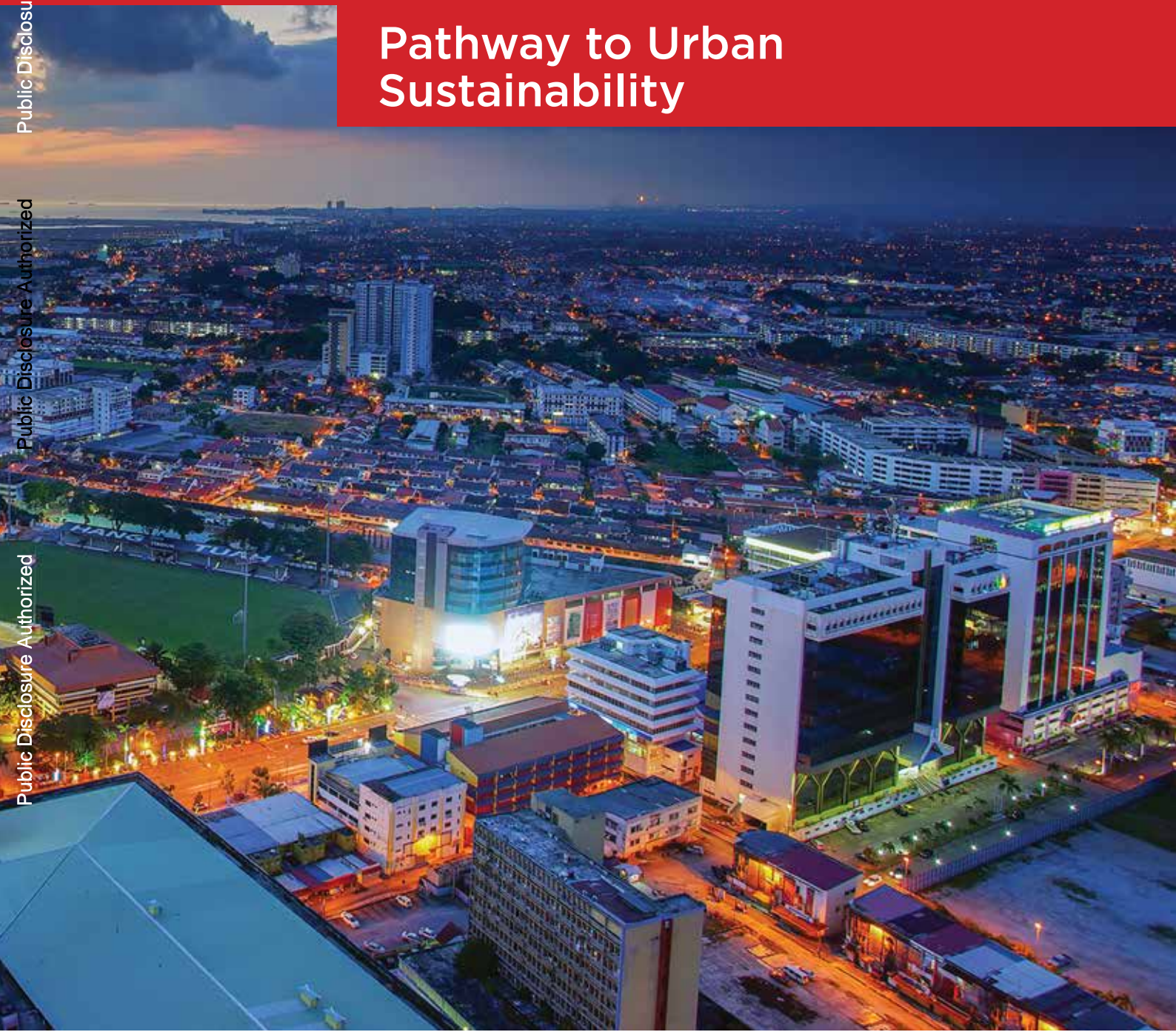


Sustainability
Outlook
Diagnostic

OVERVIEW
REPORT

MELAKA

Pathway to Urban Sustainability



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Pathway to Urban Sustainability



with research from





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"Melacca City panorama." Photo: JPLDesigns.

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Abbreviations

ADB	Asian Development Bank
EIU	Economist Intelligence Unit
GEF	Global Environment Facility
GHG	greenhouse gases
GPSC	Global Platform for Sustainable Cities
GSURR	Global Practice for Social, Urban, Rural, and Resilience
GVA	gross value added
HSR	high-speed rail
IMM	Izmir Metropolitan Municipality
MIGHT	Malaysian Industry-Government Group for High Technology
UNIDO	United Nations Industrial Development Organization
USF	Urban Sustainability Framework
WHS	World Heritage Site

MELAKA 0 MILE

AYER KEROH	10 KM	KUALA LUMPUR	168 KM
LONDON	10632 KM	SEREMBAN	100 KM
LISBON	11699 KM	PORT DICKSON	87 KM
		MASJID TANAH	28 KM
		MEKAH	6550 KM
		VALPERISO	9800 KM



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Land Public Transport Commission; Malaysian Energy Commission; Malaysian Department of Environment; Malaysia Department of Lands and Mines; Malaysia Green Technology Corporation; and the Kuala Lumpur–Singapore High Speed Rail Corporation.

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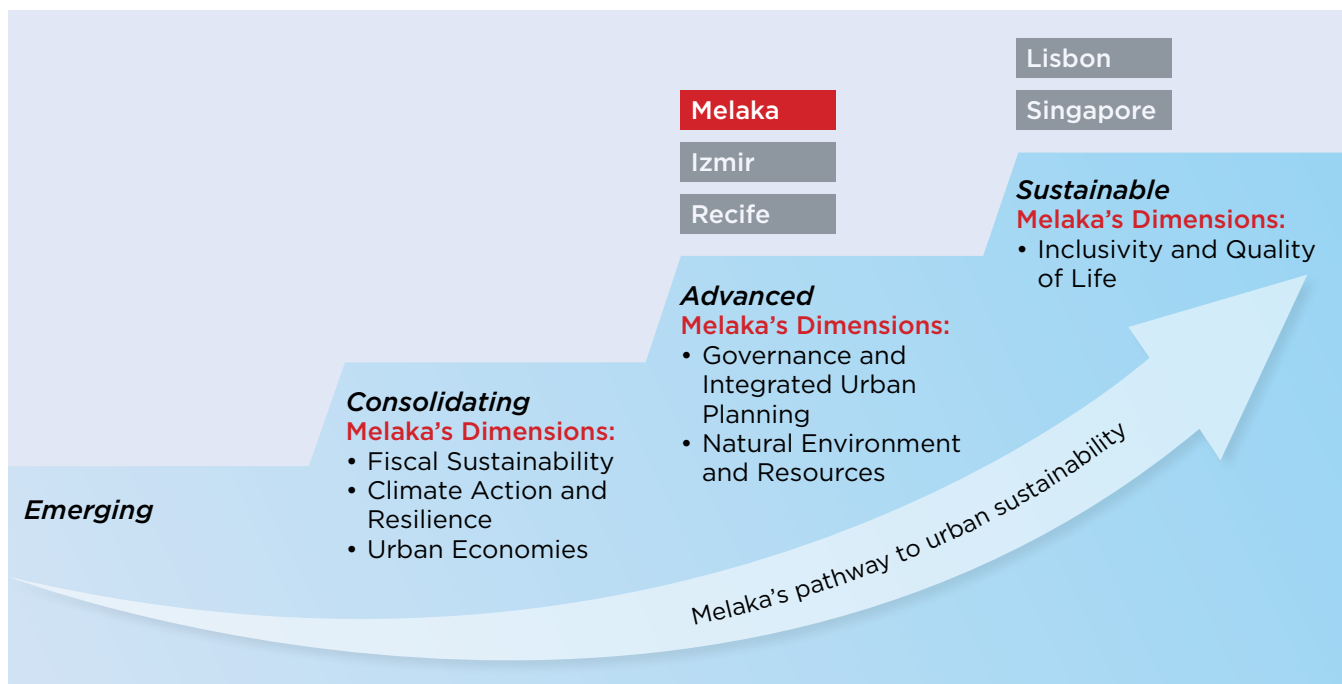
Policy Briefing

Realizing Melaka's sustainability aspirations requires bold steps to maintain the state's economic success and prepare the necessary infrastructure for its expected population growth. This policy briefing is followed by an executive summary and benchmarking information, and accompanied by six supporting reports offering in-depth analyses. The Global Platform for Sustainable Cities (GPSC), led by the World Bank, is a network of 28 cities in 11 countries that supports adopting an integrated approach to urban planning and financing. An integrated approach requires wide input, and a full list of acknowledgments has been included in this report.

GPSC Sustainability Outlook Diagnostic

Melaka State, situated roughly halfway between Kuala Lumpur and Singapore, has unique importance in the global dialogue around the sustainability of our shared urban future. At Melaka's heart is its historic urban center, a UNESCO World Heritage Site (WHS) strategically located along the Strait of Malacca, one of the world's busiest shipping routes and a link between the two largest countries by population, China and India. Melaka has taken significant steps toward realizing a more sustainable urban growth trajectory, including becoming a member of GPSC when the platform was launched in 2016. In 2017, GPSC initiated the Sustainability Outlook Diagnostic with the United Nations Industrial



FIGURE 1 GPSC Benchmarking: Melaka's Pathway to Urban Sustainability

An integrated approach—one that ties Melaka's strong performance in Inclusivity and Quality of Life to the lower-scoring dimensions—will help the state more rapidly achieve its sustainability goals.

Development Organization (UNIDO) and the Malaysian Industry-Government Group for High Technology (MIGHT) to assist Melaka State in achieving the level of urban sustainability to which it aspires.

This detailed assessment covers six dimensions of sustainability, captured in supporting reports titled *Reinforcing Melaka's Economic Success*; *Integrating Environmental Plans*; *Enhancing Services and Housing*; *Shaping a Compact, Efficient, and Harmonious Urban Form*; *Shifting Melaka's Mobility Split*; and *Demonstrating Fiscal Sustainability*. Each report provides significant insight into different aspects of Melaka's sustainability trajectory and highlights key areas for improvement.

