

# ENABLING GrEEEn CITIES: AN OPERATIONAL FRAMEWORK FOR INTEGRATED URBAN DEVELOPMENT IN SOUTHEAST ASIA

*Sonia Chand Sandhu and Ramola Naik Singru*

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## Enabling GrEEEn Cities: An Operational Framework for Integrated Urban Development in Southeast Asia

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## ABSTRACT

The working paper proposes a paradigm shift through a comprehensive *Green Cities Approach* for integrated urban development and environmental planning. This responds to rapid urbanization and associated challenges of degrading environment quality, inefficient resource consumption, inequitable growth, and increased risks to climate change and natural disasters that are steadily compromising livability. The authors suggest a flexible and scalable approach of “*doing things differently*” that can be applied at any time and stage in the city’s development trajectory. The GrEEEn cities operational framework forms the basis of a comprehensive green city action plan (GCAP) which is a time-based overarching investment program linked to goals for environment quality improvement and competitive resilient growth. The GCAP provides policy recommendations and options at national and local government levels for city managers and development partners to design innovative investments with technology options to help cities achieve their *green city vision*. Urban management partnerships (UMPs) through city-to-city peer learning and knowledge sharing is a platform for partnerships with city Governments, civil society, residents and stakeholders, private sector, industry and small-and medium-sized enterprise for identifying and implementing solutions for improving quality of life, increasing competitiveness and managing risks from climate change and natural disasters. This approach thus operationalizes the 3E strategies of environment, economic competitiveness, and equity, proposed under the ADB Urban Operational Plan, and incorporates elements of environment sustainability, climate and disaster resilience in ADB’s Strategy 2020.



## 1. GrEEEn CITIES OPERATIONAL FRAMEWORK: CONCEPT

1. The **Urban Operational Plan (UOP), 2012–2020, of the Asian Development Bank (ADB)** provides direction for ADB’s response to the challenge of rapid urbanization by supporting investments in sustainable urban development based on the “3E” strategies of economic competitiveness, environmental sustainability, and equity. Starting with Southeast Asia and using existing project development mechanisms, the Urban Development and Water Division (SEUW) of ADB’s Southeast Asia Department (SERD) is operationalizing the 3E strategies under the UOP through the GrEEEn Cities Approach. This working paper presents a “model” for integrated urban development and environment planning that was developed to take the 3E strategies from theory to practice in Southeast Asia under the regional technical assistance (TA) *Green Cities—A Sustainable Urban Future in Southeast Asia* and based on simultaneous learning from sector work on green cities in Indonesia, Malaysia, Myanmar, Thailand, and Viet Nam.<sup>1</sup>

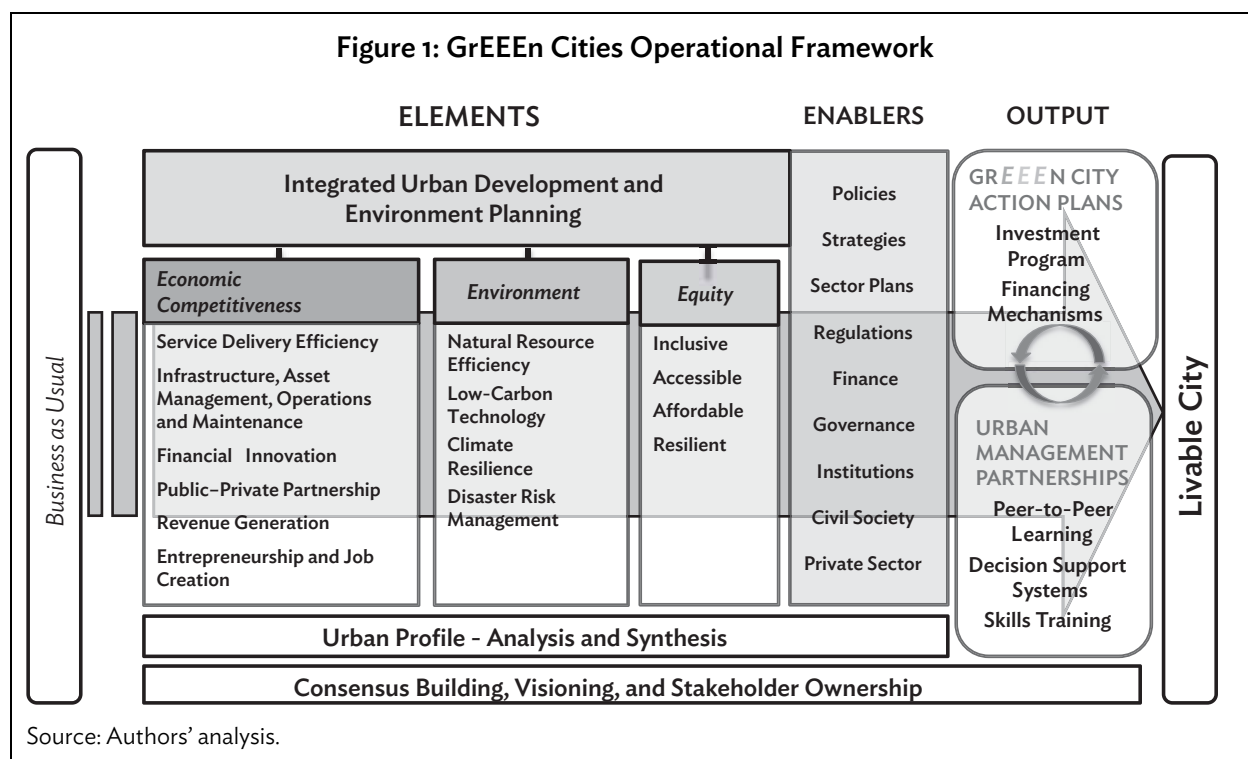
2. The **GrEEEn Cities Approach (GCA)** is a flexible and scalable initiative that proposes a paradigm shift in response to rapid urbanization by integrating urban development with environmental planning to improve livability and resilience in cities. By “doing things differently,” the GCA provides solutions to the related challenges of environmental degradation, inefficient resource consumption, inequitable growth, and increased risks of climate change and natural disasters that compromise livability. This approach can be used at any time in a city’s development trajectory and at any stage of its economic status, as demonstrated in the cities of Melaka in Malaysia, Mandalay in Myanmar, and Hue and Vinh Yen in Viet Nam. GCA partners with city governments, civil society, residents and stakeholders, the private sector, industry, and small- and medium-sized enterprises (SMEs). These partnerships identify and implement solutions to improve the quality of life, increase competitiveness, and manage climate change and natural disasters, without compromising on social equity.

3. The GrEEEn Cities Operational Framework (Figure 1) begins with an assessment of “business-as-usual” (BAU) to develop an urban profile. Socioeconomic and environment cobenefits, natural resource consumption, resilience to climate and disaster risks, technologies for low-carbon growth, and financial resource flows of a city are assessed and its natural and revenue-generating assets are identified, along with other enablers, such as national strategic priorities, policies, institutional mechanisms, and partnerships with civil society and the private sector, with which the city is able to maximize its asset advantage. Barriers to, and facilitators of, cross-sectoral synergies that allow the city to conserve its natural capital and build competence and capacity are determined. Criteria are established for multitiered decision making by city managers to improve the efficiency of urban services and the sustainability of urban infrastructure.

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<sup>1</sup> ADB. 2012. *Technical Assistance for Green Cities—A Sustainable Urban Future in Southeast Asia*. Manila (TA 8314-REG); ADB. 2013. *Technical Assistance for Public-Private Partnership Development in Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area and Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT)*. Manila (TA 7626-REG); and ADB. 2013. *Technical Assistance for Capacity Building Support for Project Identification*. Manila (TA 8251 MYA).





