

Catalyzing Solutions for Sustainable Cities

*Sharing Knowledge.
Strengthening Partnerships.
Pursuing Urban Sustainability.*



**Global
Platform for
Sustainable
Cities**



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Notes

1. All dollars (\$) indicated are in United States dollars.
2. All CO₂ emissions are in metric tons.
3. Some numbers have been rounded for clarity. Project financing amounts have been provided by GEF. Estimated project CO₂ emission targets are sourced from the May 2017 GEF report titled "Tackling the Drivers of Global Environmental Degradation through the IAP Programs." Country environmental footprint data comprising the percentage of population residing in urban areas and metric tons of CO₂ emissions per capita has been accessed through the World Bank Open Data Portal. The urban population data is sourced from the 2018 United Nations Population Division's World Urbanization Prospects; the CO₂ emission data is for 2014 and is sourced from the Carbon Dioxide Information Analysis Center of Oak Ridge National Laboratory.

Sustainable Cities

A Global Priority

Urban areas are growing at an unprecedented rate, with over half of the world's population of nearly 4 billion people now residing in cities.

By 2050, the number is expected to swell to over 6.5 billion—approximately two-thirds of humanity.

Rapid urbanization provides opportunities, yet challenges come in tandem. How cities respond to this fast-paced growth will have a long-lasting impact on the global environment.



Global Goals

The 2030 Agenda for Sustainable Development includes 17 Sustainable Development Goals (SDGs), with the 11th goal particularly relevant to cities. SDG 11 commits the world to making “cities and human settlements inclusive, safe, resilient and sustainable.”

Building on the SDGs, the New Urban Agenda (NUA) adopted at the 2016 Habitat III conference in Quito, Ecuador, sets out a 20-year road map for the sustainable urban development of cities and municipalities. The document focuses on improving residents’ social, cultural, and environmental well-being.



> “Cities are incubators where new ideas and business models are born and tested among business people and finance institutions, planners and regulators. The fight against climate change will be won or lost in cities.” <

– Naoko Ishii | CEO and Chairperson | Global Environment Facility

> “At the World Bank, we are working with the private sector, governments, civil society, and other partners to build competitive, inclusive, resilient, and sustainable cities and communities for everyone worldwide, especially for the urban poor. The Sustainable Cities program is an important contributor to these initiatives.” <

– Ede Ijjasz-Vasquez | Senior Director | Social, Urban, Rural, and Resilience Global Practice | World Bank Group

GEF: Prioritizing Sustainable Urbanization

The Global Environment Facility (GEF) recognizes that compact, resilient, resource-efficient, and well-managed cities can be drivers of the green economy and effective investments that return global environmental benefits. Poorly managed cities, on the other hand, will create sprawling urban development that strains ecosystems and essential infrastructure services, exacerbates climate change, and increases land degradation and environmental pollution.

To prioritize sustainable urbanization practices, GEF joined forces with key entities to launch the Sustainable Cities Integrated Approach Pilot under its GEF-6 funding cycle. The Sustainable Cities program supports 11 developing countries and 28 of their cities with approximately \$151 million in grant funding at the global and project levels. This effort has leveraged an additional \$2.4 billion in co-financing.

World Bank Leading Efforts to Promote Sustainable Communities and Tackle Climate Change

The World Bank has established initiatives promoting resilient and sustainable communities and supporting efforts to tackle climate change—which are critical prerequisites to its twin goals of eliminating poverty and boosting shared prosperity. In its new climate targets for fiscal years 2021–2025, the World Bank plans to double its direct climate finance and private mobilization investments to \$200 billion. With this it will significantly boost climate adaptation and resilience initiatives, along with integration of climate considerations in policy planning, implementation, and evaluation. The new plan will also support 100 cities as they seek to implement low-carbon and compact urban planning strategies.

The World Bank's Global Practice focusing on urban development and resilience is responsible for working with communities and cities so they are environmentally sustainable, resilient to economic and natural shocks, competitive, and inclusive, with opportunities for all. Further to this charge, the World Bank leads the Global Platform for Sustainable Cities (GPSC).

GEF-7 Investing in “Game Changers”

GEF will continue its support to mainstream sustainable development during its next replenishment funding cycle (GEF-7). The Sustainable Cities program will transition to an impact program with a focus on new technologies and approaches that can emerge as game changers to leverage greater global environmental benefits.

Why Focus on Cities?

100%

of the world's 34 primary biodiversity hotspots contain urban areas.

80%

of the world's gross domestic product is produced in cities.

70%

of greenhouse gas emissions are generated by cities.

2/3

of humanity will live in cities by 2050.

2/3

of global energy is consumed by cities.

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The Program in Numbers

Since becoming fully operational in 2017 during GEF-6, the Global Platform for Sustainable Cities (GPSC) has:

28

cities in 11 countries participating

16

training events and expert meetings organized

10

knowledge products produced—
10 more currently being prepared

8

knowledge and investment partners involved

4

language versions of the
Urban Sustainability Framework produced

2

global meetings organized, attended by
500 policy makers from more than 50 cities

1

Urban Sustainability Diagnostic for Melaka carried out—
20 more under preparation for participating cities

1

GPSC website and urban dashboard created—
www.thegpsc.org

Sustainable Cities Integrated Approach— *A Holistic Way Forward*

GEF's 2020 strategy emphasizes support for the transformational change needed to create environmental impacts on a broad scale; more specifically, it supports broad coalitions of committed stakeholders and focuses on scalable activities. Beginning in 2015, the GEF-6 Sustainable Cities program has promoted integrated approaches that address distinct, time-bound global environmental challenges.

Urbanization has played a central role in the world's economic growth, but it has also caused environmental degradation. The Sustainable Cities program provides policy and governance support to facilitate integrated urban planning, management, and financing that leads to sustainable and resilient development and sound ecosystem management.

A Two-Track Approach: Creating and Connecting Global Ambassadors

The Sustainable Cities program consists of two integral tracks:

- > City-level projects, with a focus on integrated solutions to urbanization across sectors, including urban mobility, ecosystem conservation, climate change adaptation, solid waste management, and smart technologies
- > The Global Platform for Sustainable Cities (GPSC), which ties all the city-level projects together in terms of strategy

Why Focus on Integrated Approaches?

Cities are a natural place to focus on integrated solutions—however, successful integrated solutions are not commonplace. Cities offer fertile ground for integrating traditionally interdependent operating systems, such as energy, transport, water, and waste, although in practice these components have been integrated with varying degrees of effectiveness through cross-sectoral means of land use planning and urban governance. There are strong environmental, social, and economic reasons for advancing these components into better-coordinated human systems and integrating them with natural systems. Such integration can offer tremendous environmental benefits and must be fully encouraged and scaled up in order to effect transformational change.



> “The Urban Sustainability Framework has been developed to help cities understand their current sustainability status, define a vision with priorities, establish financing for implementation, and monitor their progress—all while being able to benchmark themselves with peer cities.” <

— GPSC’s Urban Sustainability Framework¹

¹ Global Platform for Sustainable Cities, World Bank, *Urban Sustainability Framework*, 1st ed. (Washington, DC: World Bank, 2018). The text is freely available on the GPSC website at www.thegpsc.org/usf.

Global Platform for Sustainable Cities— *The Power of Partnership*

GPSC's Three Thrusts

Sharing Knowledge. Strengthening Partnerships. Pursuing Urban Sustainability.

GPSC is a partnership and knowledge platform that promotes integrated solutions and cutting-edge support for cities seeking to improve their urban sustainability. The platform comprises a diverse range of cities and organizations and has been operational since 2017.

Each city faces various constraints to achieving its sustainability aspirations based upon its own unique contexts, such as population size and per capita income. Yet by coming together and combining their efforts, cities can leverage greater advantages through the power of partnership.