Melaka was also benchmarked against the cities of Izmir (Turkey), Lisbon (Portugal), Recife (Brazil), and Singapore. The policy-focused benchmarking analyzed 65 indicators to determine a holistic urban sustainability profile for each city that looked at several key areas (Governance and Integrated Urban Planning; Fiscal Sustainability; Urban Economies; Natural Environment and Resources; Climate Action and Resilience; and Inclusivity and Quality of Life). This comprehensive approach

provides a snapshot of where Melaka has achieved sustainability alongside specific opportunities for improvement (seen in figure 1). The expectation is that more cities in the GPSC network and beyond will benefit from this benchmarking process. Importantly, the findings of the assessment and benchmarking are analogous, confirming the efficacy of this approach.

Key Areas for Improvement

Managing urban change sustainably requires recognizing the powerful links that exist between economic growth, urban form, and municipal financing, as well as the related infrastructure, environmental, and social impacts. Melaka State's fragmented urban form illustrates these links: it undermines economic productivity and strains budgets by making infrastructure, including basic services and public transport, more expensive to provision. Car dependency, a by-product of poor urban connectivity, has environmental consequences, while the relative unaffordability and inaccessibility of low-density housing for certain lower-income residents may potentially increase inequality. An integrated approach, supported

by data, is therefore critical to achieving Melaka's sustainability goals, as captured in the three key areas for improvement which follow.

1 Economic Competitiveness

Melaka State has enjoyed remarkable economic success with positive manufacturing and tourism growth in recent years. However, productivity growth in these sectors is limited. **Continued economic growth for Melaka State requires leveraging its competitive advantages.** Specifically, Melaka State should aim to

- Increase worker productivity
- Diversify tourism offerings and increase the duration of tourists' stays
- Pursue high-tech manufacturing investment in specialty areas

2 Integrated Urban Planning

Melaka State's success has been associated with significant population growth and low-density expansion of urban areas. This fragmented and disconnected urban form risks stalling and potentially undermining the city's future economic growth. **Shaping a compact and human-centric urban form is key to unlocking economic, social, and environmental gains.** Specifically, Melaka State should aim to

- Reduce oversupply of developable land and incentivize higher-density, mixed-use development
- Coordinate land use and transport planning to gradually shift the public transport modal share from 2 percent to 40 percent
- Enhance Melaka's urban walkability
- Provide more low-cost, affordable, and well-connected housing as part of infill development

3 Fiscal Sustainability

Melaka State requires federal transfers to meet its capital expenditure and has limited capacity for independent capital investment. Melaka State has opportunities to optimize its creditworthiness profile, potentially giving access to private debt. As the urban agglomeration spreads across various local authorities, Melaka State and its municipalities must work hand-in-hand to **increase their fiscal sustainability so that they can implement infrastructure to meet their anticipated future growth needs.** Specifically, Melaka State should aim to

- Obtain a national scale shadow credit rating to demonstrate fiscal sustainability and creditworthiness, while also helping to identify and implement financial management improvements
- Increase the efficiency and scale of recurrent own-source revenue collection, achieve a reliable and sustainable operating margin, and improve debt management capacity
- Work with municipalities, such as Melaka City, so that they can create a sound multiyear capital investment plan

Next Steps

Melaka State has already taken positive steps toward realizing its urban sustainability aspirations. The GPSC Sustainability Outlook Diagnostic can significantly support the state's next steps in achieving its goals by providing evidence of the links between economic productivity, integrated urban planning, and fiscal sustainability. **Developing an integrated approach in the forthcoming update to the State Structure Plan can be further guided by the targeted recommendations in each of the six detailed assessment reports.**

Executive Summary

Why Melaka

Malaysia's Melaka State, situated roughly halfway between Kuala Lumpur and Singapore, has unique importance in the global dialogue around the sustainability of our shared urban future. The state has taken significant steps toward realizing a more sustainable urban growth trajectory, including becoming a member of GPSC when the platform was launched in 2016. In 2017, GPSC initiated the Sustainability Outlook Diagnostic with UNIDO and MIGHT; the goal has been to assist Melaka State in

developing a more integrated approach to urban challenges and thus achieve the level of urban sustainability to which it aspires.¹

Melaka State, one of Malaysia's 13 states, occupies a historically strategic position in global trade routes, with the mouth of the Melaka River opening onto the Strait of Malacca's busy shipping routes. The historic city center, which has expanded significantly in recent decades, maintains a rich mix of Arab, British, Chinese, Dutch, Indian, Malay, and Portuguese cultural influences and has been named

¹ This report uses *Melaka*, the traditional Malay spelling, rather than the alternative spelling of *Malacca* to reference Melaka State and Melaka City.

FIGURE 2 Melaka's Strategic Location



Melaka is strategically located on the Strait of Malacca, one of the world's busiest shipping routes and a link among the major Asian economies, including the world's two biggest countries by population, China and India. The strait provides the shortest maritime links from Asia to Africa and Europe.

a UNESCO WHS. Further information regarding Melaka's geographic and political structure is included in box 1.

The state has recently experienced strong economic growth, and it has high aspirations for its urban sustainability. The state government has shown leadership in several recent initiatives guiding its development strategies. For instance, the Green City Action Plan was developed by the Asian Development Bank (ADB) in 2014 to focus specifically on water management, energy efficiency and renewable energy, green transportation, zero waste, urban agriculture and

forestry, and cultural heritage and tourism (ADB 2014). Melaka's State Structure Plan 2035 (State of Melaka 2018) further aims to promote economic growth, improve connectivity, reconstruct the physical living environment, manage traffic, improve socioeconomic well-being, and facilitate overall sustainable development.

However, the city faces significant challenges, including a car-dependent, inefficient spatial form that undermines productivity, entails significant social and environmental costs, and exacerbates financial pressures in meeting infrastructure needs. The GPSC's Sustainability Outlook Diagnostic

BOX 1 Melaka State's Geographic and Political Structure

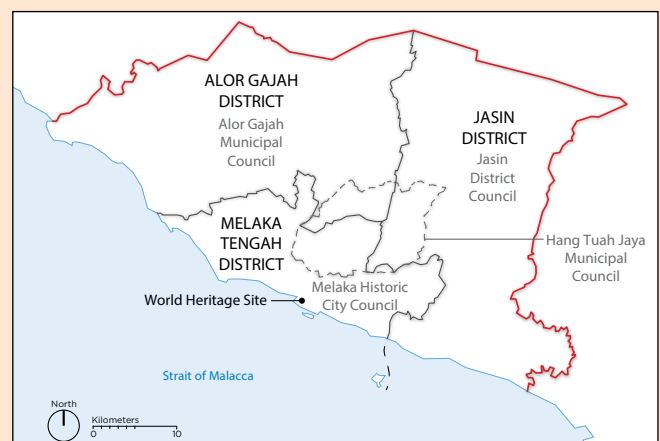
Melaka State has an area of 1,663 square kilometers (State of Melaka 2018) and a population of approximately 910,000 people as of 2017 (DOSM 2019). The state is governed by a parliament called the State Legislative Assembly, which is headed by the chief minister. The party in power forms the State Executive Council and is responsible for the state's overall administration.

The state is divided into three districts (Melaka Tengah, Alor Gajah, and Jasin), and four municipalities (Alor Gajah Municipal Council, Hang Tuah Jaya Municipal Council, Jasin District Council, and Melaka Historic City Council). The majority of urban residents live in Melaka Tengah District, which is situated at the center of an urban agglomeration that extends significantly beyond its administrative boundaries.

Melaka City has long been prized for its strategic location along the Maritime Silk Road, and it was occupied by several empires until the Federation of Malaya gained independence in 1957 (National Archives of Malaysia 2018). The Strait of Malacca is still one of the world's most important shipping lanes, carrying between one-fifth and one-quarter of all

global sea trade (Hans-Dieter and Solvay 2006). This positioning has encouraged transshipment activities; while the consolidated Port of Singapore acts as the world's leading transshipment hub, Malaysia hosts several of the world's busiest transshipment ports along the strait.

FIGURE 3 Map of Melaka State's Districts and Municipalities



Source: Adapted from State of Melaka 2018.

Note: The map shows Melaka State, excluding Tanjung Tuan enclave along the coast of adjacent Negeri Sembilan State. Council and district jurisdictions are indicative. Melaka Historic City is referred to in this assessment as Melaka City.

for Melaka provides a holistic approach to enable leaders to assess Melaka's strengths and weaknesses as they chart a path toward achieving their sustainability ambitions. The outcome and speed of this type of assessment is heavily reliant on available data, particularly spatially disaggregated data. As Melaka expands its data capabilities it will be able to make more informed policy decisions.

Assessing Melaka

GPSC's *Melaka Sustainability Outlook Diagnostic: Pathway to Urban Sustainability* and its associated supporting reports were developed to inform the next update to the State Structure Plan, focusing on sectors that are integral to Melaka's future urban sustainability. Guided by the GPSC's Urban Sustainability Framework (GPSC, World Bank 2018), it lays out analyses supported with available data, key messages, and recommendations across six detailed assessment reports. These cover how Melaka State can reinforce its economic success (Supporting Report 1); integrate environmental plans (Supporting Report 2); enhance services and housing (Supporting Report 3); shape a more efficient urban form (Supporting Report 4); shift mobility to walking and public transport (Supporting Report 5); and demonstrate fiscal sustainability (Supporting Report 6). They further highlight the degree to which Melaka's future sustainability is connected to urban form, underscoring the need to develop an integrated approach in responding to sustainability challenges.

In addition, a further benchmarking exercise using 65 indicators has been conducted to more rapidly assess Melaka's sustainability profile against its peers (box 2). Importantly, the findings of the assessment and benchmarking are analogous, confirming the efficacy of this approach. Full details are captured in the benchmarking section of this report.

Synopsis of Dimensions Covered

The in-depth analysis in the six supporting assessment reports consistently points to the need for Melaka State to adopt an integrated approach to achieving its sustainability aspirations, with three

key considerations emerging: 1) sustaining Melaka's remarkable economic success requires focusing on its competitive advantages in the manufacturing and tourism sectors to boost productivity; 2) shaping a compact and human-centric urban form is key to unlocking economic, environmental, and social gains; and 3) implementing infrastructure to meet anticipated future growth needs requires increased fiscal sustainability. Each of the reports includes a set of key messages and recommended actions for improving sustainability. These are summarized as follows.

