National Institute for Environmental Studies, Japan

6TH INTERNATIONAL FORUM ON SUSTAINABLE FUTURE IN ASIA /
6TH NIES INTERNATIONAL FORUM – OPEN SYMPOSIUM Jan 20, 2021 1315- 1600

Science-Based Climate Policy Making at the Local Level in Malaysia - Lessons Learnt from Collaborative Work among Universities and Research Institutions

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UTM-LOW CARBON ASIA RESEARCH CENTRE
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UTM UNIVERSITI TEKNOLOGI MALAYSIA

CONTENT

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- **Malaysia Commitment towards LCS**
- **S2A- LCS Mainstreamed into Development Plan**

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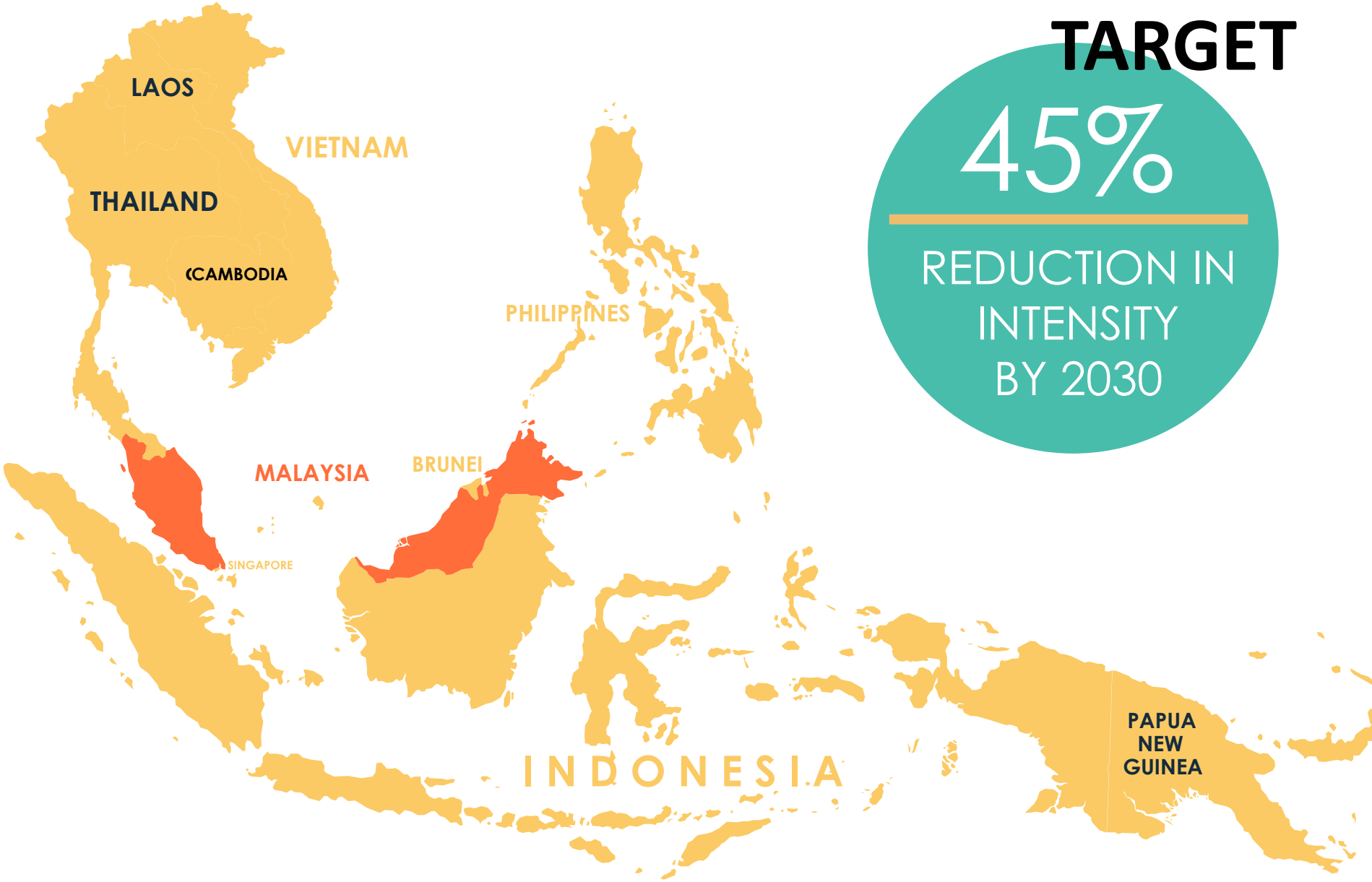
- **Main streaming versus Stand-alone LCS plan**
- **The case of Iskandar Malaysia, Kuala Lumpur and Muar**

