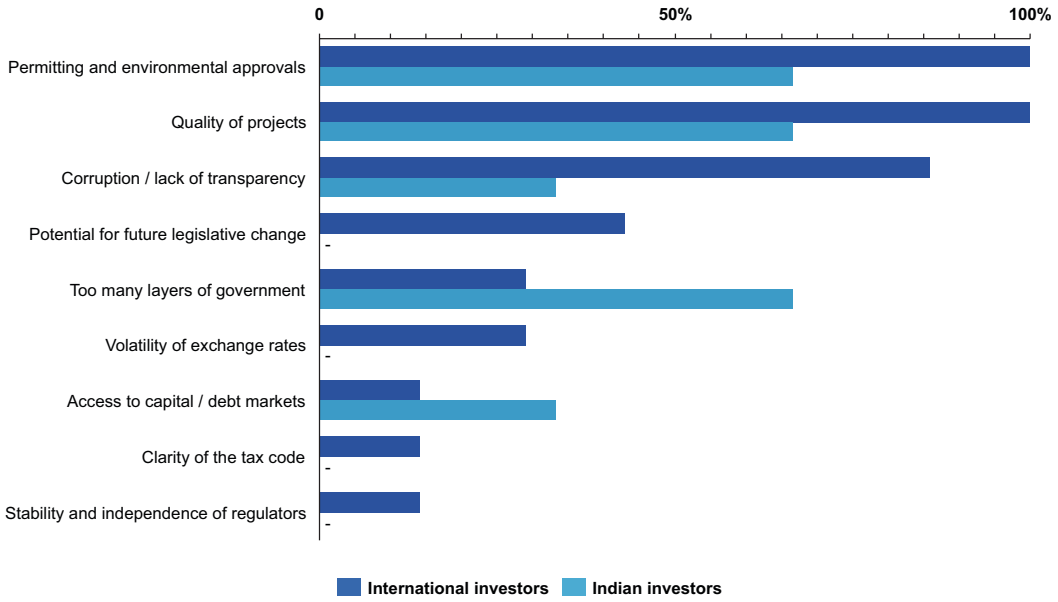
Improving competitiveness will yield India huge benefits. In particular, it will help rebalance the economy and move the country up the value chain, ensuring more solid and stable growth. This, in turn, could result in the creation of more jobs for the country's rapidly growing population. Despite the abundance of low-cost labour, India has a very narrow manufacturing base; manufacturing accounts for less than 15% of India's GDP.[38]

In contrast, agriculture represents 18% of output and employs 47% of the workforce. Poor productivity in the agricultural sector means very low wages and a life of mere subsistence for many. The services sector accounts for just 28% of employment but 56% of GDP. However, most services jobs are low skilled and poorly paid; white-collar jobs remain scarce. For example, the vibrant business process outsourcing sector employs just 3.1 million workers or 0.6% of India's 482 million labour force, but accounts for 6% of GDP.[39] India needs to create jobs in the "missing middle", the 610 million youths under the age of 25 – half of India's population – who have recently entered or will soon enter the workforce.

Private Sector Requirements to Engage and Invest in India

The Forum conducted two related surveys: In the first, the Forum's Global Competiveness team interviewed 211 business leaders in 2014 to identify the most problematic factors involved in doing business in India (see Annex II). IIn the second, the Forum's Investors Industries team interviewed 10 major international and Indian investors, which in total represent $1.7 trillion in assets under management, to better understand how they assess the current investment environment in India and what reforms could be most effective in attracting additional capital for infrastructure investment (see Figure 7). The surveys revealed that both groups consider funding and financing as well as policy and regulation as main obstacles to engaging and investing in India.

Figure 7: Major Impediments for Investors to Increased Infrastructure Investment in India
(% of respondents who mention the issue)



Recommendations for India's Urban Development Agenda

The Forum's FUDS Initiative provides three strategic recommendations for the Government of India to advance the debate around the various newly announced policies and initiatives on urban development.

Recommendation I: Integrate Spatial Planning at all Governmental Levels: National, State and City[40]

The key instrument to achieve social, territorial and economic development within and between countries is spatial planning. The primary role of spatial planning is the integration of housing, strategic infrastructure and urban infrastructure and the improvement of national and local governance in the context of urban development. Spatial planning has both a regulatory and a developmental function.

The developmental mechanism is essential to the provision of services and infrastructure, establishing the direction for urban development and establishing incentives for investment within environmental and social constraints. Effective spatial planning helps avoid duplication of effort by actors such as national and state governments, commercial developers, communities and individuals. Spatial planning has been possible in many countries through structural and fundamental reforms of their planning systems.

For India, the advantages of developing an integrated and dynamic national spatial strategy include:

- Promoting territorial cohesion to deliver balanced social and economic development of the states and improve national competitiveness
- Improving the relationship between national and state-level urban development functions
- Promoting more balanced accessibility and connectivity
- Facilitating nationwide access to information and knowledge
- Ensuring development with sustainability
- Enhancing cultural heritage conservation
- Developing and sustaining strategic infrastructure
- Encouraging economic sectors such as industry, services and sustainable tourism
- Limiting the impact of natural disasters and improving disaster recovery

Critical activities to be carried out when developing a national spatial strategy include the following: effective allocation of competencies; establishment of key regulations and urban frameworks at the national level; development of 15- to 20-year economic, social and spatial strategies; and implementation of public participatory forums to implement these policies and strategies at the local level. In some cases, current ways of carrying out these activities may need to be revised.

In principle, competencies should rest with the lowest level of government. The allocation of competencies needs to take into account the capacity of different levels of government to achieve the desired outcomes, as stated in the national spatial strategy. The national government should take the lead in creating an integrated spatial planning system that encourages investment and facilitates sustainable development. This will be done primarily by setting the right conditions for the operation of effective spatial planning at the state and local levels.

A key role for the national government is to ensure that administrations cooperate and share competencies to develop plans that are in conformity across geographical and sectorial boundaries. Other roles of the national government in spatial planning include:

- Promoting a shared strategic vision and establishing priority outcomes for spatial development
- Developing a legislative framework that enables the creation of spatial planning instruments and policy at different spatial scales through democratic and participatory procedures
- Utilizing incentives and sanctions to ensure effective cooperation across sectors and administrative boundaries, as well as between multiple levels of government

- Supervising spatial planning at the regional and local levels
- Monitoring spatial development trends and the impact of spatial planning
- Ensuring that all national ministries and departments understand the effects of their policies and actions on spatial development and the need for coordinated policy and action
- Supporting and advising regional and local governments and helping to build capacity at all levels
- Managing and regulating issues of national and international significance in collaboration with regional and local authorities
- Creating national agencies to act as liaisons when working in partnership with regional and local governments on matters requiring urgent and special attention

The roles of state governments in spatial planning include:
- Preparing spatial strategies by collaborating with regional and local stakeholders
- Planning and delivering regionally significant infrastructure across local boundaries
- Using environmental assessment and appraisal methodologies for regionally significant projects
- Ensuring that local spatial planning conforms to national and regional strategies
- Providing information and analysis on regional spatial development trends for national and local governments
- Assisting in capacity building at the local level through guidance, training and interpretation of legislation

The main tasks at the regional level are to interpret and adapt national policies and priorities to regional conditions, provide a strategic plan that addresses the functional planning relationships and overall development patterns, and provide guidance and assistance to local authorities in the creation of local planning instruments. Regional government should use spatial planning as a tool to ensure greater coherence and integration among economic development, environmental resources, sustainable development, rural development, heritage, and culture and tourism strategies.

Special agencies can be established to deliver major and critical infrastructure and urban development programmes. These agencies should have specific roles to address particular planning issues that require urgent and concentrated attention, such as the development of new settlements or the regeneration of old industrial zones. For India to take on board this recommendation, the Government of India would have to initiate comprehensive work on developing a national spatial strategy by the end of 2015 and link it to the ongoing activities of the industrial corridors programme, the Smart Cities programme and other urban planning and regeneration initiatives.