Supporting Report 1: Reinforcing Melaka's Economic Success

Key message:

- **Leverage competitive advantages and create conditions for the key sectors of tourism and manufacturing to thrive.**

Melaka State has seen remarkable economic growth in recent decades; however, much of this has been through the growth of the tourism sector and related increases in consumer services. The city's manufacturing sector, while still responsible for 41 percent of economic output (DOSM 2017a), has registered modest growth in productivity and output in recent years. A reliance on tourism and associated short-term low-quality jobs to drive growth may be undermining productivity gains in the wider economy; it may also be straining infrastructure, services, and the heritage assets of the city as well as undermining the region's long-term economic sustainability. Melaka State's unusually low unemployment rate of 0.9 percent, possible labor shortages, and relatively lower population growth further suggest the need to increase productivity to sustain growth. Given the competition for talent from Kuala Lumpur and Singapore, Melaka needs to increase its competitiveness—both by building on its strengths to attract talent to better job prospects in highly productive sectors and by improving the quality of life it offers. Having most investment flows for manufacturing in medium- and high-tech sectors is a positive sign that higher-quality jobs are being created. However, a relative lack of connective infrastructure, including limited links to the national rail network, limits labor mobility and Melaka's access to local and international markets.

BOX 2 GPSC Urban Sustainability Benchmarking

Melaka was benchmarked against Izmir (Turkey), Lisbon (Portugal), Recife (Brazil), and Singapore using 65 indicators. The policy-focused benchmarking analyzed six dimensions of urban sustainability and created a framework having four different steps of urban maturity. While Melaka’s overall development is “Advanced” (the third level), its Inclusivity and Quality of Life dimension is ranked “Sustainable” (the highest level). The Climate Action and Resilience, Fiscal Sustainability, and Urban Economies dimensions are

currently “Consolidating” (the second level). The results of the benchmarking are included in a later section of this Overview Report.

This benchmarking process will be expanded to more urban areas, including much of the GPSC network. Importantly, it does not rank cities, but instead highlights which cities are examples of best practices in different areas and can be seen as achievable models for their peers.

FIGURE 4 Benchmarking Melaka’s Urban Sustainability Maturity

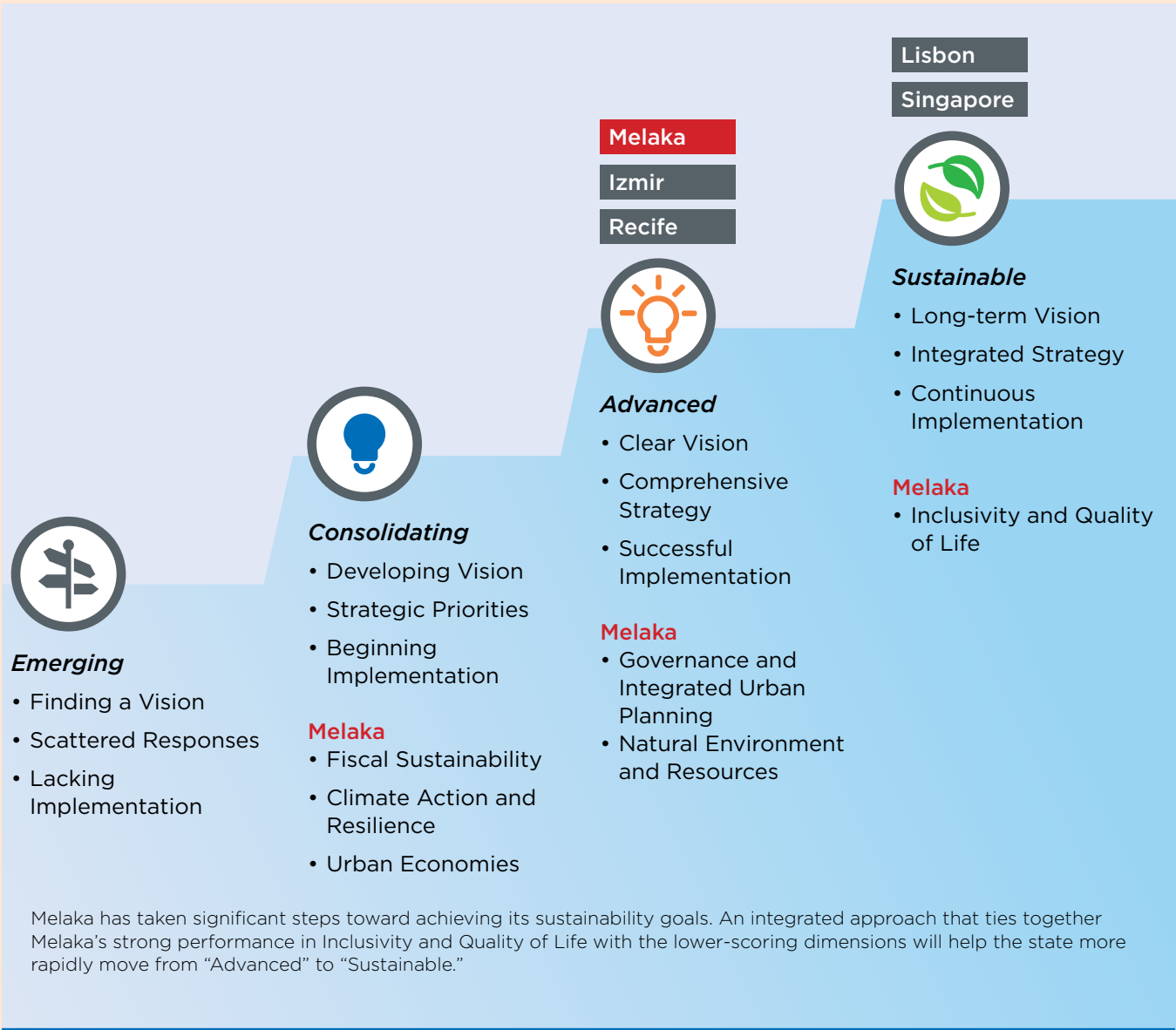
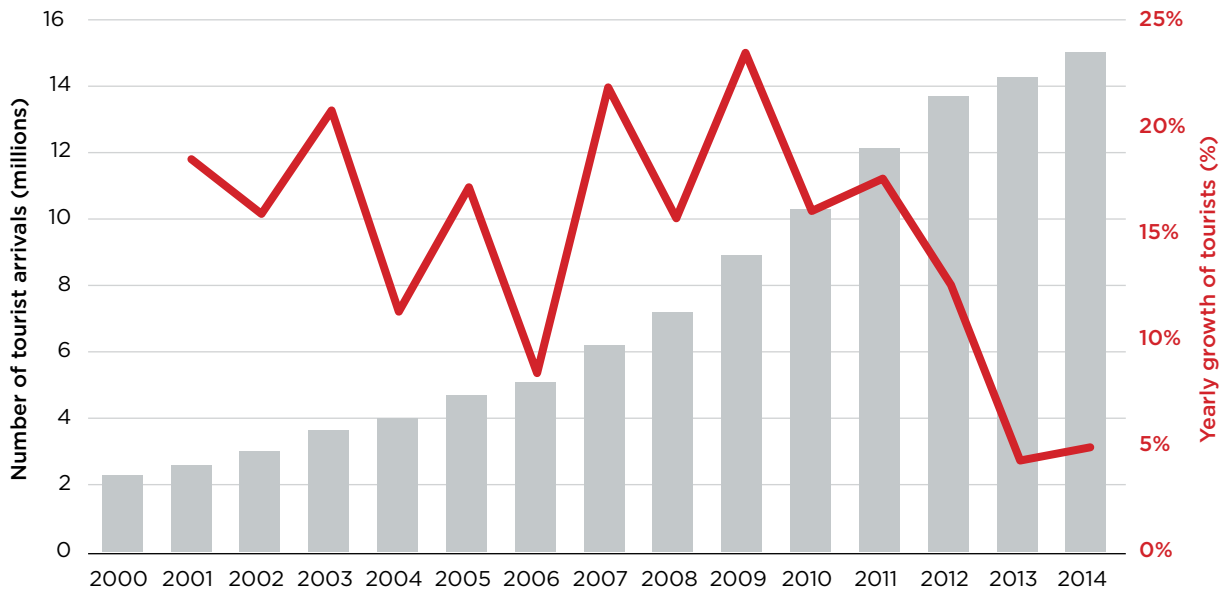


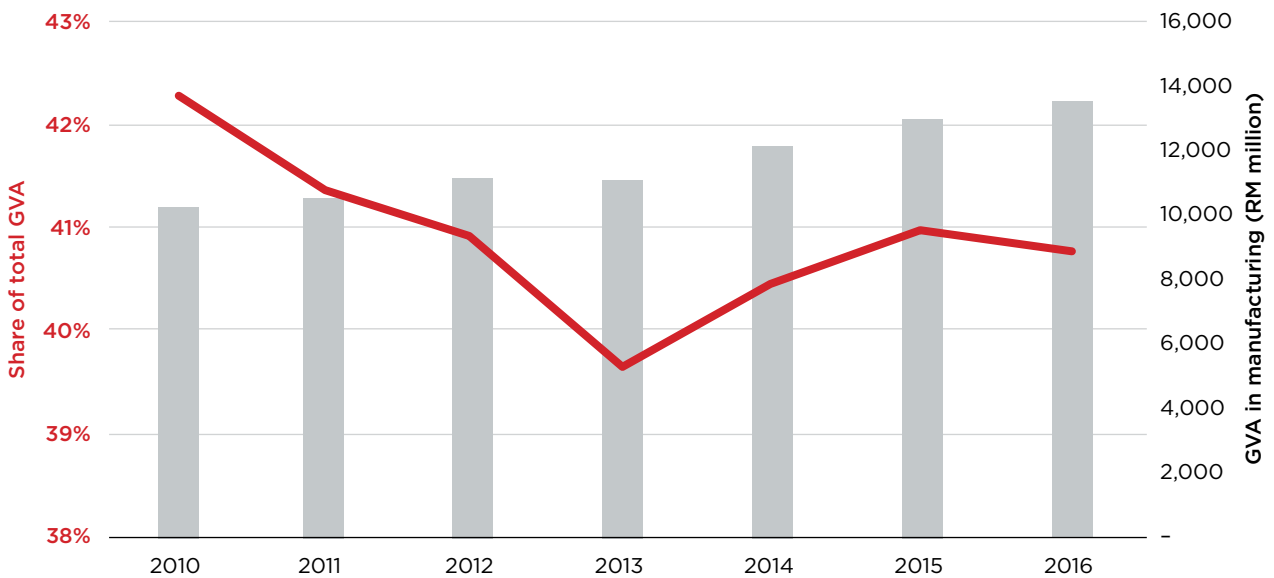
FIGURE 5 Tourist Arrivals to Melaka State (2000-2014)



Despite continuing growth in the absolute number of visitors, the rate of growth has declined in recent years. Diversifying tourism offerings to attract higher-value travelers and encouraging more productive labor will ensure the sector continues to drive economic growth.

