

Conference Edition

The Making of Sustainable Cities – Integrated Approach



**GEF-6
Sustainable
Cities Integrated
Approach
Pilot (SC-IAP):
Insights and
Lessons**



Led by:



Supported by:



Conference Edition

The Making of Sustainable Cities– Integrated Approach

GEF-6
Sustainable Cities Integrated
Approach Pilot (SC-IAP):
Insights and Lessons



Led by:

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP



Supported by:

global
environment
facility
INVESTING IN OUR PLANET

© 2026 International Bank for Reconstruction and Development/The World Bank
1818 H Street NW
Washington, DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

Rights and Permissions. This work is subject to copyright. Because The World Bank encourages dissemination of its knowledge, this work may be reproduced, in whole or in part, for non-commercial purposes as long as full attribution to this work is given.

Translations. If you create a translation of this work, please add the following disclaimer along with the attribution: This translation was not created by The World Bank and should not be considered an official World Bank translation. The World Bank shall not be liable for any content or error in this translation.

Adaptations. If you create an adaptation of this work, please add the following disclaimer along with the attribution: This is an adaptation of an original work by The World Bank. Views and opinions expressed in the adaptation are the sole responsibility of the author or authors of the adaptation and are not endorsed by The World Bank.

Third-party content. The World Bank does not necessarily own each component of the content contained within the work. The World Bank therefore does not warrant that the use of any third party owned individual component or part contained in the work will not infringe on the rights of those third parties. The risk of claims resulting from such infringement rests solely with you. If you wish to re-use a component of the work, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright owner. Examples of components can include, but are not limited to, tables, figures, or images.

All queries on rights and licenses, including subsidiary rights, should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; e-mail: pubrights@worldbank.org

About the cover photos: Under Track 2, SC-IAP supported projects in 11 countries—Brazil, China, Côte d'Ivoire, India, Malaysia, Mexico, Paraguay, Perú, Senegal, South Africa, and Viet Nam—covering 28 pilot cities, with the support from 8 Implementing Agencies (ADB, AfDB, DBSA, IDB, UNDP, UNIDO, and World Bank).

Back cover photo: The Metal Bridge of Tobatí stands out as a top landmark in Paraguay, perfectly framed by the majestic Cordillera mountains. Photo: Jan-Schneckenhaus.

Design: Miki Fernández | ULTRAdesigns.

Contents

Acknowledgments	iv
Executive Summary	v
I. Introduction	1
II. SC-IAP Overview: Piloting the Integrated Approach	3
1. City Projects	6
2. Global Platform for Sustainable Cities (GPSC)	8
III. Key Lessons and Insights	11
Insight 1 Working with Urban Planners to Integrate Sustainability into the Planning Process Is Critical for System Change.....	12
What was done	12
Key challenges	14
Recommendations	14
Insight 2 Sector Transformation Requires Integration—Applying Systems Thinking in Transport, Waste, and Other Core Urban Services.....	15
What was done	15
Key challenges	17
Recommendations	17
Insight 3 Integrating Nature and Biodiversity into Urban Development Is Essential for Resilient and Livable Cities	18
What was done	18
Key challenges	20
Recommendations	20
Insight 4 Strengthening Investment Readiness and Municipal Finance Is Essential for Scaling Integrated Urban Solutions.....	21
What was done	21
Key challenges	22
Recommendations	22
Insight 5 Gender Equality Strengthen the Effectiveness and Sustainability of Urban Interventions	23
What was done	23
Key challenges	24
Recommendations	24
Insight 6 A Global Knowledge Platform Is Critical to Enable Integration, Learning, and Scale.....	25
What was done	25
Recommendations	29
IV. Conclusions	30
Annexes	31
Annex 1. Country Profiles.....	32
Annex 2. GPSC Knowledge Resources	43



The historic Melaka River is a revitalized waterway that blends 600 years of colonial heritage with modern sustainable urban development. Photo: Mikhail Mishchenko

Acknowledgements

This report was prepared by Xueman Wang, with support from Borja Castro Lancharro, and with inputs from Peter Griffiths, Ripin Kalra, Pallavi Sengupta, and Amsale Bumbaugh.

Project information and data were compiled based on contributions from the GEF-6 Implementing Agencies—ADB, AfDB, DBSA, IDB, UNDP, UNEP, UNIDO, and the World Bank—and their respective project teams. The team gratefully recognizes their collaboration and contributions to the development of this report.

The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent. The World Bank does not

guarantee the accuracy, completeness, or currency of the data included in this work and does not assume responsibility for any errors, omissions, or discrepancies in the information, or liability with respect to the use of or failure to use the information, methods, processes, or conclusions set forth. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries. Nothing herein shall constitute or be construed or considered to be a limitation upon or waiver of the privileges and immunities of The World Bank, all of which are specifically reserved.

Executive Summary

Cities are central to addressing today’s intertwined climate, biodiversity, and development challenges. As engines of growth and innovation, they also drive a significant share of global greenhouse gas emissions, resource consumption, and ecosystem degradation. Responding to these systemic challenges requires moving beyond fragmented, sector-by-sector interventions toward integrated approaches that shape how cities plan, invest, and grow over the long term.

Launched under the Global Environment Facility’s sixth replenishment (GEF-6), the Sustainable Cities Integrated Approach Pilot (SC-IAP) represented a major innovation in the GEF portfolio. By combining city-level integrated investment projects with a dedicated knowledge platform, the Global Platform for Sustainable Cities (GPSC), the program tested how coordinated planning,

policies, finance, and knowledge could deliver transformational impact at scale. Implemented across 28 cities in 11 countries, the pilot demonstrated that cities can serve as a powerful entry point for generating multiple global environmental benefits when integration is embedded in both design and implementation.

The results of the GEF-6 pilot clearly show that the Sustainable Cities program has been successful, not only in delivering tangible on-the-ground results, but also in generating durable lessons that now shape the evolution of the GEF Cities program under GEF-7 and GEF-8, and its continued inclusion in GEF-9. Drawing on nearly a decade of implementation experience, this report synthesizes six key messages that will guide future phases of engagement.

Bicycle and pedestrian path on Reforma Avenue, Mexico City, passing through Chapultepec Park. Photo: abalcazar/iStock.com.



Six Key Messages for the Future of the GEF Cities Program

1 Integrated urban planning is a foundational lever for system change

Engaging urban planners and planning institutions—rather than focusing solely on sector agencies—proved essential for influencing long-term development patterns, infrastructure investments, and land use decisions. Embedding climate, biodiversity, and low-carbon objectives into statutory plans and planning processes offers one of the most effective pathways to durable urban transformation and should remain a core priority in future GEF city programs.

2 Sector transformation requires systems thinking, not standalone solutions

The pilot showed that sectors such as transport, waste, and energy deliver far greater benefits when designed as integrated systems. Approaches such as transitoriented development and circular economy–based waste management linked to land use, service delivery, environmental outcomes, and financing mechanisms—turning sector investments into catalysts for broader urban transformation.

3 Urban nature and biodiversity must be treated as core urban infrastructure

GEF-6 demonstrated that naturebased solutions and urban biodiversity are not add-ons, but essential components of resilient, livable, and climateready cities. Embedding green and blue infrastructure into planning and capital investment decisions will be increasingly critical as cities seek to address heat, flooding, ecosystem loss, and qualityoflife challenges.

4 Investment readiness and municipal finance are decisive for scaling impact

Integrated plans only translate into results when cities have the financial capacity to implement them. Strengthening municipal finance, creditworthiness, project preparation, and engagement with the private sector emerged as a key enabler of scale. Future phases of the program will place even stronger emphasis on mobilizing public and private investment, including through partnerships with development banks and private financiers.

5 Gender equality strengthens the effectiveness and sustainability of urban interventions

Projects that integrated gender considerations directly into service delivery—such as mobility, waste management, and urban services—achieved more durable social and economic outcomes than those focused solely on participation. Embedding inclusion into systems, operations, and investment decisions will remain essential to ensure that sustainable cities deliver equitable benefits.

6 A global knowledge and partnership platform is critical for learning and scale

The Global Platform for Sustainable Cities proved instrumental in ensuring that lessons from individual city projects informed broader practice. By convening cities, implementing agencies, development partners, and city networks, GPSC amplified its impact beyond the original pilot cities, reaching hundreds of cities across more than 100 countries. This model has become a defining feature of the GEF Cities program and will continue to evolve to support earlier engagement, stronger links to implementation, and deeper private sector reach.

Looking Ahead: From Pilot to Platform at Scale

As the first integrated urban program of its kind within the GEF, the GEF-6 Sustainable Cities Integrated Approach Pilot marked a turning point. Its continuation through GEF-7 and GEF-8, and its inclusion in GEF-9, reflects the growing recognition that cities are indispensable to delivering global environmental outcomes at scale. With each successive phase, the Cities program has expanded its ambition, reach, and influence, moving from pilot interventions toward a sustained platform for urban system transformation.

Building on the lessons captured in this report, future phases of the GEF Cities program are well positioned to be even more impactful. Strong partnerships with GEF Implementing Agencies, multilateral development banks, city networks, and knowledge partners, combined with deeper engagement with the private sector, will allow the program to mobilize greater investment, support more cities, and accelerate the transition toward low-carbon, resilient, and nature-positive urban development.



Partnerships and collaboration

The success of the GEF-6 Sustainable Cities Integrated Approach Pilot would not have been possible without the close collaboration and commitment of the GEF Secretariat, the GEF-6 Implementing Agencies (ADB, AfDB, DBSA, IDB, UNDP, UNEP, UNIDO, and the World Bank), the International Finance Corporation (IFC), and the many national and local partners involved in project implementation. Special recognition is due to the GPSC Resource Team partners—WRI, C40 Cities, and ICLEI—whose technical leadership, global networks, and practitioners reach significantly strengthened learning, peer exchange, and scale.

Engagement with other international financial institutions, including the International Finance Corporation (IFC) and the European Bank for Reconstruction and Development (EBRD), further reinforced alignment and supported the advancement of a more coherent sustainable urban agenda.

Together, these partnerships have helped establish the GEF Cities program as a cornerstone of the GEF portfolio—one that will continue to grow stronger, more influential, and more impactful as it applies the lessons of GEF-6 to future generations of sustainable cities.

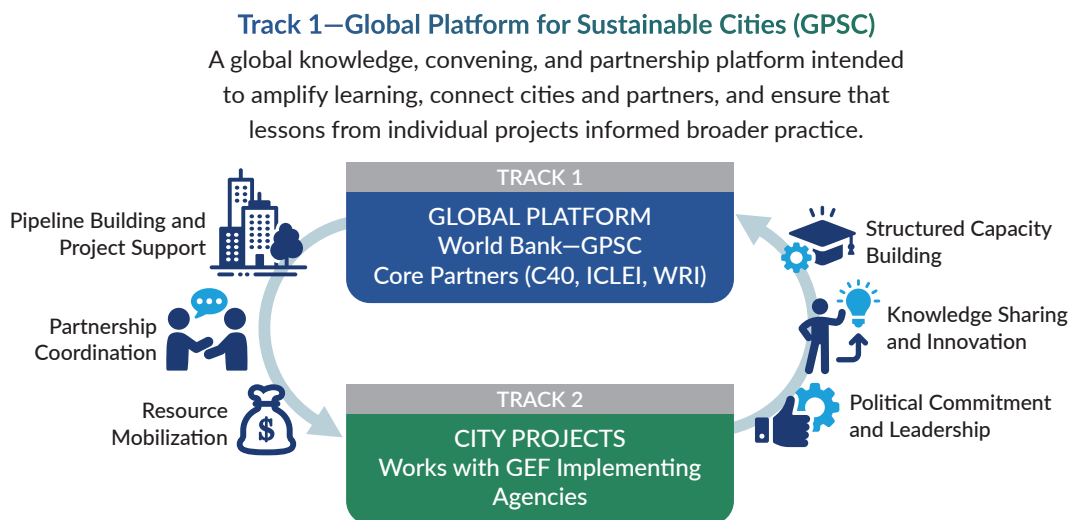


Kuala Lumpur Forest Eco Park in the heart of a bustling city. Photo: gahsoonlpphoto.com

I. Introduction

Cities are at the forefront of today’s global development and environmental agenda. As engines of economic growth, innovation, and job creation, they also account for approximately 80% of global greenhouse gas emissions and resource consumption and contribute to biodiversity loss. Rapid and often unplanned urbanization—especially in low- and middle-income countries—has intensified climate risks, ecosystem degradation, and spatial inequality. These challenges are deeply interconnected, yet responses have historically been fragmented, organized around sectoral silos and short-term investments rather than long-term systems transformation.

Acknowledging the role of cities and the challenges facing them, the Global Environment Facility (GEF), during its sixth cycle (GEF-6), initiated a new approach (to bringing multiple sectors together and putting cities at the heart of fighting global environmental challenges). The Sustainable Cities Integrated Approach Pilot (SC-IAP) was thus launched in 2016, with the objective of moving beyond isolated sector interventions and testing how coordinated planning, policies, finance, and knowledge could drive sustainable urban transformation at scale. The GEF SC-IAP was structured as a dual-track program:



Track 2—City-level Investment Projects

Integrated urban projects financed by the GEF grants with substantial co-financing to implement integrated urban solutions on the ground.