India could learn the following from the selected case studies:
- The Swiss case study is an example of how spatial planning can be strategically integrated into a federal system.
- The UK, Ireland and France case study shares general principles of successful strategic planning, as identified by the Royal Town Planning Institute.
- The Irish case study shows how an inefficient and ineffective system got lean and thereby leveraged a geographic information system (GIS).
- The Japanese case study describes how geographic information system (GIS) technologies facilitate urban planning.
- The European Union (EU) case study highlights an approach to make data accessible and hence fully usable for cities and their citizens; it also shows how city data can be used to engage stakeholders and create trust.
- The case study from Venezuela shows how GIS can be used to understand how urban squatter settlements are organized, using that information as the foundation for devising improvement efforts.

Case Study – Switzerland: Planning in the Strategic Context of Spatial Planning[41]

The constitution of the Swiss Federal Republic states that the federal government decides the fundamental principles of spatial planning, while the cantons are responsible for actual spatial planning. The federal government furthers the efforts of the cantons and works in cooperation with them. Both the federal government and the cantons are required to consider the needs of spatial planning in the fulfilment of their duties. Federal spatial planning legislation requires the federal, cantonal and community administrations to synchronize plans for spatially significant projects and to consider the spatial implications of other activities.

In addition, the law details measures to be taken for the cantons' structural plans and land use plans. In conceptualizing their structural plans, the cantons decide the essential features of how their territories should be developed, while keeping in mind the concepts and plans at the federal level, as well as the structural plans of neighbouring cantons. They work with the federal authorities and neighbouring cantons or countries. These structural plans, which are binding, lay out the minimum level of coordination for spatial planning activities for the desired development, as well as the time frame and the means of fulfilling the task.

The cantons organize the process for developing the structural plan. They regulate how the communities and other stakeholders will be involved in the development of the structural plan for spatially significant tasks. The federal authorities also have an obligation to work out the basic foundation in the form of concepts and sector plans and to make these consistent with each other. Of particular relevance in this legal context is the focus on unspecified "activities". The manner in which these activities are to be identified remains open and is the responsibility of the cantons. The need for cooperation – between federal offices, between the federal and cantonal governments and between the cantons – is repeatedly emphasized. Identification of individual activities is a three–step process, which allows for assessment at any time. This framework enables solutions to be worked out step by step, connecting the necessary knowledge with the relevant decision-making problems and applying them economically. This is not part of a long-term programme determined collectively by the federal government, the cantons and the local communities. Instead, it provides for an assessment at any time based on the current state of the structural plan.

This case study is a summarized section from Spatial Planning and Development in Switzerland, *commissioned by the Swiss Federal Office for Spatial Development (ARE). For more information see* www.irl.ethz.ch/re/publications/PDF_docs/ch_eva_engl.pdf

Case Study – UK, Ireland & France: General principles of successful strategic planning[42]

Managing housing markets, transport networks, river basins, energy supplies and investment in skills requires coordination across multiple local governments. The solution is strategic planning. The Royal Town Planning Institute (RTPI) a leading body for spatial, sustainable and inclusive planning and the largest planning institute in Europe has studied how planning has worked in a number of settings and identified the following principles that strategic planning should follow, irrespective of location.

Be sharply focused. Planning should be about efficiently using resources and have a clear purpose. It is easy for strategic plans to become unwieldy and cover a wide range of issues that are adequately addressed either by regional or national planning policy (e.g. Scottish Planning Policy and England's National Planning Policy). It is not entirely clear why strategic plans need to include broad policy statements like "all development will seek to mitigate climate change," especially if this objective is covered by legal and national policy provisions.

Be genuinely strategic. Planning should deal only with issues that require treatment at a level higher than individual municipalities. Strategic plans need to set out where major investments in housing, transport and economic growth will take place. Decisions taken at the right geographic level will ensure appropriate investments, environmental safeguards and a degree of fairness between localities.

Be spatial. Planning should make choices between places, not simply establish general criteria for later decision-making. All policy-makers, not just planners, must recognize that some activities for example, large-scale housing, employment and higher education are better undertaken in some places within a city, county or region than others, and act accordingly.

Be collaborative. Partners must work together to deliver each other's agendas and collaborative governance structures can ensure proactive engagement by all stakeholders. This contrasts with what might be termed "cooperation", where participation is restricted to proposal consent as long as it does not interfere with respective agendas. Evidence from England has demonstrated the value of allowing areas to determine their own associations. There are also strong advantages to permitting strategic planning collaborations to determine their own internal governance arrangements, subject to compliance with issues such as accounting practice.

Have strong leadership. To ensure negotiations between places are productive and not protracted, the leadership must be both political and professional. Participants must have the full support of their areas when entering into negotiations or they will be hampered. To reach that position, trust in the leadership needs to take root and flourish.

Be accountable to local electorates. The process should ensure that governance arrangements are sensitive to the interests of local culture and communities. A common approach is to have a joint board comprising elected representatives of each area dedicated to strategic planning. Another is for a leaders' board to take strategic decisions. The latter has the advantage of facilitating closer links between spatial planning and other objectives.

Be responsive. Strategic planning needs to be efficient, with a dynamic review mechanism capable of adapting to change. In several cases, the strategic planning function acts as a guide to other decisions (for example, on planning or investment) taken further down the line. If the plan is cumbersome to prepare, it could delay those other decisions.

Be deliverable. For strategic planning to be to be effective, it must be linked to expenditure programmes. From the experiences of Glasgow and London, it is clear that strategic planning only in name serves no purpose; implementation bodies must also buy in to the process. The RTPI has explored this critical factor in its Planning Horizons paper, *Making Better Decisions for Places*.

Furthermore, RTPI has identified six key factors affecting successful strategic planning:

1. Cooperation between local authorities brings major benefits to all participating councils
2. Strategic planning benefits from being locally designed the principle of subsidiarity
3. Strategic planning may flounder if the scope is insufficiently wide
4. Effective strategic planning requires deep political involvement
5. While business engagement may be elusive, it is critical
6. Cooperation needs to reach beyond the core strategic planning area

This case study is a summarized section form Strategic Planning: Effective Cooperation for Planning Across Boundaries, *from the Royal Town Planning Institute (RTPI)*. Available at: www.rtpi.org.uk

Case Study – Ireland: Transforming the planning process[43]

The objective of the National Spatial Strategy of Ireland is to achieve a better balance of social, economic and physical development supported by more effective planning.[44] To drive balanced regional development, the Department of the Environment, Community and Local Government sets the overall regulatory and policy framework for planning to be implemented through local authorities and a board, as well as building an integrated online-planning information service known as Myplan.ie.

The challenge

Ireland had 88 separate planning authorities, including city and county councils, town councils and borough councils, which together adopted over 400 statutory development plans, local area plans and zoning plans. However, these plans were produced in a variety of formats, inhibiting an effective overview and integrated planning of future development and other land uses. Therefore, the department set out to improve coordination between local authorities by creating a single source of consistent, up-to-date planning information for all of Ireland to support government decision-making. This required the local authorities to enhance and enrich their development, local area and zoning plans, which formed the basis of a consolidated and consistent national planning dataset.

The solution

Myplan.ie was developed as a solution to ensure strategic, coordinated and forward-looking planning. The solution leveraged Ordnance Survey Ireland's web mapping service to stream background mapping, including street maps, aerial photography and historical maps, directly into the application. Myplan.ie incorporates a vast amount of supplementary information, including data on important national monuments, architectural heritage, areas of special protection, nature reserves, flood plains and population census and education services.

For the government, Myplan.ie facilitates targeted investment in infrastructure and improves planning, governmental oversight, coordination of public services and communication with individuals and businesses. For individuals and organizations (such as property developers, architects, surveyors, lawyers and planning consultants), the availability of Myplan.ie is expected to lead to significant efficiency gains since they no longer have to piece together information from multiple sources.

As a result, developers can propose better planning applications thanks to improved insight into what development might be permitted and how designs for new buildings should be adapted to mitigate risks (such as flooding) and incorporate environmental sensitivities. They can also use the online solution to see precisely what land in their local communities is designated for development and to access a wide range of data on factors that impact planning decisions, such as population growth.