Sources: Tourism Malaysia 2015; Melaka Tourism Promotion Division 2015.

FIGURE 6 Melaka State's Manufacturing Sector Contribution to GVA and Total Employment (2010-2016)



Sources: DOSM 2011-2017; 2017a.

Note: GVA = gross value added.

While manufacturing continues to grow, other sectors like consumer services are significantly outpacing the growth of the sector. Maintaining the manufacturing sector's significant contribution requires further expanding opportunities to attract investment that creates higher-quality jobs.

Recommended actions to improve sustainability:

- 1-A Reassess large infrastructure projects and create strategies to leverage their opportunities.** Ensure that projects like high-speed rail (HSR) and port investment—alongside local connectivity improvements and policy innovations—increase businesses' access to markets and labor.
- 1-B Rethink strategic priorities and link them with opportunities for economic development.** Understand what caused tourism and manufacturing to cluster in Melaka, and then prioritize opportunities for economic opportunity that build on and recognize local strengths and capacities.
- 1-C Build a more inclusive and collaborative model of economic decision making.** Leverage the power of business and community decision making by building robust partnerships.
- 1-D Support development of major sectors.** Tourism and manufacturing, as existing pillars of the economy, require unique support to continue to thrive, e.g., diversification for tourism offerings and productivity boosts for manufacturing.

Supporting Report 2: Integrating Environmental Plans**Key message:**

- **Synthesize existing initiatives by creating an integrated environmental approach and progressing toward recalibrated goals.**

Melaka's rapid urbanization has resulted in significant infrastructure and environmental pressures, despite ambitious attempts by the state to handle growth in a more coordinated manner. Melaka State has responded by seeking international funds and expertise to reposition its trajectory toward smart, green, and sustainable growth. The state has also collaborated with central and city governments and businesses to share best practice and drive further benefits through coordination. Innovative tools to assess green targets could potentially be used to track performance and build targeted solutions but

require wider adoption. However, the state's limited influence over funding for projects limits opportunities for a long-term integrated approach. The state is still responding to a growing list of environmental challenges in key areas.

Solid waste management: Investments have been made to improve future capacity for processing waste through recycling at source, material recovery facilities, incineration, and elimination of landfill waste. However, there is concern that current waste exceeds landfill capacity, and that there isn't a clear strategy to reduce consumer waste or compost organic waste.

Water management: Melaka State has 100 percent access to piped water and has plans to reduce consumption and distribution losses. Highly subsidized tariffs limit the incentive for behavior change, and aging infrastructure and water pollution present significant risks.

Energy and greenhouse gases (GHG): Melaka has ambitious targets for implementing renewable energy and reducing GHG in the transport sector, responsible for 29.8 percent of total GHG emissions (ICLEI 2016). However, cheap energy prices and a lack of a clear framework to assess integration limit the adoption of renewables.

Climate change and resilience: Melaka is Malaysia's only representative in the 100 Resilient Cities network.² This membership increases local resilience capacity while providing access to a network of cities responding to related challenges. Coordinating local and state-level priorities with integrated administration and coordination could further strengthen Melaka's climate resilience.

Recommended actions to improve sustainability:

- 2-A Identify a clear champion of each priority project and strategic objective.** Identifying ownership of such targets will enable a greater focus on performance assessment and ultimately on budget allocations, in turn enabling more effective implementation.
- 2-B Optimize existing knowledge sharing and technical leadership arrangements with peer cities and partners.** Through better coordination—both internally and externally—

² 100 Resilient Cities will cease operations in July 2019 (Flavelle 2019), making Melaka's participation in GPSC ever more important for capacity development and knowledge sharing.

the state will be able to identify critical pathways to ensure outcomes in line with its sustainability objectives.

2-C Develop clear performance guidelines for water management in buildings and urban areas.

Water management and efficiency awareness programs should be launched, including water pricing mechanisms and comparative water usage information, to encourage water use reduction.

2-D Harness environmental data and develop evidence-based targets that inform policy and track performance.

Citizens should be included in policy making and implementation through public campaigns, surveys, and awareness programs about environmental protection, recycling, and sustainable water and energy consumption.

2-E Remove natural habitats prone to flooding from areas designated for future development.

Policies could be enacted to strengthen the development controls of flood-prone areas. Improved maintenance regimes will reduce instances of flash floods.

2-F Raise public awareness regarding recycling and reuse through environmental protection programs.

Special attention should be paid to organic waste, which in this case typically makes up around 60–70 percent of the total waste generated, and composting and sorting facilities should be developed.

2-G Reduce GHG emissions by increasing use of renewable energy and encouraging energy efficiency.

Melaka State should develop a concrete and reliable energy profile, determine energy targets for sustainable and clean energy, and help mobilize financing for energy efficiency and renewable programs.

Supporting Report 3: Enhancing Services and Housing

Key messages:

- Achieve full coverage of basic services.
- Continue focus on improving the housing market.

Widely sharing the benefits of Melaka's stellar economic gains is a key component of urban sustainability. Melaka already has nearly a full provision of basic services throughout the state,

putting full coverage within reach, and 84 percent of Melaka's households are owner-occupied (DOSM 2017a). While housing is generally considered affordable, particularly for apartments and terraced homes, the relative unaffordability of certain housing types for low-income earners requires greater investigation to identify potential future challenges. A long-term plan to improve sustainability and efficiency through densification and optimizing land-use and infrastructure planning will play a significant role in shaping the success of the built environment.

Recommended actions to improve sustainability:

3-A Increase accessibility of basic infrastructure to 100 percent coverage throughout Melaka State.

This is achievable in the medium term by working with the community to identify areas and households where gaps prevail and to allocate resources toward basic infrastructure investment.

3-B Improve Melaka State's housing data framework.

An integrated housing data framework administered by the Melaka Housing Board in collaboration with other government departments and other relevant stakeholders would better inform the current housing schemes and policies of Melaka State.

3-C Integrate long-term housing considerations into planning processes.

The housing strategy, which would complement the State Structure Plan 2035, should incorporate a comprehensive diagnostic of the current housing situation in Melaka State, a review of the policy framework, and an action plan to achieve long-term affordability.

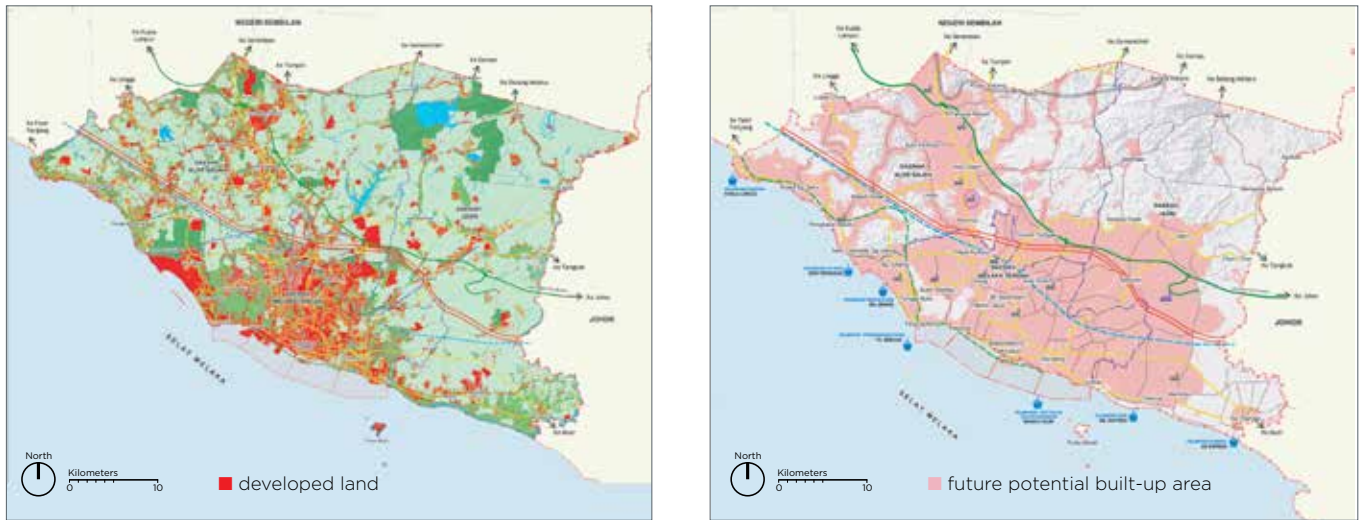
3-D Promote housing supply diversification.

To ensure a variety of affordable housing options that cater to increasingly diverse households, this strategy should include considerations such as promoting the development of smaller housing units and the densification and redevelopment of excess land on existing family lots.

3-E Deliver additional low-cost and affordable housing through private sector partnerships.

Melaka should implement a mandatory land value capture scheme dedicated to affordable housing for sites that achieve significant land

FIGURE 7 Melaka State's Developed Land: Actual in 2013 (left, in red) and the State Structure Plan 2035's Future Potential Extent (right, in pink)



Source: State of Melaka 2018.

Melaka State's developed land (excluding railways and roadways)³ in 2013 was 234 km², representing 14 percent of the overall state's area. The State Structure Plan anticipates that by 2035 the state will have 464 km² of developed land (28 percent of the state) and indicates a potential built-up area for development of 848 km² (51 percent of the state). The plan aims to guide and control the physical development at the subnational level to promote economic growth, improve connectivity and the physical living environment, manage traffic, improve socioeconomic well-being, and facilitate overall sustainable development.

value lifts. It should also develop negotiated public-private partnerships with local developers and conduct independent analysis to ensure that any levies and land value capture schemes are financially viable for the development industry.

3-F Improve affordability through enhanced locational accessibility. Melaka should concentrate future housing as infill into mixed-use urban areas. The areas should be along key public transport corridors, improve walkability conditions in residential neighborhoods, and improve the provision of urban services and infrastructure in underserved areas.

Supporting Report 4: Shaping a Compact, Efficient, and Harmonious Urban Form

Key messages:

- Reduce the oversupply of developable land.
- Leverage Melaka's cultural, historical, and natural heritage.
- Harmonize Melaka's urban fabric.

■ Encourage new data approaches and strengthen data capacity for integrated planning.