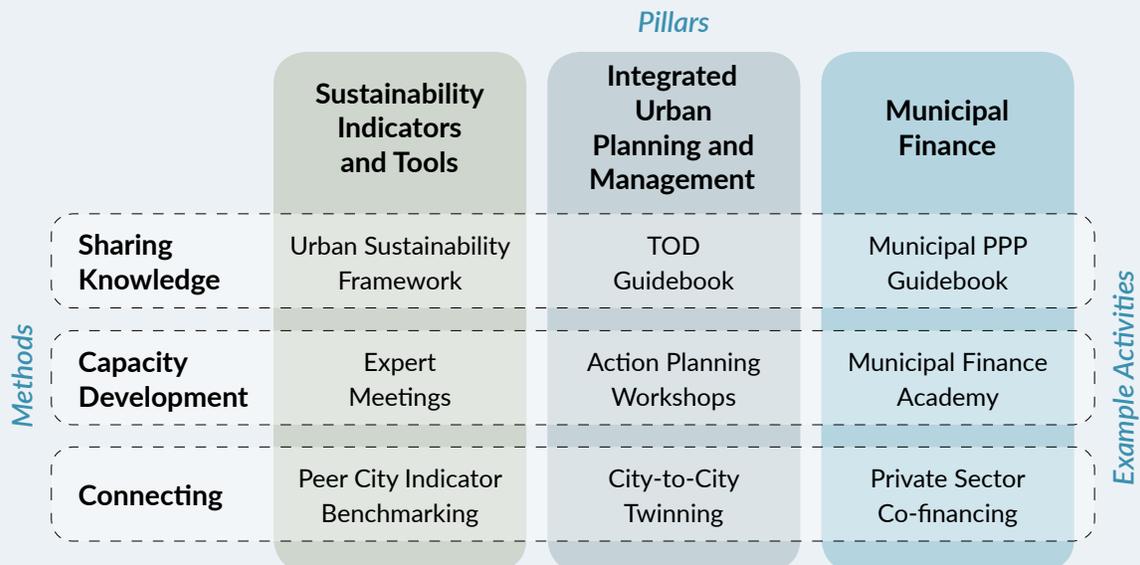
GPSC's support for cities has several objectives:

- > Help cities adopt a holistic approach to urban planning, management, and financing
- > Provide cutting-edge knowledge and urban expertise
- > Promote cities that are inclusive, safe, resilient, and sustainable

The World Bank leads the GPSC. The platform connects and collaborates with various stakeholders—including development banks, UN agencies, knowledge partners, investment partners, resource partners, and others—to pursue a holistic approach to sustainable urbanization, link projects to financing, and thereby facilitate the transformation of knowledge to investment.

GPSC's Pillars Supporting Sustainability

The platform's initiatives can be explained through its three pillars in support of urban sustainability. As shown in the diagram, three vertical pillars intersect three primary cross-cutting methods of engagement, and a range of corresponding example activities. The following pages of this report give an overview of the three pillars, along with examples of how GPSC shares knowledge. GPSC's methods of developing capacity and connecting stakeholders are also explained.



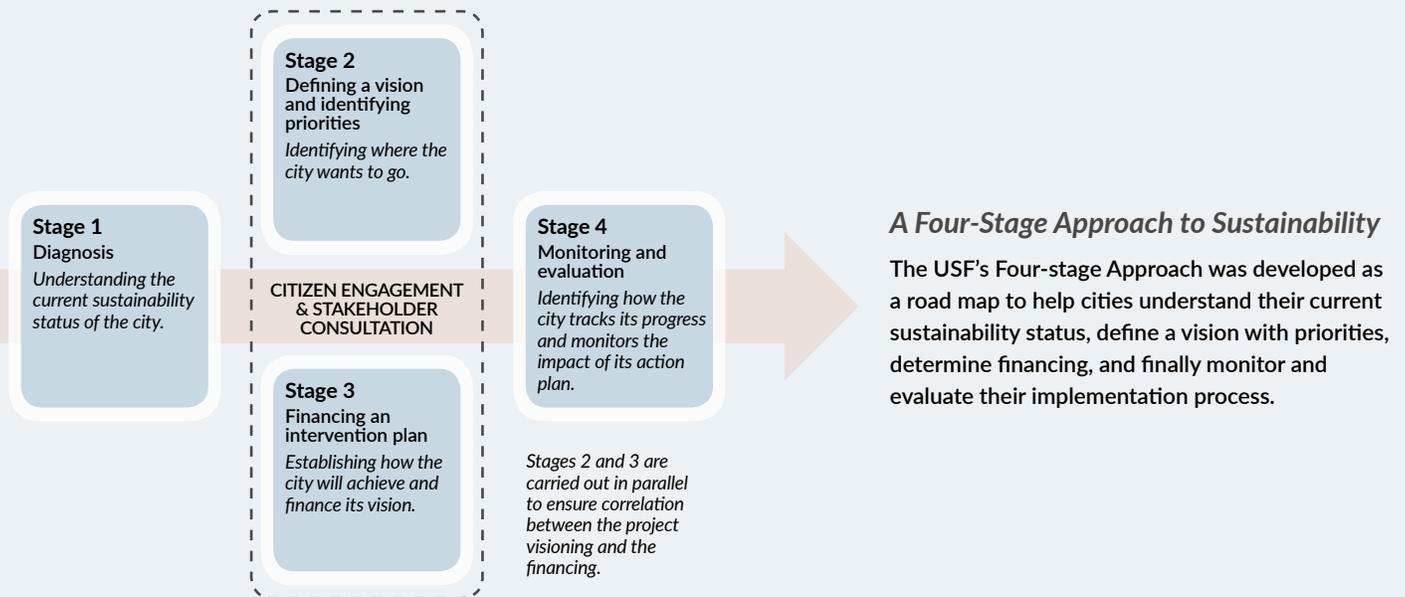
Note: TOD = transit-oriented development; PPP = public-private partnership.

Sustainability Indicators and Tools— Promoting a Shared Approach

Under GPSC’s first pillar, the platform promotes a coordinated use of indicators and tools to assess a city’s sustainability, set goals, monitor the implementation, and track the progress. The GPSC’s primary methods document is the Urban Sustainability Framework (USF), which is available on its website (www.thegpsc.org/usf) in four languages (English, Chinese, French, and Spanish).

Urban Sustainability Framework

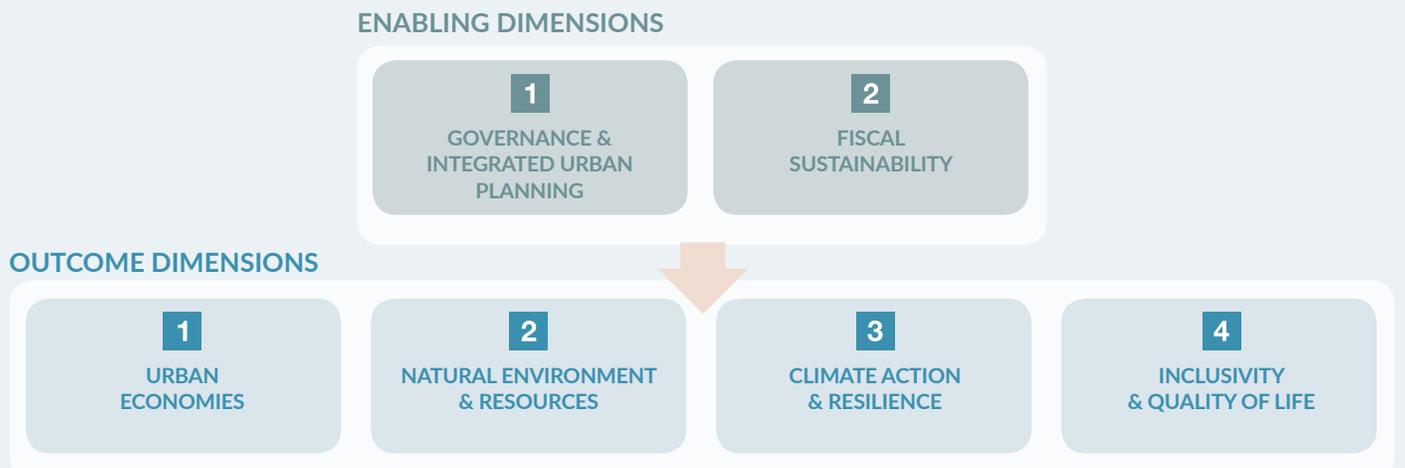
Recognizing the wide range of its cities, GPSC developed the USF as a guidance document to help build a common understanding of urban sustainability and provide cities and urban practitioners with policy-oriented and actionable tools to reach their sustainability aspirations. The document comprises two integral parts, the Four-stage Approach and the Measuring Framework.