4. A **GrEEEn City Action Plan (GCAP)** is a time-based, overarching investment program with identified short-, medium-, and long-term investments linked to goals and enabling actions for improving environmental quality and achieving competitive, resilient growth. The GCAP results from the urban profile, followed by synthesis according to the 3E dimensions of a livable city—economic competitiveness, environmental sustainability, and equity. It provides city managers at national and local government levels with policy recommendations and technology options for designing innovative investments with development partners to achieve the *vision of a green city*.

5. Integrated urban development is centered on improving the “livability” (quality of life) in the city by incorporating environmental management into urban planning. Rapid urbanization and escalating demand for urban services have increased pressures on natural resources compromising land, air and water quality, already threatened by climate change. Institutionally fragmented governance and poor decision making have further eroded urban systems. As more people fill the cities and the search for a better quality of life continues, the need for service infrastructure will only intensify. The challenge for city managers is to keep a balance between natural resource availability and consumption by implementing sustainable solutions to the problem of urban service provision.

6. Bridging environmental quality and urban planning concerns will lead to improved livability by breaking down institutional compartmentalization; deploying effective decision support systems and multicriteria analysis tools; investing in comprehensive urban profiles, and in assessments of carrying capacity and vulnerability risk; and recognizing that environmental, economic, and social systems complement technical soundness.

7. **Urban management partnerships (UMPs)** through city-to-city peer learning and knowledge sharing are designed to improve skills and competence in integrated urban development, environment planning, and project management at various levels of government, and in civil society and the private sector. The GCAP and UMPs, together with innovative financing mechanisms and decision support systems, will ensure the long-term implementation of planned investments. This approach thus operationalizes the 3E strategies proposed under the ADB UOP, while reflecting the priority given to climate and disaster resilience in ADB's Strategy 2020.

## 2. GrEEEn CITY ACTION PLAN

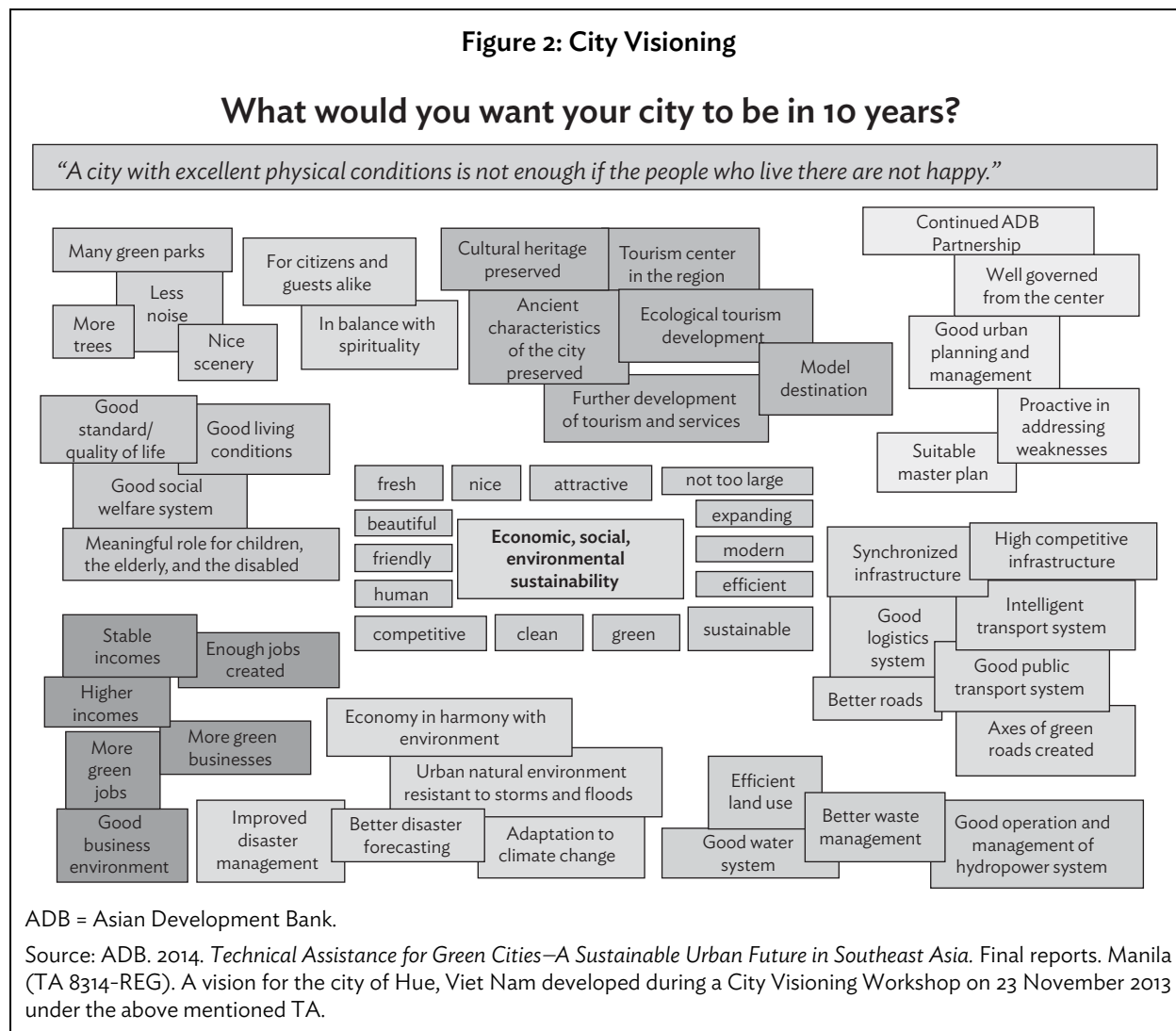
8. The GCAP is an operational platform integrating urban planning, environmental management, decision making, financial innovation, and consensus building. It establishes a pathway leading the city away from its current urban, environment, and resilience standards and toward the standards of "GrEEEn cities," where urban planning is risk sensitive and environmentally responsive, and cross-sectoral optimization is achieved. Through smart investments in infrastructure, human resources development, natural capital conservation, and technological innovation, the city can become more competitive.

9. Developed within the GrEEEn Cities Operational Framework, the GCAP comprises the following: (i) the vision of a green city with goals, indicators, and timeline; (ii) a spatial development plan at the city level; (iii) an environmental baseline and targets for the reduction of land, air, and water pollution; (iv) a list of short- and long-term actions to achieve livability; (v) cost estimates and budgetary resources for proposed investments; (vi) institutional mechanisms for implementing the GCAP, with identified roles and responsibilities; (vii) innovative financial mechanisms; (viii) performance and data management procedures; (ix) systems for eliciting and answering citizen feedback and redressing grievances; (x) geographic information system-based thematic maps for decision making; (xi) recommended reforms in policies and standards, to implement the GCAP; (xii) capacity and skills improvement plans, including vocational training to develop green skills, provided in cooperation with local universities and the private sector; and (xiv) proposals for UMPs.

### 2.1 Visioning

10. **A GrEEEn city puts people first**, and has a holistic view of development, growth, and access to services and job opportunities. For the city to achieve its GrEEEn goals and objectives, strong consensus among stakeholders is necessary. *Visioning* is the process of building alignment and consensus on "GrEEEn principles" and strategic development priorities at the city level (Figure 2). It facilitates the evaluation of challenges and opportunities for urban development in the context of the GrEEEn Cities Operational Framework, and is conducted as part of the diagnostic assessments in urban profiling. The visioning exercise is complemented with strengths–weaknesses–opportunities–threats analysis and problem tree analysis. Other relevant participatory methods of consensus building and assessment may also be used. This process involves all of the city's stakeholders—representatives of the national, regional, provincial, and local governments, the business sector, and civil society. It is designed to identify the assets and priority development needs of the city, and possible approaches to addressing those needs. The causes of the city's present and future problems are ranked and weighted to establish sectoral priorities. The ranking criteria commonly used are (i) the perceived seriousness of the identified issues; (ii) the correlation between solutions to the 3E principles; and (iii) the investment priorities that will maximize development output within a limited resource envelope. The key output of

the visioning exercise is consensus on the GrEEEn vision, the scope and elements of the GCAP, enabling policies, institutional and organizational challenges, and indicators for capacity improvement needs.