The system can be viewed free of charge at www.myplan.ie

Case Study – Japan: GIS in urban planning and how it works in Japan

This case study describes how geographic information system (GIS) technologies facilitate urban planning in Japan. It draws on examples from three components of urban planning: city master planning, regulation revision and city planning ordinance revision. Urban planning is defined as "city planning, city planning restrictions, city planning projects and any other necessary matters concerning city planning for the sound development and orderly improvement of cities."[45] Spatial data (locational information) can be useful in all stages of urban planning from planning, consensus building and implementation to management and maintenance.

City master planning

A city master plan governs all subsidiary plans in a district, city, town or village. It typically describes the municipality's overall policies governing:

- Land use and urban physical structures
- Rationality of traffic systems
- Placement of elements that affect community welfare
- Green belts, bodies of water, landscape and the environment
- Disaster management

Therefore, to update a city master plan and justify such an update the current patterns of land and building use need to be collected and analysed. In Japan, current patterns of land and building use are gauged from data collected through a municipality's Basic Survey for City Planning together with census data. A Basic Survey is conducted every five years and, typically, includes population and industry, land and building use, as well as urban infrastructure such as roads and parks. In recent years, the results of Basic Surveys have been released as GIS data.

GIS data is used throughout the process of city master planning. The technology enables different maps to be laid over each other for comparison and analysis, facilitating the identification of gaps and issues to be addressed. For example, a predominance of both narrow roads and irregular parcel sizes may indicate an older neighbourhood where urban infrastructure needs upgrading or improvement.

A city can plan infrastructure upgrades using criteria within its jurisdiction, estimate the amount of work necessary, prioritize areas and create a master plan for urban area improvement and conservation. GIS technology is used to compare the draft plan with existing plans of related projects or other divisions within the local government. Finally, GIS maps are used to communicate the city master plan with its citizens for consensus building and education.

Regulation revision

District use regulations define the purpose of a building (for example, commercial or residential) in each type of use district, as well as the permitted floor area ratio, building-to-land ratio, maximum height allowed, minimum parcel size and so forth. As any changes to these district use regulations impact the rights of private land and building owners, the reasoning behind revisions must be meticulously analysed and documented. GIS technologies support local governments in this exercise by providing relevant data. The results of GIS analysis show the effects of a change in regulation both numerically and visually, contributing to consensus building.

Height control districts have restrictions on the minimum or maximum height of buildings to preserve or improve an urban environment. In the past, the absence of such regulations resulted in high-rise residential buildings sprouting up in metropolitan centres, sometimes changing the character and quality of the surrounding environment. Many local governments are now adopting height control regulations, for which data on existing building heights is crucial. Airborne laser scanning (capturing 3D data of large areas) is helping local governments measure and map the height of existing buildings. Combining this data with land use, parcel size, roads and other information using GIS enables the generation of multiple scenarios based on different height control parameters that can be examined before adopting or revising height control regulations.

City planning ordinance revision

To ensure locally appropriate urban planning, city planning ordinances in Japan are set by local governments within the parameters of national legislation. As a general rule, an ordinance is required when rights are restricted or when administrative obligations or duties are created.

There are different kinds of local city planning ordinances: those that outline a municipality's urban planning principles and measures; those that describe methods and procedures for community participation in the planning process; and those that list standards and codes governing land development projects and land use, or list local standards and codes on land development based on the City Planning Act (called delegatory ordinances).

GIS technologies also support local governments in the preparation of compound ordinances. While sharing traits with delegatory ordinances, compound ordinances are issued by local governments under legislative powers vested by the Local Autonomy Act. When setting new or revised standards and codes regarding development and land use, the number and distribution of buildings or plots that would meet the new criteria must be demonstrated. As these ordinances could potentially restrict private rights, GIS technologies are used to validate the rationale behind the proposed codes and standards.

This case study has been provided by Kokusai Kogyo Co. Ltd. (Japan).

Case Study – European Union: TRANSFORM Smart City Project[46]

The EU's TRANSFORM programme is an integrated approach to smart city development. The purpose of the programme is to develop methods and tools that enable the transformation of cities into low-carbon and smart-energy urban areas. Specifically, the intent is to support the efforts of local stakeholders responsible for investments and policy decisions to turn their CO_2 targets into tangible implementation plans with a strategic, long-term horizon, as well as to define neighbourhood-specific, shorter-term developments.

Driving the TRANSFORM programme is a consortium of six leading European cities and 13 private-sector partners. Amsterdam, Copenhagen, Genoa, Hamburg, Vienna and Lyon contribute their experience with planning, city administration and developing climate and energy policies. Energy and grid companies contribute their knowledge of smart grids, renewables, business models and energy modelling. Other commercial partners, such as Accenture, Arup and Siemens, as well as knowledge institutions, contribute know-how on planning, energy system analytics, quantitative data modelling, qualitative modelling, key performance indicator (KPI)–setting and decision-support environments.

The programme's tenure is 2013–2015, enabling other cities and their stakeholders to take advantage of developed methodologies and the open-source decision-support environment. The approach developed through the TRANSFORM programme facilitates the development and achievement of each city's specific objectives for becoming a smart-energy city by enabling partner cities and their stakeholders to:

- Assess the current state and define goals by developing an overview of the city's smart-energy vision, analysing the current state and determining the trajectory for becoming a smart-energy city
- Develop a transformation agenda to supplement the current city strategy with an integrated and focused approach to planning and action
- Apply the quantitative decision-support environment, an open-source web-based decision-support system that enables informed decisions based on city-specific data. This decision-support system is optimized for each city and supports the following steps:
  - Gather, clean-up, aggregate (if needed for privacy reasons) and translate to a standardized format the city-specific geospatial and energy-related data originating from multiple data owners (such as energy suppliers, municipalities and network companies) on a granular level. Enrich the energy-consumption data through statistical analysis, upload all data into a common TRANSFORM database, and make the database available using a web interface
  - Analyse the data to obtain initial insights into potential opportunities for action. Analysis covers different energy and climate KPIs from the city (such as natural gas consumption). It enables data queries on different spatial levels (for example, buildings, blocks and districts), and across different energy and climate-related indicators. Using a geographic information system, a user can zoom in on city maps and identify where the biggest energy and climate gains can be achieved
  - Define values (in time) for variables outside the direct control of the city that will be used as part of sensitivity analysis (for example, energy prices) and combine them into a number of possible future scenarios
  - Define measures aimed at helping the city reach its energy and climate targets (such as thermal grid extension); and using a variety of selection criteria (for example, energy labelling of buildings), allocate these measures to selected districts, streets, blocks or buildings directly on the map. Combine different measures to create alternative implementation plans
  - Run simulation experiments, view projected results in time (using detailed graphs, charts and maps), identify gaps, optimize different measurement portfolios and redefine implementation plans
- Develop smart urban labs implementation plans by identifying and implementing specific urban redevelopment projects applied to the following neighbourhoods:
  - Copenhagen: Redevelopment of a port area toward a CO_2-neutral, mixed-use lively new neighbourhood for living and working
  - Hamburg: Transformation of a partly industrial zone into a mixed-use urban area, combining housing, industry, a port, water, green areas and open space
  - Amsterdam: Transformation of a mixed-use area that includes the main sports arena, offices, leisure and shopping facilities, a hospital, data centres and an energy plant
  - Lyon: Transformation of a central district from the 1960s into a mixed-use area, including offices and residential and commercial areas
  - Genoa: Transformation of a port area into a new carbon-low urban area
  - Vienna: Greenfield and brownfield development, including 20,000 apartments, 20,000 workplaces, new public transport and social and smart technical infrastructure

Although TRANSFORM is still a work in progress, participating cities are already gaining valuable insights from the broad stakeholder approach and the expertise of various partners and partner cities. The TRANSFORM programme accelerates and improves the cooperation of different stakeholders within the city and creates the foundation for data gathering, resulting in actionable insights and fact-based decision making facilitated by the decision-support environment.