Melaka State, which has forecast population growth of 70.4 percent between 2015 and 2035 (State of Melaka 2018), has rapidly transitioned from rural to urban, with most employment now supported by urban areas. The compact historic core, a UNESCO WHS, has lost some of its unique cultural vibrancy as the city has expanded, increasing the need for compact and dense urban development—not only to increase economic efficiency through agglomeration, but also to integrate the suburbs with the center's unique urban fabric, while developing a polycentric urban form. This approach also provides opportunities for using land value capture to finance transport, public spaces, and affordable housing, while improving the area's financial and environmental sustainability. Retaining and developing Melaka's unique identity is also key to enhancing the city's appeal to tourists, businesses, and potential talent keen to enjoy a higher quality of life. Central to this effort is potentially leveraging centrally managed socioeconomic and physical planning

³ Definitions of developed land, built-up area, and urban extent can be found in Supporting Report 4: *Shaping a Compact, Efficient, and Harmonious Urban Form*.

data to evaluate and monitor the performance of strategic objectives. One concern is the current and planned oversupply of land, which has led to low employment and residential densities, and which could be a major liability for economic efficiency, infrastructure costs, and climate resilience.

Recommended actions to improve sustainability:

4-A Incentivize higher-density, mixed-use, green, and compact developments with flexible land use regulations. Recalibrate incentives toward redevelopment and increasing density, rather than sprawl. Spatial development should focus on having a mix of compatible uses by integrating areas close to the city center with high-density, high-plot ratio, and fine-grained lot patterns.

4-B Shape a compact polycentric urban form and develop well-connected nodes. Melaka should prioritize integrating land use and transportation infrastructure planning by developing and connecting strong nodes with concentrated economic activity; new functions such as logistics, business, finance, and knowledge industries should be gradually developed in accordance with the city's growth.

4-C Adopt a sustainable approach to conservation. Melaka is advised to put in place sustainable tourism measures in the WHS. Cultural sustainability principles should also be used to evaluate development interventions within the site.

4-D Increase livability with a more vibrant public realm. Melaka needs to develop animated streets beyond the restricted perimeter of the heritage zone, based on the same principles of the scaled down, traditional streets. Bringing residents closer to parks, water bodies, and waterways will cater to a wide spectrum of social and recreational needs.

4-E Pursue a more harmonious urban fabric by applying sustainability and historical urban landscape principles to development. Melaka's harmonious urban fabric should be compact, integrated, connected, and diversified to promote diverse neighborhoods, optimize land use, and reduce car dependency.

4-F Address data gaps with alternative data sources and partnerships. Melaka should assess the feasibility of using private proprietary data, including big data and data analytics from private service providers, to address key data gaps such as private transportation patterns, retail spending, housing prices, air and water quality, and public space use.

4-G Increase data integration through cross-agency collaboration. Melaka should develop state-level data management and innovation capability for integrated planning, through the development of a specialized data expertise team and a roadmap, in consultation with all government units involved. The roadmap should identify key data gaps and develop an action plan to achieve cross-agency data integration.

4-H Encourage open source. Developing an open source policy roadmap will identify existing open source solutions for Melaka's immediate and future data needs. Building in-house capability, including hiring an open source technical specialist and providing training and capacity to staff, will be needed.

4-I Embrace open data. Melaka is advised to identify which integrated planning data sets and information are suitable for public release, as part of the roadmap for data integration and the implementation of the open data policy. It should ideally create one integrated, systematically updated, open data website containing structured and ready-to-use data sets.

Supporting Report 5: Shifting Melaka's Mobility Modal Split

Key messages:

- Focus on public transport and green mobility strategies.
- Enhance Melaka's Walkability

Melaka's rising wealth and its low-density, fragmented urban form result in high car dependency, congestion, and pollution. Some 90 percent of Melaka's trips are estimated to be made using cars (ADB 2017). Ambitious targets for

FIGURE 8 Melaka Heritage Area's Pedestrian Volume



Source: ADB 2017.

Most pavements are only 1-2 meters wide, and 40 percent of the streets in the main heritage area have no walkways at all (ADB 2017). Given significant competition for space between motorists and pedestrians, there is great potential to increase this area's walkability.

reducing GHG emissions require a substantial mode shift to public transport and land use planning that results in better integration between where people live, learn, and work. However, public transport's market share of around 1 percent necessitates substantial investment in quality, convenience, and availability of passenger information. A poor-quality pedestrian realm further discourages walking, while higher transport costs negatively impact accessibility in low-income groups.

Recommended actions to improve sustainability:

5-A Transform the public transportation industry.

Melaka's state-owned transport company, Panorama, has an estimated market share of around 1 percent. Panorama needs to be transformed into a modern and professional public transport company that is customer oriented, focused on growth, and efficiently managed to attract investment and funding.

5-B Integrate public transport into a comprehensive strategy for a regional economic corridor.

The HSR link between Kuala Lumpur and Singapore, which is scheduled to become operational in 2031, has a station planned 15 kilometers from Melaka City. Melaka needs to integrate its public transportation network with a high-quality public transport corridor between the new HSR station and Melaka City. There is an urgent need to safeguard the corridor (ADB 2017).

5-C Adopt transit-oriented development strategies.

Efficient land use through transit-oriented development strategies and compact growth will encourage high-density, mixed-use, and balanced development, with walkable streets and jobs close to homes. This approach will be vital to reducing private car use and increasing the financial viability of public transport.

5-D Move toward a public transport modal share of 40 percent. Melaka should reduce growth in private vehicle usage by introducing travel demand management measures, such as controlling parking areas, reducing off-street parking, and assessing transport-related development contributions. In addition, Melaka needs to significantly improve passenger convenience on public buses.

5-E Enable walkability. Promoting walkability is a key element to making public space more vibrant, reducing traffic congestion, and stimulating the local commercial economy.

Supporting Report 6: Demonstrating Fiscal Sustainability

Key message:

■ Demonstrate overall fiscal sustainability.

Melaka requires federal transfers to meet its capital expenditure. Diversifying to market-based financing may increase the capacity to shape and deliver on investment priorities; however, neither the state nor the city has a credit rating, limiting this potential. A general reduction in federal transfers and tax receipts at state level, with the state's total revenue decreasing by 18 percent from 2012 to 2015 (State Government of Melaka 2014, 2015, 2016), along with regular budget deficits, may indicate the state's risk of being unable to fund urban infrastructure in the future. The revenue decrease was notably during a period of strong population growth. As Melaka State shares infrastructure between several districts and municipalities, Melaka City was also assessed, given the impact it has on the state's wider fiscal sustainability. The city has responded to its own fiscal challenges by selling assets, which makes it harder for the city's revenue structure to gain from future urban growth and development. Debt financing is seldom used at local or state levels. If adequate sustainable infrastructure is to be developed at a pace that is consistent with Melaka State's rapid growth, current legal and regulatory restrictions on the use of long-term debt or PPPs must be overcome, and participation of Malaysian sources of finance, including capital markets, should be catalyzed.

Recommended actions to improve sustainability:

6-A/E State and city: Obtain a shadow credit rating. Both Melaka State and Melaka City should obtain a shadow credit rating on the Malaysian national scale to demonstrate their degree of fiscal sustainability and creditworthiness. This rating would be kept confidential within the government and could help the state identity and implement financial management improvements.

6-B/F State and city: Improve debt management. Both Melaka State and Melaka City should establish written policies and procedures to improve their debt management processes.

6-C State: Undertake a concerted effort to increase own-source revenue. Melaka State should determine if its billing and collection efforts are performing efficiently and if existing revenue streams can be revalued or potential new revenue sources should be introduced.

6-D State: Achieve a reliable operating margin surplus. This requires a combination of increasing own-source recurrent revenues and slowing the growth in operating expenditures as much as possible.

6-G City: Work closely with Melaka State to prepare the city's own multiyear capital investment plan. This should include a financing plan that identifies market-based and governmental sources of capital for the city's projects.

6-H City: Substantially increase recurrent own-source revenues and reduce reliance on non-recurrent revenue. Negotiate with Melaka State on ways to make the city property tax more responsive to changes in property values and ways to reduce the city's heavy dependence on the property tax.

6-I City: Return to maintaining an operating margin surplus. Increase the growth in the city's operating revenue to a rate that exceeds the growth in operating expenditures.



"Melacca." Photo: Oleh Slobodeniuk.

Action Plan

The action plan seen in table 1 provides a holistic overview of the key messages and recommended actions to improve sustainability that were developed during the GPSC Sustainability Outlook Diagnostic. It will support policy makers and leaders in determining strategic focus areas,

aligning funding, and delegating the necessary tasks for implementation as they chart their own path toward sustainability. Each recommendation’s implementation action timeline has been estimated to be a short-term “quick win” requiring less than 5 years, a medium-term commitment of 5 to 10 years, or a long-term horizon of 10 years or greater.

TABLE 1 Recommended Actions

1 Reinforcing Melaka’s Economic Success	
<i>Leverage competitive advantages and create conditions for the key sectors of tourism and manufacturing to thrive</i>	
1-A Reassess large infrastructure projects and create strategies to leverage their opportunities	1 year
1-B Rethink strategic priorities and link them with opportunities for economic development	1 year
1-C Build a more inclusive and collaborative model of economic decision making	3 years
1-D Support development of major sectors	5 years
2 Integrating Environmental Plans	
<i>Synthesize existing initiatives by creating an integrated environmental approach and progressing toward recalibrated goals</i>	
2-A Identify a clear champion of each priority project and strategic objective	1 year
2-B Optimize existing knowledge sharing and technical leadership arrangements with peer cities and partners	2 years
2-C Develop clear performance guidelines for water management in buildings and urban areas	2 years
2-D Harness environmental data and develop evidence-based targets that inform policy and track performance	3 years
2-E Remove natural habitats prone to flooding from areas designated for future development	3 years
2-F Raise public awareness regarding recycling and reuse through environmental protection programs	5 years
2-G Reduce GHG emissions by increasing use of renewable energy and encouraging energy efficiency	15 years
3 Enhancing Services and Housing	
<i>Achieve full coverage of basic services</i>	
3-A Increase accessibility of basic infrastructure to 100 percent coverage throughout Melaka State	5 years
<i>Continue focus on improving the housing market</i>	
3-B Improve Melaka State’s housing data framework	2 years
3-C Integrate long-term housing considerations into planning processes	5 years
3-D Promote housing supply diversification	10 years
3-E Deliver additional low-cost and affordable housing through private sector partnerships	10 years
3-F Improve affordability through enhanced locational accessibility	> 15 years