3.Covid 19 impact

- **Covid Pandemic and Impact in Malaysia**
- **Way forward – integrating Climate action plan into CoVid**

MALAYSIA CARBON EMISSION TARGET



URBAN PROBLEMS with Low carbon SOLUTIONS – Spatial and Socio economic planning

Low carbon Material / Energy

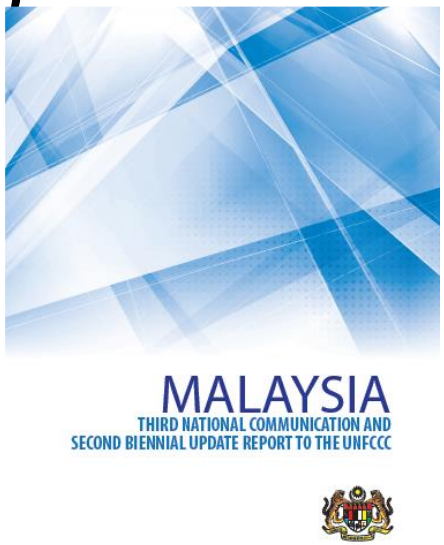
Engine of growth & green economy

Green Mobility

Community and green lifestyle

MALAYSIA'S FOCUS ON GREEN TECHNOLOGY APPLICATION AND LOW CARBON CITY FRAMEWORK (LCCF)

Malaysian Government has made a commitment to reduce **45%** reduction in emission intensity by 2030 as pledge in our NDC at **COP21** in Paris in 2015.



NC3 AND BUR2 (2018) been prepared to meet Malaysia's obligations as a Party to the United Nations Framework Convention on Climate Change (UNFCCC).

Green Technology Application for the Development of Low Carbon Cities (GTALCC) 2020 *by UNDP*

GTALCC facilitate the implementation of low carbon initiatives in at least five Malaysian cities and to showcase a clear and integrated approach to low carbon urban development.