More information is available at www.urbantransform.eu

Case Study – Venezuela: Urban planning and slums[47]

Approximately half of the people in Venezuela live in poverty, many occupying shanty towns or squatter areas. Several cities consider demolishing these squatter settlements to be a solution, but such displacement creates disorder, increases crime and adds to the misery of poverty. Venezuela, on the other hand, has leveraged GIS technologies to understand how urban squatter settlements are organized, using that information as the foundation for devising improvement efforts.

A framework was developed to plan sustainable improvements with the goal of enhancing the residents' quality of life. This approach was intended to introduce "friendly interventions" into the as-built environment. For example, residents agreed to sharing waste disposal to maintain clean open spaces and limiting building height so as not to block natural light.

On the more complex issues, such as unstable slopes, inadequate utilities and insufficient schools, GIS technologies were used to create what-if scenarios generating maps to show what a possible solution would look like, who it would affect and how it would help. These images enabled community participation in planning. Based on community input and planners' assessments, site analyses were carried out to help communities successfully request government programme funding.

"Barrio (shanty town) analysis is very complex," explained Giusti de Pérez, an architect leading the project. "GIS can take this mess of barrio data and organize it into something that makes sense. We would select a barrio, meet with its community leader and explain that we wanted to help. The community leader would then invite other people from the community to a meeting. Together, we would identify what they needed and prioritize their concerns. When visualizing squatter developments as cities within cities, GIS technologies help us see the internal connections that constitute the barrio's underlying order, which is understood by residents of the area," noted de Pérez.

For a three-year project in the Petare barrio of Caracas, GIS technologies proved critical to visualizing and assessing the area's urban built conditions and social networks. GIS was also essential to creating a sustainable planning strategy and designing improvements that fit both building and social needs under the conditions dictated by the site's geography. Working with local residents, urban planners mapped 93 sectors spread over 82 hectares. Data included vehicular and pedestrian pathways, sector boundaries, social spaces and built-up areas. The group determined the areas that faced the risk of landslides and focused on implementing building control policies for these areas.

Community concerns varied and each project was unique. In the Petare barrio, the community's main concern was accessibility to urban facilities and infrastructure such as better drainage and solid waste disposal. The priorities of another barrio community included drainage, open spaces for children and lighting. Three key lessons were drawn, based on the experience of using GIS technologies to improve the lives of squatter communities:

1. Find ways to involve the local community in the process of gathering information to identify the problems and opportunities. This helps planners overcome the lack of data.
2. Identify the social relations and interactions of the local community with open spaces in the area. This is more important than merely describing land use.
3. In hilly squatter settlements, understand the rules of urban and social functioning: identify steep slopes, drainage patterns and accessibility to the city.

This case study is taken from GIS Best Practices: GIS for Urban and Regional Planning. January 2011. ESRI. Available at: http://www.esri.com/library/bestpractices/urban-regional-planning.pdf

Recommendation II: Create a Stable Policy Framework for Private Investment in Urban Infrastructure[48]

Like governments around the world, India faces an acute need to provide new or modernized infrastructure and public services. Investors evaluate an infrastructure or urban development opportunity in relation to other asset classes such as government bonds, equity markets and private equity. In other words, investors evaluate not just how to invest in infrastructure but whether to invest in it at all.

Many investors, particularly long-term ones such as pension funds, insurance companies and sovereign wealth funds, want to allocate more capital to infrastructure, but struggle to find bankable projects. A significant mismatch exists between the need for infrastructure projects and the capital made available by investors. While both investors and political leaders can take steps to address this disconnect, governments can enhance the viability of infrastructure projects and attract private capital for the public good.

It is imperative to appreciate the perspective of investors, who assess infrastructure projects against a multitude of options in other asset classes and countries. In this context, countries with more effective regulatory environments and credible project pipelines will attract more investment at a lower cost. Fortunately, the most critical policies that interest private finance also tend to benefit society. This underscores a key point: governments can seek private investment while achieving the ultimate goal of creating broader economic value and societal benefit. Based on interviews with major global infrastructure investors, the following specific actions for governments are recommended:

Have a strategic vision for infrastructure. A credible vision and clear project pipeline can mitigate investor uncertainty and public scepticism and can trigger productive collaboration between government and investors. Key components in this are:

- **Credible project pipeline**. Develop an ongoing project pipeline linked to a national vision and strategy to enhance attractiveness. A set of realistic, comprehensive opportunities instead of ad hoc procurements will help investors see value in building capabilities and expertise in India.
- **Viable role for investors**. Prioritize projects for private-sector financing that are most likely to interest investors and achieve value for money for the public. Capital recycling – that is, leasing or selling existing brownfield assets to raise funds for greenfield projects – should be considered.
- **Communication strategy**. Proactively address the benefits of, and public concerns about, private- and possible foreign-investor ownership in infrastructure, particularly by clarifying the difference between "ownership" and "control".

Create policy and regulatory enablers. A supportive policy and regulatory environment must underpin any strategic vision. Investors frequently cite four main policy impediments:

- **Renegotiation risk**. The strain on Government of India balance sheets, coupled with several recent high-profile regulatory decisions, has positioned political risk – and specifically renegotiation risk – as a critical concern for many investors.
- **Procurement process**. Bidding for a PPP project is time-consuming and costly for investors. A lack of standardization is a major obstacle to an efficient process. A PPP entity should be given the task of enhancing transactional capacity and efficiency on the government side and of driving greater efficiency and standardization in the procurement process.
- **Permitting processes**. Regulatory and environmental permitting processes should be reviewed and streamlined, and, if possible, a lead agency should be appointed to manage the process and review of other agencies. Complex permitting processes that lack coordination and predictability will constrain investment in even the most financially attractive projects.
- **Tax policy**. Tax policy should not systematically give advantage or disadvantage to certain types of investors. Taxes also should be stable over time. The holistic impact of all forms of taxation should be assessed based on the financial viability of projects.

Develop an investor value proposition. Investors evaluate the risk-return of an infrastructure opportunity in relation to investments in other asset classes and jurisdictions. To develop a strong investor value proposition at the level of an individual project, the Government of India should address three crucial issues:

- **Financial returns from the investor perspective**. Projects should be analysed from an investor's perspective to determine financial viability, support risk-allocation decisions and benchmark risk-return compared with other investment opportunities. The government should not expect investors to accept a lower return simply because a project has significant social benefit. This is not to underplay the importance of securing public value. However, many investors are restricted by fiduciary duties and legislation to maximize risk-adjusted returns.
- **Risk allocation**. The Government of India should develop a standard methodology for allocating risk – a set of "guiding principles" to determine the level of risk allocation optimal to both deliver value for money and provide investors with an appropriate risk-return. In the current environment, the allocation of financing risk and demand risk is of particular importance. To manage financing risk, the government could consider alternative approaches to incentivizing transactions, such as credit guarantees. For demand uncertainty, risk-mitigation options could include availability-based payments and risk sharing.
- **Market sounding**. Market sounding with potential investors should be interactive and undertaken early to generate feedback on a project, learn more about investor preferences and determine refinements needed prior to the tender process. Market sounding must be carefully managed to generate useful information and prevent probity issues.

Once the policy environment is stable and the right conditions for investors have been created, the Government of India needs to look at the various tools available to foster investment in strategic infrastructure and urban development. One such tool is PPPs, with which the Government of India already has experiences.[49] PPPs can accelerate infrastructure development by tapping the private sector's financial resources as well as its skills in delivering infrastructure effectively and efficiently on a whole lifecycle-cost basis. But despite this supposed fit between demand for and supply of private sector participation, too few projects have been successful in India.

The reason for this paradox is the "project preparation gap," that is, the lack of well-prepared, bankable PPP projects where investors are sufficiently reassured by the commercial and technical feasibility, the risk allocation and the public sector`s contractual commitment and capacity, as well as by the institutional and legal framework. Furthermore, of the PPPs that have been implemented, several have been plagued by delays, cost overruns or renegotiations as a result of a suboptimal preparatory phase.