The Measuring Framework: Helping Cities Understand and Measure Urban Sustainability

The USF has interpreted the critical themes of the SDGs, the New Urban Agenda, and the Paris Agreement to develop a six-dimensional interrelated framework to measure the sustainability

of cities. Urban sustainability is assessed through two enabling dimensions and four outcome dimensions, which are further broken down into focus areas. The Measuring Framework includes a list of goals cities can consider, rationales and key questions, and a list of indicators that allow cities to easily track their progress toward sustainability, while comparing themselves against their peers.



Melaka Sustainability Diagnostic

Building upon the USF’s methods of assessing a city’s challenges and devising a road map to achieve urban sustainability, GPSC initiated the Urban Sustainability Diagnostic process. Starting with a three-day workshop in October 2017, consultations were held with Melaka’s stakeholders from both the public and private sectors. The analysis covered five areas targeted to Melaka’s unique opportunities and constraints: Competitive & Smart Economy, Clean & Green Environment, Inclusivity & Quality of Life, Fiscal Sustainability, and Integrated Urban Planning. The assessment team was led by the World Bank in collaboration with the United Nations Industrial Development Organization (UNIDO) and the Malaysian Industry-Government Group for High Technology (MIGHT).

Urban Planning Tools to Leverage Climate Benefits

Urban land use is foundational to integrated urban planning. The GPSC provides tools such as the Urban Growth Scenario to assess the greenhouse gas (GHG) benefits of a compact urban development model. This model produces multiple results, which include savings in land, water, and energy usage; mobility optimization; and lower infrastructure costs. The co-benefits generated from integrated land use and planning provide an important basis for policy dialogue with the political leadership and for developing a compact urban spatial strategy.

City-level Sustainability Benchmarking— Comparing with Peers

The USF encourages cities to assess their urban sustainability and compare themselves with their peers. GPSC has initiated a benchmarking process using the six dimensions of the USF, and will compare most of its 28 cities to a group of aspirational peer cities in an initial assessment; the goal is to

understand where each city currently stands in terms of sustainability. The process focuses on drawing out the best practices of the cohort of cities; for each focus area, it highlights which cities are examples of best practices and successful policies and should be seen as models for their peers.

Where Your City Stands



Integrated Urban Planning and Management— Sharing Sustainable Solutions

Integrated urban planning and management, GPSC’s second pillar, is a strategic process that allows cities to shape a vision incorporating a multiplicity of mutually reinforcing actions and policies.

GPSC emphasizes the importance of informing strategic planning processes with robust data. It provides guidance to cities on how to improve data collection and management as well as leverage technology for big data, and it showcases good practices for data-sharing platforms.

Opportunities and interventions should promote a holistic, interconnected approach to city functions and consider the city as a system of systems. Such an approach recognizes the interrelationships between dimensions as set out in the GPSC’s USF and seeks to maximize synergies between city systems and functions. Transit-oriented development (TOD) is a good example of an integrated approach that brings together the consideration of land use, urban mobility, optimization of job opportunities, and environmental benefits.

Harnessing Geospatial and Data Technology for Planning

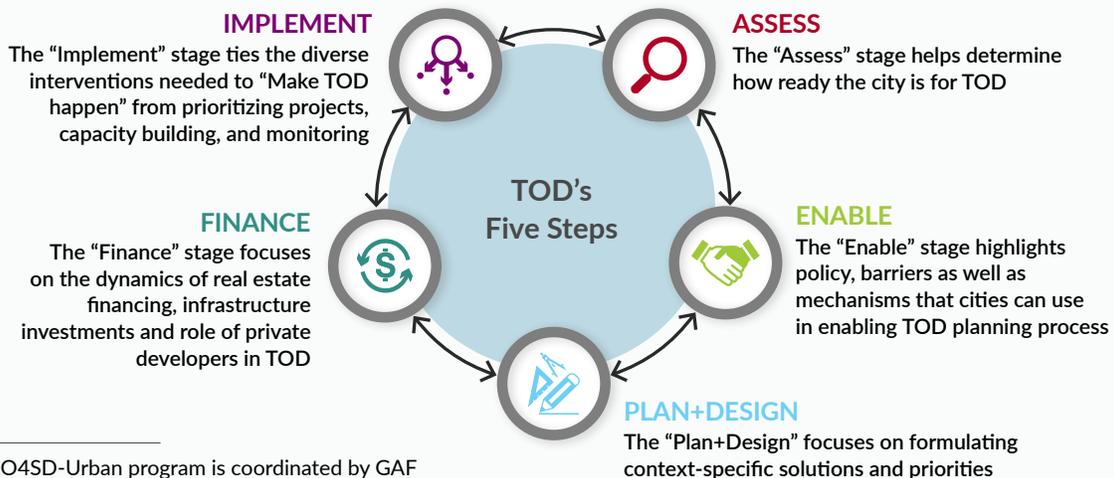
In collaboration with the Earth Observation for Sustainable Development for Urban Applications (EO4SD-Urban) program of the European Space Agency (ESA),^a the GPSC is in the process of providing cities with urban extent imagery to facilitate a finer-grained understanding of urban expansion. Some

of the geospatial products being provided to cities include baseline land use and land cover data, along with derived products such as data on urban green areas, transport networks, informal settlements, and population densities.

Transit-Oriented Development Implementation Resources and Tools

Transit-oriented development is a cross-cutting approach that integrates the strategies of land use planning, transportation planning, and land value capture. TOD advances environmental sustainability, promotes economic and socially inclusive development, and supports highly livable

and vibrant communities. GPSC has supported a World Bank initiative to produce a 550-page toolkit explaining how cities can achieve best practices in TOD. The document, *Transit-Oriented Development Implementation Resources and Tools*, lays out TOD’s five steps, as shown in the diagram.



a. ESA’s EO4SD-Urban program is coordinated by GAF Germany in collaboration with a consortium of Earth observation service providers in Europe.

Municipal Finance— Supporting a Fiscally Enabling Environment

GPSC's third pillar emphasizes the importance of cities' fiscal sustainability and builds upon the platform's focus on linking technical assistance to financing. A prudent fiscal framework will entail a transparent process of strategic budget and debt management, robust revenue sources, investment in infrastructure, and continual strategic forecasting.

Cities typically face three interrelated challenges for sustainably financing their urban development and management initiatives: the capital needed to invest in projects may not be readily available; revenue streams for city governments and urban service providers are irregular; and cities and urban service providers lack access to market-based financing for urban infrastructure. To address these challenges, city

governments and their urban service providers need to take actions that promote their long-term financial sustainability.

To promote a fiscally enabling environment through its municipal finance pillar, GPSC helps cities

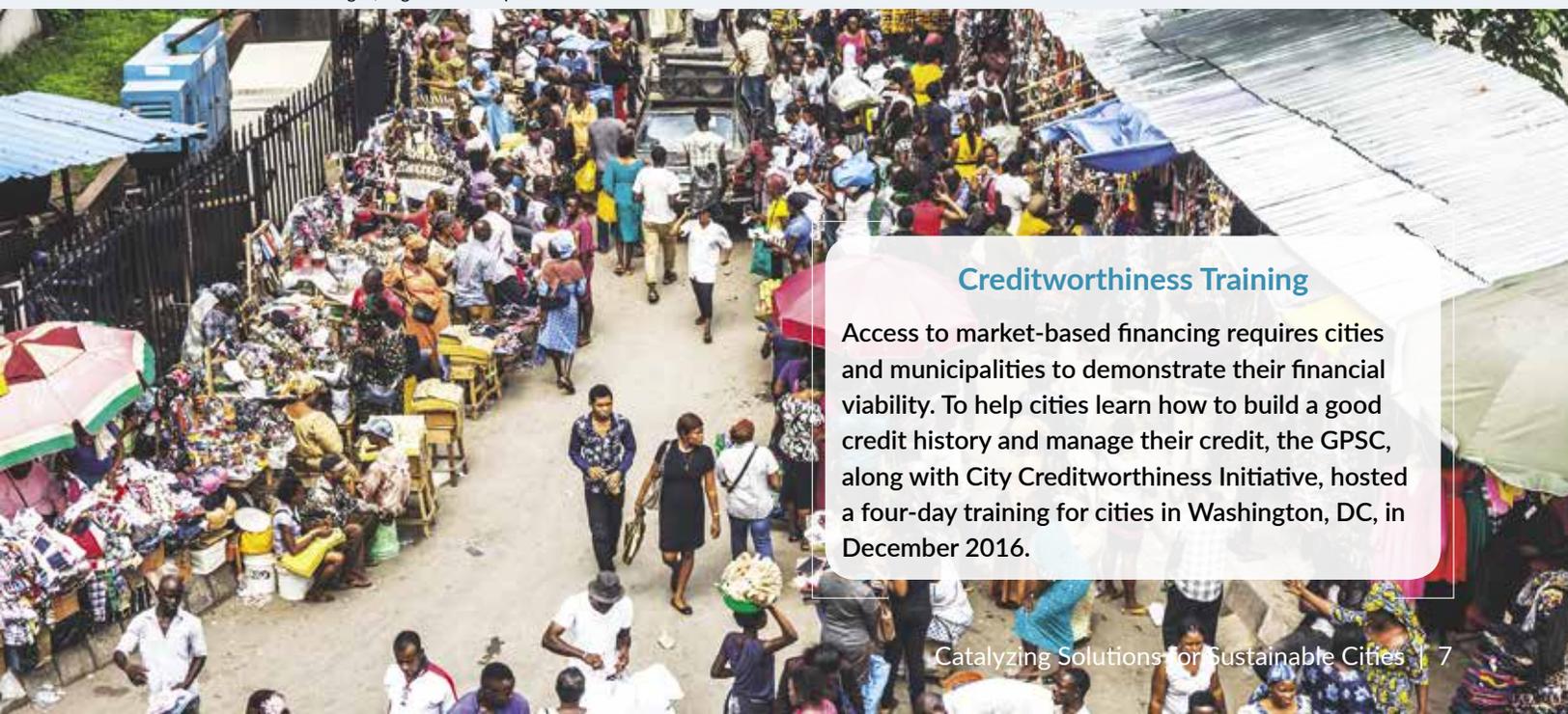
- > Assess their fiscal sustainability and creditworthiness
- > Develop revenue improvement strategies and climate-smart capital investment plans
- > Identify market-based options to finance infrastructure investment plans
- > Harness private sector investment for project financing and scaling