4 Shaping a Compact, Efficient, and Harmonious Urban Form

Reduce the oversupply of developable land

4-A Incentivize higher-density, mixed-use, green, and compact developments with flexible land use regulations	5 years
4-B Shape a compact polycentric urban form and develop well-connected nodes	> 15 years

Leverage Melaka's cultural, historical, and natural heritage

4-C Adopt a sustainable approach to conservation	3 years
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Harmonize Melaka's urban fabric

4-D Increase livability with a more vibrant public realm	5 years
4-E Pursue a more harmonious urban fabric by applying sustainable and historical urban landscape principles to development	15 years

Encourage new data approaches and strengthen data capacity for integrated planning

4-F Address data gaps with alternative data sources and partnerships	1 year
4-G Increase data integration through cross-agency collaboration	2 years
4-H Encourage open source	1 year
4-I Embrace open data	2 years

5 Shifting Melaka's Mobility Modal Split

Focus on public transport and green mobility strategies

5-A Transform the public transportation industry	2 years
5-B Integrate public transport into a comprehensive strategy for a regional economic corridor	10 years
5-C Adopt transit-oriented development strategies	10 years
5-D Move toward a public transport modal share of 40 percent	> 15 years

Enhance Melaka's walkability

5-E Enable walkability	10 years
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6 Demonstrating Fiscal Sustainability

Demonstrate overall fiscal sustainability

6-A State: Obtain a shadow credit rating	1 year
6-B State: Improve debt management	1 year
6-C State: Undertake a concerted effort to increase own-source revenue	3 years
6-D State: Achieve a reliable operating margin surplus	3 years
6-E City: Obtain a shadow credit rating	1 year
6-F City: Improve debt management	1 year
6-G City: Work closely with Melaka State to prepare the city's own multiyear capital investment plan	2 years
6-H City: Substantially increase recurrent own-source revenues and reduce reliance on non-recurrent revenue	3 years
6-I City: Return to maintaining an operating margin surplus	3 years

“Replica of a 16th century Portuguese galleon in the Samudera Maritime Museum in Melacca.” Photo: Charlie Tong.



Conclusion

Melaka State has taken significant steps toward achieving urban sustainability, including partnering with international organizations and becoming an active member of GPSC when the platform was launched in 2016 to promote knowledge exchange. Fulfilling its aspirations, however, requires further bold steps as the area rich in history grapples with contemporary urban challenges. These include retaining key areas of economic competitiveness to support continued growth, developing a more efficient urban form to unlock economic, social, and environmental gains, and increasing fiscal sustainability to meet future growth needs.

The state government has shown leadership in several recent initiatives guiding its development strategies. GPSC's Sustainability Outlook Diagnostic, developed in partnership with UNIDO and MIGHT, highlights the importance of leveraging the state's opportunities and developing an integrated approach to its urban sustainability challenges going forward. Using it to inform the next update to the State Structure Plan will help the state chart a path toward sustainability.

An integrated approach that coordinates growth at the state, municipality, and community levels, and that leverages centrally managed socioeconomic and physical planning data to evaluate and monitor the performance of strategic objectives, is key to achieving Melaka's goals. As the assessment highlighted, an integrated approach is also by nature iterative, requiring regular review and updating as new information becomes available. This will enable Melaka State to reinforce its economic success, integrate environmental plans, consolidate housing and services, shape a more efficient urban form, shift mobility to walking and public transport, and demonstrate fiscal sustainability. Ultimately, the future sustainability of Melaka State is strongly connected with the sustainability of its urban form. Melaka's challenges are not necessarily unique, which means it can benefit from the wider GPSC network of cities. But thanks to its geographical advantages and vibrant historic center, it is uniquely positioned to provide leadership as it defines its sustainability credentials. The future steps taken by Melaka will very likely confirm its singular importance in the global dialogue around the sustainability of our shared urban future.



Melaka city view from the Menara Taming Sari Tower. Photo: jyaaba.

Benchmarking Melaka's Urban Sustainability

Background

The Urban Sustainability Framework (USF) (GPSC, World Bank 2018) was created by GPSC to build a common understanding of sustainability within an urban context and provide practical guidance to cities on how to pursue such sustainability through integrated approaches.

To assist Melaka State in understanding its level of urban sustainability, the USF was operationalized by developing specific metrics to evaluate local policies on sustainable urban development. The objective of these metrics is to enable city governments around the world to learn more about the policy initiatives that peer cities are undertaking. They can also help cities track their own progress in creating policies to promote sustainable urban development.

The benchmarking was researched by the Economist Intelligence Unit (EIU) from a set of key indicators found in the USF. The benchmarking focuses exclusively on policy inputs (rather than outputs), as these are areas where policy makers can implement changes in measurable and tangible ways. Policy inputs that are part of the benchmarking include an analysis of strategies, programs, regulations, and institutions that governments should consider to promote integrated urban development. As part of this pilot project, the benchmarking identified cities along a policy development continuum that serves as a roadmap for sustainable urban planning.



City Selection

Melaka was benchmarked against four comparators: Lisbon, Izmir, Recife, and Singapore. These cities were selected taking into account similar demographics, geography, economic activities, cultural affinity, and sustainability ambitions. Singapore, for instance, has close geographic proximity with Melaka; both have a significant manufacturing industry, and they share strong historical and cultural links. Melaka sees Singapore as an aspirational role model in many ways. Based upon the intention of comparing peer cities, the benchmarking had three objectives:

- 1) Understand the readiness of Melaka’s urban planning and sustainable policy development
- 2) Measure Melaka’s current policy environment in relation to comparator cities and the USF focus areas
- 3) Assess the viability of scaling up the benchmarking to include more GPSC cities

Methodological Approach

The benchmarking framework has a total of 65 indicators—34 qualitative (input) indicators and 31 quantitative (output/outcome indicators). These indicators draw upon a range of different sources:

- **Qualitative indicators (input indicators)** draw on documents describing strategies, programs, regulations, and institutions that governments should consider in order to promote integrated urban development.
- **Quantitative indicators (output/outcome indicators)** draw on data collected by authorities or international organizations to assess key characteristics and policy outcomes.

The 34 qualitative indicators assess policy inputs across the six dimensions of the USF (Governance and Integrated Urban Planning; Fiscal Sustainability; Urban Economies; Natural Environment and Resources; Climate Action and Resilience; and Inclusivity and Quality of Life). The dimensions and key focus areas are shown in figure 9.

FIGURE 9 Six Dimensions and Key Focus Areas





“Shoppers in Jonker Street—the center of the Chinatown neighborhood in Malacca.” Photo: MosayMay.

To score the qualitative indicators, policy questions were created based upon three guiding principles:

- 1) **Objectivity.** Qualitative research and benchmarking must rely on tangible evidence. This allows for consistency across large samples and minimizes the risk for interpretation biases.
- 2) **Precision.** One question should measure one concept. To achieve this, the streamlined framework adopts a binary (yes/no) scoring system, including qualitative justifications and references to allow for traceability.
- 3) **Comprehensiveness.** Questions selected are evenly spread across the dimensions and the focus areas of the USF. This allows the framework to retain the original structure developed by the GPSC while allowing for a focused and repeatable assessment.

Quantitative indicators were collected to inform an assessment of data availability (see annex B for a full list of the indicators). Where data was not directly collected by the government, “n.a.” was inputted into the benchmarking background data and supplemented by a note detailing the nature of data limitations and alternative sources.

Scoring

The 34 qualitative (input) indicators across five cities were scored on a scale of zero to two. A score of zero was assigned to cities where no evidence or negative evidence was available. A score of one was assigned to cities where there was some evidence of a policy, strategy, and/or program, but this evidence was limited or outdated. A score of two was assigned to cities where evidence was encompassing and had been updated in the past five years.

Twenty in-depth interviews with local experts and authorities across five cities were conducted as part of this assessment. Interviews were complemented with secondary research and analysis of laws, strategies and plans, EIU’s proprietary data, academic studies, websites of government authorities and international organizations, websites of industry associations, and local and international news and media reports.

To ensure that scores were properly justified and consistent across all countries, each qualitative score was reviewed, scores were calibrated, and cross-country comparisons were conducted. Consequently, scores are best understood by reading both the scoring criteria and the written justifications provided for each indicator found in the accompanying Excel dashboard. An example score card is seen in figure 10.

FIGURE 10 Izmir’s Score Card: Vision and Long-term Strategic Planning

Indicator Dimension and Focus Area: 1.1 Vision and Long-term Strategic Planning
Question: Is there a city-level strategic plan that provides a clear long-term vision for the future?
Score: 2/2
<p>Justification: Izmir Metropolitan Municipality (IMM), the main local authority, has a city-level strategic plan to provide a long-term vision for the future. Three strategic plans have so far been developed, covering the periods 2006–2017, 2010–2017, and 2015–2019. The current strategic plan includes an evaluation of the 2010–2017 period and examines a wide range of issues, including geography, population, employment, health, education, economy, culture and art, and infrastructure. It identifies nine main strategic objectives with targets and performance benchmarks. These nine objectives are transparent governance; sustainable environmental management; urban conservation and planning; infrastructure improvement; safe and environmentally friendly transportation; social solidarity and health; 24/7 culture, art, and sport; the popularization of tourism; and disaster management and security.^a IMM’s performance in fulfilling activities determined to achieve the plan objectives and targets is monitored and evaluated through performance programs and activity reports published annually.^b</p> <p>^a Izmir Metropolitan Municipality, “Strategic Plan 2015–2019,” 2015, https://www.izmir.bel.tr/CKYuklenen/EskiSite/file/MALI_HIZMETLER/StrategicPlan2015-2019.pdf.</p> <p>^b Buğra Gökçe, General Secretary of Izmir Metropolitan Municipality, Izmir, November 14, 2018.</p>

Normalization and Weights

Each score has been normalized on a 0–100 range and then aggregated across indicators. Normalization rebases the raw indicator data to a common unit to allow for comparability. An equal weightage of 16.6 percent has been assigned to each of the six dimensions of the framework. This method highlights the importance of integrated planning but recognizes that the relative importance of each focus area—and the way each focus area can be addressed—may differ for each city. A graphic representation of the weightage and overall scoring is seen in figure 11.

Maturity Assessment

The benchmarking model groups scores in four categories to reflect the level of each city’s development along a policy continuum composed of four steps. Instead of presenting the overall scores, the benchmarking groups cities based on whether their policies are Emerging, Consolidating, Advanced, or Sustainable (figure 12). This is a benchmarking practice that focuses on fostering policy dialogue.