A PPP best practice framework has been developed (see Figure 8). Necessary preconditions for the effective use of this framework are that projects have been identified and prioritized on the basis of an integrated infrastructure plan or national/regional spatial strategy, that a rigorous economic cost-benefit analysis has been done and that the PPP delivery mode has been indicated by an unbiased value-for-money analysis of the whole lifecycle. The framework identifies eight critical success factors that the Government of India should take into consideration when preparing PPPs.

The Government of India can use this holistic framework along with a detailed checklist for four of the critical success factors (see Figure 9) to identify and prioritize the areas where change is required.

Figure 8: PPP Best Practice Framework

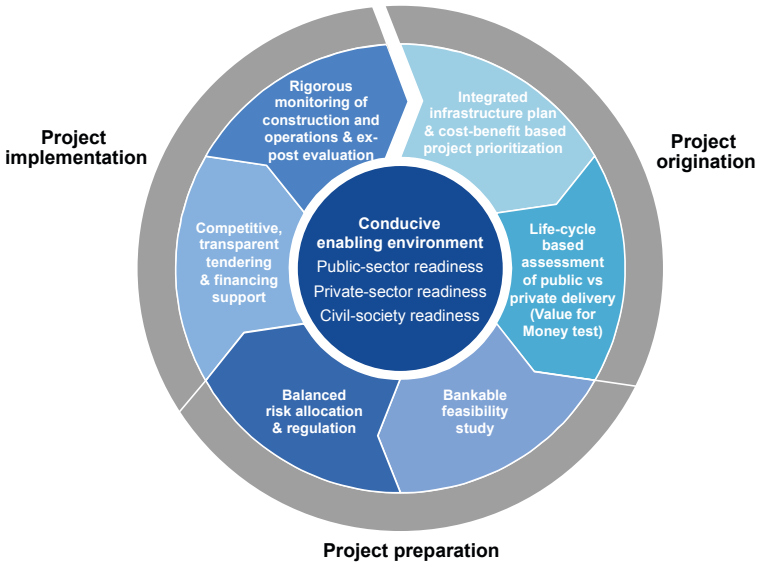


Figure 9: Checklist of PPP Project Preparation Best Practices

Rigorous project preparation process	Team and leadership	**1.1.** Assemble an experienced, cross-functional team	**1.2.** Secure buy-in and leadership of high-level political champions and public servants
	Governance & project mgmt	**1.3.** Set up a governance structure with clear roles/responsibilities and a coordinator	**1.4.** Pursue rigorous project management, and devise multi-stage planning
	Preparation funding	**1.5.** Secure sufficient preparation funding and minimize costs through standardization	**1.6.** Leverage project-preparation facilities (with cost recovery, advisory and monitoring)
Bankable feasibility study	Technical scope	**2.1.** Conduct robust and sophisticated demand forecasting	**2.2.** Fix contractible, innovation-friendly output specification cross-checked by cost forecast
	Commercial attractiveness	**2.3.** Apply user charges, ancillary revenues, land-value capture and government payments	**2.4.** Test bankability continuously and conduct market sounding early
	Prerequisites	**2.5.** Pursue proactive, inclusive and professional stakeholder engagement	**2.6.** Complete holistic legal feasibility check and expedite permits and land acquisition
Balanced risk allocation and regulation	Incentives	**3.1.** Adopt a life cycle-oriented contract model aligned with the policy objectives	**3.2.** Apply incentive-based price regulation and evaluate competition options
	Risk mitigation	**3.3.** Identify all risks, allocate them to the best-suited party and apply risk sharing/ mitigation	**3.4.** Adopt regulation that is adaptive to exogenous changes and volatility
	Safeguards	**3.5.** Fulfil social objectives via enforced quality regulation and efficient monitoring	**3.6.** Provide for government intervention options in a predictable and fair way
Conducive enabling environment	Public-sector readiness	**4.1.** Establish a solid legal framework and independent regulators/dispute resolution	**4.2.** Enhance individual capacity with training, and build institutional capacity in PPP units
	Private-sector readiness	**4.3.** Facilitate access to local currency, long-term finance and guarantees	**4.4.** Develop a competitive and capable local industry/workforce and pursue trade reforms
	Civil-society readiness	**4.5.** Insist on transparency and enforce anti-corruption standards	**4.6.** Optimize public communication, information and participation

As an immediate step, the Government of India should start by reviewing and benchmarking its PPP policies and frameworks against the best practices checklist to identify areas most relevant to India. Based on these insights, the Government of India should aim to standardize its PPP approach to align with best practices. For example, by establishing a clear gateway/approval process; by institutionalizing project-preparation facilities, viability-gap funding or financing/guarantee facilities; and by providing model documents for contracts and requests for proposals/quotations (RfPs/RfQs).

World Economic Forum – Global Strategic Infrastructure Initiative

The framework presented here has been developed by the Forum's Global Strategic Infrastructure Initiative. The main objective of this initiative is to develop, share and disseminate actionable frameworks and best practices to catalyse action at the global and regional level to resolve the infrastructure gap. It aims to provide a continuous, sustained dialogue and interaction between governments, multilateral development banks, financiers, investors, engineering & construction companies and users to ultimately increase the number of well-structured bankable infrastructure projects and boost infrastructure delivery globally. The initiative focuses on four areas:

- Development of best practice guides and frameworks
- Provision of systematic business engagement to support implementation at regional level
- Development of a knowledge and collaboration platform to trigger collaboration on infrastructure
- Advancement of infrastructure finance through new approaches

A number of interesting urban development PPP case studies have been developed with the support of international partners.[50] To maximize the value of PPPs, the Government of India should structure them as long-term programmes within a national infrastructure plan and a national spatial strategy, instead of as a series of separate projects. The Government of India should keep its expectations flexible and realistic by also looking beyond PPPs: the PPP approach to infrastructure and urban development projects in India is no fail-safe silver-bullet solution and, if a PPP does not deliver the best value for money, it should be abandoned and perhaps replaced by a more suitable delivery mode. PPPs are an option, not an objective. But overall, a well-designed PPP strategy and programme – complemented by other policies to improve infrastructure and urban development prioritization, delivery and operations – will provide India with a great opportunity to boost its infrastructure, increase economic competitiveness and achieve major socioeconomic advances.

Case Study – India (Tamil Nadu): Pooled bond issue as a sub-sovereign finance model[51]

A series of amendments to the Constitution of India in 1992[52] gave local governments increased authority and responsibility for social, economic and urban infrastructure services (such as public health, education, housing, water and sanitation, and urban development). As a result, state governments were to increase the transfer of resources and functions to urban local bodies (ULBs). In response, the state government in Tamil Nadu founded the Tamil Nadu Urban Development Fund (TNUDF) in 1996 with the participation of Indian financial institutions and the World Bank, and with technical assistance from USAID.

TNUDF was the first municipal development fund in the country. It was established as a trust under Indian law and has become a leader in the support of municipal financing by introducing creative funding instruments appropriate to the emerging Indian capital market. A private asset management company, Tamil Nadu Urban Infrastructure Financial Services (TNUFSL)[53], manages the financial operations of the trust. Through TNUFSL, TNUDF has been able to attract domestic private financing for urban projects covering water supply and sanitation, roads, bridges, electricity and other aspects.

In 2002, TNUDF successfully completed the Water and Sanitation Pooled Fund (WSPF), the first pooled financing arrangement in India, to finance water infrastructure projects. There were other benefits, too. The pooled fund's structure was tailored to the financing needs of several small and medium-sized ULBs. It provided credit enhancements to extend a municipal bond's maturity, significantly improved bond pricing and laid the foundation for the development of the municipal bond market in India.

Objective

The WDPF's main objective was to provide 13 small and medium-sized ULBs in the state of Tamil Nadu access to the domestic capital market to finance their water and sanitation infrastructure projects. The goal was to diversify their credit risks and achieve the necessary economies of scale for a mix of financially strong and weak municipalities that could not have individually accessed the municipal bond market. By pooling the funding requirements, the normally high transaction costs of a bond issuance and market access were shared by all borrowers.