## 2.2 Urban Profiling

11. The GCAP is based on an understanding of the BAU, arrived at through comprehensive urban profiling, including an assessment of the regulatory, institutional, environmental, social, and economic aspects. An energy and water use assessment or audit provides an understanding of natural resource consumption, correlated with urban service provision and efficiency of service delivery. An urban mobility analysis helps in the assessment of connectivity between inner-city neighborhoods and regional growth centers, and between critical infrastructure assets. Unique environmental and ecological aspects of the city and its surroundings are regarded as core assets in the existing urban development plan. Enabling institutional, governance, and civil society participation mechanisms for increased competitiveness and revenue generation are also identified. Investment projects are

prioritized in this context and designed such that these are resource and energy efficient, and supported with improved technologies to the extent possible.

12. The Urban Profile includes an institutional assessment, which looks into the current trend toward decentralization and the increasingly influential role of local governments in the delivery of essential urban services, amid the stresses due to the exponential physical and economic growth in cities. Existing capacity and resource constraints on core urban services—water supply, sanitation, solid waste management, mobility, education, health, and trade support—are key considerations discussed with stakeholders during visioning. Institutional, operational, and financial recommendations for reducing impact on natural resources, improving service delivery to end users, and sharing risks with the private sector are determined through the GCAP process.

13. The GCAP encompasses recommendations derived from the urban profiling and assessment that will be translated into initiatives, plans, programs, and investments, which, individually or in combination, are expected to achieve the targets and goals agreed on during the visioning and consensus building. Some of the identified interventions could include the construction of wetlands as part of a storm-water management strategy or a decentralized wastewater treatment system, composting or waste-to-energy systems like biogas or incinerator-based systems, or on-grid solar systems. Greener urban development strategies aimed at improving the city's environmental quality and lowering its carbon footprint could involve adopting green building and development standards, greening existing urban development through adaptive design and retrofits, introducing urban forestry, or recycling nutrients in community kitchen gardens or urban farms.

14. With respect to environmental quality and climate change, the GCAP reviews urban development proposals contained in the city's master plan, identifies their critical environmental impact, and recommends appropriate actions. The GCAP also identifies environmental and climate change initiatives, such as wastewater and waste management, given the requirements of the growing city, energy efficiency improvements, renewable energy, low-carbon transport options, and the need to strengthen community resilience by integrating climate adaptation into disaster risk reduction and expanding green cover. The projects chosen must conform to the parameters of the livability.

15. The initiatives included in the GCAP extend beyond investment projects to matters of institutional policy, organizational practice, or training and capacity building that are necessary for the adoption of the GCAP and the realization of its goals and outcomes. With the GCAP, the city can leverage catalytic funding from multilateral or bilateral agencies, from green funds like the Global Environment Fund (GEF) or the Climate Investment Funds (CIFs), from public-private partnerships, or even from the business sector's corporate social responsibility initiatives. In exploring various financial mechanisms with financial stakeholders, the city can clearly explain the intended use of the funds.

### **2.3 Action Planning**

16. The Urban Profile includes a comprehensive stakeholder mapping complemented by consensus building. Mechanisms for engaging communities in GCAP performance monitoring and urban service delivery are identified and customized to the city's social fabric. In particular, tools such as citizen or community scorecards are developed. These tools help local governments and communities set targets and assess progress toward a sustainable future and a better quality of life. The investments proposed in the GCAP include measures intended to improve service equity, affordability, and accessibility to all groups and to make communities more resilient, especially to

climate change. Each investment is aimed at ensuring that affordable services are delivered and that diverse groups of people, particularly the most vulnerable and poorest communities, derive maximum benefit.

17. The GCAP offers an opportunity to create synergies with the private sector and identify investments that increase competitiveness and inclusion. Such opportunities are critical in most of Southeast Asia, including Viet Nam, where SMEs account for 97% of all businesses, employ almost 50% of the workforce, and produce 40% of the country's gross domestic product. The GCAP also provides city managers with a platform for informed engagement with the national government and with various stakeholders and financiers under the integrated urban development and GrEEEn Cities Approach.

18. Green jobs and a green economy are increasingly becoming integral components of most Southeast Asian countries. Economic and financial analyses contribute to scoping out the competitiveness aspects of the GCAPs. Improving the competitiveness of cities through green jobs and transitioning to a greener economy will necessitate investments, improvements in practices and technology, and direct investments in workforce training and development, entrepreneurship, financing for green SMEs, innovation, and clean technology adoption, among others, to supplement infrastructure investments. Green infrastructure investments present additional challenges for private sector participation, as not all benefits are readily bankable or accrue to the participator. But the biggest challenge facing the scale-up of financing and private sector participation for green growth is the inherent uniqueness of green investments and the significant variations in benefits across sectors (water, transport, housing, etc.), levels of investment, and types of beneficiary organizations (multinationals and SMEs), such that structured financing solutions are the rule rather than the exception. Some financing strategies or instruments might, however, offer greater potential for scale-up than others, and demand further investigation.

19. A financial analysis is carried out to understand the existing municipal finance framework and approaches to fiscal decentralization (if any), determine if there is greater autonomy for subnational governments in public finance and infrastructure development, and evaluate the constraints and opportunities for subnational governments in gaining access to capital markets for financing green initiatives. This analysis would extend to the private sector, to find out the challenges for the commercial banking sector and the structural risks (actual and perceived) that may need to be addressed, and to lay the foundation for future public-private partnerships (PPPs). Then, the potential for various innovative financing and risk management instruments, such as guarantees, credit enhancements, PPPs, carbon credit financing, local development infrastructure funds, land-based financing of infrastructure, pooled financing, and output-based aid, to increase private sector participation in funding and managing green initiatives must be evaluated.

20. Strong leadership and commitment from the national, provincial, and city governments is important in ensuring effective integrated urban and environment planning, stakeholder inclusion, and private sector involvement.

### **2.3.1. Economic Competitiveness**

21. The GCAP defines resilience as the ability of infrastructure systems to cope with ecological disturbances from extreme events while retaining their core service function and structural integrity. It links resilience directly to the sustainability of urban infrastructure assets in the face of natural disasters and risks to food and water security, and their capacity to protect communities and ensure efficient service delivery. The sustainability of assets in turn rests on effective asset management—a

crucial balance between environment, climate, social, economics, and technical feasibility considerations. Baselines and benchmarks for planning, design, and construction standards are established during the urban profiling and discussed with stakeholders in the visioning and GCAP preparation process. Climate vulnerability and disaster risk assessments identify risks to infrastructure assets and environmental and social impact. A comprehensive asset inventory forms the baseline and provides the status and conditions for existing infrastructure, its location, age, and financial value. This database helps cities to create a long-term asset management plan for ensuring continued service provision. This includes an operation, maintenance, and financial plan matching the costs of operations with user charges.

22. The revenue generated is linked to the costs incurred to operate and maintain urban infrastructure assets. Asset performance in changing environmental conditions is assessed to establish the degree of resilience, and the information is integrated with the overall inventory and the vulnerability risk assessment. The accessibility of the assets to different user groups is determined. An overall asset management plan is recommended, along with a strategy and policy for operation and maintenance.