These two tracks are designed to reinforce each other. City projects generated practical experience, tools, and evidence, while the global platform curated, translated, and disseminated this knowledge to a wider community of cities, national governments, and development partners. Between 2016 and 2024, the SC-IAP transitioned from concept to large-scale implementation across diverse urban contexts. As the

pilot phase draws to a close, the SC-IAP has delivered important lessons and insights to inform future efforts. This technical report presents a summary of achievements, highlights key lessons learned, and provides recommendations for shaping upcoming programs. Additionally, the annex includes essential data and findings gathered from project activities in 28 participating cities across 11 countries.



Beautiful view of Upper lake, Bhopal, Madhya Pradesh, India. Photo: Sahil Ghosh.

II. SC-IAP Overview: Piloting the Integrated Approach

Building on the rationale for a more coordinated, multisector approach to urban sustainability, the SC-IAP was designed to test what integration looks like in practice—both through implementation on the ground and through a mechanism to capture and spread what worked. This section provides an overview of how the pilot was operationalized through two parallel

tracks: city level investment projects that delivered tangible results in planning reform, institutional strengthening, and investment mobilization, and the Global Platform for Sustainable Cities (GPSC), which evolved into a broader coordination and partnership hub to accelerate learning, connect cities, and support scaling.

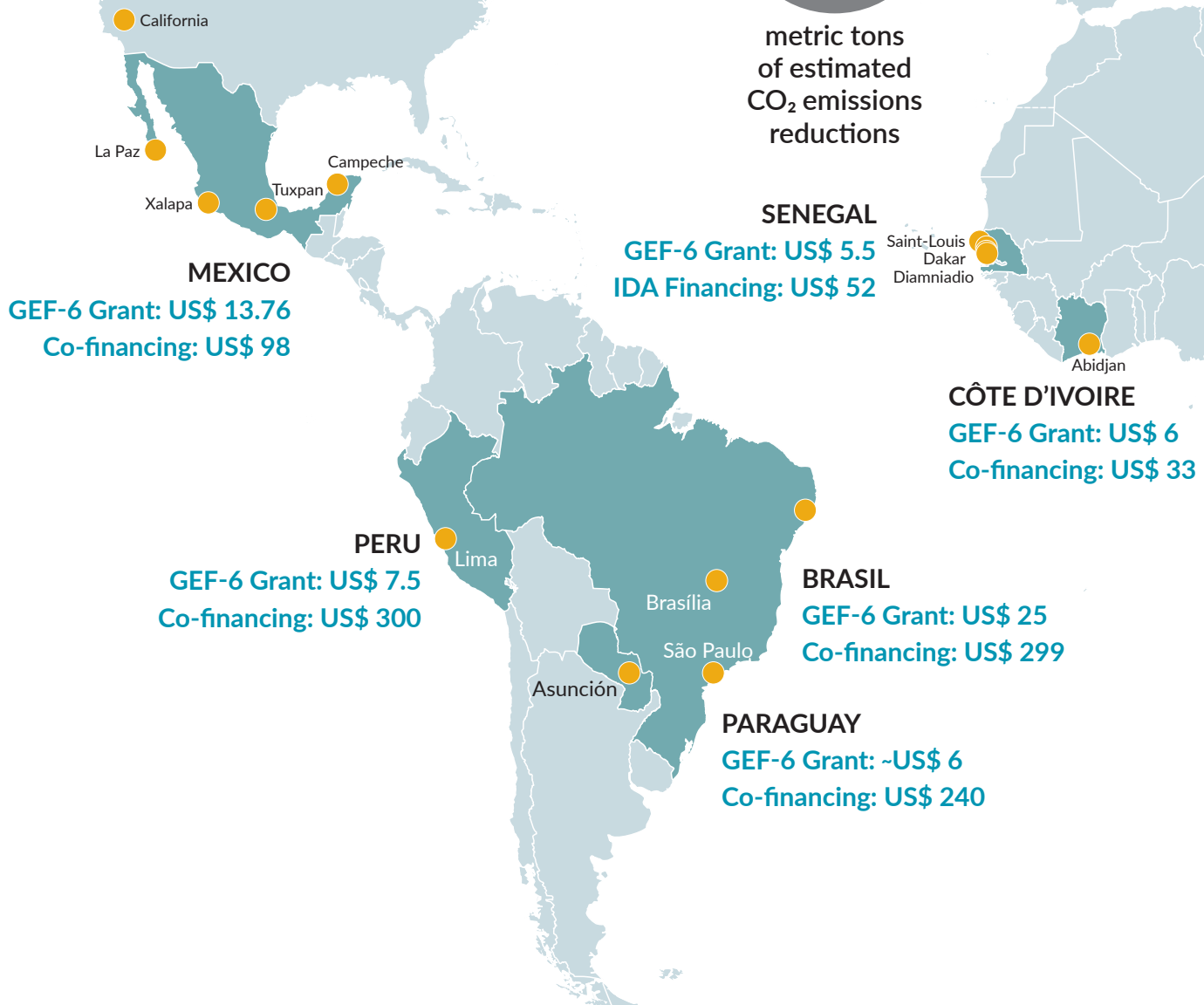
Connecting—Leveraging the Network

11 countries
28 cities

Map in progress

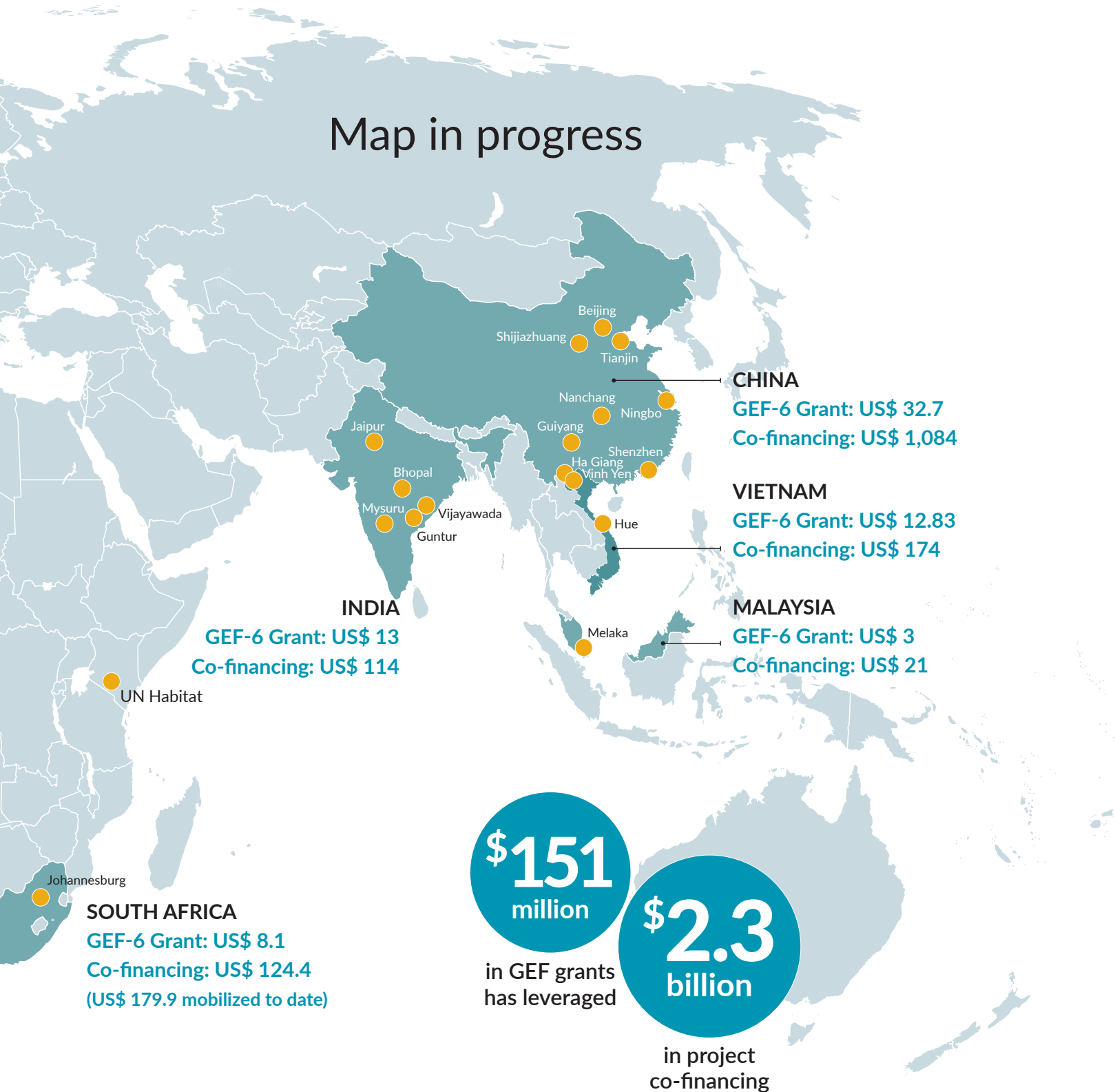
100 million

metric tons of estimated CO₂ emissions reductions



All \$ amounts are in millions.

Map in progress



1. City Projects

Under Track 2, SC-IAP supported projects in 11 countries—Brazil, China, Côte d’Ivoire, India, Malaysia, Mexico, Paraguay, Perú, Senegal, South Africa, and Viet Nam—covering 28 pilot cities, with the support from 8 Implementing Agencies (ADB, AfDB, DBSA, IDB, UNDP, UNIDO, and World Bank). GEF provided approximately US\$151 million in grant financing and mobilized around US\$2.5 billion in co-financing, demonstrating the catalytic potential of integrated urban pilots. Projects addressed multiple, interlinked urban sustainability priorities, including:

- > Integrated urban planning and spatial strategies
- > Mobility and transit-oriented development (TOD)
- > Decarbonized built environment, including energy efficiency and renewable energy
- > Circular economy solutions, including solid waste and water management
- > Nature-based solutions (NbS), urban biodiversity, and resilience
- > Municipal PPPs
- > Social inclusion and gender equality

Throughout the GEF-6 cycle, the SC-IAP delivered significant climate mitigation benefits aligned with GEF’s results framework. The portfolio achieved over 128 million tons of CO₂e in direct emission reductions, driven by investments in renewable energy, energy efficiency, low-carbon mobility, and waste management. Substantial indirect reductions are expected through integrated planning, policy reform, replication, and scaling in additional cities. Many interventions embedded in infrastructure systems and planning tools will continue generating emission reductions beyond the GEF-6 period.

Across countries, SC-IAP projects demonstrated that GEF grant financing can unlock large policy, institutional, and investment shifts when integration is embedded in design and implementation. Key achievements include:

- > **Mainstreaming sustainability into planning instruments:** Cities incorporated climate, biodiversity, and low-carbon objectives into master plans, TOD strategies, sector plans, and development guidelines (e.g., TOD policies in China; urban

sustainability frameworks in India; resilience and spatial planning tools in Senegal).

- > **Demonstration of integrated investments:** Pilots combined multiple sectors—such as land use, transport, energy, and waste—to deliver co-benefits, reduce emissions, and improve service access (e.g., TOD station-area planning, eco-districts in South Africa, integrated waste-energy systems in India).
- > **Strong co-financing leverage:** Many projects exceeded planned co-financing, confirming the bankability of integrated urban approaches when linked to credible investment pipelines.
- > **Capacity and institutional strengthening:** Cities and national agencies improved their ability to use data, geospatial tools, diagnostics, and cross-sector coordination mechanisms to inform decisions. In Paraguay, national and metropolitan institutions significantly improved cross-sector coordination and integrated planning through shared data and governance platforms. In South Africa, the City of Johannesburg strengthened evidence-based planning through the development of spatial data systems and analytical tools. In Viet Nam, the Ministry of Natural Resources and Environment (MONRE) and city-level authorities advanced the use of standardized diagnostics, including climate vulnerability assessments and GHG methodologies, supporting stronger national–local alignment.
- > **Replication and scale-up pathways:** Several countries established national platforms, guidelines, or policy frameworks to extend project lessons beyond pilot cities:
 - **China:** National TOD platform with expansion to 33+ cities and integration into policy
 - **Peru:** National platform for sustainable cities and climate change
 - **Viet Nam:** National standards and replication of GCAPs
 - **Paraguay:** Association of Municipalities of the Asunción Metropolitan Area (AMUAMA)

In the cases of **Mexico** and **South Africa** emerging replication through financial mechanisms and technical guidelines.