PARIS AGREEMENT – COP21
Global community signalled intent to act

Collaborative work among experts and policy makers

S2A

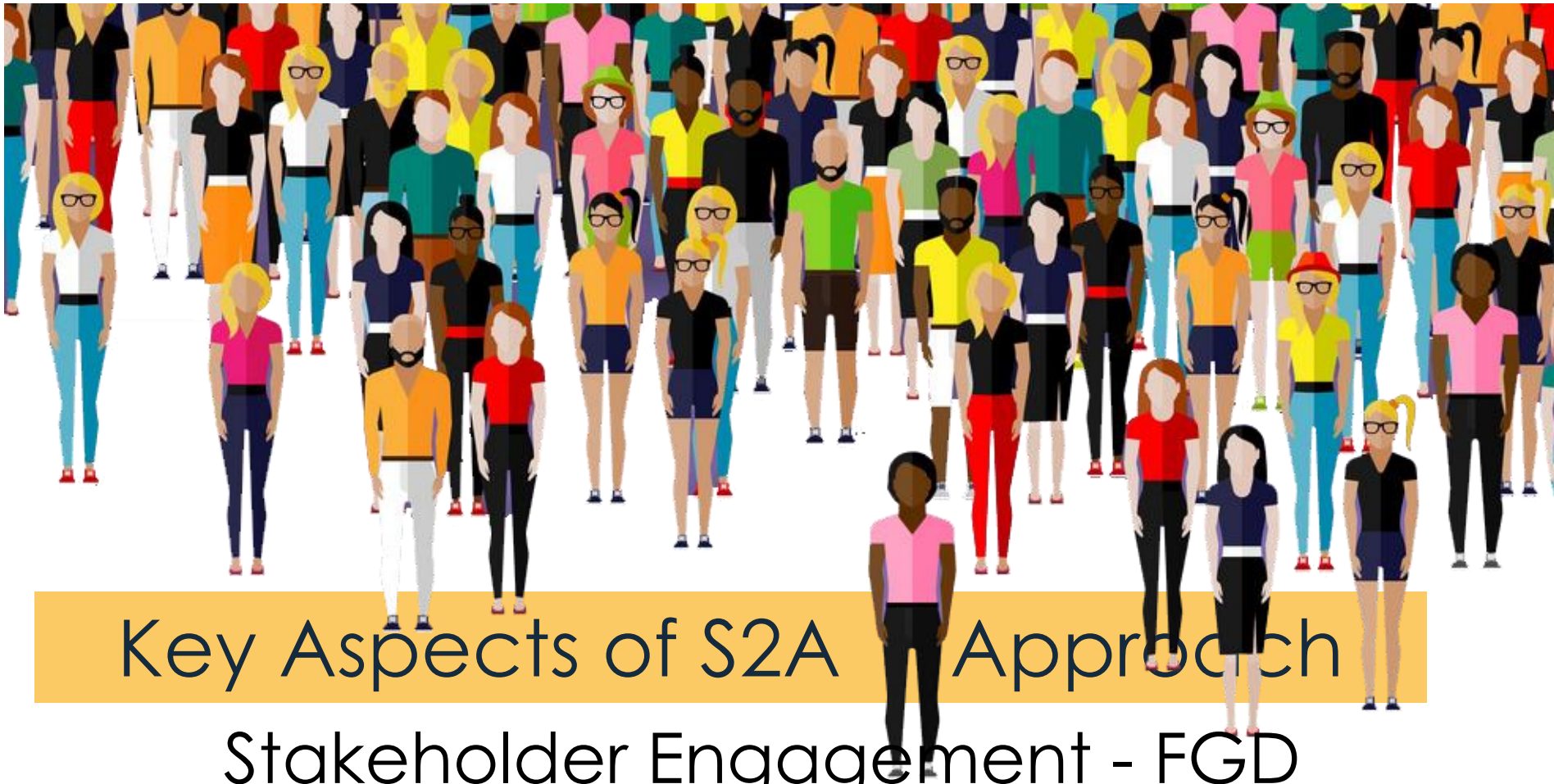
Science to Action

in making

LOW CARBON SOCIETY

a reality

*PROCESS AND DESIGN



Key Aspects of S2A Approach

Stakeholder Engagement - FGD

Pro-growth Pro-job Pro-poor Pro-env.

Harnessing contribution of
Science and Technology
Sustainable development approach/ Climate Actions
Balance approach
Environmental friendly and development sound

Science (R&D) + **Policies (LCS)** = Actions

FOCUSING ON CO –BENEFIT & VULNERABILITY

Promoting resilient, low carbon, resource efficient and socially inclusive development