23. **Sustainable assets.** The GCAP's wide menu of investments in integrated urban development helps city governments catalyze and maximize financing options. The city government can maximize the use of conventional finance, leveraging private sector financing, and seek specialist financing from the GEF, the CIFs, or other sources. The diagnostic review of the urban profile includes an assessment of the enabling regulatory framework for gaining access to national and international finance.

24. Various aspects of revenue generation are identified and recommended in the GCAP to enable the city to achieve its goals with community and stakeholder participation. As part of asset management, the revenue generated by each asset is compared with its operating costs. A review of assets is done in the course of asset inventory to assess whether the city's assets are being used to generate revenue and maximize returns.

25. Effective private sector participation recognizes the advantages that the public and private sectors each have, relative to the other, and their complementary roles. City governments are motivated to promote private sector participation in urban infrastructure by the need to (i) attract private capital investment (often to supplement public resources or allow their release for other public needs); (ii) use available resources more efficiently and effectively; and (iii) reform sectors by reallocating roles, incentives, and accountability. The strength of the private sector in the urban context lies in its access to new technology and possible new sources of financing. In the partnership with the private sector, the city government will not hand over its environmental and equity obligations—it will continue to provide social responsibility, environmental awareness, local knowledge, and an ability to mobilize political support—but will integrate those obligations into the partnership at the time it contracts with the private sector. The present situation of the city government vis-à-vis the private sector in urban infrastructure and service delivery needs to be analyzed during the diagnostic review, gaps identified, and plans made for addressing the gaps through the enhanced role of the private sector.

### 2.3.2. Ecological and Climate Resilience

26. **Natural resource efficiency.** Cities consume a great deal of energy and water. They recognize the importance of using resources efficiently and continually strive to improve practices through the 3Rs Approach (reduce, reuse, and recycle). Strict institutional monitoring of water and land use will

help prevent overabstraction, sustain water sources, and manage pollution. Both demand-side and supply-side measures have been adopted to improve the efficiency of water use by reducing leakage, wastage, and water theft. Commercially viable alternative-energy options will be explored with a view to having a balanced mix of renewable and nonrenewable energy sources. More efficient use of materials such as paper, plastics, and chemicals (particularly hazardous) would also lessen the waste that needs to be managed. The current situation in this regard will be assessed and suitable actions will be integrated into the GCAPs.

27. **Low-carbon technology.** The GCAPs will aim for a low-carbon trajectory to the extent possible and explore the use of appropriate technologies, methods, and practices. A comprehensive carbon or greenhouse gas inventory will be proposed and a realistic goal for carbon reduction established. The city will commit itself to targets commensurate to its contribution. A list of carbon mitigation measures for the short, medium, and long term will be identified. Financial resources for implementing these measures will be budgeted and implementation initiated. The implementation of the low-carbon trajectory will be monitored and evaluated, and the findings will be disclosed publicly. The current situation will be analyzed during the diagnostic review and technology measures for the city will be identified.

28. **Disaster risk management.** Climate-vulnerable areas, more prone to natural hazards because of climate change, will be identified in the urban profiling and diagnostic assessment. Greater disaster preparedness through human resource capacity building and physical capital investment projects will be planned and initiated through the GCAPs. The city's disaster preparedness will be analyzed, gaps will be identified, and plans for building climate resilience in line with the cities' needs will be drawn up.

### 2.3.3. Equity

29. The GrEEEn Cities Operational Framework promotes urban growth with equity, giving attention to the role of social and human capital in urban development. Equity refers to:

- (i) equity of access to key services among all citizens;
- (ii) equity between generations, meaning that future generations should not be disadvantaged by the activities of the current generation;
- (iii) distribution of development benefits and access to those benefits, e.g., employment, revenue, social investment; and
- (iv) opportunities to participate equally in the consultation and development process.

30. **Inclusiveness.** The GrEEEn Cities Operational Framework addresses the need for inclusion by dealing with inequality in access to all aspects of life, from employment, housing, and living conditions, services, and facilities, to opportunities for participation in social, cultural, and political structures and processes. Its aim is to empower citizens in their dialogue with governments and service providers. It is generally believed that if service providers were more accountable to their clients, and, more specifically, to low-income households, they would provide better services. During the diagnostic review, the inclusiveness of the city government's services will be reviewed and gaps identified. Community resilience is a key consideration, as more resilient communities are less vulnerable. Building the capacity of communities, particularly those with lower incomes, will empower them. The nature and type of capacity building will be identified and an appropriate plan developed.

31. The investments proposed in the GCAP will include measures to improve equity, affordability, and accessibility to all groups in the city and enhance the resilience of communities, especially when

confronted with climate change. From a social standpoint, the following aspects of each investment should be considered and assessed:

- (i) spatial extent and beneficiaries of the investment, including the degree to which it will benefit the most vulnerable and poorest communities;
- (ii) affordability of the investment to all citizens (in case of services provided or programs implemented);
- (iii) sustainability of the investment (services or programs);
- (iv) technical and financial capacity of the operator (local government or individual family or others) to run and maintain the service or program; and
- (v) effects on the living conditions of the population, especially the low-income families.

### 3. IMPLEMENTATION

#### 3.1 Enablers

32. The GrEEEn Cities Operational Framework identifies investment actions in the short, medium, and long term, along with the enabling institutional mechanisms. These enabling actions or enablers could be policies, strategies, sector plans, regulations, financial incentives, governance institutions, civil society, or private sector interventions. Gap assessments done, as part of the diagnostic review will highlight the enablers and link them to the proposed investment actions. These gap assessments could be strategic environmental assessments, sector analyses, institutional gap analyses, legal reviews, or even stakeholder capacity assessments. Table 1 lists the various enablers, stakeholders, and enabling mechanisms in the specific context of Viet Nam.

**Table 1: Enablers, Key Documents, Stakeholders, and Enabling Implications  
in the Viet Nam Context**

Enablers	Key Documents and Stakeholders	Enabling Implications
Policies and strategies	National Green Growth Strategy 2012; Socio-economic Development Strategy 2011–2020; Sustainable Development Strategy 2011–2020; Framework Master Plan for Urban Development to 2025 and Vision to 2050; National Strategy on Climate Change 2011	Represent the government’s clear vision and strong political commitment to growth, poverty reduction and social equity, environmental preservation, and sustainable urban development