Brazil



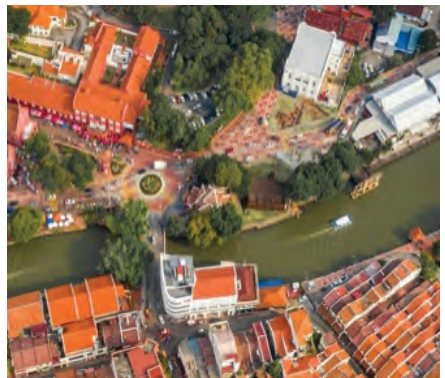
China



Côte d'Ivoire



India



Malaysia



Mexico



Paraguay



Peru



Senegal



South Africa



Viet Nam

2. Global Platform for Sustainable Cities (GPSC)

The GPSC was established after all 11 country projects had been selected. As the first of its kind within GEF, GPSC adopted a learning-by-doing approach, bringing cities, implementing entities, and partners together for knowledge exchange and sharing best practices. Many cities and implementing entities lacked urban expertise, so GPSC leveraged the World Bank's extensive urban experience, especially in urban planning, integrated urban services, and municipal financing, to complement project activities on the ground.

GPSC played a pioneering role in operationalizing the integrated approach under GEF-6 by testing new modalities for knowledge creation, capacity

building, and city engagement. It developed practical tools, training formats, and thematic workstreams to translate global knowledge into actionable support across planning, finance, nature, and infrastructure, as detailed below. Through innovative learning approaches and sustained engagement, GPSC strengthened the program's knowledge track and supported implementation across countries. At the same time, it faced challenges in aligning with evolving city-level needs and ensuring strong linkages with project implementation, providing important lessons on the timing and integration required to maximize impact.

GPSC introduced planning tools such as geospatial tools, urban sustainability benchmarking frameworks,

GPSC IN NUMBERS



KNOWLEDGE

44 GPSC Knowledge products including 5 sector toolkits

150+ GPSC Resource Team Knowledge Products (C40, ICLEI, and WRI)

340+ unique knowledge products on the GPSC digital library shared by partners.



LEARNING AND SHARING

3 Global Meetings with more than 1,500 attendees

17 City Academies, Working Groups and Workshops

42+ Online Webinars

75 Learning Events led by the GPSC Resource Team (C40, ICLEI, and WRI)

5,000+ people reached through in-person and online events



ENGAGEMENT

370 cities reached through learning activities

117 countries involved

22 Newsletters

3,300+ subscribers to the GPSC Newsletter

662,000+ unique visitors to the GPSC website from 2018 to 2024



NETWORK

88 Knowledge Partners including IFIs, Academia, Private Sector, and Cities

12 World Bank Communities of Practice engaged

Singapore, 2016



1st
Global Meeting

New Delhi, 2017



2nd
Global Meeting

São Paulo, 2019



3rd
GPSC Global Meeting

2020, First Global
Online Series



The call for action was led by the World Bank and GEF, together with the cities of Freetown, Helsinki, and São Paulo, Virtual

municipal creditworthiness assessments, and municipal PPPs to support cities in enhancing their project activities and broadening their scope of action and engagement, particularly in urban planning processes.

- > Produced and curated over 44 flagship knowledge products to guide integrated planning, urban services, and municipal finance, as detailed in Annex 2.
- > Convened **3 global meetings** supported by **5 city academies, 8 working groups, and 4 workshops**

engaging around 5,000 participants from more than 350 cities worldwide. In response to COVID-19¹, the platform rapidly pivoted its delivery model, from in-person convenings to a structured global program of online events that sustained engagement, expanded outreach, and accelerated knowledge exchange across the network.

- > Built strong partnerships with MDBs and financial institutions, implementing entities, resource team (C40, ICLEI, WRI), UN agencies, academics, and think tanks to deliver cutting-edge knowledge and support project implementation.

¹ With the outbreak of COVID-19, the planned fourth Global Meeting in Washington, DC (2020) was transformed into the first global online series, “Building Back Better: Green, Healthy and Inclusive Cities” (October 1 – December 16, 2020). This was followed by a second global online series (March 2 – June 30, 2021) and the thematic webinar series “Bringing Nature to Cities: Integrated Urban Solutions to Biodiversity Loss and Climate Change” (September 16 – December 22, 2021), collectively enabling sustained engagement and expanded global participation.

The GPSC advanced coordination across MDBs, working closely with partners including **EBRD, CAF, AFD, AfDB, and EIB** to align approaches and support a more coherent sustainable urban agenda, while strengthening collaboration with the broader MDB community. A coordinated plan with IFIs was established in 2016 to guide joint efforts. Building on this foundation, the GPSC formalized its engagement with the **EBRD Green Cities Program** in April 2016, reinforcing collaboration to scale integrated urban solutions and investment pipelines across regions.

- > Broadened city engagement to include cities from developed countries and those not part of SC-IAP, serving as a knowledge partner to support knowledge sharing—a multidisciplinary global community. The engagement with São Paulo illustrates this approach: as a city partner, São Paulo leveraged GPSC knowledge and exchanges to advance its own urban sustainability agenda, including the development of a Biodiversity Index inspired by the Singapore City Biodiversity Index presented through GPSC academies. This collaboration culminated in São Paulo hosting the [3rd Global Meeting](#) and leading the adoption of the [São Paulo’s Statement on Urban Sustainability](#).
- > The GPSC provided targeted, complementary support to country projects by strengthening their technical depth, enabling institutional uptake, and accelerating scale-up beyond pilot interventions. In **China**, it reinforced the development of the national TOD Platform, now applied across dozens of cities. In **Brazil**, GPSC contributed to the consolidation of national sustainable cities platforms, helping scale tools, indicators, and knowledge

systems to hundreds of municipalities. In **Malaysia**, GPSC support complemented the Melaka pilot by strengthening municipal finance capacity and aligning policy, technology, and private sector engagement to advance smart energy systems. Across countries, this targeted support helped translate project-level innovation into national frameworks, digital platforms, and investment-ready approaches, demonstrating the catalytic role of GPSC in bridging local implementation with systemic transformation.

- > The GPSC introduced a suite of practical planning and financial tools that enabled cities to move beyond project-level activities toward more integrated urban development. These included geospatial tools, the **Urban Sustainability Framework** for benchmarking and diagnostics, municipal creditworthiness assessments, and PPP frameworks. Together, they strengthened cities’ engagement with urban planning processes, improved cross-sector coordination, and supported more informed investment decisions. This approach helped translate project experience into broader policy impact and scalable, investment-ready solutions

As the pioneering urban program of the GEF, SC-IAP opened a new front for GEF to engage cities and pilot innovative approaches to scale up impact. The program’s achievements and importance are well recognized by the GEF Council. The GEF sustainable cities program is the only one created under GEF-6 that continues its objectives and scope into subsequent phases. This ongoing commitment has enabled the program to deepen its reach, accelerate scaling efforts, and deliver sustained impact across more cities worldwide.

III. Key Lessons and Insights

Building on what had been achieved under SC-IAP across its city projects and the GPSC, this section provides six insights on what enabled and constrained integrated urban

action in practice—spanning planning, sector integration, nature, finance, inclusion, and knowledge.



Framed by lush greenbanks and ancient foliage, an aerial view of Hue City. Photo: Renata Angerami.

Insight 1

Working with Urban Planners to Integrate Sustainability into the Planning Process Is Critical for System Change

GEF-6 demonstrated that engaging **urban planners and planning institutions**—rather than working only with sectoral agencies—is essential to achieving system level change in cities. Traditionally, GEF urban projects have primarily engaged sector-specific officials and technical experts (e.g., transport, energy, waste, or environment). While these interventions can deliver important results, they often remain confined to individual sectors and have limited influence over how cities grow and evolve over time.

Under the SC-IAP, the GPSC and the many projects made much effort to engage urban planners, planning bureaus, and metropolitan planning institutions. This shift proved critical because urban planning decisions shape a city’s long-term development trajectory—including land use patterns, density, infrastructure networks, and urban expansion. In many

developing country cities, rapid and poorly managed urban sprawl has led to rising carbon footprints, higher infrastructure costs, ecosystem degradation, and increased vulnerability to climate risks. Integrating sustainability objectives into the planning process therefore offers one of the most powerful levers for influencing long-term urban outcomes.

What was done

At the GPSC level, the GPSC supported cities in strengthening the **data, tools, and institutional capacity** needed to integrate sustainability into planning decisions:

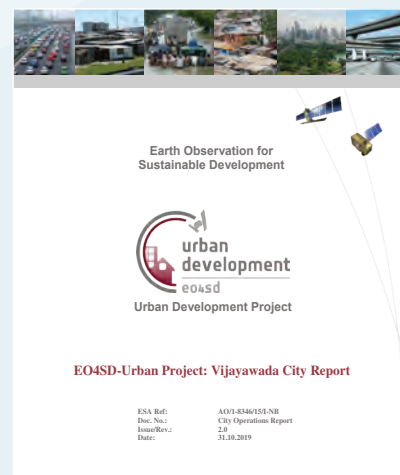
- > **Building data and geospatial capacity.** GPSC collaborated with partners, including the [European Space Agency \(ESA\)](#), to provide training and technical support on the use of spatial data

2019, São Paulo



Geospatial data and spatial planning City Academy

GPSC/ESA [city diagnostics](#) produced for Abidjan, Bhopal, Campeche, Dakar, Lima, Saint Louis, and Vijayawada, 2019



and geospatial tools for urban planning. This collaboration helped cities leverage satellite imagery and other spatial datasets to inform planning decisions—particularly to understand patterns of urban expansion, land use change, and exposure to environmental risks.

GPSC also introduced good practices on data governance and interagency data sharing—drawing on examples such as Singapore’s city data sharing platform—to show how municipalities can institutionalize data exchange across departments and make geospatial information more usable for day-to-day planning and investment decisions.

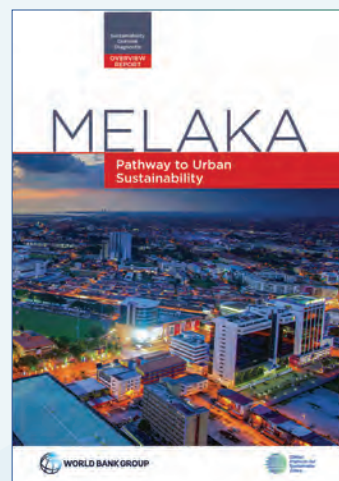
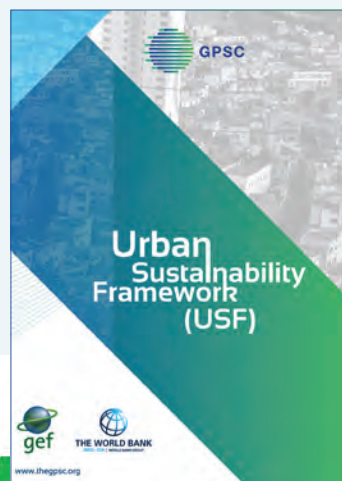
> **Providing a shared sustainability framework.** GPSC developed the [Urban Sustainability Framework \(USF\)](#), which includes a comprehensive set of indicators spanning environmental, social, economic, and institutional dimensions. The framework was designed to help cities move beyond sector specific metrics and adopt a shared diagnostic language for sustainability.

At the project level, for many GEF-6 participating cities, integrated urban planning and data systems were not always central to project designs. Over time, sustained engagement between the GPSC and country teams helped elevate evidence-based planning as a core implementation approach, with cities adopting new diagnostics, geospatial tools, and sustainability frameworks to guide priorities and investment decisions.

In **India**, cities adapted the GPSC’s Urban Sustainability Framework into the Urban Sustainability Assessment Framework (USAF), a 131-indicator tool applied in five pilot cities. USAF embedded climate, mobility, waste, water, land use, and governance indicators into planning, guiding spatial strategies and investment priorities within master plans. By institutionalizing this shared diagnostic, India shifted municipal planning from fragmented action to integrated, long-term urban transformation.

In **South Africa**, peer learning helped strengthen the use of planning and data tools, while in **Senegal**,

The Urban Sustainability Framework (USF) provides a comprehensive diagnostic tool to help cities assess and prioritize sustainable urban development



With the support of GPSC, **Malaysia** produced the [Melaka Sustainability Outlook Diagnostic](#), an integrated assessment of energy, mobility, emissions, land use, and planning systems. Combining data analysis with stakeholder consultations, it identified key sustainability gaps and provided an evidence base to inform the State Structure Plan and guide policy decisions. The diagnostic also supported stronger investment planning and municipal finance, helping position Melaka for more coordinated, low-carbon urban development.

improved data availability and GIS capacity supported more evidence-based territorial and resilience planning, including better targeting of measures to manage urban flooding. In **Côte d'Ivoire**, metropolitan geospatial and population datasets informed implementation of the Greater Abidjan Master Plan 2030, strengthening data-driven environmental and infrastructure planning.

Key challenges

Despite these advances, integrating sustainability into urban planning remains challenging. **Planning reforms take time** and depend on institutional continuity, sustained political commitment, and long-term technical capacity. In many cities, **data gaps, fragmented mandates, and weak coordination across sectors** continue to undermine integration.