FIGURE 11 Dimension Weightage as Part of Overall Benchmarking Score

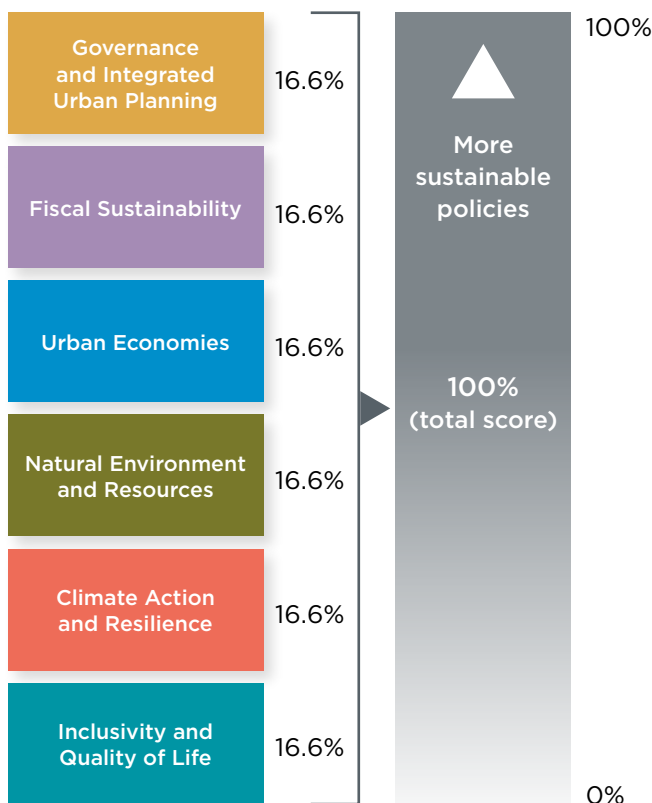


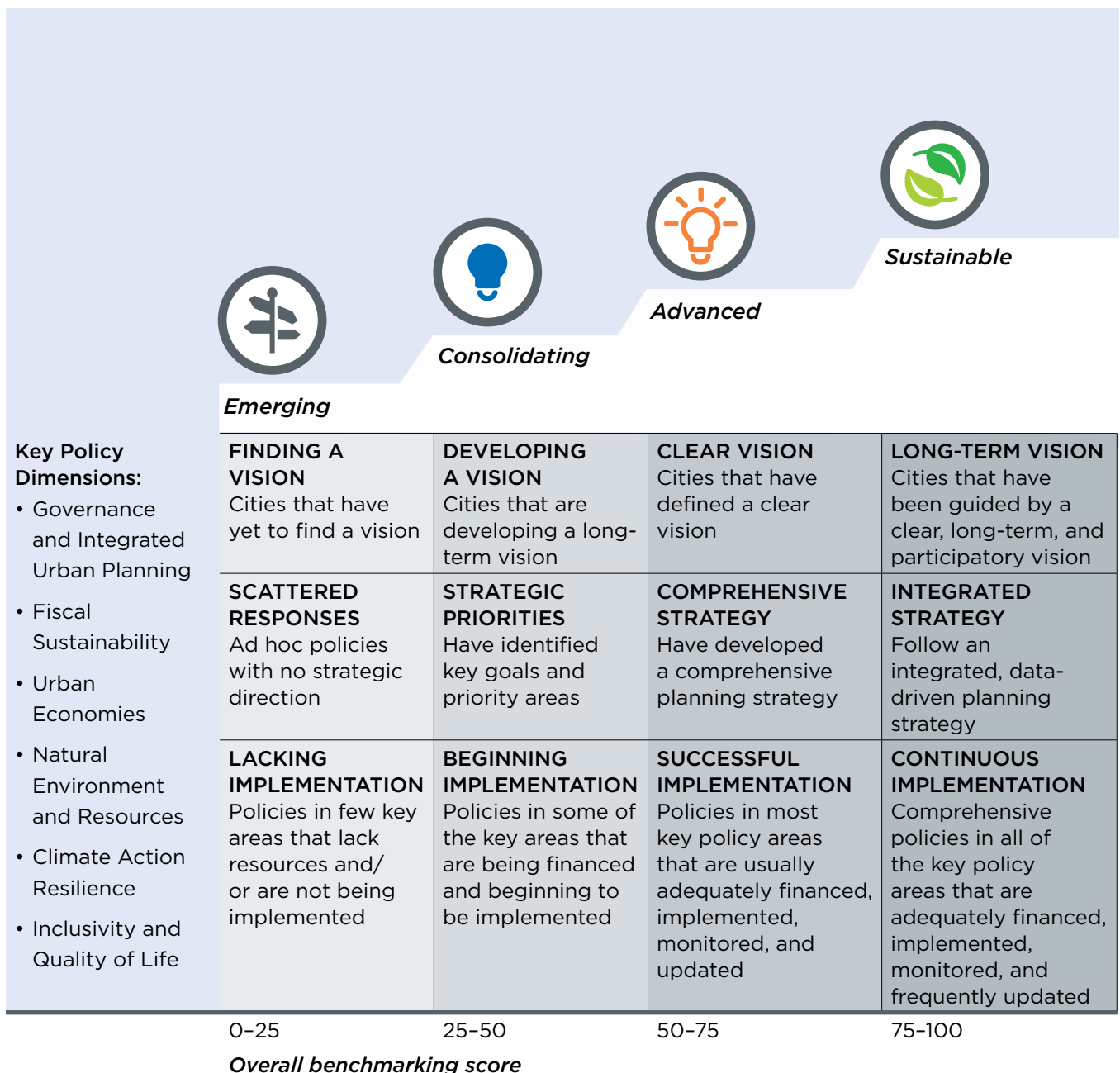
FIGURE 12 Overall Benchmarking Score Reflecting Maturity of Urban Sustainability

	<i>Emerging</i>	<i>Consolidating</i>	<i>Advanced</i>	<i>Sustainable</i>
Overall score	0–25	25–50	50–75	75–100

The scores translate into a qualitative maturity assessment that reflects the key building blocks of sustainable policy agendas. The highest-scoring cities are those that have developed a long-term vision, have integrated this vision into a multidimensional and integrated strategy, and have been able to continuously implement and update policies and programs to achieve this vision.

Each city is placed upon one of the four steps of urban maturity based on an overall score and on the score for each of the six dimensions. This allows cities to assess which key policy areas represent strengths and weaknesses, and helps decision makers identify priority areas for action. The placement of cities onto steps forms comparable cohorts of cities that can learn from each other. This city-to-city learning is an important driver of GPSC.

FIGURE 13 Urban Maturity Steps



Benchmarking Excel Model

To help viewers analyze the benchmarking data and results themselves, an Excel model with an interactive user-friendly interface was created. The model allows the data and results to be seen using several representation methods, including by individual scorecard, a stoplight assessment, horizontal scoring continuum, and scatter plot. By utilizing the model, policy makers and urban practitioners can better understand where their city stands in comparison with its peers.

Excel model downloadable here: 

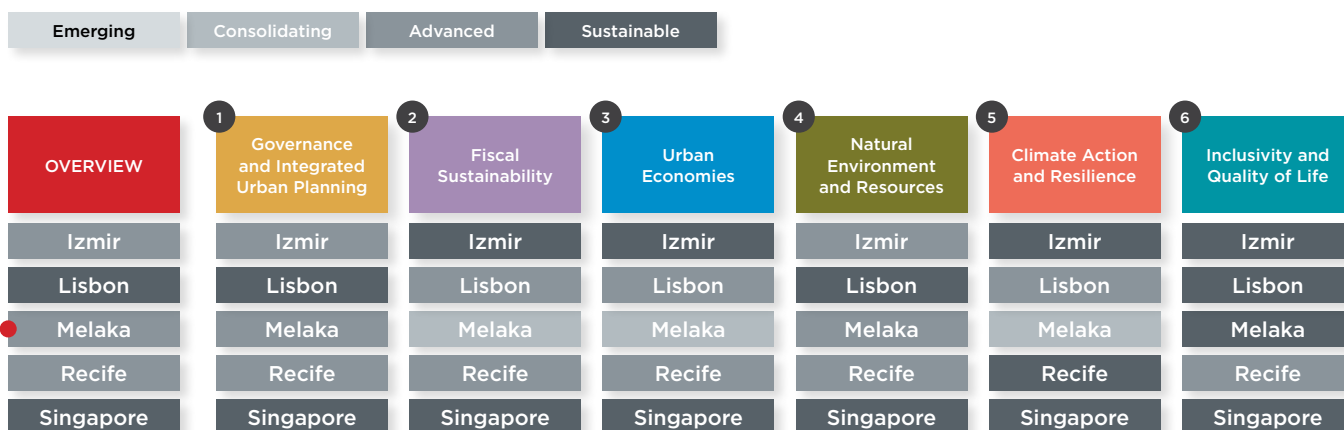
Assessment Results

Overall Results

The benchmarking exercise places Melaka’s overall policy development in the Advanced category, with a strong performance in the Inclusivity and Quality of Life focus area. Policies in the Fiscal Sustainability, Urban Economies, and Climate Action and Resilience were Consolidating. In comparison, policies in Singapore and Lisbon were overall deemed Sustainable, and Recife and Izmir were placed in the Advanced category along with Melaka. A traffic light representation of the scoring from the Excel model is seen in figure 14.