Melaka Municipal Finance Assessment

GPSC carried out an assessment of Melaka's fiscal sustainability within the Melaka Urban Sustainability Diagnostic. Importantly, this study was performed at both the state and municipal jurisdictions because some of the investments required to improve a state's sustainability must be undertaken directly by the municipal government. In November 2017, a three-day rapid assessment was conducted that

comprised stakeholder interviews and meetings, along with analysis of data drawn from the official audited financial statements of both governments for the previous four years. The successful engagement has since broadened beyond Melaka's Sustainable Cities project and now provides Malaysian civil servants with training in municipal finance capacity development.

Downtown market streets. Lagos, Nigeria. Photo: peeterv



Creditworthiness Training

Access to market-based financing requires cities and municipalities to demonstrate their financial viability. To help cities learn how to build a good credit history and manage their credit, the GPSC, along with City Creditworthiness Initiative, hosted a four-day training for cities in Washington, DC, in December 2016.

Capacity Development— *Learning Together*

GPSC focuses on connecting stakeholders to promote an integrated approach to urban sustainability that breaks down silos and fosters collaboration. This process of forging partnerships and sharing knowledge is supported through city-to-city learning, collaboration within the network, and the inclusion of new partners in the network based upon cities' needs and the evolution of urban sustainability practices.

GPSC is a knowledge repository for integrated urban planning that shares both best practices and lessons learned. It fosters learning through its website, through global, regional, and working group meetings, and by bringing together experts and stakeholders to share ideas.

Training and expert discussion topics have covered the following:

- > Geospatial data in collaboration with the European Space Agency
- > Urban sustainability indicators
- > GHG assessment tool for integrated urban planning
- > Integrated urban planning as practiced by Singapore
- > Integrated approach to solid waste management
- > Transit-oriented development
- > Nature-based solutions to urban flooding
- > Creditworthiness and public-private partnership (PPPs)



Global Meetings

GPSC held its first global meeting in Singapore in March 2016. The event brought together 200 participants from national, subnational, and city governments as well as research institutes, international organizations, and the private sector. Participants took part in panel discussions, thematic learning sessions, and site visits that covered a range of issues, such as urban flood risk management, TOD, and climate change resilience in urban planning.

The second global meeting, “Better Planning, Better Cities: Solutions to Urban Sustainability,” kicked off in October 2017 in New Delhi. It brought together participants from 19 countries, 30 cities, and 35 organizations. Learning events and roundtables were held on the core topics, including TOD, municipal PPPs, and the use of geospatial data tools.

GPSC African Regional Workshop

The World Bank and African Development Bank (AfDB) collaborated to organize GPSC's first regional workshop, "Integrated Urban Development in Africa: Challenges and Lessons Learnt." Held in May 2018 at AfDB's headquarters in Abidjan, Côte d'Ivoire, the event was attended by over 130 participants and hosted lectures and hands-on training on three topics: (i) evidence-based approaches to integrated urban planning; (ii) urban mobility and transit-oriented development; and (iii) municipal financial sustainability.

GPSC City Academy Singapore

The first GPSC City Academy took place in November 2018 in Singapore. At this Technical Deep Dive event, 23 city practitioners from seven countries and 10 cities sought to strengthen their knowledge of integrated approaches to urban planning, climate change, and TOD. The City Academy was jointly organized by the World Bank and the GPSC Resource Team of World Resources Institute (WRI), C40 Cities Climate Leadership Group, and ICLEI Local Governments for Sustainability.



Connecting— *Leveraging the Network*

GPSC continues to grow as a global convening space for dialogue, resources, and expert needs related to urban sustainability. The platform fosters intercity and interagency collaboration, bringing together urban

practitioners from the public and private sectors, along with a broad range of organizations—all in an effort to set up a broad-based coalition promoting sustainable forms of urban development, management, and financing.



GPSC City Academy, Singapore. Photo: Lincoln Lam (in Lew)

Implementing Agencies

The following implementing agencies guide each of the GEF Sustainable Cities projects in the 11 participating countries. They represent a wide range of multilateral development banks, a national development bank, and UN agencies.



National City Platforms

The national city platforms linked to GPSC promote an integrated approach to urban sustainability at the national and subnational levels.

Knowledge Partners

GPSC's knowledge partners share knowledge and experiences on low-carbon development and resource management. They include Aarhus, Denmark; California; China Center for Urban Development; the European Space Agency; and UN-Habitat. Paris and Yokohama are in the process of joining this unique group.

Investment Partners

The International Finance Corporation (IFC) has become GPSC's first investment partner. GPSC also works closely with the network of international financial institutions to bring public and private financing opportunities to cities.



Resource Partners

The resource team, which provides technical knowledge and helps cities further connect with each other, includes World Resources Institute (WRI), C40 Cities Climate Leadership Group, and ICLEI Local Governments for Sustainability. The growing number of resource partners provides strong support to the participating cities.



11
countries

28
cities

100
million

metric tons
of estimated
CO₂ emissions
reductions

MEXICO
*Campeche,
La Paz, and Xalapa*
GEF grant: \$15 million
Co-financing: \$98 million

SENEGAL
*Dakar, Diamniadio,
and Saint-Louis*
GEF grant: \$9.5 million
Co-financing: \$52 million