Recommendations

- > **Integrated planning is essential for system change** because it influences how cities set priorities, allocate resources, and manage tradeoffs beyond individual projects.
- > **Integration is a governance and management challenge** as much as a technical one, requiring sustained coordination, decision authority, and accountability across departments and levels of government.
- > **Systematic engagement of urban planners and planning units is critical** to embed sustainability objectives in statutory plans, policies, regulations, and standards, supported by shared data platforms to establish a common analytical foundation that enables cross-sector alignment.



Insight 2

Sector Transformation Requires Integration—Applying Systems Thinking in Transport, Waste, and Other Core Urban Services

The SC-IAP experience shows that an **integrated approach is not only about coordinating across sectors**—it is also critical to integrate “**multiple sectoral approach**” within individual urban sectors. Conventional sector programs in transport or solid waste management can deliver important assets and services, but when designed in isolation, they often fail to unlock the multiple benefits—such as efficient land use, greater resource efficiency, and reduced emissions—that can be achieved through integrated approaches.

In **urban transport**, traditional approaches often treat investments as primarily serving a single function—moving people more efficiently from one point to another. SC-IAP experience showed that this lens is too narrow: transport performance and emissions are shaped by urban form, land-use patterns, station-area development, and the incentives that drive private investment. **Transit-Oriented Development (TOD)** changes the dimension of transport planning by using transit as an anchor to coordinate land use, density, public space, and access to jobs and services—while also opening pathways for **land value**

capture and other financing mechanisms that can help sustain and scale transit investments.

In the **solid waste sector**, SC-IAP reinforced the importance of tackling the **entire value chain**—from waste generation and segregation, to collection and transport, to treatment and final disposal. Integrated approaches connect upstream service improvements with downstream solutions such as recycling and composting, and—where appropriate—energy recovery (e.g., **waste-to-energy**) to reduce landfill reliance, cut methane emissions, and improve the financial and operational viability of municipal waste services.

The sections below use the TOD and waste examples to illustrate how integration can turn sector programs into entry points for broader urban system change.

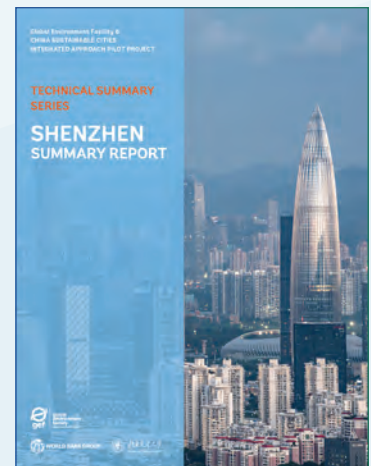
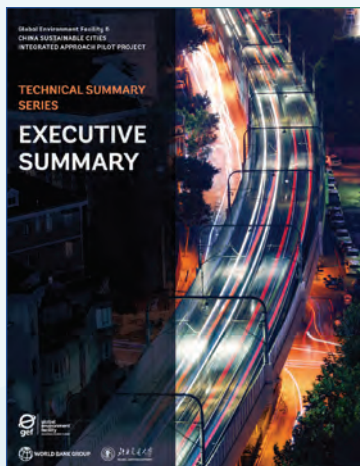
What was done

Transit-Oriented Development as an integrator: Urban transport was identified as a priority sector under SC-IAP due to its strong links with emissions, accessibility, land consumption, and economic



GPSC TOD Knowledge and Tools. To operationalize Transit-Oriented Development (TOD) as an integrated urban approach, the GPSC developed a suite of practical guidance and digital resources. This includes the TOD Implementation Resources and Tools (first and second editions), which provide step-by-step methodologies, case studies, and financing approaches to support cities in planning and delivering TOD projects. These resources are available in [English](#) and [Chinese](#), with additional modules adapted to the Brazilian context in [Portuguese](#), supported by the Inter-American Development Bank (IDB). They are complemented by an [interactive online TOD platform](#), offering access to tools, data, and global best practices. Together, these products translate TOD from a conceptual framework into actionable guidance, enabling cities to integrate land use, mobility, and investment planning in a coherent and scalable manner.

China SC-IAP TOD
Resources and lessons
learnt produced after
implementation



productivity. Rather than treating transport investments in isolation, the program promoted TOD as an integrated approach that aligns land use, transport infrastructure, urban design, and financing mechanisms.

At the GPSC level, TOD was elevated as a strategic thematic priority. GPSC produced major TOD publications (in three languages—English, Spanish and Chinese), delivered targeted training programs, and established a dedicated online knowledge platform, helping cities and practitioners understand TOD as a multisector planning and investment framework rather than a transport intervention alone.

At the project level, the China SC-IAP project demonstrated how TOD can be operationalized at scale. TOD principles were applied across multiple levels—national, metropolitan, corridor, and station area—linking transport investments with land use regulations, development controls, and financial mechanisms. This approach strengthened interagency coordination, improved the quality and intensity of development around transit, reduced car dependency, and created conditions for leveraging private investment. As a result, TOD has now become fully integrated into China’s urban planning policy, serving as a foundational element in the country’s approach to planning and managing urban transport systems. See [executive summaries](#) for detailed information on the TOD platform and city-level applications.

The same integrated approach was successfully applied beyond transport. In the GEF-6 **India Sustainable Cities** project, waste management was identified as a strategic entry point due to its dual relevance for greenhouse gas mitigation and circular economy. Rather than treating waste as a standalone sector, the project adopted a **systems approach** that addressed multiple interlinked urban subsystems with the objective of moving toward adopting a circular economy.

At the GPSC level, GPSC drew on the World Bank’s solid global expertise in solid waste management, including flagship analytical work and operational guidance on improving waste services and financing. Building on this foundation, GPSC curated and disseminated knowledge products on [integrated solid waste management and circular economy approaches](#), and provided **targeted support to India** through workshops and training focused on planning and delivering end-to-end waste systems—linking service coverage and operational performance with resource recovery, treatment options, climate outcomes, and circular economies

At the project level, the India SC-IAP pilots treated solid waste management as an **end-to-end system**—from segregation and collection, to transport and processing, to resource recovery and final treatment—so that interventions reinforced each other rather than shifting bottlenecks downstream.

India SC-IAP Integrated Approach		
Low-Carbon Collection	Operations and Inclusion	Resource Recovery and Scaling
Upstream collection and logistics were modernized by introducing electric waste collection vehicles (EV tippers) to improve service efficiency and reduce emissions. To support low-carbon operations, floating solar installations were deployed to help power the fleet.	To strengthen operations and maintenance while advancing inclusion, women previously engaged in informal waste collection were trained in the driving, operation, and maintenance of EVs, linking service delivery improvements with skills development and formal employment.	Downstream processing focused on resource recovery : composting facilities diverted organic waste from landfill and converted it into usable inputs for urban and peri urban applications, demonstrating a practical circular economy pathway and laying groundwork for additional treatment solutions.

This value chain approach created the basis for a **circular economy** logic in which materials are recovered, organic waste is converted into usable products, and residual waste streams can be directed to appropriate treatment options, including **waste-to-energy** where feasible.

Together, the TOD and waste/circularity examples show why **sectors traditionally treated as single purpose**—moving people (transport) or disposing of waste—need to be planned and delivered through an **integrated, systems lens**. When sector investments are aligned with land use, service delivery systems, and enabling policies and incentives, they can help shift underlying urban systems and generate multiple benefits—improving **resource efficiency**, delivering **environmental gains**, and enhancing the **livability** of cities—rather than delivering standalone assets.

Key challenges

Integrated sector approaches—whether TOD or waste/circularity—can be difficult to design and implement because they require cities to overcome **system inertia** and entrenched **institutional silos**. Cross sector coordination remains a persistent challenge, particularly where mandates are fragmented, and

decision-making is dispersed across agencies and levels of government. In addition, integrated delivery demands a broader mix of technical and implementation expertise than many cities can readily mobilize.

Recommendations

- > **Adopt an integrated approach to sector programs** to not only provide essential services and infrastructure, but also ensure these efforts are linked to broader urban goals—delivering multiple benefits such as improved resource efficiency, enhanced environmental outcomes, and greater livability for cities.
- > **Complement sector teams with the right cross-cutting expertise** so projects are implementable and scalable—for example, pairing transport specialists with urban planners (and, as needed, finance, land management, and social expertise) to align investments with land use, regulations, and delivery systems.
- > **Institutionalize coordination** through clear roles, routines, and shared metrics/data so integration is not dependent on ad hoc collaboration or individual champions.

Insight 3

Integrating Nature and Biodiversity into Urban Development Is Essential for Resilient and Livable Cities

When the GEF-6 Sustainable Cities Integrated Approach Pilot (SC-IAP) was launched, urban nature, biodiversity, and nature-based solutions (NbS) were still relatively unfamiliar concepts for many participating cities. Urban environmental action was often framed narrowly around pollution control or climate mitigation, while biodiversity conservation was typically perceived as a **rural or protected area** issue, rather than an integral component of urban development.

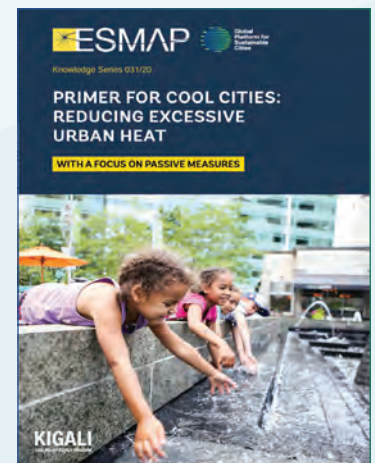
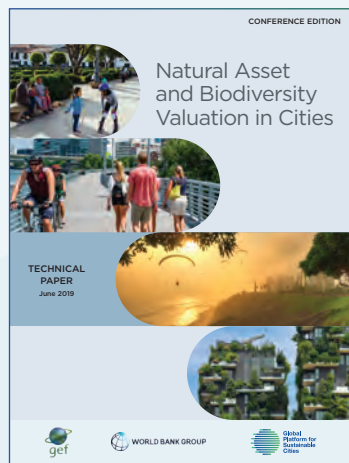
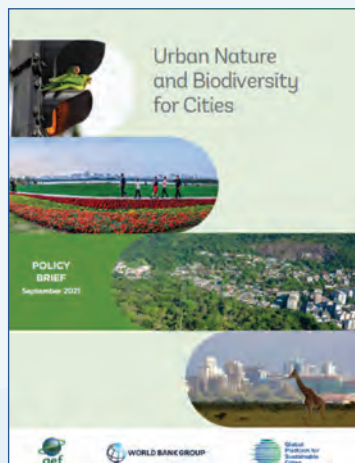
SC-IAP helped demonstrate that **“bringing nature into cities”**—through urban green infrastructure, ecosystem restoration, and urban biodiversity planning—is not an optional addition, but a **core urban development strategy**. Integrating nature and biodiversity into urban systems delivers multiple, reinforcing benefits: reduced heat and flood risk, improved water quality, enhanced public space and livability, increased climate resilience, and stronger public support for sustainability investments. Crucially, these benefits emerge most strongly when nature-based solutions are embedded in urban planning and infrastructure decisions, rather than implemented as isolated pilot projects.

What was done

At the GPSC level, GPSC helped mainstream **urban nature, biodiversity, and NbS** as core elements of sustainable city practice. Starting in 2018, it convened leading experts and city practitioners—including the Secretariat of the Convention on Biological Diversity—through a structured program of **workshops, training, and knowledge exchanges**. GPSC also launched Cities4Biodiversity (C4B) and produced practical guidance (including a [Urban Nature and Biodiversity for Cities Policy Brief](#), the [Natural Asset and Biodiversity Valuation in Cities](#) report, and the [Primer for Cool Cities to Reduce Excessive Urban Heat with Passive Measures](#), to help cities integrate biodiversity into planning and investment decisions. C4B delivered three deep-dive learning engagements: Singapore, Paris, and virtual.

In collaboration with **UNEP** and **ICLEI**, GPSC subsequently converted C4B and launched an Urban Nature Program that linked knowledge development with project preparation and investment support to accelerate implementation.

These technical papers highlight how integrated urban approaches can unlock resource efficiency across energy, water, land, and materials systems.



First GPSC Meeting of Mayors Forum on Urban Nature and Biodiversity at the CBD CoP16, 2024



Photo: Philipp Montenegro.

The program is structured around three complementary workstreams—upstream policy support, midstream project preparation, and downstream investment—to scale financing for green and blue urban infrastructure and implement integrated solutions that address climate change and biodiversity loss.

At the project level, SC-IAP supported **NbS pilots** that demonstrated how biodiversity protection and ecosystem restoration can deliver tangible, multisector co-benefits.

> **Paraguay:** An urban green area pilot restored more than 21 hectares of green space, strengthening

the city’s resilience to climate change, protecting urban biodiversity, and increasing greenhouse gas sinks, while also improving public space.

> **Brazil:** in Recife filtering gardens were completed and showcased as a replicable nature-based solution for water management and urban drainage, demonstrating how NbS can be integrated into dense urban contexts.