FIGURE 14 Traffic Light Representation of Dimension Performance

Normalized scores 0-100, where 100 = most favorable conditions



Melaka’s Scoring

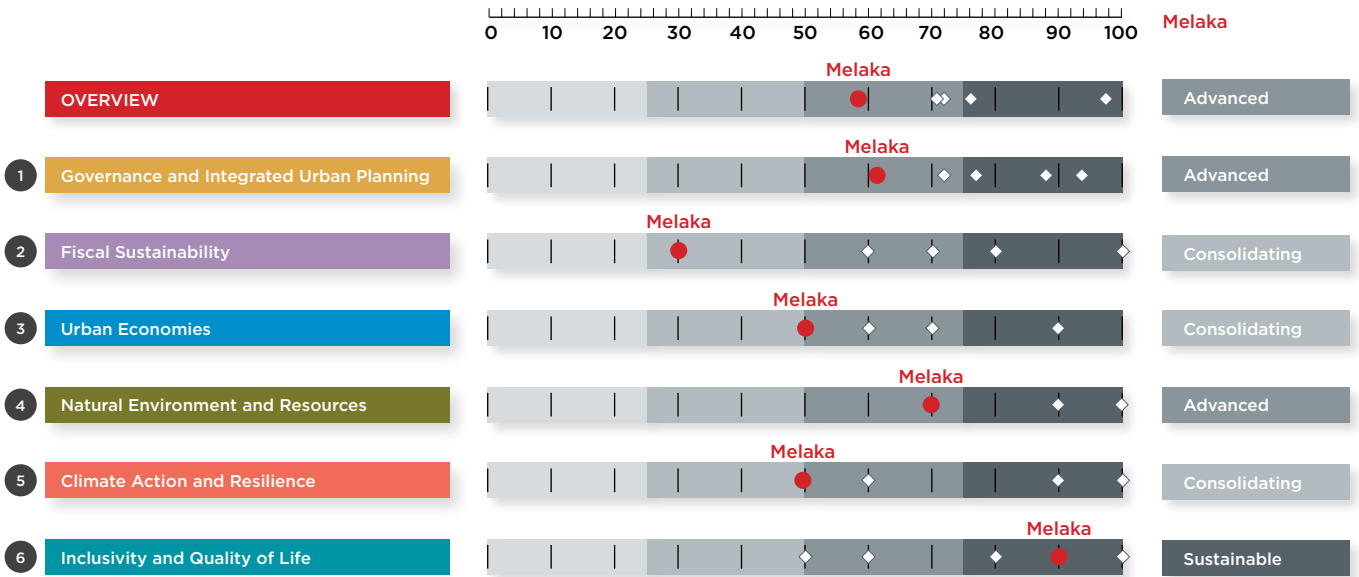
In the Governance and Integrated Urban Planning category, Melaka has ambitious and forward-looking development plans. Its collaboration with various entities to develop the Melaka State Structure Plan 2035 (State of Melaka 2018) and the Green City Action Plan (ABD 2014) have helped Melaka to move toward integrated policies. The only indicator where Melaka scored below its peers in this area was Transport and Mobility, as it lacks a comprehensive transport master plan. A representation from the Excel model of how Melaka scored in comparison to each of its peers is shown in figure 15.

In the Fiscal Sustainability area Melaka lagged significantly behind others, due mostly to a low

score on Accountability and Transparency and the lack of third-party scrutiny over its finances. Melaka does not have a credit rating, and no independent agency has made a pronouncement regarding the sustainability of its debt. Official documents and budgets are not available online or easily available to the public.

In the Urban Economies area, Melaka scored on the limit between Consolidating and Advanced, mostly due to a lack of focus in its economic vision. The Melaka State Structure Plan 2035 aims to shift the structure of the economy to make the state more reliant on the services sector, but there is no clear definition of the type of services industry it will be prioritizing. In contrast, cities like Lisbon and Recife have defined clear economic identities. Lisbon, for example, has reduced red tape,

FIGURE 15 Continuum Representation of Melaka's Benchmarking Scoring (0-100)



made information accessible to companies, and promoted skilled labor to become Europe's start-up incubator. Recife's economic plan emphasizes the development of high-tech companies with its initiative Porto Digital, which encourages tech incubators to settle in the city.

In the Climate Action and Resilience area, Melaka scored on the limit between Consolidating and Advanced, as many of its policies are quite recent and some await implementation. A climate change adaptation plan still needs to be developed, although Melaka has begun to develop a disaster risk management strategy by completing a

preliminary resilience assessment as part of the 100 Resilient Cities program. Conversely, Izmir leads in the disaster risk management policy development area. The city allocated almost 10 percent of its budget to disaster management between 2010 and 2014 and has shifted its approach from crisis management to risk management over the past decade.

For a detailed breakdown of the scores and justifications of Melaka and its peers, see the Indicator Explorer tab in the accompanying benchmarking Excel model.

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"Menara Taming Sari Tower, Bandar Hilir, Melacca." Photo: Chantirong

Annex A. Benchmarking Input Indicators

TABLE 2 Input Indicators (benchmark indicators)

Dimension	Focus Area	Benchmarking Question
Governance and Integrated Urban Planning	1.1 Vision and Long-term Strategic Planning	Is there a city-level strategic plan that provides a clear long-term vision for the future?
	1.2 Stakeholder Participation	Is there a structure that allows civil society to directly participate in urban planning and management?
	1.3 Data Management	Is there a publicly accessible platform for georeferenced data at the city level?
	1.4 Trend Analyses	Is there evidence of data sets and trend analyses being used to inform city-level planning activities?
	1.5 Land Use and Zoning	Does the city have up-to-date land use plans and institutional capacity (an agency or committee) to monitor their implementation?
	1.6 Urban Growth Patterns	Does the city have plans in place to limit urban sprawl and encourage increasing urban density?
	1.7 Informal Settlements	Does the city have policies in place to prevent and rehabilitate informal settlements?
	1.8 Transport and Mobility Integrated with Land Use	Is there an up-to-date transport master plan that enables authorities to measure and monitor the development of the transportation system?
	1.9 Cultural Heritage	Are there policies and plans in place to protect and conserve cultural and historical heritage?
Fiscal Sustainability	2.1 Accountability and Transparency	Is there an accountability framework in the city?
	2.2 Creditworthiness	Does the city have a credit rating?
	2.3 Revenue and Financial Autonomy	Is the city financially autonomous (as opposed to dependent on other levels of government) for its overall financing?
	2.4 Expenditure Management	Does the city have operating and capital investment plans that guide the preparation and execution of annual operating and capital budgets?
	2.5 Management of Debt and Other Obligations	Is the city's debt level deemed sustainable by ratings agencies and/or independent watchdogs?
Urban Economies	3.1 Economic Performance	Is there an economic plan or strategy to promote economic growth in different sectors of the city's economy?
	3.2 Business Climate, Innovation, and Entrepreneurship	Is the regulatory environment of the city conducive to starting and operating local firms relative to the rest of the country (i.e., ease of doing business)?
	3.3 Labor Force	Are there city-led policy programs in place to match the labor force level of skill to the current and emerging employment opportunities?
	3.4 Livelihood Opportunities	Are there labor policies in place to deter discrimination and promote fair employment conditions?
	3.5 Income Equality and Shared Prosperity	Is there a government effort to ensure that the provision of public services reaches all urban areas?

Dimension	Focus Area	Benchmarking Question
Natural Environment and Resources	4.1 Ecosystems and Biodiversity	Is there a policy or regulatory framework in place to protect ecosystems and biodiversity?
	4.2 Air Quality	Is there a policy, program, or plan to reduce the source emissions and to reduce the risks they represent for public health?
	4.3 Water Resources Management	Is there a policy, program, or plan to improve water consumption patterns?
	4.4 Solid Waste Management	Are there standardized and sustainable municipal waste management practices?
	4.5 Consumption and Production Patterns	Are there city-led campaigns to raise awareness about sustainable consumption and lifestyles?
Climate Action and Resilience	5.1 Greenhouse Gas Inventory	Does the city use a GHG inventory to identify sources of emissions and prioritize policies to reduce emissions?
	5.2 Energy Efficiency	Is the city implementing strategies to improve energy efficiency?
	5.3 Clean Energy	Has the city set targets, policies, incentives, and milestones to increase the share of renewable energies?
	5.4 Climate Change Adaptation	Has the city developed a climate change adaptation plan or project?
	5.5 Disaster Risk Reduction	Has the city undertaken comprehensive disaster risk management strategies integrated with city planning?
Inclusivity and Quality of Life	6.1 Housing	Does the city have an affordable housing policy that is integrated with city planning and other national goals?
	6.2 Poverty Reduction, Hunger Reduction, and Food Security	Are there specific policies or programs to ensure urban food security?
	6.3 Drinking Water and Sanitation	Is there sufficient and affordable potable water supply and sanitation system provided to households across the city?
	6.4 Health and Well-Being	Are there city-level health promotion initiatives?
	6.5 Safety	Are there policies to prevent and decrease crime prevalence?

Annex B. Benchmarking Outcome Indicators

TABLE 3 Output Indicators (background indicators)

No.	Performance Indicator
1	Population
2	Annual growth rate of the local population (%)
3	Age dependency ratio (% of working-age population)
4	Years since land use plan was reviewed and updated
5	Total city built-up area (km ²)
6	Percentage of urban population living in slums (%)
7	Percentage of households that declare they have access to public means of transport within 0.5 km (%)
8	Number of World Heritage Sites within 100 km (UNESCO WHS)
9	Credit rating or shadow credit rating on the national credit rating scale of the country (rating agency)
10	Own-source revenue (US\$)
11	Total capital expenditures (US\$)
12	Debt service payments (US\$)
13	City's GDP per capita (US\$/capita)
14	Average annual growth (GDP) rate in the past 10 years (%)
15	Number of days to obtain a business license (days)
16	Labor force by education level (%/level)
17	Unemployment rate as a share of the labor force (%)
18	Income Gini coefficient
19	Hectares of permanent green space per 100,000 city residents (ha)
20	Annual mean level of fine particulate matter in the city (annual mean, ug/m ³ PM _{2.5} and PM ₁₀)
21	Annual household water consumption for all sectors (US\$ million)
22	Total solid waste generation per capita (kg/capita)

No.	Performance Indicator
23	Material footprint per capita (metric tons)
24	Annual CO ₂ equivalent emissions per capita (tCO ₂ /capita)
25	Total final energy consumption (GJ per capita)
26	Percentage of total energy derived from renewable sources, as share of city's total final energy consumption (%)
27	10-year average of direct disaster economic loss (US\$ thousand)
28	Housing shortage (number of housing units/number of households)
29	Percentage of malnourished children under five (% of children under five)
30	People using safely managed drinking water services (% of population)
31	Total public and primary private health insurance coverage (% of total population covered)



“View of the famous colonial Dutch Square in Malacca.” Photo: Charlie Tong



Melaka State in Malaysia has strong sustainability aspirations and is an important member of the Global Platform for Sustainable Cities (GPSC). To inform the next update to Melaka's State Structure Plan, GPSC performed a sustainability outlook diagnostic to holistically consider six dimensions of the state's urban sustainability. The diagnostic consists of an overview report—containing a policy brief, executive summary, and benchmarking assessment—and six supporting reports that cover each of the diagnostic's dimensions. Informed by a wide range of stakeholder consultations and by data, analyses, and the benchmarking assessment, the reports offer key messages and recommendations for action so that Melaka can chart its own pathway to urban sustainability.