=

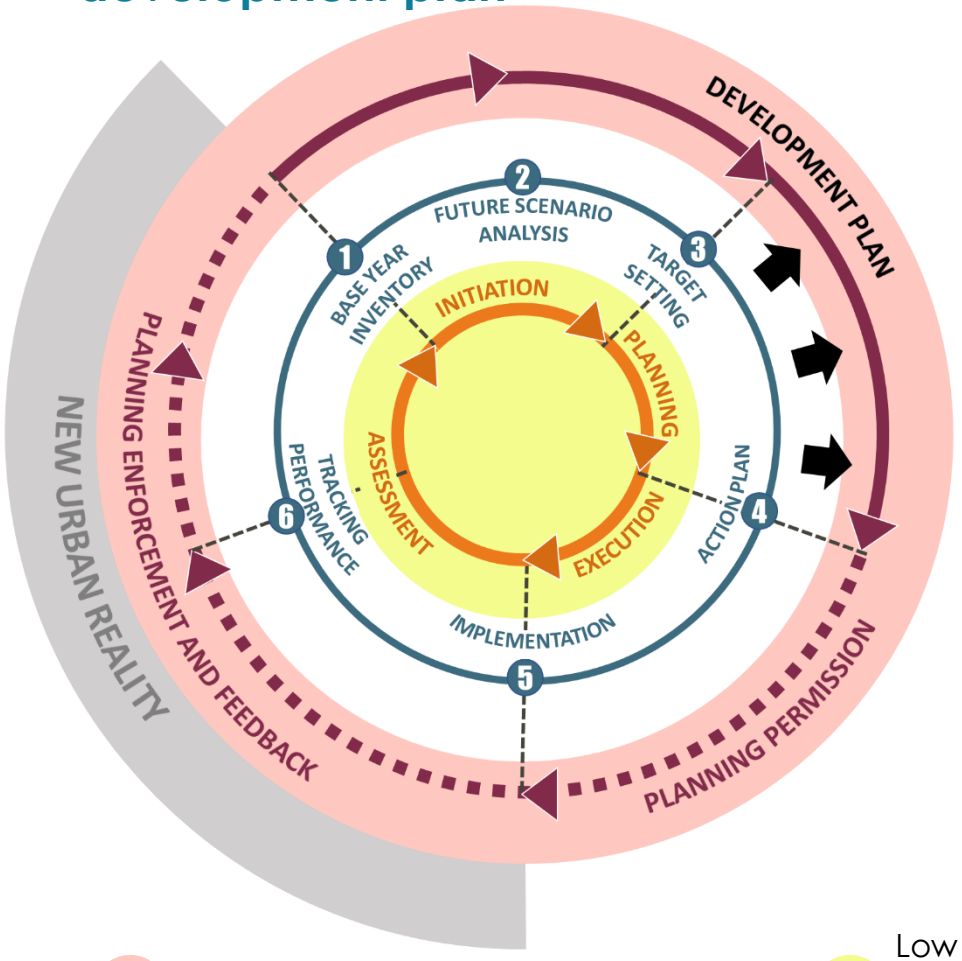
LOW CARBON PLANNING OPTIONS- STAND-ALONE OR MAINSTREAMING

Issues/ Problems

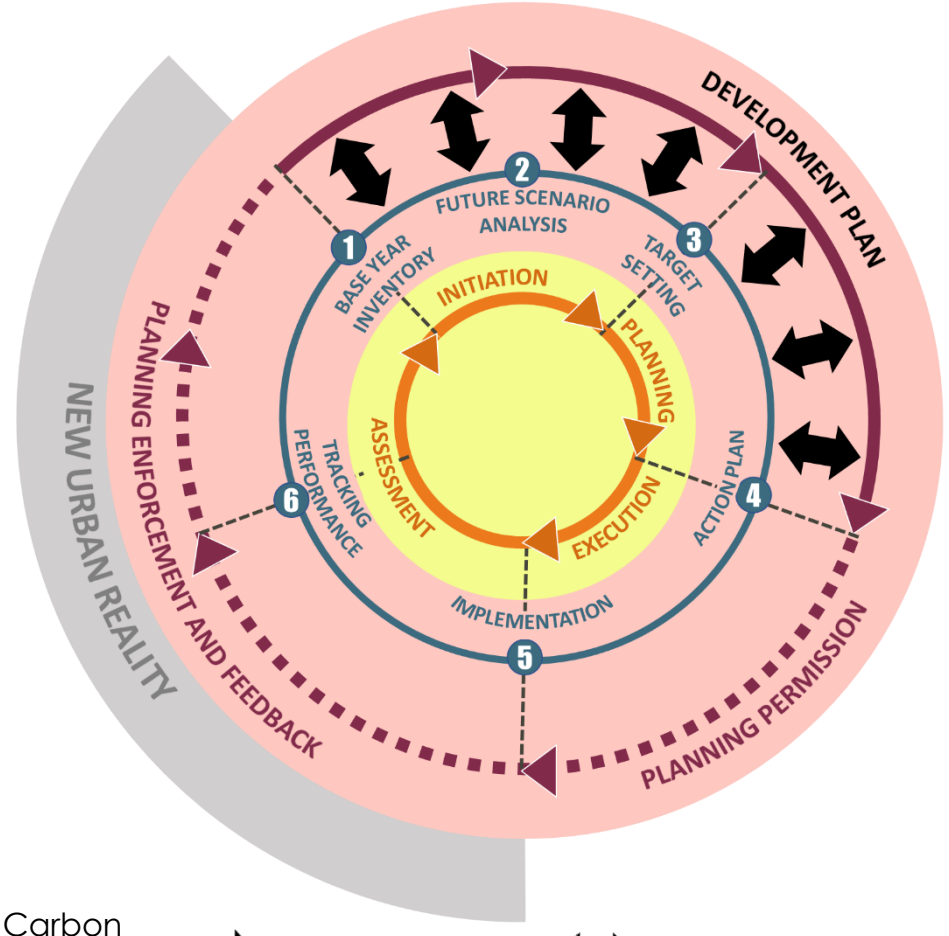
Developing Local Action Plans together with Climate actions initiatives (Mainstreaming)

STAND–ALONE LCS Blueprint Vs MAINSTREAMING CLIMATE ACTION PLANS

Stand alone – Decarbonize existing development plan



Integrate Climate Action plan into Development Plan



Spatial Planning

Climate Policy Making

Low Carbon Development Processs

Mainstreaming (one-way)

Mainstreaming (two-way)

MAINSTREAMING CLIMATE ACTION PLANS

1. *Initiation*

The forecasting of GHG emission level for targeted year is done by using the Asia Pacific Integrated Model (AIM) or other model that has been recognised by the IPCC