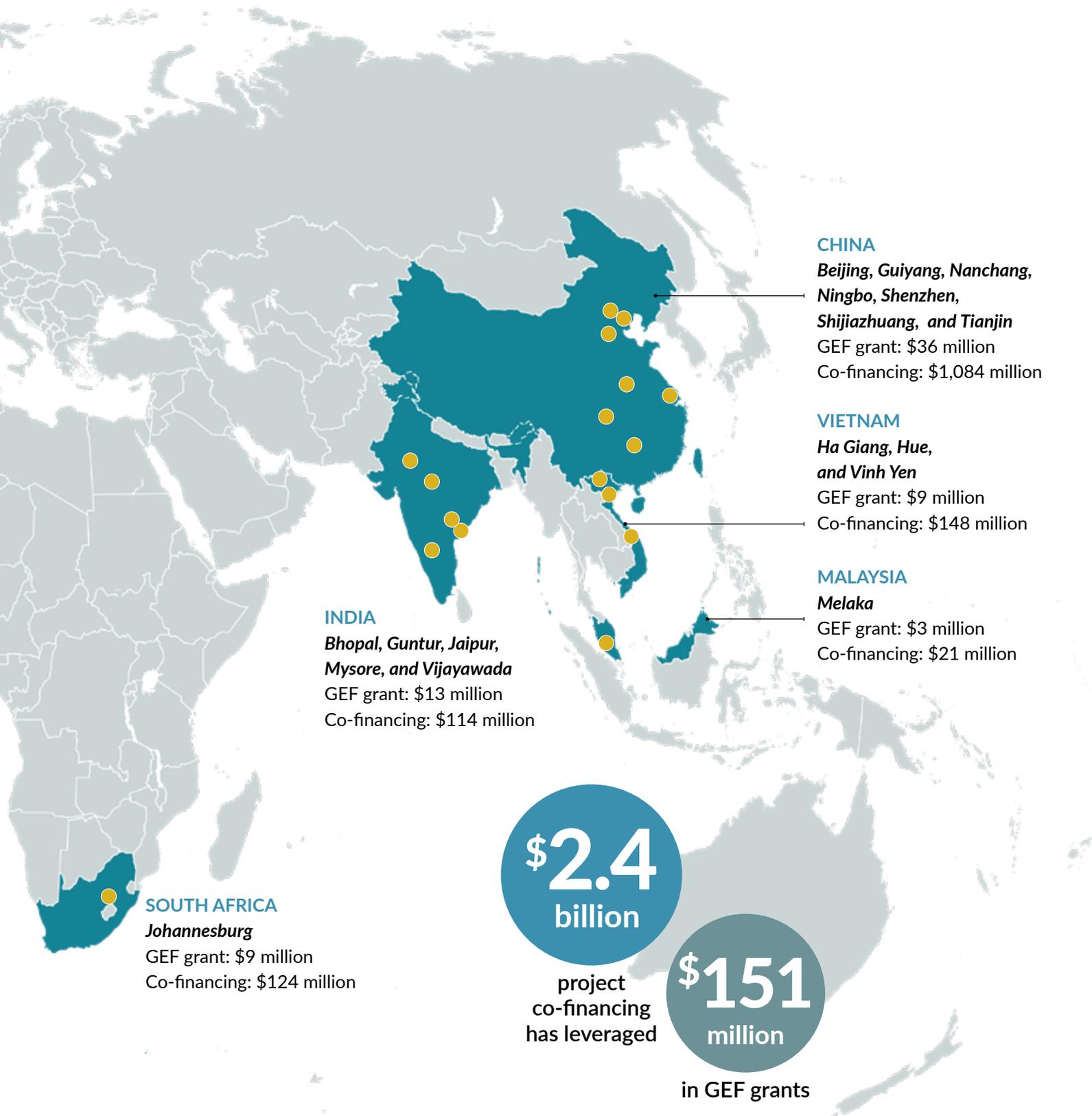
CÔTE D'IVOIRE
Abidjan
GEF grant: \$6 million
Co-financing: \$33 million

PERU
Lima
GEF grant: \$7.5 million
Co-financing: \$300 million

BRAZIL
Brasilia and Recife
GEF grant: \$25 million
Co-financing: \$195 million

PARAGUAY
Asunción
GEF grant: \$8.3 million
Co-financing: \$240 million

Connecting— Leveraging the Network



> “The concept of sustainable industrialization will guide the industrial development of Côte d’Ivoire and strengthen our commitment to continuous improvement of the difficult conditions of our people. Sustainable approaches will guide our National Development Plan, and we seek support from international institutions—like the World Bank, the AfDB, and UNIDO—and from our national and subnational stakeholders to help us fight pollution and climate change and achieve results that are beneficial for all.” <

— Mrs. Anne Désiré Ouloto | Minister of Health, Environment and Sustainable Development | Côte d’Ivoire

Participating Countries and their Cities

Cities are the incubators in which sustainable urban planning strategies are tested, implemented, and assessed. Under the Sustainable Cities program, countries and their cities are pursuing sustainability goals through various means, including urban mobility, waste management, infrastructure development, reduction of GHG emissions, and ecosystem and biodiversity conservation. The city projects focus on some of the following key components:



Ecosystems and Biodiversity

Preserving natural reserves and habitats, protecting coastlines, and analyzing biodiversity performance



Green Industries

Developing strategies to reduce industrial emissions and hazardous industrial waste and implementing these technologies in industrial production



Low-carbon Technology

Using renewable energy to harness solar panel technology to power public and private buildings and mobility systems



National Platform

Developing country-specific platforms for linking and implementing sustainable city strategies at the local, national, and global levels



Solid Waste Management

Formulating solid waste management strategies and manuals, and constructing bio-digesters, composting facilities, waste-to-energy facilities, and sewage treatment plants



Urban Mobility

Encouraging the use of public transit through comprehensive mobility strategies, and developing projects that integrate urban planning, transportation, and land value capture strategies through TOD



Urban Sustainability Planning

Fostering long-term urban planning decisions informed by robust data and stakeholder participation processes



Photo: Mariana Ceratti / World Bank.



Brazil

Brasilia and Recife

GEF grant: \$25 million/ Co-financing \$195 million

Implementing agency: United Nations Environment Programme

Environmental Footprint

- > 86 percent of Brazil's population resides in urban areas.
- > 2.6 metric tons of CO₂ emissions per capita are generated each year in Brazil.

Project's Climate Benefits

An estimated direct reduction of 3.8 million metric tons of CO₂ emissions

Project Focus

The project—Promoting Sustainable Cities in Brazil through Integrated Urban Planning and Innovative Technologies Investment—focuses on the integration of urban technologies with land use to foster sustainable development and build climate resilience. The project includes the following key components:

- > **Develop a National Knowledge Platform** to help over 300 Brazilian cities build institutional capacity.

- > **Focus on integrated urban planning**, with an aim to reduce energy and water insecurity, build climate resilience, and institutionalize evidence-based climate change policies.
- > **Demonstrate green technologies in pilot projects**, including testing the efficacy of filtering gardens in Recife, analyzing the financial and technical viability of solar-powered boats in Recife, and testing phytoremediation for soil remediation in Brasilia.

National Knowledge Platform

With the support of the Sustainable Cities Programme in São Paulo and the Centro de Gestão e Estudos Estratégicos in Brasília, the Brazilian Ministry of Science, Technology, Innovation and Communication is developing an online national knowledge platform. This will contain urban planning tools, training programs, and sustainable planning strategies that cities can adopt for facilitating sustainable urban development. This initiative will be augmented by a new Sustainable City Innovation Observatory which will identify solutions for urban planning and investments in Brazilian cities.



China

Beijing, Guiyang, Nanchang, Ningbo, Shenzhen, Shijiazhuang, and Tianjin
GEF grant: \$36 million/ Co-financing \$1,084 million
Implementing agency: World Bank

Environmental Footprint

- > 58 percent of China’s 1.38 billion population resides in urban areas.
- > China is estimated to add 255 million urban residents by 2050.²
- > 7.5 metric tons of CO₂ emissions per capita are generated each year in China.

Project’s Climate Benefits

An estimated total reduction of 62 million metric tons of CO₂ emissions directly and indirectly

Project Focus

The project focuses on integrating transit infrastructure with urban development. It will complement China’s ambitious infrastructure goals—specifically, achieving a total of 6,000 km of urban rail infrastructure and 4,000 metro stations by 2020. The program comprises various scales:

- > **A National Platform**, which will develop a Chinese TOD toolkit that cities can use to evaluate their implementation readiness, assist in the design of relevant strategies, and evaluate the impact of those strategies.
- > **City-level TOD technical assistance and pilot**, which will ensure that TOD strategies are reflected in city master and sectoral plans, zoning regulations, and urban design schemes.
- > **Pilot projects at subdistrict, corridor, and station level**, which will implement lessons learned from technical assistance activities and develop guidelines for improving multimodal connectivity.

² UN DESA (United Nations Department of Economic and Social Affairs), *World Urbanization Prospects: The 2018 Revision—Highlights* (United Nations, 2018).

The Donggu Line is currently the best-developed TOD demonstration project in Ningbo. Photo: World Bank.



Collaborating with Mobike Data

The national program is collaborating with Mobike, a stationless bike-sharing platform, and utilizing its data on bike trips around metro stations to inform the creation of TOD strategies and prioritize the implementation of projects.



A team of experts visits the industries that have been selected for the pilot on reducing industrial pollutants. @unido.