More importantly, the WSPF transaction was also intended to help develop the municipal capital market by introducing an attractive long-term debt instrument, with longer maturities than were characteristic at the time. Until this transaction, the maximum tenor for municipal bonds in India was seven years, as they were perceived as very risky. The lack of appetite for longer maturities had become a major impediment to the expansion of the municipal bond market in the country.

Results

WSPF issued its first bond in November 2000. It was a five-year unsecured bond issue for $21.3 million and carried an effective interest rate of 11.85% a year. A month later, in December 2002, the WSPF issued its second bond (the first long-term infrastructure bond in India). The enhanced $6.4 million pooled debt bond secured AA (local) rating by Fitch Ratings. It was privately placed at a competitive effective interest rate of 9.2% a year (compared to the first issue's 11.85%), resulting in substantial savings compared to the ULB's individual borrowing rates of approximately 12% a year. In addition, the unprecedented 15-year maturity of the bond lowered the debt service payments and improved the matching of funding maturity to the life of the projects.

More significantly, the longer tenor and structure of these bonds triggered an active secondary bond market, enhancing the liquidity of these instruments, and helping to develop and invigorate the primary municipal bond market. The success of the offering also confirmed the demand for long-term municipal debt instruments on a pooled basis.

In a broader context, this transaction demonstrated the crucial role that a public-private financing intermediary such as TNUDF can play in bringing together local governments, rating agencies, advisers, investment banks and investors to facilitate access to the domestic capital market. The transaction demonstrates that funding the development of local infrastructure in financially strapped municipalities can be met by market-based mechanisms, and can be replicated in the urban and semi-urban areas of other developing countries that need investment in social and economic infrastructure.

This case study is from the Financial Sector Knowledge Sharing Project (FS Share) from the USAID's Bureau for Economic Growth Agriculture and Trade (EGAT); available at: https://egateg.usaid.gov/sites/default/files/FS%20Series%201%20Enabling%20Sub-Sovereign%20Bond%20Issuances.pdf

Recommendation III: Create Institutions to Stimulate Capacity Building and Attract Talent to Grow Businesses

Buoyed by the success of the service sector, which contributes more than 56% of GDP[54], India has started to focus on developing human capital. In 2009, in a major policy boost to develop human resources, the government launched the National Skill Development Mission, which aims to provide vocational training to 500 million people by 2022[55]. In addition, India added around 850,000 technical graduates and 160,000 management graduates to the workforce in 2014 alone; of these, around 36% are employed directly – the largest such figure in the world[56].

The recent strong mandate at the centre after nearly two decades of coalition governments has already improved investor sentiment. The new government launched the Make in India campaign (see above, Major Policies Impacting Urban Development in India), which aims to attract foreign capital and technology for local manufacturing, following in the footsteps of the People's Republic of China. Approximately 40,000 expatriates currently work in India and the number continues to grow every year[57], which points to the growing attractiveness of the country for global talent and business.

But an analysis of India's economic competitiveness reveals two facts. First, manufacturing accounts for less than 15% of India's GDP, which is low given the vast potential of India's relatively cheap labour force[58]. Second, most of the jobs in the service sector are low-skilled and poorly paid[59]. India needs to increase the number of white-collar jobs to ensure it attracts and retains talent. It needs "lighthouse" projects with the potential for interdisciplinary collaboration on urban development. Hence, it is recommended that the Government of India create further institutions to stimulate capacity-building and attract talent to grow businesses.

Several interesting approaches exist that also have a linkage to urban development. For instance, the following Mexican case study shows how the Guadalajara authorities from various levels of government jointly created an environment to attract and retain talent that otherwise would have gone to the United States to serve the Latin American market from there with digital services. The UK case study (see page 29) demonstrates the benefits of a creative and stimulating environment in which representatives from the public and private sectors and academia work hand-in-hand and learn from each other to innovatively yet pragmatically solve the pressing problems of urban development.

Case Study – Mexico: Guadalajara Creative City, Poised for High-Tech Future[60]

Guadalajara, located in the state of Jalisco, is one of the most important metropolitan areas and economic nodes in Mexico. While the overall economic performance of the city has yet to reach its full potential, Guadalajara scores among the top ten cities on Mexico's CIDE and IMCO indices. The appeal of Guadalajara is attributed to its cultural, economic and urban conditions. The city embraces creativity as one of the main drivers of development. Famous for its mariachi and tequila, Guadalajara hosts two of the most important cultural events in Latin America: an international book fair and international film festival. It is home to over 40 universities, including some of the most important in Mexico. In 2011, it hosted the Pan American Games, which led to the construction of world-class infrastructure.

Economically, the electronic manufacturing and ICT clusters have become the main driving forces of the city. By 2010, 12 original equipment manufacturers, more than 700 electronic manufacturing companies and several design centres were established in Guadalajara. This process began in 1968 with the arrival of several leading international companies. In 2010, these industries exported over $17 billion in goods, the highest figure in this sector of the country, led by companies such as LG, Samsung, Sony and Siemens. The state of Jalisco holds 24% of the software-development market, 34% of the high-tech industry and 56% of the electronics industry in Mexico.
Institutionally, Jalisco is the only state in Mexico with a metropolitan coordination law, which aims to improve harmonization throughout the urban area and foster development. Additionally, the urban planning commission, working closely with the private sector and universities, has been critical to the development of urban projects seeking to enrich the experience of the city.

In 2012, Guadalajara was selected as the site of Ciudad Creativa Digital, a project that aims to become the largest hub for the digital media industry in Latin America. The initiative seeks to transform the city's historic downtown area and is supported by the federal, state and municipal governments, as well as by universities and business organizations. Guadalajara Ciudad Creativa Digital A.C., a public-private organization, was founded to guide, manage and facilitate the long-term continuity of the project.

Guadalajara has built on its strengths to become the main hub for high-tech industries in Mexico. The integration of focused economic development, proper urban conditions and creativity, based on both education and history, might be the cornerstone of the city's future. Nevertheless, Guadalajara still needs to work on improving social factors: 30% of the population lives below the poverty line, and urban sprawl needs to be controlled. Guadalajara's competitiveness drivers must be strengthened to rank at the top of the nation and justify the city's tag line: Mexico's Silicon Valley.

This case study is taken from The Competitiveness of Cities: A Report of the Global Agenda Council on Competitiveness. *August, 2014. Geneva: World Economic Forum. Available at www.weforum.org/reports/competitiveness-cities*

Case Study – United Kingdom: The Future Cities Catapult[61]

The Catapult network is a new technology and innovation initiative developed by the UK's innovation agency, Innovate UK, to help encourage economic growth and differentiation among British businesses. The network has seven technology and innovation centres ("Catapult Centres") around the United Kingdom, each of which is focused around specific industries: High Value Manufacturing (located at multiple sites), Cell Therapy (London), Offshore Renewable Energy (Glasgow and Blyth), Satellite Applications (Harwell), Connected Digital Economy (London), Transport Systems (Milton Keynes) and Future Cities (London). Each centre offers British businesses an opportunity to work with academia, scientists and engineers on late-stage research and development, to access state-of–the-art large-scale equipment and facilities, and to transform high-potential ideas into new products and services. Each catapult centre has been operational since 2014, and together the centres represent over £1.4 billion ($2.1 billion) in private- and public-sector investment, transforming the UK's long-term innovation capability.[62]

Over £6.5 trillion ($9.9 trillion) will be invested globally in city infrastructure over the next 10–15 years, and the accessible market for integrated city systems is estimated to be £200 billion ($303 billion) a year by 2030.[63] However, the market is still nascent. Innovative approaches to "city making" are still struggling, hampered by poor procurement processes, inadequate financing mechanisms and institutional silos.[64] The Future Cities Catapult (FCC) is playing a lead role in the United Kingdom to overcome these barriers, build a vibrant market for innovative urban solutions, stimulate capacity building, attract and develop talent, and support business and economic growth.

The FCC aims to help British businesses exploit the emerging market by bringing business, city governments and academia together to collaborate and develop new innovative city services that focus on overcoming the challenges of urbanization. By offering an independent space where experts from across disciplines can collaborate, the FCC enables cities, companies and universities to work alongside the private sector to remove barriers to innovation and develop solutions that meet the future needs of the world's cities. The aim of the FCC is to develop globally replicable and exportable solutions that will help further grow the British economy.