2. *Planning*

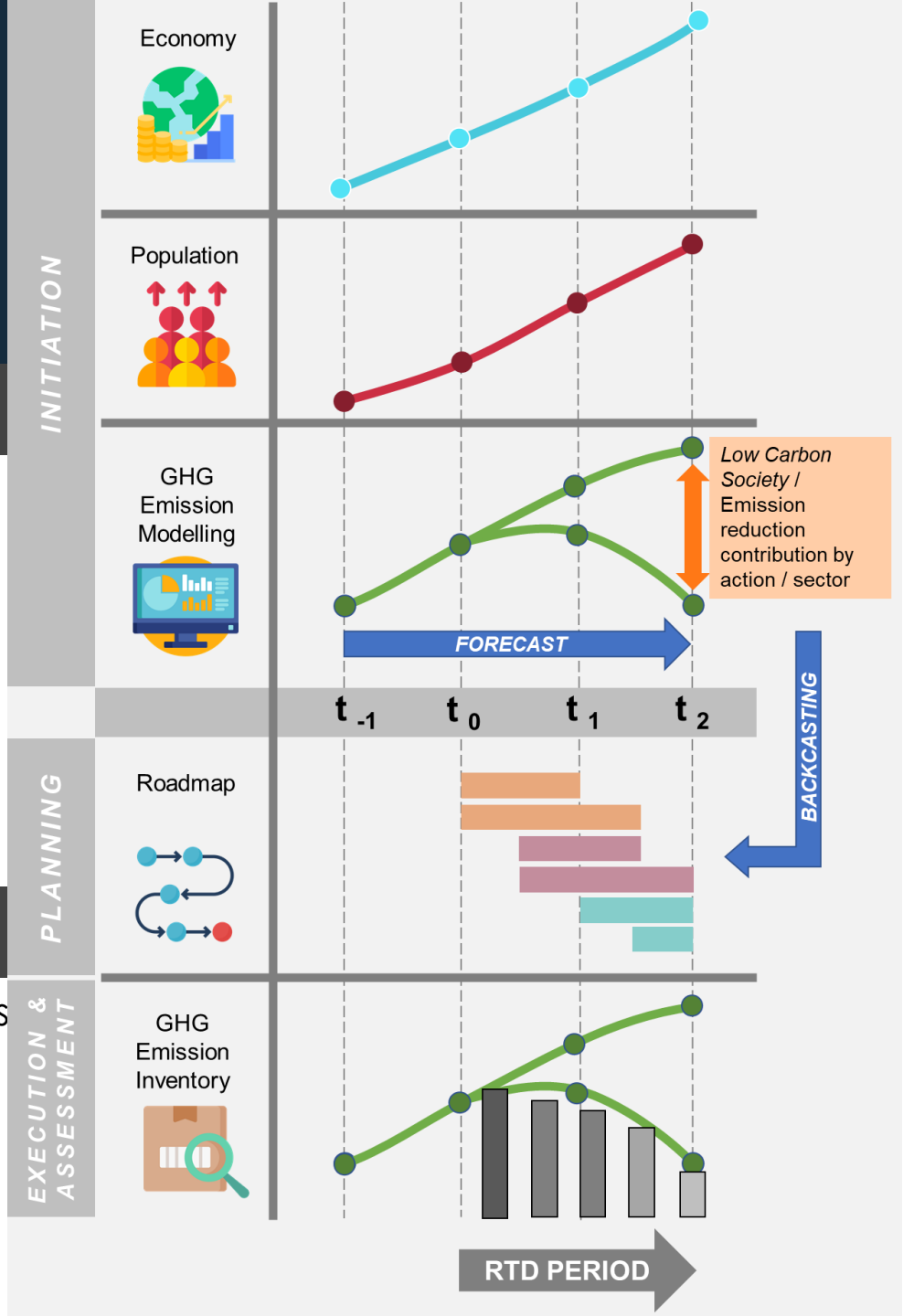
Preparation of action plans that contribute to carbon reduction thus to achieve GHG reduction target

3. *Execution*

The implementation is based on the time frame to ensure the reduction target can be achieved.

4. *Assessment*

Involves continuous monitoring and reporting that needs to be carried out on a regular basis.



2.0 LESSON LEARNED

LESSON LEARNED FROM COLLABORATIVE
WORK AMONG
UNIVERSITIES AND RESEARCH INSTITUTIONS

Collaborative Work among Universities and Research Institutions with Policy makers - LESSONS LEARNT

Key Messages

1. **Cities as main CO2** emitters will continue **be competitive and engine of growth**. We should aims **at co benefit** from climate change actions as focus on **decoupling CO2 reduction and economic growth**.
2. **Good scientific research is important component of Research institute and policy makers collaboration** to ensure effective implementation of LCS policies
3. **Evidence based Policies** supported by multi **stakeholders engagement are effective**
4. **Mainstreaming LCS** into development plan can be effective way to accelerate climate action plan making
5. **Internationally funded collaborative joint research** on LCS is essential especially through city to city collaboration.