Côte d'Ivoire

Abidjan

GEF grant: \$6 million/ Co-financing \$33 million

Implementing agencies: AfDB and UNIDO

Environmental Footprint

- > 50 percent of Côte d'Ivoire's total population resides in urban areas.
- > 0.5 metric tons of CO₂ emissions per capita are generated each year in Côte d'Ivoire.
- > In 2013, Abidjan was identified as the fifth-most vulnerable city in the world in terms of flood risks.³

Project's Climate Benefits

An estimated reduction of 0.9 million metric tons of CO₂ emissions, and persistent organic pollutant (POP) reduction of 0.5 g toxic equivalents (TEQ) over the life of the project

Project Focus

The Abidjan Integrated Sustainable Urban Planning and Management program complements the master plan for the Greater Abidjan Region (Schéma Directeur de Grand Abidjan 2030), with a focus on building capacities and systems to tackle environmental degradation, climate change, and industrial pollution. The project includes the following components:

- > **Assess and improve air quality** by reducing emissions and strengthening the legal framework for air quality of industrial emissions.
- > **Improve urban planning and management**, with a focus on uptake of innovative low-carbon technologies.
- > **Provide sustainable urban infrastructure and tools** to city stakeholders.

Five Pilot Projects to Tackle Industrial Pollution

Under the program, five companies have been selected to pilot projects that promote the reduction of industrial pollutants. The industries include cardboard production and printing, hazardous waste management, oil refining and recycling, and pesticides production. An assessment of the baseline pollution emissions of these industries was completed in September 2018.

³ Stephane Hallegatte, Colin Green, Robert J. Nicholls, and Jan Corfee-Morlot, "Future Flood Losses in Major Coastal Cities," *Nature Climate Change* 3 (2013): 802–6.



India

Bhopal, Guntur, Jaipur, Mysore, and Vijayawada
GEF grant: \$13 million/ Co-financing \$114 million
Implementing agency: UNIDO

Environmental Footprint

- > 34 percent of India's 1.3 billion population resides in urban areas.
- > India is estimated to add over 416 million urban dwellers by 2050.⁴
- > 1.7 metric tons of CO₂ emissions per capita are generated each year in India.

Project's Climate Benefits

An estimated reduction of 0.8 million metric tons of CO₂ emissions directly and 5 million metric tons of CO₂ emissions indirectly

Project Focus

The India program focuses on integrating sustainability strategies into urban planning and management practices to create a favorable environment for investments in infrastructure and service delivery. Its key components include the following:

- > **Develop strategies for sustainable urban planning and management** based on relevant international guidelines and standards.
- > **Demonstrate technology projects** by setting up waste-to-energy and compost plants in Jaipur, Bhopal, and Mysore, and developing sewage treatment plants for electricity-generating methane capture in Guntur and Vijayawada.
- > **Support India's national urban development programs**—such as Swachh Bharat Mission (also known as the Clean India Mission), Smart Cities Mission, Atal Mission for Rejuvenation, and the Urban Transformation and Solar Cities Program—through sustainable planning and management.

Launch of the Indian Platform for Sustainable Cities

At its second global meeting, held in New Delhi in October 2017, GPSC proudly launched the Indian Platform for Sustainable Cities (IPSC). The IPSC is a multi-sectoral platform for the implementation of sustainable city strategies through two streams: a national level that links initiatives across India, and the global level that links the platform with the GPSC.

⁴ UN DESA (United Nations Department of Economic and Social Affairs), *World Urbanization Prospects: The 2018 Revision—Highlights* (United Nations, 2018).



Melaka canal, Malaysia. Photo: Mikhail Mishchenko.

Malaysia's National Platform

Malaysia's National Platform for Sustainable Cities is being developed, and institutional groundwork has been put in place. As a part of the initiative, the Malaysian Urban-Rural National Indicators Network (MURNInets) will be updated. MURNInets was originally developed in 2002 to assess the sustainability of Malaysian cities.



Malaysia

Melaka

GEF grant \$3 million/ Co-financing \$21 million

Implementing agency: UNIDO

Environmental Footprint

- > 75 percent of Malaysia's population resides in urban areas.
- > 8.0 metric tons of CO₂ emissions per capita are generated each year in Malaysia.
- > Malaysia has high dependence on carbon-intensive fossil fuels and coal.
- > Use of public transportation is limited, and car ownership is rapidly increasing.

Project's Climate Benefits

An estimated reduction of 0.8 million metric tons of CO₂ emissions directly and 3.5 to 5.4 million metric tons of CO₂ emissions indirectly

Project Focus

The Sustainable City Development in Malaysia project has two key components:

- > **Integrate climate change considerations** into urban planning strategies and strengthen the national urban policy framework.
- > **Implement a smart-grid urban energy system** in Melaka as a demonstration project for this technology. These activities further Melaka's vision of being a green city-state by 2020.

Energy-efficient Sustainable City Master Plan

An energy-efficient Sustainable City Master Plan has been prepared for Hang Tuah Jaya municipality in Melaka State. It will focus on urban resilience and pilot use of renewable energy in commercial and government buildings.

Campeche, La Paz, and Xalapa

GEF grant: \$15 million/ Co-financing \$98 million

Implementing agency: Inter-American Development Bank (IDB)

Environmental Footprint

- > 80 percent of Mexico's population resides in urban areas.
- > 3.9 metric tons of CO₂ emissions per capita are generated each year in Mexico.

Project's Climate Benefits

An estimated reduction of 29,000 metric tons of CO₂ emissions directly and 0.4 million metric tons of CO₂ emissions indirectly; generation of 46,000 MW of renewable energy over the life of the project

Project Focus

The Mexico program complements the government's broader Sustainable and Emerging Cities program and is anchored at multiple scales:

- > **At the national level**, the program enhances understanding of the benefits of urban planning and implications of climate change for urban development.
- > **At the city level**, it demonstrates climate-smart investment in clean energy, waste management, water, and sanitation.
- > **At the global level**, it promotes engagement of Mexican cities in global policy discourses.
- > **City-level projects** include integrated planning for flood risk reduction, sanitation, and restoration of urban coastal areas in Campeche; solar power plants in public buildings in La Paz; construction of bio-digesters; and establishment of an intermunicipal operator for solid waste management in Xalapa.

Evening view on Plaza Mayor (main square) in the center of Campeche. Photo: Traminio





Paraguay

Asunción

GEF grant: \$8.3million/ Co-financing \$240 million

Implementing agency: United Nations Development Programme (UNDP)

Environmental Footprint

- > 61 percent of Paraguay's total population resides in urban areas.
- > 0.9 metric tons of CO₂ emissions per capita are generated each year in Paraguay

Project's Climate Benefits

An estimated reduction of 1.2 million metric tons of CO₂ emissions through transport-oriented development generated each year

Project's Biodiversity Benefits

1 percent increase in the global populations of five species of birds found seasonally around Asunción

Project Focus

The project, Asunción Green City of the Americas—Pathways to Sustainability, aims to manage issues of transport, waste management, and green spaces in an integrated manner in the Asunción Metropolitan Area (AMA). It has the following key components:

- > **Enable a framework for a green sustainable city** to enhance integrated urban planning of AMA.
- > **Develop sustainable mobility** in AMA to reduce GHG emissions from urban transport; steps that have already been taken include designing sustainable bus stops and constructing over 200 km of bicycle lanes.
- > **Improve chemical and waste management systems** to reduce GHG emissions and levels of toxic chemicals.
- > **Develop plans to protect natural reserves and biodiversity.**



Steps Taken to Protect Natural Reserves

- > Creation of a habitat conservation plan for the Ecological Reserve of Banco San Miguel and Bahía de Asunción (REBSMyBA)
- > Creation of a management plan for the Ñu Guasu reserve
- > Development of a strategy to declare the Botanical Garden of Asunción and Guasu Metropolitan Park as urban protected areas

National and Municipal Plan for Urban Solid Waste Management

Paraguay is creating a National Plan for Urban Solid Waste Management, with guidelines for cities on preparing related municipal plans. Through this effort, a national campaign to raise awareness about solid waste management has been designed. In addition, six business plans are being developed for city-level solid waste separation and recycling plants.

Peru

Lima

GEF grant: \$7.5 million/ Co-financing \$300 million
Implementing agency: IDB

Environmental Footprint

- > 78 percent of Peru's population resides in urban areas.
- > 2.0 metric tons of CO₂ emissions per capita are generated each year in Peru.
- > 30 percent of the Lima Metropolitan Area (LMA) is vulnerable to an El Niño phenomenon (the periodic warming of the Pacific Ocean).
- > 60 percent of LMA houses are seismically vulnerable.