Urban Nature as Core Infrastructure: In the Metropolitan Area of Asunción, Paraguay, SCIAP supported the identification of a 13,000-hectare metropolitan green corridor connecting seven



protected areas and other key urban green spaces. Rather than isolated park upgrades, the project integrated biodiversity conservation into metropolitan planning frameworks. The corridor improved ecological connectivity, strengthened climate resilience to heat and flooding, and enhanced public space access. By repositioning green infrastructure as a structural component of urban development, Paraguay demonstrated how biodiversity integration can deliver environmental, social, and climate co-benefits simultaneously.

Key challenges

Despite growing recognition of their value, **urban nature, biodiversity, and NBS** remain difficult to mainstream. In many cities, “nature” is still treated as an afterthought or a beautification measure, rather than planned as functional infrastructure. As a result, the multiple resilience services that urban ecosystems can provide—cooling, flood regulation, water quality, habitat connectivity, and improved public space—are not yet consistently integrated into **systems thinking**, planning standards, and investment decisions.

Finally, **financing** remains a major barrier: cities often lack dedicated budget lines, bankable pipelines, and the tools to value and monetize benefits in ways that attract sustained public and private investment.

Recommendations

- > **Plan and invest in urban nature as core infrastructure** by embedding green infrastructure in city infrastructure planning and capital investment programs, so green and grey systems are designed to work together.
- > **Adopt a network approach** that connects green and blue assets with slow mobility corridors, helping cities maximize resilience, livability, and climate mitigation benefits at the urban scale.
- > **Strengthen the economic case and financing pathways** by supporting cities to identify economic opportunities and revenue models linked to green infrastructure (e.g., avoided costs, co-benefits, land value impacts, and operations models) that can help leverage additional investment.



Insight 4

Strengthening Investment Readiness and Municipal Finance Is Essential for Scaling Integrated Urban Solutions

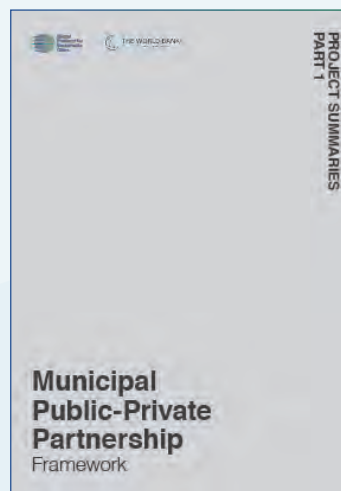
While integrated planning and sectoral approaches are essential for shaping sustainable urban development, cities ultimately need investment and financing capacity to translate plans into action. Under SC-IAP, many cities face fundamental constraints in accessing finance, including limited creditworthiness, weak financial management systems, and insufficient experience engaging private capital. Without addressing these constraints, even well-designed integrated urban strategies risk remaining aspirational. SC-IAP demonstrated that municipal finance and investment readiness are critical enablers of system change. Strengthening cities' capacity to assess their financial position, structure bankable projects, and engage with private investors is essential for scaling sustainable urban investments beyond pilot interventions.

What was done

At the GPSC level, GPSC prioritized **municipal finance and investment readiness** as a core pillar of its support to cities. It focused on equipping cities with practical tools and skills to better understand and improve their financial standing and investment potential:

- > **Creditworthiness training and diagnostics** were provided to help cities assess their financial health, identify gaps, and understand pathways to improved access to finance.
- > **Municipal finance diagnostic tools** helped cities assess their fiscal position by analyzing revenue sources, expenditure patterns, debt and liabilities, and key fiscal risks. These diagnostics provided an evidence base for prioritizing capital investments and identifying practical pathways to strengthen investment readiness. Under GPSC's Urban Sustainability Framework, municipal finance and capital investment planning are foundational dimensions of the urban sustainability assessment.
- > **Public-Private Partnership (PPP) guidance and trainings** were developed to help cities understand [when and how PPPs](#) can be used appropriately, including risk allocation, project preparation, and governance considerations.

Municipal Finance and PPP resources developed for the PPP Framework Portal.



At the project level, several SC-IAP countries began to translate this capacity building into practical engagement with the private sector:

- > **Côte d’Ivoire:** Industrial pilots and financing discussions highlighted the need for guarantees and blended finance mechanisms to unlock private investment from SMEs and local banks.
- > **South Africa:** The Johannesburg project advanced PPP-ready approaches in waste, housing, and energy systems, including biodigester procurement and green building standards.
- > **Viet Nam:** The project introduced cost-benefit analysis and regulatory frameworks to support private sector engagement in green infrastructure and climate-resilient investments.
- > **Mexico:** the National Bank of Public Works and Services (BANOBRAS) supported the structuring of replicable investment models in energy and sanitation, facilitating private sector participation through national financing mechanisms.

Key challenges

Strengthening **municipal finance** and improving creditworthiness is a **long-term** effort, often constrained by national fiscal frameworks, limited local revenue autonomy, and macroeconomic volatility. Many cities also face weak financial management systems and limited capacity to plan and fund capital investments, which makes it difficult to build a credible pipeline of projects. For **private sector mobilization**—including PPPs—common

bottlenecks include gaps in project preparation and due diligence, unclear legal and regulatory frameworks, limited experience with risk allocation and contract management, and insufficient bankable revenue models.

Recommendations:

- > **Strengthen municipal financial management and creditworthiness** through sustained support to improve own source revenues, expenditure control, debt management, and capital investment planning.
- > **Build a pipeline of investment-ready projects** by investing early in project preparation (technical studies, financial modeling, and implementation arrangements) to move from plans to bankable transactions.
- > **Engage the private sector and financiers early** in the project cycle to structure viable delivery and risk-sharing arrangements, including PPPs where appropriate and where revenue models can be made bankable.
- > **Pair capacity building with transaction support** (including engagement with financial institutions such as IFC and others) so diagnostics translate into deals, and ensure projects include enabling measures from the outset (tariffs/fees where appropriate, land and permitting readiness, governance arrangements, and bankable contract structures).
- > Where conditions allow, **explore access to capital markets** (e.g., municipal or sustainability bonds) as part of a broader financing strategy.

Insight 5

Gender Equality Strengthens the Effectiveness and Sustainability of Urban Interventions

Gender equality and social inclusion strengthen sustainability outcomes when they are measurable, embedded in project design, and directly linked to service delivery. In many urban programs, gender considerations are addressed through consultations or participation requirements, but remain disconnected from core investments and operational systems. Such approaches limit impact and sustained empowerment.

Under SC-IAP, several projects moved beyond participation-based approaches by integrating gender considerations into **how urban services are delivered**, who benefits from new technologies, and who gains access to skills, jobs, and economic opportunities. This experience shows that inclusion is most effective when it is treated as a functional component of urban systems.

What was done

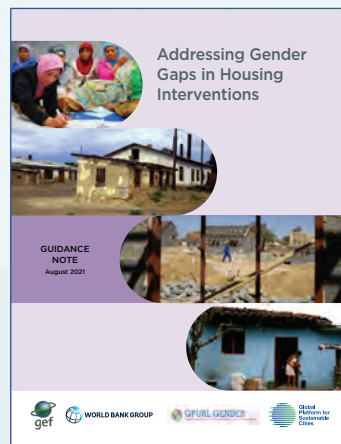
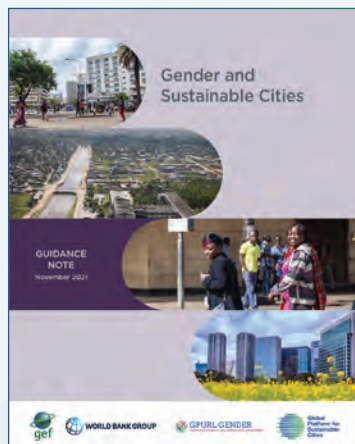
At the GPSC level, during the GEF-6 cycle, the GPSC strengthened gender integration across the SC-IAP by embedding inclusion considerations into its knowledge, training, and technical activities. Working closely with the World Bank's Gender

Community of Practice, GPSC organized webinars, workshops, and exchanges to build operational capacity among city practitioners. GPSC also produced practical guidance notes, including [Addressing Gender Gaps in Housing Interventions](#) and [Gender and Sustainable Cities](#). These resources supported cities in moving beyond participation-based approaches toward integrating gender-responsive design and service delivery within urban systems.

At the project level, SC-IAP projects demonstrated practical ways to integrate gender into the design and operation of urban systems:

- **Gender-responsive training and employment** were embedded within infrastructure and service investments. Women were trained and employed as operators, technicians, and service providers in sectors traditionally dominated by men, including **waste management and urban mobility systems**. **India** integrated gender considerations into capacity building and training activities, with women participating in technical and institutional strengthening efforts alongside the deployment of low-carbon waste systems such as EV-based

Gender Resources
available on the GPSC
Gender Portal



collection. In selected waste and mobility pilots, women previously engaged in informal waste collection were trained to operate and maintain electric vehicles powered by renewable energy, linking decarbonization with skills development, safer working conditions, and improved livelihoods. This approach moved beyond consultation to more directly connect gender inclusion with urban service delivery, demonstrating the potential for gender-responsive investments to enhance both equity and system performance.

- > In integrated waste and mobility interventions, women previously working in informal and precarious conditions were supported to **transition into formal employment**, gaining access to skills development, stable incomes, and safer working conditions. In **South Africa**, the Johannesburg project incorporated gender considerations primarily through inclusive participation in training, capacity building, and community-based activities—particularly in areas such as urban agriculture and local service delivery. While the project achieved strong female representation and engagement, available evidence indicates that gender integration was focused on participation and skills development.

Key challenges

Addressing gender equality through projects is consistently challenging, and many GEF interventions are **technical assistance**-oriented, which can lead to a focus on “output” measures such as participation

rates, (e.g., number of women consulted or trained), which are important but rarely capture whether projects change access to services, jobs, safety, decision-making power, or long-term economic opportunities. Moving from inclusion “inputs” to durable outcomes typically requires institutional commitment over multiple years, changes to procurement and human resource practices, and sustained capacity building within municipalities and service providers.

Recommendations

- > **Move beyond technical assistance** to institutionalization by linking outputs to clear implementation arrangements (mandates, staffing, operating budgets, and timelines) and by supporting the adoption of tools and plans through formal procedures and performance management.
- > **Embed gender and inclusion in service delivery systems** by designing interventions that change how services are delivered and who benefits (e.g., access, affordability, safety, and responsiveness), including in operations and maintenance and in private/operator contracts where relevant.
- > **Shift indicators from participation to outcomes** by tracking measures such as job placement and retention, earnings and progression, leadership roles, safety and accessibility outcomes, and the integration of gender criteria into standards, procurement, and municipal operating procedures.

Insight 6

A Global Knowledge Platform Is Critical to Enable Integration, Learning, and Scale

GEF's decision to launch SC-IAP as a **two-track program** was both visionary and transformational: it paired a set of participating project cities—supported by their respective GEF Implementing Agencies—with a **global knowledge platform** designed to connect experience across countries and accelerate learning. The underlying premise was that the **whole is bigger than the sum of its parts**: city-level experimentation would generate practical lessons, and a dedicated platform would curate, translate, and scale those lessons so that innovations piloted in one context could inform—and be adapted by—many others.