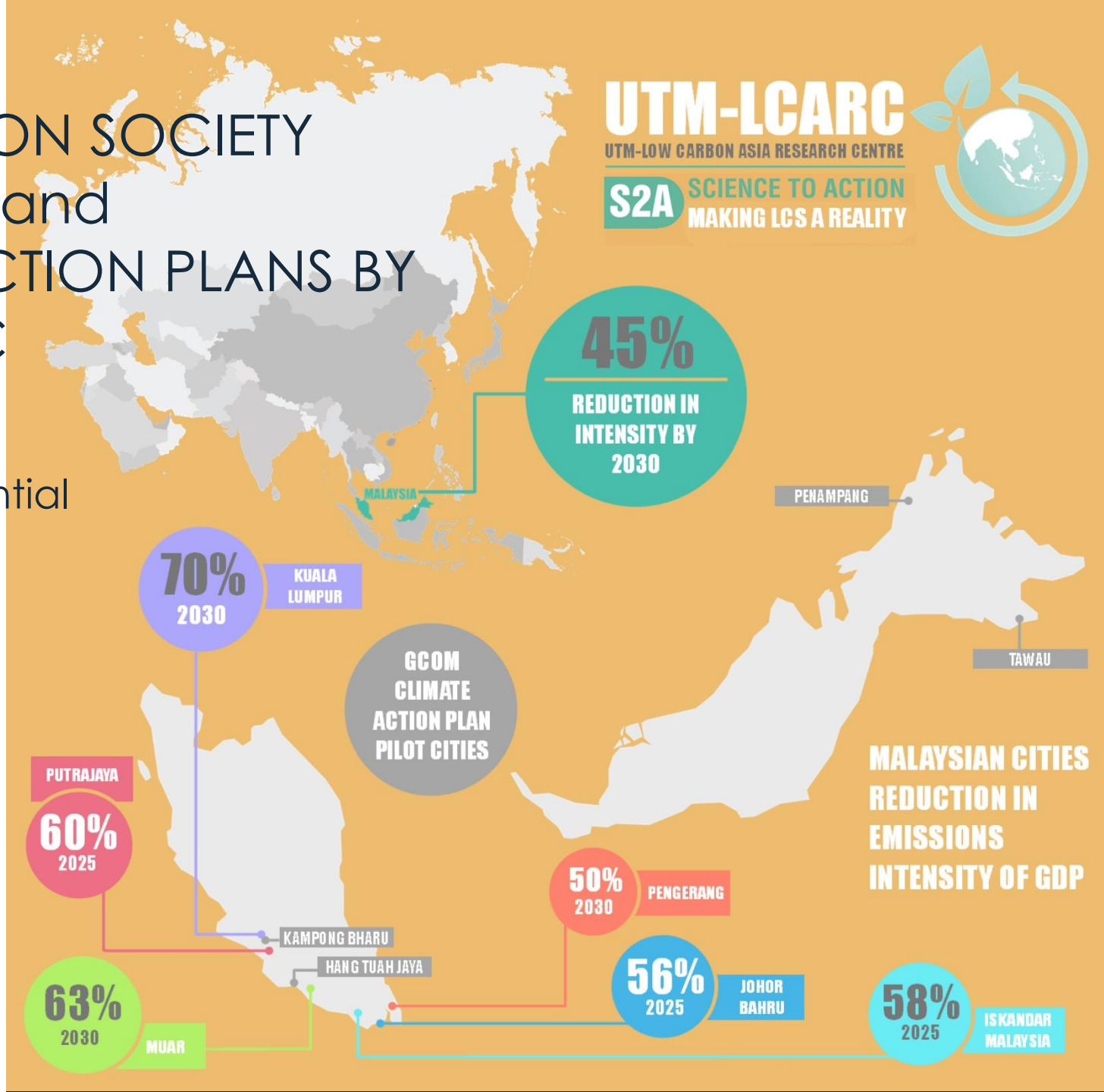
Source: *Ho, C.S.; Chau, L.W.; Teh, B.T.; Matsuoka, Y. and Gomi, K. (2016) 'Science-to-Action of the Sustainable Low Carbon City-region: Lessons Learnt from Iskandar Malaysia', in Nishioka, S. (Ed.) (2016) Enabling Asia to Stabilise the Climate, Singapore: Springer; pp.119-150, DOI:10.1007/978-981-287-826-7_7*