At the heart of the innovation centre at the catapult is the cities lab, a world-leading facility where live city data is analysed and solutions to city challenges are tested and validated using innovative data-visualization techniques. This data is taken from across multiple city silos and presented in new ways, clearly demonstrating the value of cross-sector ways of working, showing how the FCC focuses on the integration of systems, and highlighting the way this collaboration helps create opportunities for better performance and greater value.

Furthermore, by combining skills across disciplines, the FCC enables cities in the UK to work across agencies to experiment with and build capacity for new ways of delivering and designing integrated city solutions and services. Collaborative ventures, research combining the private sector and academia, and demonstration projects in the market develop and accelerate access to a broad range of world-class skills and knowledge relevant to the needs of future cities. Establishing a world-class science and research base that supports the development of innovative urban solutions, therefore, develops talent in and attracts talent to the UK.

For more information see www.futurecities.catapult.org.uk

Next Steps

The Government of India has outlined ambitious plans for rapid urbanization to enable of "Faster, More Inclusive and Sustainable Growth". To date, the Government of India past and present has sought to deliver rapid urbanization by introducing specific legislation such as the introduction of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act and through various initiatives such as the creation of five industrial corridors, "Make in India" and "100 Smart Cities" programmes. The Forum welcomes the steps that the Government of India has already taken and suggests that it consider implementing the following strategic recommendations to realize its vision:

1. Integrate spatial planning at all governmental levels: national, state and city
2. Create a stable policy framework for private investment in urban infrastructure
3. Create institutions to stimulate capacity building and attract talent to grow businesses

It is suggested that the administration continue its consultations with industry and infrastructure partners, as well as civil society to get a balanced view of actions needed to achieve these plans. Fast, measurable and impactful action is necessary.

There is a strong desire on the part of the Forum Industry Partners to continue engaging in India on infrastructure and urban development initiatives. Roundtable discussion will be convened in India in collaboration with Industry Partners early in 2015 to support the Government of India with its ambitious plans.

Annexes

Annex I: Measuring India's "Faster, More Inclusive and Sustainable Growth"

Within the Twelfth Five Year Plan, the Government of India lists the following 25 core indicators to track its performance in achieving its vision of faster, more inclusive and sustainable growth (see Chapter 2):

Economic Growth
1. Real GDP Growth Rate of 8%.
2. Agriculture Growth Rate of 4%.
3. Manufacturing Growth Rate of 10%.
4. Every State must have an average growth rate in the Twelfth Plan preferably higher than that achieved in the Eleventh Plan.

Poverty and Employment
5. Head-count ratio of consumption poverty to be reduced by 10% points over the preceding estimates by the end of Twelfth Plan.
6. Generate 50 million new work opportunities in the non-farm sector and provide skill certification to equivalent numbers during the Twelfth Plan.

Education
7. Mean Years of Schooling to increase to seven years by the end of Twelfth Plan.
8. Enhance access to higher education by creating two million additional seats for each age cohort aligned to the skill needs of the economy.
9. Eliminate gender and social gap in school enrolment (that is, between girls and boys, and between Scheduled Casts (SCs), Scheduled Tribes (STs), Muslims and the rest of the population) by the end of Twelfth Plan.

Health
10. Reduce infant mortality rate to 25 and maternal mortality rate to 1 per 1,000 live births, and improve Child Sex Ratio (0–6 years) to 950 by the end of the Twelfth Plan.
11. Reduce Total Fertility Rate to 2.1 by the end of Twelfth Plan.
12. Reduce under-nutrition among children aged 0–3 years to half of the National Family Health Survey (NFHS-3) levels by the end of Twelfth Plan.

Infrastructure, Including Rural Infrastructure
13. Increase investment in infrastructure as a percentage of GDP to 9% by the end of Twelfth Plan.
14. Increase the Gross Irrigated Area from 90 million hectare to 103 million hectare by the end of Twelfth Plan.
15. Provide electricity to all villages and reduce aggregate technical and commercial (AT&C) losses to 20% by the end of Twelfth Plan.
16. Connect all villages with all-weather roads by the end of Twelfth Plan.
17. Upgrade national and state highways to the minimum two-lane standard by the end of Twelfth Plan.
18. Complete Eastern and Western Dedicated Freight Corridors by the end of Twelfth Plan.
19. Increase rural tele-density to 70% by the end of Twelfth Plan.
20. Ensure 50% of rural population has access to 40 Litres per capita per day (lpcd) piped drinking water supply, and 50% gram panchayats achieve Nirmal Gram Status by the end of Twelfth Plan.

Environment and Sustainability
21. Increase green cover (as measured by satellite imagery) by 1 million hectares every year during the Twelfth Plan.
22. Add 30,000 MW of renewable energy capacity in the Twelfth Plan.
23. Reduce emission intensity of GDP in line with the target of 20% to 25% reduction over 2005 levels by 2020.

Service Delivery
24. Provide access to banking services to 90% Indian households by the end of Twelfth Plan.
25. Major subsidies and welfare related beneficiary payments to be shifted to a direct cash transfer by the end of the Twelfth Plan, using the Aadhar platform with linked bank accounts.

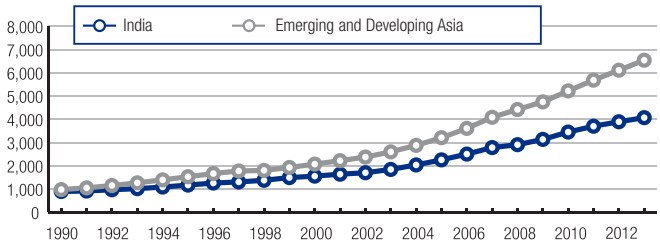
Annex II: India's Country Economic Profile[65]

The Global Competitiveness Report 2014–2015 presents a two-page economy profile for each of the 144 economies covered. A guide on how to read it, is accessible at: http://reports.weforum.org/global-competitiveness-report-2014-2015.

Key indicators, 2013

Population (millions)	1,243.3
GDP (US$ billions)	1,870.7
GDP per capita (US$)	1,505
GDP (PPP) as share (%) of world total	5.83

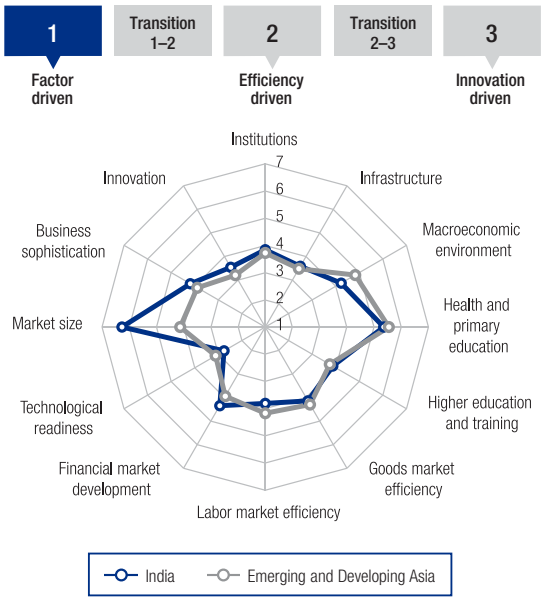
GDP (PPP) per capita (int'l $), 1990–2013