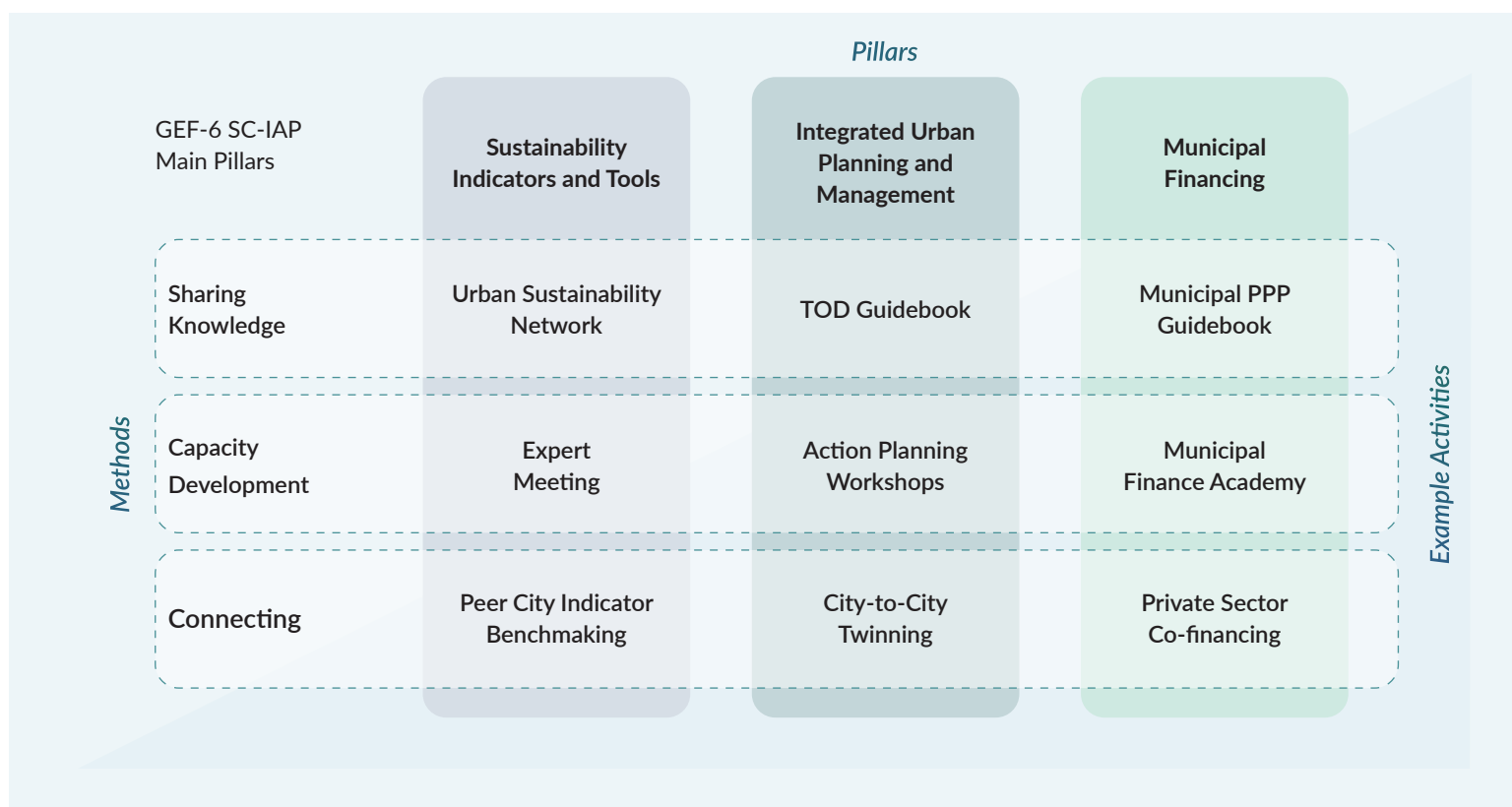
As the first effort of its kind in the GEF, the World Bank—serving as the lead agency for the global platform—worked with the GEF Secretariat, the GEF Implementing Agencies, and partners to translate this concept into an operational model. In practice, this required a genuine **learning-by-doing** approach as roles, workstreams, and knowledge services were defined while implementation was already underway.

When the GPSC was established, it faced some immediate operational questions: how to translate the “whole is bigger than the parts” principle into practical support for the participating city projects; what an **integrated approach** should mean at the project level; and to what extent the platform could influence project design given that, by the time GPSC was approved, all 11 country/city “child” projects had already been selected. Institutionally, the child projects were implemented through multiple GEF Implementing Agencies, which were the primary entities supporting project execution on the ground. GPSC, therefore, needed to define a clear value proposition—adding value through convening, peer learning, and knowledge products—without creating confusion with city counterparts or duplicating project activities.

What was done

The World Bank, as the lead agency for the global platform, embraced the early operational challenges as an opportunity to leverage its long-standing experience in urban development planning and investment. Drawing on strengths in spatial planning, urban management, infrastructure investment, and municipal finance, the Bank helped operationalize GPSC as a practical support and learning mechanism for participating cities as well as GEF Implementing Agencies.

- Structuring GPSC's core knowledge-sharing function around three key urban dimensions—integrated planning (including spatial planning and urban management), urban management and services, and municipal finance. This structure reflected a whole system view of urban transformation: cities need to align where and how they grow (planning), how services and infrastructure are delivered (management and services), and how priorities are funded and investments are sustained (finance). Organizing knowledge in this way helped participating cities and Implementing Agencies move beyond their existing project activities with the long-term goal of shaping urban systems. During GEF-6, the GPSC operation produced 44 Knowledge products, including flagship reports, practical tools, and case studies under these three pillars.
- **Connecting cities through a structured learning network and peer-to-peer partnerships.** GPSC's core function was to convene participating cities and Implementing Agencies as a global community of practice, creating a structured space for peer learning and practical exchange. By convening global meetings, thematic trainings, and continuous knowledge-sharing activities, the platform enabled cities to learn from real implementation experience



while accessing global expertise and good practices. This approach strengthened the translation of knowledge into action, expanded engagement beyond the original SC-IAP cohort, and positioned GPSC as a key enabler of integrated urban solutions. The scale of engagement—reaching hundreds of cities and thousands of practitioners—demonstrates the platform’s role in amplifying impact, accelerating learning, and supporting more coordinated urban transformation.

GPSC also actively fostered peer-to-peer partnerships, including exchanges between **Malaysia** and **Senegal** – two SC-IAP participating countries, where a Senegalese delegation visited Malaysia, including Melaka, to learn from practical lessons and approaches.

- > **Engaging city leadership through a Mayors Roundtable.** To complement technical support with political leadership, GPSC created a **Mayors Roundtable** to elevate city vision and commitment as a driver of integrated implementation. The Roundtable started at the 2nd **Global Meeting** in 2017 in Delhi, and continued at

the 3rd **Global Meeting** in São Paulo 2019, which culminated in the [São Paulo Statement on urban sustainability](#) endorsed by 26 mayors. When in-person convening was not possible during COVID19, GPSC sustained leadership engagement through virtual formats, including webinars. Bringing mayors together proved to be a powerful mechanism for leaders to learn from—and inspire—each other, reinforcing the role of political vision in shaping a city’s long-term pathway.

- > **Providing demand-driven support to Implementing Agencies.** In identifying a modality of how the global platform can closely support the “child” project implementation, GPSC provided targeted, on-demand services to complement the support that GEF Implementing Agencies were providing to participating country projects. For **Malaysia**, GPSC’s complementary inputs on urban planning and municipal finance helped broaden the reach and deepen the impact of UNIDO supported project activities. For **India**, the GPSC team connected UNIDO with IFC to explore

GPSC Impact and Reachability		
Learning	Engagement	Knowledge Ecosystem
<ul style="list-style-type: none"> • 3 Global Meetings (1,500+ participants) • 3 Global Online Series (1,000+ participants) • 67 GPSC-led capacity building events, including 45 webinars 	<ul style="list-style-type: none"> • 70 cities engaged • 117 countries involved • 5,000+ participants reached 	<ul style="list-style-type: none"> • Global community of practice established • Peer-to-peer learning and exchange • Access to global expertise and best practices • Continuous knowledge sharing across cities

potential pathways for private sector engagement in municipal waste management alongside the child project pipeline.

> **Making GPSC a partnership mechanism to leverage institutional strengths and reach.** GPSC used the World Bank’s convening power to bring together major multilateral development banks and financiers—ADB, AfDB, IDB, EBRD, and others—to identify opportunities for collaboration and coordinate complementary support to cities. This MDB coordination mechanism continued under

the co-management of the World Bank and EBRD. GPSC also established a Resource Team that brought together two major city networks —C40 and ICLEI— and a leading think tank—WRI—to complement GPSC’s knowledge sharing activities with additional technical expertise and practitioner reach. In parallel, GPSC engaged other partners (e.g., UN-Habitat) to strengthen coordination and deliver joint activities, reinforcing a broader partnership ecosystem to support integrated implementation.

> **Connecting GPSC to national knowledge platforms**

Mayors signing São Paulo’s Statement on Urban Sustainability, São Paulo, 2019.



and expanding the learning community. Among the 11 child projects, some SC-IAP countries established national platforms—such as China’s TOD platform and [Brazil’s Sustainable Cities Program](#)—which GPSC leveraged to extend learning beyond pilot cities and engage a broader network of municipalities. Through these partnerships, GPSC connected global knowledge with domestic implementation and expanded participation across countries. It also introduced a “knowledge partner” model, enabling non-GEF cities to contribute experience and join learning activities. This collaboration culminated in São Paulo—supported by Brazil’s Sustainable Cities Program—co-hosting the 3rd GPSC Global Meeting, demonstrating how national platforms can amplify global learning and scale peer exchange.

> **A structured governance model that ensured coordination across GEF implementing Agencies**

(IAs) and alignment between global and country-level activities. GPSC, managed by the World Bank, worked in close collaboration with nine IAs, which led the delivery of individual child projects. Regular coordination was maintained through more than 17 agency-wide calls and continuous exchanges, enabling knowledge sharing, troubleshooting, and alignment of platform support with project needs. To strengthen the link between learning and implementation, cities participating in GPSC activities were accompanied by their respective IAs, ensuring that knowledge translated into operational follow-up. Strategic oversight was provided by a Partnership Committee, chaired by the GEF CEO and the World Bank Senior Director, which convened annually alongside Global Meetings to guide program direction and reinforce collaboration across partners.



Recommendations

As the first global platform of its kind under the GEF, GPSC's GEF-6 operations demonstrated the value that a dedicated knowledge and partnership mechanism can bring to the global sustainable urban agenda. Many of the good practices piloted under GEF-6 should be sustained and expanded to increase reach and impact. At the same time, perceptions and expectations of what a global platform should deliver are evolving—making it important to clarify the platform's role, boundaries, and operating model so that knowledge services can consistently translate into stronger project design, implementation, and scale.

- > **Engage earlier to influence project design and implementation at scale.** The knowledge platform is not a project preparation facility; its comparative advantage is to bring knowledge, good practice, and practical tools that influence project design choices and implementation quality. To make this “influence” effective, GPSC should engage cities and GEF Implementing Agencies well before countries submit expressions of interest, and sustain engagement throughout the programming cycle. Because Implementing Agencies are the first “tier” of engagement with countries and cities, strengthening their understanding of integrated urban practice is essential. This also implies leveraging the platform for early preparation of future GEF city programs, since GEF cycles often run in parallel and early engagement can help Implementing Agencies identify and work with potential candidate cities, test readiness, and strengthen alignment with integrated approaches before formal programming decisions are made.
- > **Use the platform to complement child projects toward system transformation.** Beyond technical inputs, a global knowledge platform can add value by strengthening the urban planning process as a system lever—systematically engaging urban planners and planning institutions to share good practice, improve the quality of statutory plans and development controls, and broaden the reach of project lessons beyond a single investment or sector. In parallel, the platform can deepen engagement with mayors and city leadership to support vision setting and strategic alignment across agencies, helping anchor integrated approaches in governance arrangements, planning decisions, and long-term investment pathways that outlast individual projects.
- > **Expand participation beyond the cohort of participating cities.** In each GEF cycle, only a limited set of cities is selected; the platform should be leveraged to engage a wider community through knowledge partner mechanisms, national platforms, and open learning offers so that lessons and tools reach many more cities.
- > **Build structured, long-term collaboration to mobilize finance and the private sector.** Financing—especially private sector mobilization—will remain a challenge for many prospective child projects. The platform should be used consistently to identify opportunities and forge structured collaboration with IFC and other MDB private sector arms, as well as other financial institutions. Substantive collaboration could include progressively structured capacity building, regular dialogue with private actors, and systematic identification of potential transactions—supported through long-term programming rather than one off engagement.

IV. Conclusions

The GEF-6 SC-IAP marked a major milestone for the GEF: as a pioneering pilot, it demonstrated that cities can be a powerful entry point for delivering multiple global environmental benefits when interventions are designed as integrated systems rather than standalone sector projects. Across 11 countries and 28 cities, SC-IAP combined policy reform, institutional strengthening, diagnostics, and targeted investments to advance low carbon and green urban development, mobilizing substantial co-financing and establishing credible pathways for replication through national platforms

and city networks. The insights gained set the stage for future sustainable city initiatives to accelerate impact and deliver higher quality implementation.

As rapid urbanization reshapes our world, cities stand at the forefront of building a healthy and livable planet. The GEF's "Integrated Approach"—combining on-the-ground city action with a global knowledge platform—shows that collective innovation delivers far greater results. This pioneering program is turning ambition into scalable action, empowering cities to drive progress toward sustainable urban futures.



Annexes



Annex 1 | COUNTRY PROFILES



Brazil

CITinova—Integrated and Sustainable Urban Development

Why This Project Mattered

Brazil's rapid urbanization, environmental degradation, and climate vulnerability demanded a new model of urban development—one that integrates land use, environmental management, infrastructure, and climate policy. CITinova responded by linking city-level innovation with national reform. Rather than funding isolated projects, it created a coordinated sustainability ecosystem that connected pilots, policy, data, and institutional capacity—enabling impact far beyond the two demonstration cities.

What Was Delivered

- > **Recife:** Nature-based regeneration along the Capibaribe River—including filtering gardens, solar-powered boats, and active mobility infrastructure—restored ecological functions while improving public space and low-carbon mobility.
- > **Brasília:** Soil remediation of former dumpsites and an innovative public-private solar model demonstrated how environmental restoration and clean energy can be scaled through regulatory reform.