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Table 1 continued

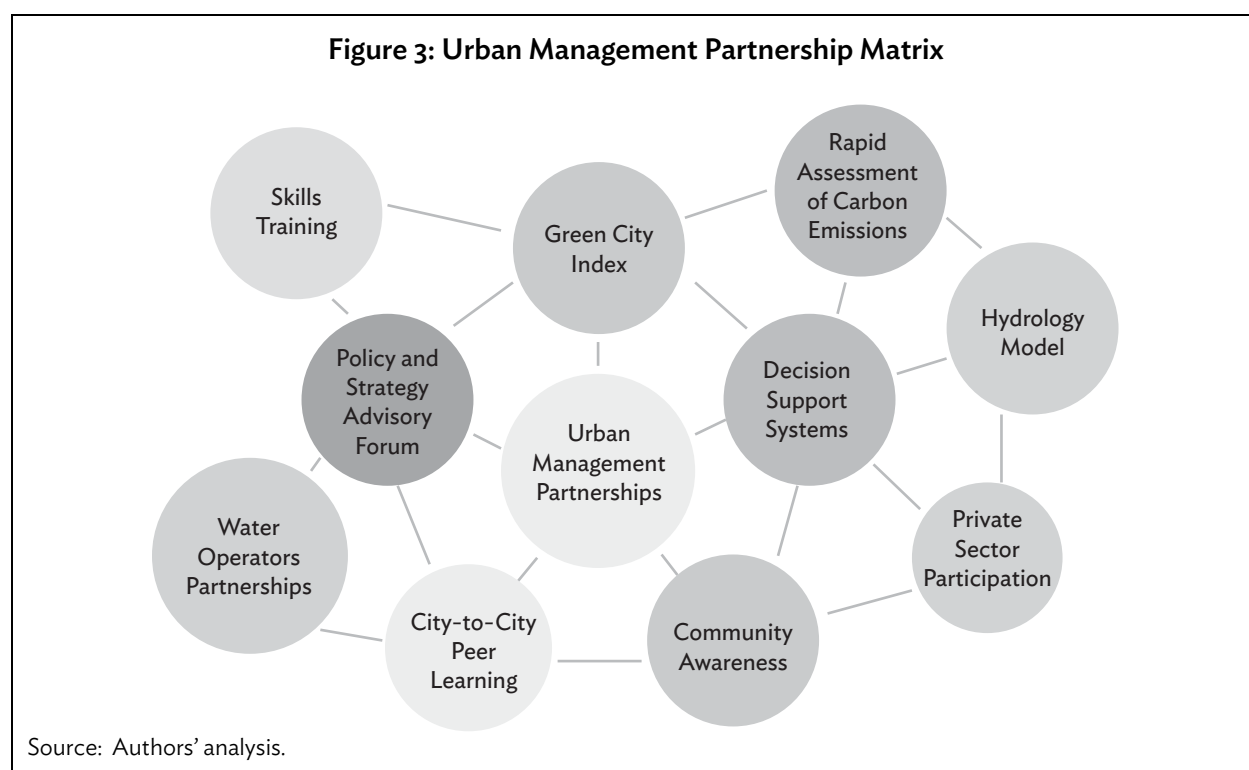
Enablers	Key Documents and Stakeholders	Enabling Implications
Sector plans and regulations	<p><i>Environment:</i> National Strategy on Environment Protection 2010 to 2020; Environmental Protection Law 2005; Law on Water Resources 1998; Law on Forest Protection and Development 2004; Law on Energy Conservation and Efficiency 2010</p> <p><i>Economic:</i> Law on Investment 2005</p> <p><i>Social:</i> National Strategy on Sustainable Poverty Reduction 2011 to 2020</p> <p><i>Urban planning:</i> Urban Planning Law 2009 and various related regulatory documents (decrees, decisions, circulars, etc.)</p>	<p>Important frameworks guiding GCAP development</p> <p>Provide legal and incentive tools and measures in support of GCAP implementation</p>
Institutions and governance	<p><i>At the national level:</i> Ministry of Investment and Planning (focal point); other concerned ministries (Natural Resources and Environment; Labour, Invalids and Social Affairs; Construction; Finance; Transport; Industry and Trade; Education and Training; etc.)</p> <p><i>At the provincial level:</i> Provincial People's Committee and sectoral departments (Investment and Planning; Natural Resources and Environment; Labour, Invalids and Social Affairs; Construction; Finance; Transport; Industry and Trade; Education and Training; etc.); relevant state-owned entities (e.g., Planning institute, Urban Environment Company, Water Company, Chamber of Commerce)</p> <p><i>At the city level:</i> City People's Committee and sectoral divisions (Investment and Planning; Natural Resources and Environment; Labour, Invalids and Social Affairs; Construction; Finance; Transport; Industry and Trade; Education and Training; etc.); relevant divisions or departments of state-owned entities in charge of the city (e.g., Planning institute, Urban Environment Company, Water Company, Chamber of Commerce)</p>	<p>Central role in GCAP development and implementation (key influencing factors: commitment, capacity, cooperation, communication, organizational change, etc.)</p>
Civil society and mass organizations	Fatherland Front, which includes Women's Union, Youth's Union, Veteran's Union; associations (farmer, business, student, etc.); independent nongovernment organizations (Red Cross, Actions for the City, etc.); communities	<p>input for GCAP development</p> <p>Collaboration in and support for GCAP implementation</p> <p>Part of feedback systems and mechanisms for GCAP implementation monitoring and accountability</p>
Private sector	International corporations; national and local private companies	PPP and potential role in financial innovations

GCAP = green city action plan, PPP = public-private partnership.

Source: ADB. 2014. *Technical Assistance for Green Cities—A Sustainable Urban Future in Southeast Asia*. Final reports. Manila (TA 8314-REG).

### 3.2 Urban Management Partnerships

33. An urban management partnership is set up to build a city's capacity to implement priority initiatives identified in its GCAP. These priority initiatives can be limited to one sector (e.g., introducing cleaner public transportation options) or it can involve cross-sectoral green development initiatives to revitalize strategic areas or municipal assets (e.g., revitalizing a river). The UMP design is flexible and scalable, as shown in Figure 3. The partnership brings together several components needed to create an enabling environment for GrEEEn cities and to provide technical support and a knowledge-sharing platform for implementing the projects. The UMP can develop a GrEEEn Cities index that establishes baselines and benchmarks with which cities can set realistic and achievable targets. It can also be the platform supporting the application of decision support systems and tools such as the City Infrastructure Investment Programming and Prioritization (CIIPP) Toolkit developed by the Cities Development Initiative for Asia (CDIA), or the Rapid Assessment of City Emissions (RACE) developed by Clean Air Asia with funding from ADB. Other critical decision-making tools, such as hydrological models for vulnerability and disaster risk assessments, can be applied. These are some of the various levels and dimensions across which the UMP can be developed and applied on the basis of the identified needs and priorities of the city.



34. **Learning-by-doing.** With their limited spheres of influence and resources, city governments clearly cannot achieve most GCAP actions by themselves. While city governments can and should lead by example with policies and practices in their own buildings, facilities, and operations, for a GCAP to succeed, city governments will need to focus on the following:

- (i) **outreach**, by communicating effectively with and engaging with residents and businesses to increase awareness and spur action;
- (ii) **collaboration**, by seeking strategic partnerships with citizens, businesses, other levels of government, universities, and nongovernment organizations (NGOs);
- (iii) **fund mobilization**, by seeking access to alternative financing mechanisms to supplement the city's resources; and
- (iv) **policy reforms**, by advocating policies at the regional, provincial, and central government levels.

Outreach, collaboration, fund mobilization, and policy reforms can be achieved only through partnerships with other stakeholders. A government outreach campaign is often most effective when done in partnership with local NGOs. Commercial financing may be an option only through a PPP. A city government may need to seek support from other cities to advocate much-needed policy reforms.

35. The stakeholders of a GCAP action can be very diverse, but usually include:

- (i) residents in the areas affected by the proposed action;
- (ii) businesses depending on, or having an interest in, the proposed action or the affected urban area(s);
- (iii) government agencies involved in the planning, implementation, and operation of the proposed action;
- (iv) NGOs active in the affected area(s) or working with affected communities;
- (v) universities and research institutes engaged in academic initiatives that are relevant to the proposed action; and
- (vi) potential financiers (government-owned, commercial, philanthropic) of the proposed action.

36. Most cities in ADB's developing member countries have limited experience in initiating and leading local stakeholder platforms. To build the capacity of city governments participating in ADB's GrEEEn Cities initiative, ADB facilitates the formation and operation of UMPs.

37. UMPs are centered on the establishment of local collaboration platforms that bring together all stakeholders for a particular GCAP action. Since actions can be limited to one sector or involve cross-sectoral green development initiatives to revitalize strategic areas or municipal assets (e.g., waterfront, cultural heritage site, industrial zone), the number of stakeholders, and thus the complexity involved in aligning their interests, will vary.