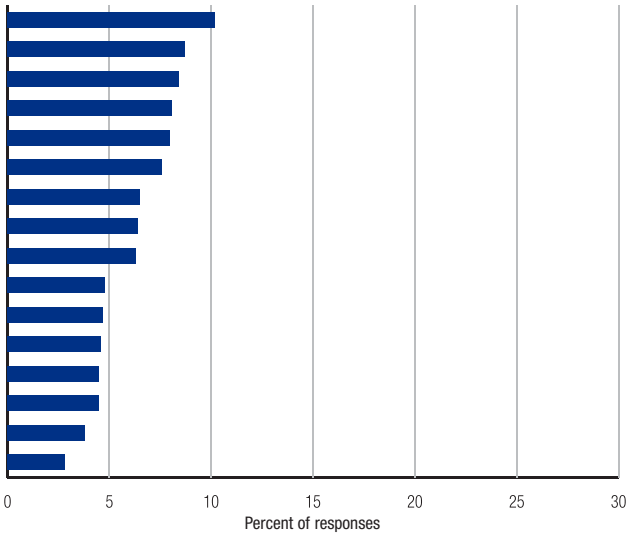
Global Competitiveness Index

	Rank (out of 144)	Score (1–7)
GCI 2014–2015	**71**	**4.2**
GCI 2013–2014 (out of 148)	60	4.3
GCI 2012–2013 (out of 144)	59	4.3
GCI 2011–2012 (out of 142)	56	4.3
Basic requirements (60.0%)	**92**	**4.2**
Institutions	70	3.8
Infrastructure	87	3.6
Macroeconomic environment	101	4.2
Health and primary education	98	5.4
Efficiency enhancers (35.0%)	**61**	**4.2**
Higher education and training	93	3.9
Goods market efficiency	95	4.1
Labor market efficiency	112	3.8
Financial market development	51	4.3
Technological readiness	121	2.7
Market size	3	6.3
Innovation and sophistication factors (5.0%)	**52**	**3.9**
Business sophistication	57	4.2
Innovation	49	3.5

Stage of development



The most problematic factors for doing business



Note: From the list of factors above, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

The Global Competitiveness Index in detail

	INDICATOR	VALUE	RANK/144
	1st pillar: Institutions		
1.01	Property rights	4.1	73
1.02	Intellectual property protection	3.7	65
1.03	Diversion of public funds	3.4	60
1.04	Public trust in politicians	3.4	50
1.05	Irregular payments and bribes	3.5	93
1.06	Judicial independence	4.2	50
1.07	Favoritism in decisions of government officials	3.4	49
1.08	Wastefulness of government spending	3.5	49
1.09	Burden of government regulation	3.6	59
1.10	Efficiency of legal framework in settling disputes	3.8	57
1.11	Efficiency of legal framework in challenging regs.	3.8	43
1.12	Transparency of government policymaking	4.0	64
1.13	Business costs of terrorism	4.0	125
1.14	Business costs of crime and violence	3.8	98
1.15	Organized crime	4.0	114
1.16	Reliability of police services	3.8	88
1.17	Ethical behavior of firms	3.8	88
1.18	Strength of auditing and reporting standards	4.2	102
1.19	Efficacy of corporate boards	4.3	94
1.20	Protection of minority shareholders' interests	4.1	76
1.21	Strength of investor protection, 0–10 (best)*	6.3	34
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	3.7	90
2.02	Quality of roads	3.8	76
2.03	Quality of railroad infrastructure	4.2	27
2.04	Quality of port infrastructure	4.0	76
2.05	Quality of air transport infrastructure	4.3	71
2.06	Available airline seat km/week, millions*	3,488.0	12
2.07	Quality of electricity supply	3.4	103
2.08	Mobile telephone subscriptions/100 pop.*	70.8	121
2.09	Fixed telephone lines/100 pop.*	2.3	118
	3rd pillar: Macroeconomic environment		
3.01	Government budget balance, % GDP*	–7.3	129
3.02	Gross national savings, % GDP*	32.7	18
3.03	Inflation, annual % change*	9.5	133
3.04	General government debt, % GDP*	66.7	110
3.05	Country credit rating, 0–100 (best)*	57.8	55
	4th pillar: Health and primary education		
4.01	Malaria cases/100,000 pop.*	1,536.4	44
4.02	Business impact of malaria	3.6	61
4.03	Tuberculosis cases/100,000 pop.*	176.0	113
4.04	Business impact of tuberculosis	3.7	135
4.05	HIV prevalence, % adult pop.*	0.3	59
4.06	Business impact of HIV/AIDS	3.7	132
4.07	Infant mortality, deaths/1,000 live births*	43.8	115
4.08	Life expectancy, years*	66.2	110
4.09	Quality of primary education	3.6	88
4.10	Primary education enrollment, net %*	93.3	78
	5th pillar: Higher education and training		
5.01	Secondary education enrollment, gross %*	68.5	106
5.02	Tertiary education enrollment, gross %*	24.8	87
5.03	Quality of the education system	4.2	45
5.04	Quality of math and science education	4.2	67
5.05	Quality of management schools	4.4	56
5.06	Internet access in schools	3.8	87
5.07	Availability of research and training services	4.2	64
5.08	Extent of staff training	3.9	77
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	4.8	91
6.02	Extent of market dominance	4.2	36
6.03	Effectiveness of anti-monopoly policy	4.4	43
6.04	Effect of taxation on incentives to invest	3.9	49
6.05	Total tax rate, % profits*	62.8	130
	6th pillar: Goods market efficiency *(cont'd.)*		
6.06	No. procedures to start a business*	12	131
6.07	No. days to start a business*	27.0	106
6.08	Agricultural policy costs	3.9	60
6.09	Prevalence of trade barriers	4.1	100
6.10	Trade tariffs, % duty*	12.4	124
6.11	Prevalence of foreign ownership	4.2	98
6.12	Business impact of rules on FDI	4.2	93
6.13	Burden of customs procedures	3.9	75
6.14	Imports as a percentage of GDP*	31.7	112
6.15	Degree of customer orientation	4.0	110
6.16	Buyer sophistication	3.8	38
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	4.1	90
7.02	Flexibility of wage determination	4.4	113
7.03	Hiring and firing practices	4.1	47
7.04	Redundancy costs, weeks of salary*	15.8	75
7.05	Effect of taxation on incentives to work	3.9	45
7.06	Pay and productivity	4.0	69
7.07	Reliance on professional management	4.2	77
7.08	Country capacity to retain talent	3.9	42
7.09	Country capacity to attract talent	3.8	46
7.10	Women in labor force, ratio to men*	0.36	133
	8th pillar: Financial market development		
8.01	Availability of financial services	4.2	83
8.02	Affordability of financial services	4.1	73
8.03	Financing through local equity market	4.0	39
8.04	Ease of access to loans	3.6	29
8.05	Venture capital availability	3.5	20
8.06	Soundness of banks	4.3	101
8.07	Regulation of securities exchanges	4.3	62
8.08	Legal rights index, 0–10 (best)*	8	29
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	4.1	110
9.02	Firm-level technology absorption	4.2	102
9.03	FDI and technology transfer	4.2	95
9.04	Individuals using Internet, %*	15.1	115
9.05	Fixed broadband Internet subscriptions/100 pop.*	1.2	103
9.06	Int'l Internet bandwidth, kb/s per user*	6.8	107
9.07	Mobile broadband subscriptions/100 pop.*	3.2	114
	10th pillar: Market size		
10.01	Domestic market size index, 1–7 (best)*	6.2	3
10.02	Foreign market size index, 1–7 (best)*	6.4	4
10.03	GDP (PPP$ billions)*	5,069.2	3
10.04	Exports as a percentage of GDP*	24.9	113
	11th pillar: Business sophistication		
11.01	Local supplier quantity	4.6	72
11.02	Local supplier quality	4.2	78
11.03	State of cluster development	4.5	27
11.04	Nature of competitive advantage	3.9	44
11.05	Value chain breadth	4.1	43
11.06	Control of international distribution	4.2	50
11.07	Production process sophistication	4.0	62
11.08	Extent of marketing	4.1	81
11.09	Willingness to delegate authority	3.9	57
	12th pillar: Innovation		
12.01	Capacity for innovation	4.0	48
12.02	Quality of scientific research institutions	4.0	52
12.03	Company spending on R&D	3.8	30
12.04	University-industry collaboration in R&D	3.9	50
12.05	Gov't procurement of advanced tech products	3.5	61
12.06	Availability of scientists and engineers	4.4	45
12.07	PCT patents, applications/million pop.*	1.5	61

Note: Values are on a 1-to-7 scale unless otherwise annotated with an asterisk (*). For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" on page 101.

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Endnotes

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