GEF-6 Grant: US\$ 25 million

Co-financing: US\$ 299 million

Duration: 7 years

Implementing Partners: Brazilian Government, UNEP

Cities: Brasília and Recife National Reach: 300+ municipalities engaged

- > **National Platforms:** Open environmental data systems, SDG-aligned urban indicators, and a Sustainable City Innovation Observatory institutionalized integrated planning and knowledge-sharing across Brazil.

Contribution

The project catalyzed the federal CITinova Agenda, embedding integrated urban sustainability into Brazil's governance framework and aligning SDG monitoring, climate planning, and land-use management under a unified approach. Nearly 300 municipalities joined sustainability platforms, with 298 cities committing to SDG targets. In Brasília, dumpsite usage fell by 62% and distributed solar systems were installed in 56 public buildings, proving that environmental restoration and clean energy can shift from demonstration to systemic reform.



China

Institutionalizing Transit-Oriented Development (TOD) at National Scale

Why This Project Mattered

Between 2015 and 2023, China’s urban rail network expanded from 4,500 km to over 10,600 km. Rapid transit growth, however, was not automatically producing compact, low-carbon urban form. Urban sprawl, uneven station development, fragmented land use, and rising car dependency threatened the sustainability—and fiscal viability—of this expansion. The Sustainable Cities Integrated Approach Pilot repositioned TOD from isolated station design to a multiscale urban governance framework integrating city, corridor, and station planning under a unified national methodology. Rather than financing infrastructure, the project redefined how infrastructure generates land value, fiscal revenue, and long-term urban competitiveness.

What Was Delivered

- > **National TOD Platform:** A web-based monitoring and evaluation system institutionalized under MoHURD, integrating diagnostic tools, impact assessment modules, and over 20 indicators across city, corridor, and station scales. Launched in 2022 and now expanding to 40+ cities
- > **Seven Citywide TOD Strategies:** All pilot cities embedded TOD principles into statutory urban and rail transit plans, exceeding original targets

GEF-6 Grant: US\$ 32.7 million

Co-financing: 1,084 million

Duration: 6 years

Implementing Partners: Ministry of Finance, MoHURD, World Bank

Cities: Beijing, Tianjin, Shijiazhuang, Ningbo, Nanchang, Guiyang, Shenzhen

- > **Multiscale Demonstrations,** including a corridor-level land value capture and financing models, station-level regeneration, and city-level job–housing balance and rail network optimization strategies.
- > **Citizen Engagement & Institutional Reform:** 48 public engagement sessions and 88 station-area consultations; establishment of Project Leading Groups in each city to strengthen inter-agency coordination.

Contribution

China transformed TOD from a spatial design tool into a national urban economic policy instrument. All seven pilot cities formally adopted TOD strategies integrated into statutory planning systems, linking rail expansion to land development controls, density allocation, and financing frameworks. The National TOD Platform institutionalized performance monitoring using standardized indicators across land use efficiency, property market dynamics, mobility performance, emissions, and fiscal returns. By aligning rail expansion with land value capture mechanisms, corridor-level investment planning, and rail-plus-property financing models, the project strengthened the economic logic of urban rail development. It demonstrated how transport infrastructure can increase land values, enhance tax revenues, and improve job accessibility.



Air Quality and Industrial Emissions Reform

GEF-6 Grant: US\$ 6 million

Co-financing: US\$ 33 million

Duration: 8 years

Implementing Partners: AfDB, UNIDO, Ministry of Transport, Ministry of Environment,

City: Greater Abidjan Metropolitan Region

Why This Project Mattered

Abidjan's rapid industrial expansion and urban growth intensified air pollution, greenhouse gas emissions, and environmental health risks. Regulatory enforcement was limited, emissions monitoring capacity was weak, and industrial development was not fully aligned with sustainable urban planning. Abidjan Integrated Sustainable Urban Planning and Management project addressed these structural gaps by linking industrial decarbonization, urban planning reform, and institutional strengthening under a unified framework. Rather than treating pollution control as a standalone technical issue, the project positioned environmental management as a driver of urban competitiveness, regulatory modernization, and long-term economic resilience.

What Was Delivered

- > **Industrial Emissions Reduction Pilots:** Five private-sector-supported pilots introduced lower-carbon technologies to reduce CO₂ and POPs, demonstrating commercially viable cleaner production pathways.
- > **Air Quality Governance Reform:** Legal, institutional, and technical audits strengthened CIAPOL's regulatory capacity and expanded air-quality monitoring systems and laboratory equipment.
- > **Urban Planning & Geospatial Systems:** Development of metropolitan geospatial and population datasets supported implementation

of the Greater Abidjan Master Plan 2030, enabling data-driven environmental and infrastructure planning.

- > **Circular Economy & Waste Infrastructure:** Support to the relocation and modernization of the composting facility (Akouédo to Bonoua) advanced landfill diversion and climate-aligned waste management.
- > **Capacity Building & Gender Inclusion:** Technical training enhanced local expertise in emissions management and sustainable planning, with measures to increase women's participation in technical roles.

Contribution

Côte d'Ivoire moved from reactive pollution control to structured metropolitan environmental governance. The project strengthened emissions regulation, monitoring systems, and enforcement capacity while improving the investment climate for cleaner industrial technologies. Five pilots proved that decarbonization can increase efficiency and reduce risk for local industries, especially SMEs, when supported by appropriate financial instruments. By promoting bank engagement and proposing a National Platform for Sustainable Cities focused on finance, circular economy, and knowledge management, the project laid the foundation for scaling low-carbon urban development beyond Abidjan.

Annex 1 | COUNTRY PROFILES



From Diagnostics to Investable Low-Carbon Urban Infrastructure

GEF-6 Grant: US\$ 13 million

Co-financing: US\$ 114 million

Duration: 9 years

Implementing Partners: UNIDO, UN-Habitat, Ministry of Housing and Urban Affairs (MoHUA)

Cities: Bhopal, Jaipur, Mysuru, Vijayawada, Guntur

Why This Project Mattered

India's cities generate nearly 60% of national GDP yet face fragmented planning authority, rapid urban expansion, infrastructure deficits, and rising emissions. Urban growth has often outpaced institutional capacity, leading to sprawl, inefficient service delivery, and limited investment coordination. The GEF-6 Sustainable Cities Integrated Approach Pilot addressed this structural gap by linking evidence-based planning, investment preparation, and low-carbon technology demonstrations. Rather than producing plans alone, the project aimed to convert diagnostics into bankable infrastructure and coordinated urban governance.

What Was Delivered

- > **Urban Sustainability Assessment Framework (USAF):** A 131-indicator framework, adapted from GPSC's USE, applied across five cities to standardize spatial, environmental, and socio-economic diagnostics and prioritize emissions-reduction investments.
- > **Low-Carbon Infrastructure Pilots:** Waste-to-energy and composting plants (Bhopal, Mysuru), EV waste fleets powered by floating solar (Guntur), and methane-capturing sewage treatment with solar integration (Jaipur, Vijayawada), demonstrating commercially viable climate infrastructure models.

> Integrated Monitoring & Knowledge

Platforms: Standardized IT systems for GHG inventories and performance tracking, alongside the Indian Platform for Sustainable Cities to support replication and capacity building.

Contribution

India moved from fragmented urban planning toward a structured, investment-oriented sustainability model. The Urban Sustainability Assessment Framework created a common language for performance measurement across cities, enabling comparability, prioritization, and alignment with national missions such as Swachh Bharat. By integrating spatial diagnostics with financial planning tools, cities identified and prioritized projects based on emissions reduction potential and economic viability.

The five pilots demonstrated that low-carbon infrastructure—from EV waste fleets to waste-to-energy and floating solar systems—can attract private participation even in complex municipal contexts. By combining standardized diagnostics, investment preparation, and technology deployment, India showed that sustainable urban transformation requires not only planning reform but also credible pipelines of climate-aligned infrastructure.



Malaysia

Smart Energy Systems and Municipal Finance Reform in Melaka

GEF-6 Grant: US\$ 3 million

Co-financing: US\$ 21 million

Duration: 2016–2024

Implementing Partners: UNIDO, State of Melaka, national agencies

City: Melaka

Why This Project Mattered

Malaysia’s urban energy systems faced rising demand, grid pressures, and fragmented policy coordination between national and state levels. While the country had strong green technology ambitions, alignment between regulatory frameworks, municipal finance, and private-sector manufacturing remained limited. The pilot in Melaka addressed this gap by combining smart-grid technology deployment, municipal creditworthiness reform, and private-sector coordination. Rather than testing isolated technologies, the project aimed to reshape how cities plan, finance, and integrate low-carbon energy systems.

What Was Delivered

- > **Smart-Grid Demonstration:** Deployment of integrated energy storage systems, smart meters, solar farm and solar thermal systems, and EV charging infrastructure for scooters, cars, and buses—demonstrating grid integration of distributed renewable energy.
- > **Sustainability Outlook Diagnostic:** A comprehensive Melaka Sustainability Outlook provided an integrated assessment of energy, mobility, emissions, and planning systems to guide state-level policy decisions.
- > **Municipal Finance Reform:** Creditworthiness training strengthened Melaka’s financial

management capacity and was extended to other municipalities, embedding investment-readiness principles nationwide.

> Private-Sector Alignment:

Coordination mechanisms improved engagement with green technology manufacturers, linking urban demand with domestic production capacity.

Contribution

Malaysia positioned smart energy transition as both a climate action and industrial competitiveness strategy. The Melaka pilot showed that distributed renewables, storage, and EV infrastructure can be integrated into urban grids when backed by regulatory alignment and stronger municipal financial management. By coordinating policy with private manufacturers, the project created clearer demand signals for the domestic green technology sector while catalyzing investment in resilient energy systems and improving municipal creditworthiness—a prerequisite for scaling urban climate finance. The experience highlighted that procuring advanced technologies through public systems requires longer lead times and adaptive coordination. By extending municipal finance training beyond Melaka and integrating gender-disaggregated monitoring, the project strengthened institutional capacity for national replication.

Annex 1 | COUNTRY PROFILES



Mexico

Financing Climate Infrastructure Through National Development Banking

Why This Project Mattered

Mexico's Emerging and Sustainable Cities (ESC) framework identified priority climate investments, but municipalities often lacked the technical preparation and financial structuring required to move from diagnostics to implementation. The project positioned Banobras, Mexico's national development bank, as the catalytic intermediary to transform city-level climate priorities into structured, finance-ready infrastructure. Rather than focusing only on pilots, the program aimed to establish replicable financing and technical models for clean energy, solid waste, and sanitation.

What Was Delivered

- > **Clean Energy Deployment** (La Paz): Installation of photovoltaic systems in nine public buildings, fully operational and grid-connected, with Phase II expansion under preparation
- > **Sanitation & Resilience Planning** (Campeche): Completion of comprehensive water-user census, wastewater treatment design, and stormwater drainage studies to inform long-term infrastructure programming
- > **Biodigester Adaptation** (Xalapa → Jalisco): Following political turnover in Xalapa, the solid waste component was restructured and transferred to Jalisco, where due diligence identified a more suitable humid biodigestion technology for high-

GEF-6 Grant: US\$ 13.76 million

Co-financing: US\$ 98 million

Duration: 9 years

Implementing Partners: Banobras (National Development Bank) with IDB

Cities: La Paz, San Francisco de Campeche, Xalapa, Jalisco

organic waste streams, improving cost-effectiveness and output performance

Contribution

Mexico demonstrated how a national development bank can de-risk and structure subnational climate investments. By anchoring implementation within Banobras, the initiative strengthened Mexico's capacity to bundle technical studies, environmental safeguards, and financing instruments into coherent municipal investment packages. The adaptive transfer of the biodigester component to Jalisco illustrates institutional resilience: rather than abandoning the investment, technical due diligence refined the technology choice, improved economic viability, and preserved emissions reduction potential. This flexibility reinforced the ESC model as a platform for scalable, finance-ready urban projects. The project laid the groundwork for replicating clean energy, waste-to-energy, and sanitation models in additional Mexican cities through structured public financing mechanisms.

Annex 1 | COUNTRY PROFILES



Paraguay

Building a Metropolitan Green Corridor in Asunción

Why This Project Mattered

Rapid urban expansion in the Asunción Metropolitan Area fragmented natural habitats, reduced ecological connectivity, and increased exposure to flooding and climate risks. Green spaces were isolated, management capacity was weak, and biodiversity loss threatened long-term environmental resilience.

The GEF-6 Asunción Green City initiative reframed urban green areas as critical metropolitan infrastructure, connecting conservation, climate mitigation, and urban quality of life. Rather than protecting isolated parks, the project created a connected ecological system embedded within metropolitan planning.

What Was Delivered

- > **13,000-Hectare Green Corridor:** A metropolitan ecological network connecting urban parks, protected areas, and natural reserves to restore habitat continuity and improve ecosystem services.
- > **Strengthened Management of 7 Protected Areas:** Improved governance, planning instruments, and operational capacity across key conservation sites in the AMA.

GEF-6 Grant: US\$ 6 million (approx.)