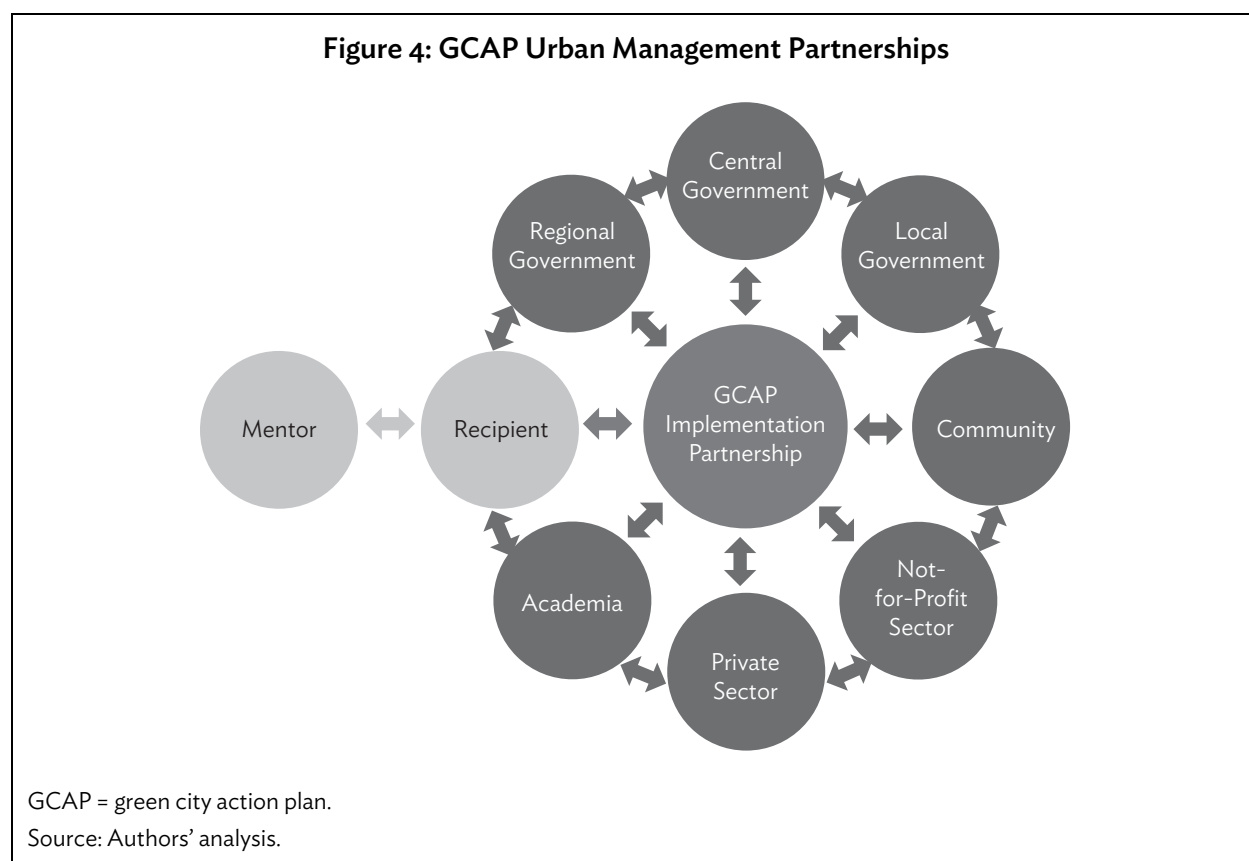
38. City governments worldwide have undertaken successful "green partnership" initiatives. UMPs bring these experiences to participating city governments through a "learning-by-doing" mentorship process.

### 3.2.1 Urban Management Partnership Process

39. The GCAP calls for an integrated, multisector approach involving a large number of stakeholders. The Melaka government has limited experience in outreach and the involvement of communities and the private sector, but it could learn from similar initiatives in other cities that have successfully engaged and collaborated with stakeholders in implementing complex initiatives. The River of Life initiative for the Klang River in Malaysia's capital, Kuala Lumpur, provides a good example of a multistakeholder approach to river revitalization and has replicated some of its best practices in

Melaka. Coincidentally, Kuala Lumpur, which has yet to improve its historic riverfront, may learn from Melaka's experience as well.

40. Figure 4 illustrates the multiple-stakeholder platform for GCAP implementation and the relationship with an (international) mentor willing to share its best practices in successfully implementing green actions through local partnerships. The text box summarizes the implementation of the GCAP for the UMP in Melaka, Malaysia.



41. **Step 1: Focus.** First, ADB will assist cities that recently completed their GCAP in identifying top-priority actions that are most suitable for an UMP. In Melaka, for instance, the focus will be on extending the revitalization of the Melaka River further upstream, while the city of Vin Yen in Viet Nam would like to prioritize the development of Dam Vac Lake and its waterfront, an underused asset.

42. **Step 2: Stakeholder mapping.** Local ownership and initiative is central to the success of UMP implementation. The city government agency that is to lead a priority GCAP action will need to outline what it expects to achieve through a strategic partnership platform. It will also conduct a stakeholder-mapping exercise, and initiate outreach to these stakeholders to gauge their interest in collaboration.

43. **Step 3: Matchmaking.** Through its network, ADB will identify one or more relevant best practices of city governments that have accomplished a similar action through stakeholder collaboration. As the text box below shows, these best practices do not necessarily need to come from

abroad. River rehabilitation initiatives in neighboring Kuala Lumpur happen to be at a more advanced stage than those in Melaka.

44. **Step 4: Diagnostic.** In an initial visit to the recipient city government, the mentor and the key stakeholders of the UMP will discuss what the local partnership would like to accomplish and how the mentor could help build capacity.

45. **Step 5: Implementation.** The UMP mentor will advise its counterpart at the recipient city government during the implementation of the GCAP action. The level of support will depend on the needs of the recipient, and the ability of the mentor to serve those needs. Usually, advisory support is given during a visit by mentor experts. Sometimes it is beneficial for key stakeholders from the recipient city government to visit their mentor to see its best practices in action. The mentor can also provide remote consultation through e-mail, Skype, or other suitable means of communication.

46. **Step 6: Scale-up.** The GCAP will include other actions that may benefit from local partnerships. Once a UMP proves successful, a participating city government may decide to establish other collaboration platforms.

47. UMPs are new and relatively untested. The mentoring approach is similar to ADB's Water Operator Partnerships Program, which has been in operation since 2007. While ADB can somewhat influence the success of a UMP through facilitation, the success of a UMP will depend on the willingness and leadership of the city in actively engaging its GCAP stakeholders.

#### **Friends of the River: An Urban Management Partnership in the Making**

A priority action in the recently completed GCAP for Melaka, Malaysia, was the further revitalization of the Melaka River. Melaka had already invested heavily in on-site initiatives to improve the quality of its signature river, but, while successful, they had been limited to only a small stretch of the river.

Further improvements were likely to necessitate consideration of upstream reaches, following a river-basin approach that could extend beyond the state's border. But downstream, where the river meanders through the most urbanized area of Melaka Tengah (including the historic center), improvements could be made in the use of the river for recreation, transportation, storm-water runoff, and flood water retention purposes.

The GCAP called for an integrated, multisector approach that would involve a large number of stakeholders. The Melaka government had limited experience in outreach and the involvement of residents and the private sector, but it could learn from similar initiatives in other cities that had successfully engaged and collaborated with stakeholders in implementing complex initiatives. Malaysia's capital, Kuala Lumpur, provided a good example of a multistakeholder approach in river revitalization in its River of Life initiative for the Klang River.