Project's Climate Benefits

An estimated reduction of 46,000 metric tons of CO₂ emissions directly and 1.6 million metric tons of CO₂ emissions indirectly

Project Focus

The project, National Platform for Sustainable Cities and Climate Change, has the following key components:

- > **Enhance integrated sustainable urban planning and management** through the development of a GHG inventory, urban growth and vulnerability assessment, and climate change coastal adaptation plan.
- > **Demonstrate urban water resource management** and assess the availability of hydric resources.
- > **Monitor local and global biodiversity performance** frameworks.
- > **Catalyze investments for urban accessibility** and low-carbon mobility.
- > **Enhance partnerships for sustainable cities** at the local, national, and global level.



Panorama of Dakar, Senegal. Photo: Siempreverde22.

Diamniadio Urban Pole

The Senegal government is setting up a new model city, called the Diamniadio Urban Pole, to ease congestion and urbanization pressure on Dakar. The city will house the eco-friendly Diamniadio Industrial Park, which will prioritize the efficient use of natural resources and cleaner industrial production. The park will develop pilot methods to reduce dioxins, furnace emissions, and industrial hazardous waste, in addition to investing in low-carbon energy technologies.



Senegal

Dakar, Diamniadio, and Saint-Louis

GEF grant: \$9.5 million/ Co-financing \$52 million

Implementing agencies: World Bank and UNIDO

Environmental Footprint

- > 47 percent of Senegal's population resides in urban areas.
- > 0.6 metric tons of CO₂ emissions per capita are generated each year in Senegal.

Project's Climate Benefits

An estimated reduction of 27,000 metric tons of CO₂ emissions directly and 0.1 million to 0.7 million metric tons of CO₂ emissions indirectly

Project Focus

The Sustainable Cities Management Initiative will complement the government's Plan for an Emerging Senegal (PSE), which is a reference framework for medium- and long-term economic and social policy to foster sustainable development. Its key components include the following:

- > **Strengthen the national urban policy framework** to promote sustainability and climate resilience.
- > **Support clean industrial production**, reduce industrial emissions, and demonstrate low-carbon energy technologies.
- > **Integrate climate risks into urban planning** in Saint-Louis and Diamniadio.
- > **Foster knowledge sharing and partnership development** on sustainable cities and resilience at multiple levels.



South Africa

Johannesburg

GEF grant: \$9 million/ Co-financing \$124 million

Implementing agencies: United Nations

Environment Programme and Development Bank of Southern Africa (DBSA)

Environmental Footprint

- > 66 percent of South Africa's population resides in urban areas.
- > 9.0 metric tons of CO₂ emissions per capita are generated each year in South Africa.

Project's Climate Benefits

An estimated reduction of 3.2 million metric tons of CO₂ emissions directly and 1.1 million metric tons of CO₂ emissions indirectly

Project Focus

The project aims to complement the city's long-term environmental and sustainability plan—the Growth and Development Strategy 2040 (GDS 2040)—and its Corridors for Freedom (CoF) vision of a socially and economically cohesive South Africa.

The program will achieve its objectives through these steps:

- > **Focus on low-energy zones** identified in GDS 2040, including those in the CoF area, with the goal of integrating traditional sectors such as sustainable housing, transport, and recycled materials.
- > **Combine three priority areas** of (i) organic waste management and waste-to-energy, (ii) composting for food security, and (iii) clean fuels for public transport.
- > **Develop an indicator framework** to support evidence-based decision making and planning.

Former power plant cooling towers, now converted to base jumping. Soweto, Johannesburg. South Africa. Photo: HomoCosmos.





Mother with children riding a motorbike. Photo: hadynyah.



Vietnam

Ha Giang, Hue, and Vinh Yen
GEF grant \$9 million/ Co-financing \$148 million
Implementing agency: Asian Development Bank (ADB)

Environmental Footprint

- > 35 percent of Vietnam's population resides in urban areas.
- > 1.8 metric tons of CO₂ emissions per capita are generated each year in Vietnam.

Project's Climate Benefits

An estimated reduction of 1.7 million metric tons of CO₂ emissions directly and 9.5 million metric tons of CO₂ emissions indirectly over the life of the project

Project Focus

The Integrated Approach to Sustainable Cities in Vietnam project aims to increase climate resilience in urban settings. A key aspect of the project is its focus on secondary cities instead of primary cities. It has the following key components:

- > **Mainstream green planning and design approaches** into the master plans of three pilot cities.
- > **Demonstrate innovative technologies** for climate-resilient and low-carbon development in Vietnamese cities.
- > **Build an enabling environment** to scale up integrated urban planning approaches to six more additional cities.
- > **Develop sustainable cities indicators** to guide an integrated planning framework linked to financial mechanisms.

> “Africa’s future will be based on steadily growing cities. There is an urgent need to build and finance sustainable infrastructure on the continent that requires a strategic vision driven by governments, international organizations, private investors, and project beneficiaries. The Sustainable Cities program will greatly assist Africa with integrated approaches to achieve these efforts.” <

– Mr. Amadou Oumarou | Director for Infrastructure and Urban Development | African Development Bank

Sustainable Cities Impact Program— The Next Steps

GEF will continue to support cities in their fight against climate change and other global environmental challenges through the GEF-7 cycle of projects, which will commence in 2019. The next phase, called the Sustainable Cities Impact Program, will strengthen cities' sustainability as a way to gain further global environmental benefits. Projects selected for this program will demonstrate a transformational environmental impact, leverage both public and private resources, and maximize the political commitment of stakeholders.

GEF-7 Project Focus Areas

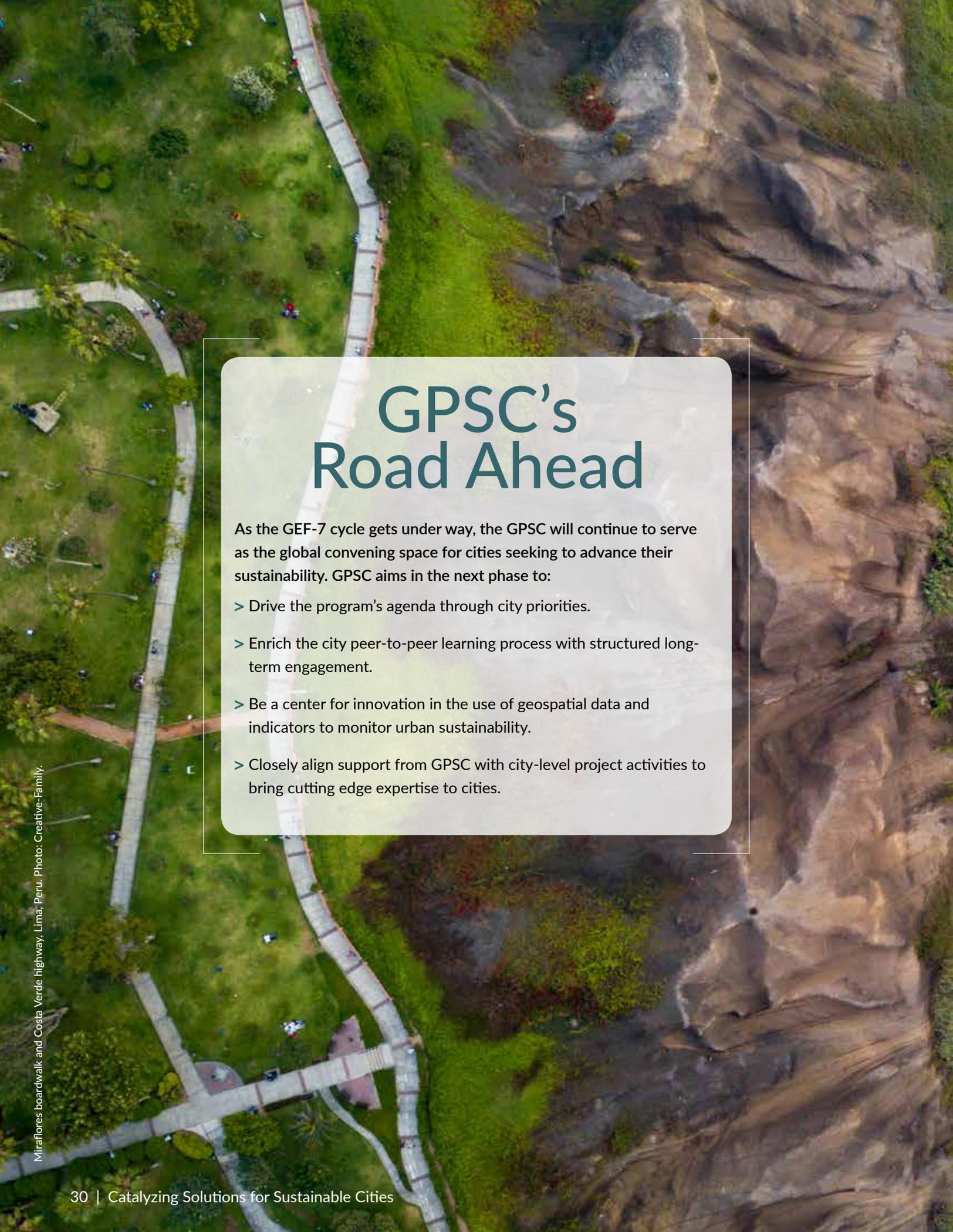
The key focus areas of the next phase are:

- > **Evidence-based spatial planning at national, regional, and local levels.** This focus seeks to enhance spatial planning with geospatial tools and invests in digital and data leadership.
- > **Decarbonizing urbanization with infrastructure integration at national, regional, and local scales.** This focus promotes seamless intercity connectivity and innovation in freight and transport.
- > **Building of deep resilience through smart systems and housing solutions.** This focus seeks to enhance cities' long-term sustainability by promoting energy efficiency, streamlining municipal services, tracking resource consumption, and scaling up slum solutions.
- > **Multiplying of finance for sustainable urban development.** This focus seeks to enhance the fiscal capacities of cities and leverage financing instruments for development through cascading financing solutions that promote financial sustainability.

Lessons Learned for the Sustainable Cities Program's Next Phase

The following approaches will be emphasized in the program's next phase:

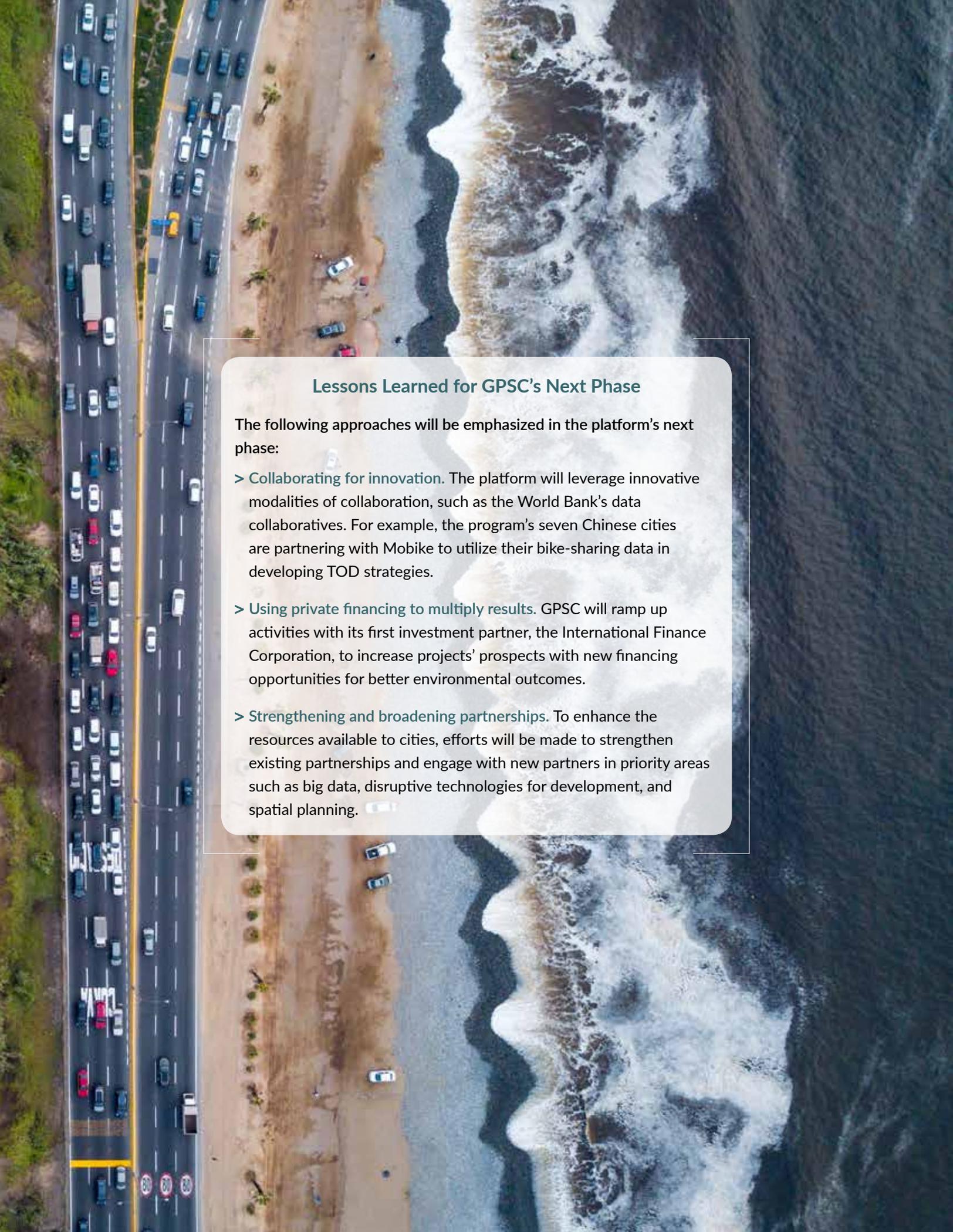
- > **Better alignment of the two program tracks.** The GPSC and the city-level projects will be further aligned for increased coherence and better delivery as one integrated program. Sufficient budget should be allocated under city-level project activities to participate in the global activities.
- > **Early engagement in project design.** The global platform will be involved early in the design of the city-level projects, and the programming and learning interests of cities will be better aligned to increase accessibility and effectiveness.
- > **Consolidation of the broad range of city-level project activities.** Urban sustainability planning and integrated approaches to sectoral interventions will be emphasized to maximize global environmental benefits.
- > **Investment in the program architecture.** To address the significant investment in coordination required by a two-track program, further time and effort will be spent to increase the platform's global influence on urban sustainability.

An aerial photograph of a park area. On the left, there is a green lawn with a winding concrete boardwalk. To the right, a large, rugged, brown rock formation rises. The sky is not visible, suggesting a high-angle shot.

GPSC's Road Ahead

As the GEF-7 cycle gets under way, the GPSC will continue to serve as the global convening space for cities seeking to advance their sustainability. GPSC aims in the next phase to:

- > Drive the program's agenda through city priorities.
- > Enrich the city peer-to-peer learning process with structured long-term engagement.
- > Be a center for innovation in the use of geospatial data and indicators to monitor urban sustainability.
- > Closely align support from GPSC with city-level project activities to bring cutting edge expertise to cities.



Lessons Learned for GPSC's Next Phase

The following approaches will be emphasized in the platform's next phase:

- > **Collaborating for innovation.** The platform will leverage innovative modalities of collaboration, such as the World Bank's data collaboratives. For example, the program's seven Chinese cities are partnering with Mobike to utilize their bike-sharing data in developing TOD strategies.
- > **Using private financing to multiply results.** GPSC will ramp up activities with its first investment partner, the International Finance Corporation, to increase projects' prospects with new financing opportunities for better environmental outcomes.
- > **Strengthening and broadening partnerships.** To enhance the resources available to cities, efforts will be made to strengthen existing partnerships and engage with new partners in priority areas such as big data, disruptive technologies for development, and spatial planning.

About the Program: The Global Environment Facility's Sustainable Cities program supports 11 developing countries and 28 of their cities with approximately \$151 million in funding to leverage environmental benefits. This effort has gathered an additional \$2.4 billion in co-financing. The World Bank leads the Global Platform for Sustainable Cities (GPSC), which coordinates the program's worldwide strategy. GPSC is a partnership and knowledge platform that promotes integrated solutions and provides cutting-edge support for cities seeking to improve their urban sustainability.