Co-financing: US\$ 240 million

Duration: 7 years

Implementing Partners: UNDP with national and municipal authorities

City: Asunción Metropolitan Area (AMA)

- > **Integrated Urban Biodiversity Planning:** Development of strategies and tools to embed ecosystem services, recreation, and climate adaptation into municipal planning processes.

Contribution

Paraguay repositioned biodiversity and green space as structural components of metropolitan development. By linking 13,000 hectares into a coherent ecological corridor, the project enhanced habitat connectivity, increased native species presence, and strengthened urban resilience to heat and flooding. The improved management of seven protected areas established clearer institutional responsibilities and monitoring systems, reducing fragmentation in environmental governance. The initiative demonstrated that metropolitan green infrastructure delivers multiple economic and social dividends: improved public health, recreational access, property value stabilization near green spaces, and reduced long-term climate adaptation costs.

Through the integration into planning frameworks, Paraguay established a replicable model for incorporating biodiversity corridors into urban growth strategies—moving beyond conservation toward ecosystem-based urban development.



Peru

National Platform for Sustainable Cities from Lima

GEF-6 Grant: US\$ 7.5 million

Co-financing: US\$ 300 million

Duration: 7 years

Implementing Partner: IDB

Cities: Lima Metropolitan Area, with national replication

Why This Project Mattered

Lima, one of Latin America's largest metropolitan areas, faces acute water stress, ecosystem degradation, climate risk, and rapid urban growth. Fragmented planning systems and limited climate data constrained the city's ability to design coordinated mitigation and adaptation strategies. The GEF-6 project addressed this gap by building the technical, institutional, and data foundations for climate-compatible urban development, using Lima as the entry point for a future National Platform for Sustainable Cities. Rather than financing infrastructure directly, the initiative focused on strengthening the planning architecture required to unlock long-term, climate-aligned investments.

What Was Delivered

- > **National Sustainable Cities Platform:** Established institutional and technical capacities to coordinate climate action across ministries and municipalities, forming the backbone of Peru's urban climate governance.
- > **Integrated Climate Diagnostics:** Development of greenhouse gas inventories, urban growth modelling using satellite imagery, climate risk assessments, and biodiversity diagnostics to inform long-term planning.

- > **Water & Ecosystem Management Tools:** Master plan for water channel management and four district-level biodiversity action plans to integrate ecosystem services into urban policy.
- > **Transport-Oriented Development (TOD):** Integration of non-motorized mobility policies and TOD guidelines into the design of three Lima metro stations, linking land use and low-carbon mobility.

Contribution

Peru established the analytical and institutional infrastructure necessary for climate-compatible metropolitan planning. By generating high-quality diagnostics, geospatial platforms, and sectoral strategies, the project improved decision-making capacity across water management, biodiversity conservation, mobility, and territorial planning. The initiative catalyzed broader urban climate investments and strengthened inter-agency coordination. Importantly, the preparation of detailed transport and infrastructure studies contributed to the mobilization of additional funding for a Bus Rapid Transit (BRT) line and informed expansion into Ica and Huancayo under GEF-8.



Senegal

Scaling Flood Resilience and Climate-Smart Urban Infrastructure in Dakar

Why This Project Mattered

Rapid urbanization and informal settlement in flood-prone zones made peri-urban Dakar highly vulnerable to recurrent flooding. Major flood events in 2009 and 2012 exposed severe infrastructure gaps, displacing residents and disrupting livelihoods.

The Stormwater Management and Climate Change Adaptation Project (PROGEP) repositioned flood management from emergency response to integrated climate-resilient urban development. By combining structural drainage investments with institutional reform and community engagement, Senegal aimed to reduce risk while strengthening long-term metropolitan resilience.

What Was Delivered

- > **Major Drainage Infrastructure:** 29.3 km of primary and 21 km of secondary drainage channels, 21 retention basins, 4 pumping stations, and 150,000 m² of paved roads constructed.
- > **Flood Risk Reduction:** 900 hectares protected from recurrent flooding (target: 400–660 ha); flooded areas reduced from 11.74 km² (2009) to 1.44 km² (2018).

GEF-6 Grant: US\$ 5.5 million

IDA Financing: US\$ 52 million

Duration: 9 years

Implementing Partners: Government of Senegal, World Bank, Nordic Development Fund

Cities: Peri-urban Dakar (Pikine and Guédiawaye)

- > **Institutional & Planning Tools:** Urban flood risk management plans, GIS systems, resilience strategies, and 591 government staff trained (target: 400).
- > **Community Engagement:** 68 participatory community projects completed and over 84,000 residents reached through awareness campaigns; 9 local flood management committees established.

Contribution

Senegal demonstrated that climate adaptation infrastructure can generate measurable economic and social returns. The project protected 167,000 residents from recurrent flooding while catalyzing urban regeneration in previously vulnerable neighborhoods. Land values in intervention zones increased by up to 500%, and average business incomes doubled, reflecting restored investor confidence and improved economic activity. By embedding drainage investments within urban planning reform and community governance mechanisms, the project strengthened Dakar's institutional capacity for climate-resilient growth.



South Africa

Mainstreaming Net-Zero Standards and Resource Efficiency in Johannesburg

Why this Project Mattered

Johannesburg's growth corridors must expand access to services while reducing emissions and improving resource efficiency. However, municipal systems often struggle to translate climate goals into enforceable standards, bankable projects, and integrated planning across sectors. This project addressed that gap by embedding low-carbon standards into municipal policy, procurement, and planning through area-based pilots. Rather than isolated demonstrations, it focused on institutional change to reshape how the city designs, finances, and delivers urban services.

What Was Delivered

- > **Eco-district and Net-Zero Standards:** Eco-district model completed with emissions-reduction pathways and net-zero guidelines integrated into a newly approved Green Building Policy. Five clinics were designed under the new standards—with 3 clinics currently under construction and 1 completed in 2025.
- > **Sustainable Social Housing:** 172 housing units retrofitted with solar and energy / water efficiency upgrades, alongside revised guidelines and Standard Operating Procedures (SOPs) to standardize sustainable delivery (pending final endorsement).
- > **Urban Food Resilience:** 17,000 m² under organic production and 3,300+ individuals trained (52% women), strengthening sustainable livelihoods and food systems.

GEF-6 Grant: US\$ 8.1 million

Co-financing: US\$ 124.4 million (US\$ 175.9 million mobilized to date)

Duration: 2018–2025

Implementing Partners: DBSA, UNEP

City: City of Johannesburg

- > **Waste-to-Energy Transition:** Integrated biodegradable waste strategy advanced and biodigester procurement launched, targeting diversion of 20,000 tons / year from landfill.
- > **Data-Driven Planning:** Integrated Spatial Data Portal and Spatial Plan Management System now operational to institutionalize evidence-based decision-making.

Contribution

Johannesburg is translating climate ambition into enforceable standards and delivery systems. The project is embedding net-zero carbon and green building requirements into municipal policy and public facility pipelines, while demonstrating how social housing retrofits can reduce operating costs and improve service reliability. It is also building citywide evidence base through spatial data systems that enable departments to plan and invest using shared climate and resource-efficiency metrics. By integrating eco-district planning, housing upgrades, circular waste solutions, and urban food resilience within one program, Johannesburg built a replicable model for metropolitan low-carbon transition in Africa.



Vietnam

Scaling Green City Action Plans and Climate-Resilient Urban Design

GEF-6 Grants: US\$ 12.83 million

Co-financing: US\$ 174 million

Duration: 2016–2025 (extended)

Implementing Partners: Asian Development Bank (ADB), Ministry of Natural Resources and Environment (MONRE), Cities of Hue, Ha Giang, and Vinh Yen

Cities: 3 pilot cities + 6 additional secondary cities

Why This Project Mattered

Vietnam's secondary cities are growing rapidly, facing increased flood risks, infrastructure pressures, and environmental degradation. While national climate commitments are strong, integrating resilience, biodiversity, and low-impact development into urban investment pipelines remained inconsistent. The project addressed this gap by embedding Green City Action Plans (GCAPs), climate-proofing standards, and nature-based solutions into city planning and national regulatory systems. Rather than isolated infrastructure pilots, the project aimed to institutionalize climate-resilient urban development across secondary cities.

What Was Delivered

- > **Green City Action Plans (GCAPs):** Updated and operationalized in Hue, Ha Giang, and Vinh Yen, with technical guidance prepared for replication in six additional cities.
- > **Climate-Resilient Design & Standards:** Detailed engineering designs for adaptation projects integrating water-sensitive urban design and nature-based solutions, alongside proposed national technical standards, cost norms, and unit cost databases to mainstream NbS in infrastructure planning.

- > **Disaster Risk Financing Pilot (Hue):** Climate risk insurance scheme advanced to final stage, pending national regulatory approval.
- > **Capacity, Knowledge & Gender**
Mainstreaming: Establishment of an NbS training hub at Hanoi University of Civil Engineering, development of manuals and toolkits, and implementation of a Gender Action Plan achieving at least 33% female participation in capacity-building activities.

Contribution

Vietnam shifted from project-level adaptation to structured, replicable green urban development. By institutionalizing GCAP methodologies and embedding nature-based and water-sensitive design standards into regulatory frameworks, the project strengthened the enabling environment for climate-resilient infrastructure. Cost-benefit analysis comparing green and conventional infrastructure supported evidence-based investment decisions. By linking local pilots to national policy reform, the initiative positioned secondary cities as scalable platforms for climate mitigation, biodiversity conservation, and disaster risk management.

Annex 2 | GPSC Knowledge Resources

Year	Title	Type
2017	GPSC Compendium: Integrated Planning for Sustainable Urban Form	Report
2017	GPSC Compendium: Data-informed Urban Planning	Report
2017	GPSC Compendium: Strategy and Innovation for Bus Reforms in Developing Countries	Report
2017	GPSC Compendium: Achieving Affordable Housing for All	Report
2017	GPSC Compendium: Small-scale Municipal PPP	Report
2018	Urban Sustainability Framework (English, Chinese, French, Spanish)	Toolkit
2018	Summary Report: Africa regional consultation workshop on sustainable cities	Report
2018	TOD Implementation Resources and Tools	Toolkit
2018	Catalyzing Solutions for Sustainable Cities	Report
2019	Summary Report: Financing urban resiliency and low emission development in Asia	Report
2019	Natural Asset and Biodiversity Valuation in Cities	Report
2019	Natural Asset and Biodiversity Valuation in Cities [Conference Edition]	Report
2019	Melaka: Pathway to Urban Sustainability	Report
2019	São Paulo Statement on Urban Sustainability (English Portuguese)	Report
2019	Summary Report: Climate Action Planning City Academy	Report
2019	Summary Report: Geospatial data and Spatial planning	Report
2019	Summary Report: Municipal Public-private Partnership City Academy	Report
2019	Summary Report: Climate Action Planning City Academy	Report
2019	Summary Report: TOD City Academy	Report
2020	Urban Land and Housing Market Assessment: A Toolkit	Toolkit
2020	A Review of Integrated Urban Planning Tools for Greenhouse Gas Mitigation	Report
2020	Primer for Cool Cities: Reducing Excessive Urban Heat—With a Focus on Passive Measures	Report
2020	The Value of Using Notation Keys in City Scale Greenhouse Gas Emission Inventories: Learning From Absent Data (Chinese, French, Spanish, Portuguese)	Report
2020	Washington, DC—a Living Lab for Sustainability and Innovation	Report
2020	Successful Local Government Fundraising and Project Pitching	Report
2020	Public-Private Partnerships for Investment and Delivery of Affordable Housing in Emerging Market Economies	Report
2020	Greater Than Parts: A Metropolitan Opportunity	Report

Annex 2 | GPSC Knowledge Resources

Year	Title	Type
2020	Sustainable Urban Development Assessment (SUDA)–Summary Report	Report
2020	Transit-Oriented Development Implementation Resources and Tools - 2nd Edition (English and Chinese)	Toolkit
2021	Municipal PPP Framework: Project Summaries part 1	Report
2021	Municipal PPP Framework: Project Summaries part 2	Report
2021	Municipal PPP Framework	Toolkit
2021	Pancakes to Pyramids: City Form to Promote Sustainable Growth	Report
2021	Urban Nature and Biodiversity for Cities. Policy Brief	Report
2021	GEF-6 Sustainable Cities IAP Program: Emerging Lessons from the Global Platform for Sustainable Cities	Report
2021	Addressing Gender Gaps in Housing Interventions	Report
2022	Clean and Low-Carbon Cities: the Relationship Between the Solid Waste Management Sector and Greenhouse Gases	Report
2021	Gender and Sustainable Cities	Report
2021	Guidance Note. Community Participation in Slum Upgrading	Report
2022	COVID-19 Vaccination and Municipal Waste Management. Technical Brief	report
2022	Ending Global Sprawl: Urban Standards for Sustainable and Resilient Development	Report
2022	C4B 1st Deep-Dive Learning: Greening Cities - Summary Report	Report
2023	Healthy Cities: Revisiting the Role of Cities in Promoting Health	Report
2024	Compendium for City Good Practice Series: How Paris Is Leveraging Nature For Climate Resilience	Report