The UMP therefore focused on replicating some of its best practices in Melaka. Coincidentally Kuala Lumpur, which has yet to improve its historic riverfront, could learn from Melaka's experience as well.

GCAP = green city action plan, UMP = urban management partnership.

Source: ADB. 2014. *Technical Assistance for Green Cities—A Sustainable Urban Future in Southeast Asia*. Final reports. Manila (TA 8314-REG).

### 3.2.2 Decision Support Systems

48. Urban simulation, prioritization models, urban hydrologic models, and similar tools help in integrated and multicriteria analysis based on city-specific attributes of individual projects and policies. This analysis leads to the scoping the objectives; prioritization of resource needs, capital and operating costs, operating needs, environmental impact and benefits, induced impact from climate change, and social and economic benefits; and the evaluation of cobenefits from the development of projects, policies, and strategies relevant to the GCAP.

49. The elements of urban simulation that are typically applied to the GCAP preparation and decision-making process are:

- (i) data collection for the modeling and development of an urban profile of existing infrastructure conditions and the preparation of urban watershed maps;
- (ii) development of future scenarios (possibly with the help of existing spatial development plans) for an evaluation of alternative urban forms, such as infill vs sprawl, or alternative informal development solutions, thus providing the basis for an evaluation of the typology of policies, infrastructure provision, and green-technology alternatives.
- (iii) identification of key performance indicators that (a) represent triple-bottom-line objectives consistent with the objectives of considering the economic, environmental, and equity dimensions, and (b) are quantifiable and allow the prediction of reasonable targets;
- (iv) development of a city-specific integrated model from the existing urban simulation, customized and simplified as necessary, and covering elements of urban form (spatial development), facilities on centralized or decentralized schemes, and green technologies and policies for indicators that need to be measured, and development of additional tools (scales and scoring system) for social and economic indicators and addition of these tools to the scope of the numerical computer model; and
- (v) integrated evaluation of infrastructure solutions to support decision making, and prioritization to support the preferred scenario.

### 3.2.3 Skills Training

50. Awareness and competence will be progressively built in order to achieve a livable city starting with the GrEEEn Cities Approach. Capacity and skills development plans will be formulated in a participatory manner through formal (schools, colleges, universities) and informal education channels (vocational training institutions that focus on adult learning).

## 4. CONCLUSION: CONNECTING THE DOTS

51. In conclusion, green city development is a process. The GrEEEn Cities Operational Framework enables the city to approach its long-term goal of achieving livability through results-based planning. The operational framework will enable green city development in each city based on its unique assets and needs, and hence customized to the development trajectory of each city and each country. The GCA has been applied in Malaysia, Myanmar, Thailand, and Viet Nam.

52. **In Malaysia**, the GCAP for Melaka city has been endorsed and adopted by the government of Melaka as the overarching document steering the city toward its green and low-carbon goals.<sup>2</sup> The GCAP is a platform for institutional integration, implementation of Melaka's Green Technology Blueprint,<sup>3</sup> and consolidation of the multiple green initiatives pursued by the city, including the development of indicators to optimize efforts between agencies and build institutional capabilities through UMPs and peer-to-peer learning (Box). The pilot implementation of the GCAP in Melaka is expected to bring out necessary policies and institutional responsibilities for implementing a national-level green growth agenda and inform the 11th National Malaysia Development Plan.<sup>4</sup> This process has demonstrated the growth of ADB as a valuable knowledge partner to middle-income countries by giving operational relevance to knowledge for the Indonesia–Malaysia–Thailand Growth Triangle. This pilot effort is being scaled up and replicated in Indonesia and Thailand.

53. **In Myanmar**, the scoping study was aimed at specific engagement with the Ministry of Construction for the preparation of a strategic development plan for Green Mandalay, which would be the model for the management of urban development throughout the country. The outputs of the study “Towards a Green Mandalay” is informing the design of the investment loan for the urban services improvement project, financed by ADB.<sup>5</sup>

54. **In Viet Nam**, the GCAPs are informing the investment loan for the Secondary Cities Development Program (Green Cities) (TA 8671-VIE) for the cities of Ha Giang, Hue, and Vinh Yen (Figure 4.1).<sup>6</sup> Its green growth and environmental sustainability focus calls for support for the 10-year strategy from several national programs, namely, the National Green Growth Strategy 2012–2020, the National Action Plan on Climate Change 2012–2020, and the National Program on Urban Development 2011–2020, to which the TA 8671-VIE is linked (Figure 6). TA 8671-VIE is aimed at developing and demonstrating different urban growth models for climate-resilient and economically competitive cities through the development of GCAPs as investment plans for the cities. Through its expected output—(i) investments in climate-resilient infrastructure as prioritized in the cities' GCAPs; (ii) increased community awareness of environmental management; and (iii) decision support systems for integrated urban planning and resource management, climate change adaptation, and disaster risk mitigation—TA 8671-VIE would be able to support the realization of the 10-year socioeconomic development strategy's overall objective of an industrialized Viet Nam in the three cities. An assessment of economic activities and regional economic growth potential will enable the intra-regional push-pull analysis to establish a pathway for economic growth and competitiveness within the GrEEEn Cities framework and national policies and strategies for green growth. The GCAPs consider these aspects of inclusive and competitive growth within the regional and national framework and are developed as time-based investment programs with potential financing solutions.

<sup>2</sup> ADB. 2014. *Melaka Green City Action Plan*. Final Report. Manila (TA 7626-REG).

<sup>3</sup> Green Technology Blueprint adopted in 2011 to formalize a vision of transforming Melaka into a Green Technology City State by 2020.

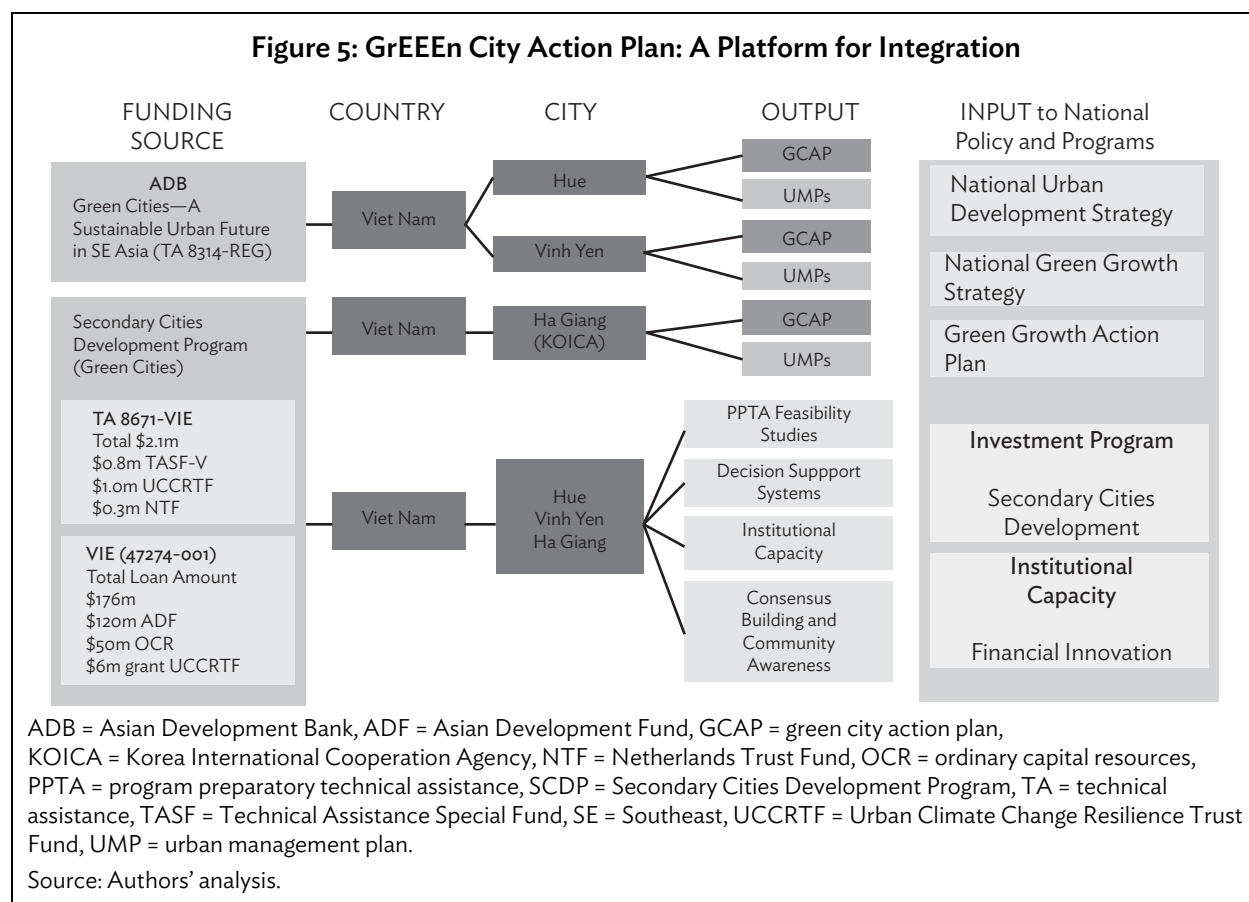
<sup>4</sup> The Government of Malaysia requested ADB's help in anchoring a key regional cooperation initiative, integrated urban development, to the national development agenda under the 11th Malaysia Plan. Government of Malaysia, Economic Planning Unit. 2010. *10th Malaysia Plan 2011–2015*. Chapter 1, p. 26. [http://www.epu.gov.my/epu-theme/RMKE10/rmke10\\_english.html](http://www.epu.gov.my/epu-theme/RMKE10/rmke10_english.html).