SELECTED LOW CARBON SOCIETY BLUEPRINTS and CLIMATE ACTION PLANS BY UTM-LCARC

Total Emissions Reduction Potential in 2030:

73.8

$MtCO_2eq$



ISKANDAR MALAYSIA LCS 2025 BACKGROUND

Development of Low Carbon Society Scenarios for Asian Regions

FLAGSHIP A

JOHOR BAHRU CITY CENTRE
- Central Business District (CBD) as heritage and cultural city
- Customs, Immigration and Quarantine Complex (CIQ)
- Johor – Singapore Causeway

FLAGSHIP B

NUSAJAYA
- Kota Iskandar
- EduCity
- Medical Park
- International Destination Resort
- Southern Industrial & Logistics Clusters (SiLC)
- Puteri Harbour

FLAGSHIP C

WESTERN GATE DEVELOPMENT
- Port of Tanjung Pelepas (PTP)
- Tanjung Bin Power Plant
- 2nd Link Access to Singapore
- RAMSAR World Heritage Park
- Tanjung Piai – Southernmost Tip of Mainland Asia
- Maritime Centre

FLAGSHIP D

EASTERN GATE DEVELOPMENT
- Tanjung Langsat Industrial Complex
- Johor Port
- Tanjung Langsat Port
- Pasir Gudang Industrial Park

FLAGSHIP E

SENAI-SKUDAI
- Senai Airport City
- Senai High-Tech Park
- Sedenak Industrial Park
- MSC Cyberport City
- Johor Technology Park
- University Technology Malaysia (UTM)

SITE: ISKANDAR MALAYSIA

Objectives:

1. To draw up **key policies and strategies** in guiding the development of Iskandar Malaysia in **mitigating carbon emission**. Transforming Iskandar Malaysia into ***a sustainable low carbon metropolis of international standing*** **by adopting green growth strategies/roadmap**.

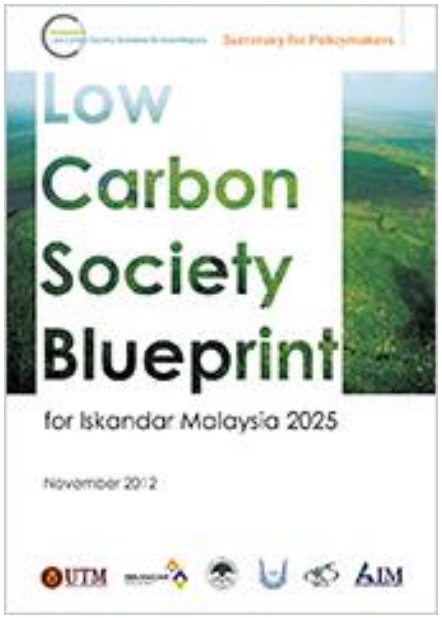
2. To respond to the nation's aspiration of **ensuring climate-resilient development for sustainability**.

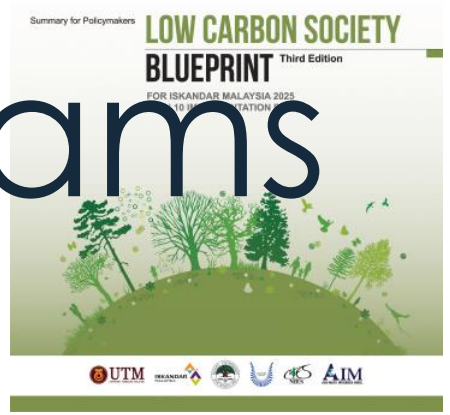
Target Year: 2025 (2005 – 2025)