<sup>5</sup> ADB 2014. *Scoping Study for a Strategic Development Plan for Mandalay*. Final Report. Manila (TA 8251-MYA).

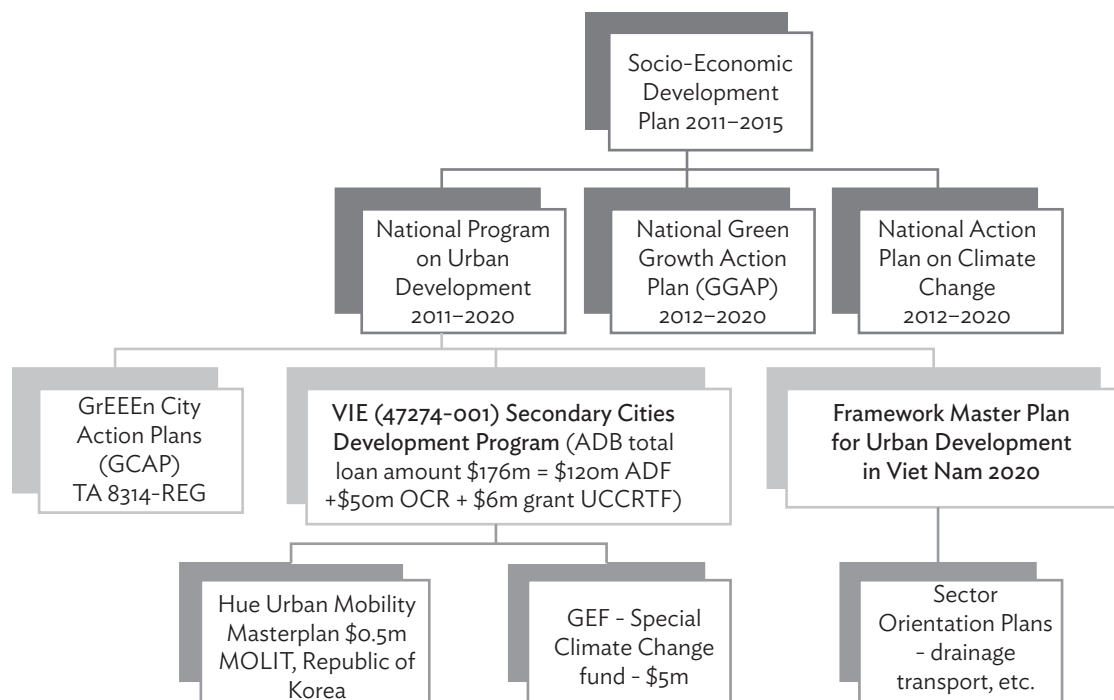
<sup>6</sup> ADB. 2014. *Hue and Vinh Yen Green City Action Plan*. Draft Final Report. Manila (TA 8314-REG); ADB. 2014. *Proposed Results-Based Loan and Administration of Grant for the Secondary Cities Development Program (Green Cities) to the Socialist Republic of Viet Nam*. Manila (TA 8671-VIE).

55. TA 8671-VIE is aimed not only at building climate-resilient infrastructure but also at making sure that these utilities and services would be available to support the three cities' activities all year round. It will achieve these objectives by ensuring that flooding and other natural disasters are less severe and less frequent, that communities are prepared for the perceived impact of natural disasters, and that the government is well informed and well-equipped to respond to a variety of disaster and climate impact scenarios. These actions and investments could be a starting point for model green-city development intended to support socioeconomic activities in a city that is resolved to improve its competitiveness and offer more economic opportunities to its constituents. The combined actions emerging from the GCAP should generate additional cobenefits. A vital part of the GCAP process is identifying the stakeholders and defining their roles so that they take ownership of the process and the outcome. Consensus building and stakeholder partnerships are therefore requisites of effective ownership. Inclusive planning can be achieved even in a short time to maximize benefits. A mechanism for capacity building, which allows stakeholders to share and exchange knowledge, should be established through urban management partnerships.

56. Scaling up this model would provide a city-focused development approach that could contribute to achieving long-term development objectives and localizing national environmental and urban policies and strategies. The GCAP and the UMPs are therefore tools imbuing a process of learning that loops back into the development and planning process as a reiterative mechanism for GrEEEn City action plan implementation through investment programs for achieving livable cities





**Figure 6: Urban Development, Green Growth, and Climate Change in Viet Nam**

ADB = Asian Development Bank; ADF = Asian Development Fund; GEF = Global Environment Facility; m = million; MOLIT = Ministry of Land, Infrastructure and Transport; OCR = ordinary capital resources; TA = technical assistance; TASF = Technical Assistance Special Fund; UCCRTF = Urban Climate Change Resilience Trust Fund; UMP = urban management plan.

Source: Authors' analysis.

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## **Enabling GrEEEn Cities**

### *An Operational Framework for Integrated Urban Development in Southeast Asia*

This working paper responds to the challenge of rapid urbanization for sustainable urban development based on the “3E” strategies of economic competitiveness, environmental sustainability, and equity. It presents a “model” for integrated urban development and environment planning that was developed to take the 3E strategies from theory to practice in Southeast Asia under the regional technical assistance (TA) Green Cities: A Sustainable Urban Future in Southeast Asia and based on simultaneous learning from sector work on green cities in Indonesia, Malaysia, Myanmar, Thailand, and Viet Nam. The GrEEEn Cities Approach (GCA) is a flexible and scalable initiative that proposes a paradigm shift for improving livability and resilience in cities. By “doing things differently,” the GCA provides solutions to the related challenges of environmental degradation, inefficient resource consumption, inequitable growth, and increased risks of climate change and natural disasters that compromise quality of life.

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