ISKANDAR MALAYSIA LCS BLUEPRINT 2025

12 Actions

281 Programs

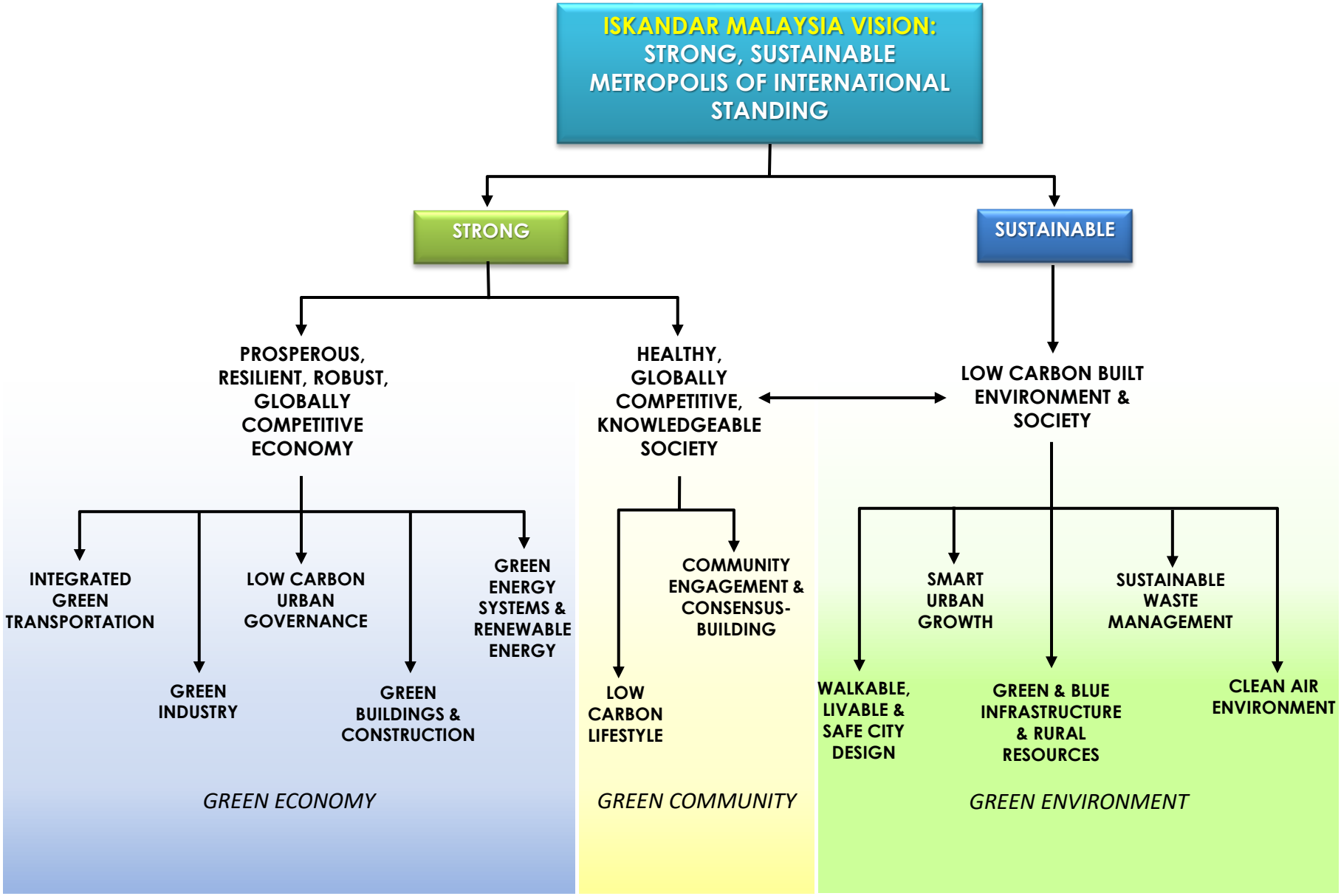




LCS ACTIONS FOR ISKANDAR MALAYSIA BY 3 MAIN THEMES

	Action Names	Themes
1	Integrated Green Transportation	GREEN ECONOMY
2	Green Industry	
3	Low Carbon Urban Governance	
4	Green Buildings & Construction	
5	Green Energy System & Renewable Energy	
6	Low Carbon Lifestyle	GREEN COMMUNITY
7	Community Engagement & Consensus Building	
8	Walkable, Safe, Livable City Design	GREEN ENVIRONMENT
9	Smart Urban Growth	
10	Green and Blue Infrastructure & Rural Resources	
11	Sustainable Waste Management	
12	Clean Air Environment	

POLICY SCOPING FOR IMLCSBP 2025



ISKANDAR MALAYSIA – POTENTIAL CO_2 REDUCTION

Table 1: Projected main socio-economic variables

	2005	2025	2025 /2005
Population (1000)	1,353	3,000	2.22
Household (1000)	303	706	2.33
GDP (Bill. RM)	35.7	141.4	3.96
Gross output (Bill. RM)	121.4	438.9	3.61
Primary industry	1.5	2.4	1.59
Secondary industry	86.2	274.0	3.18
Tertiary industry	33.7	162.5	4.82
Passenger transport demand (Mill. passenger-km)	9,565	59,524	6.22
Freight transport demand (Mill. ton-km)	8,269	26,054	3.15

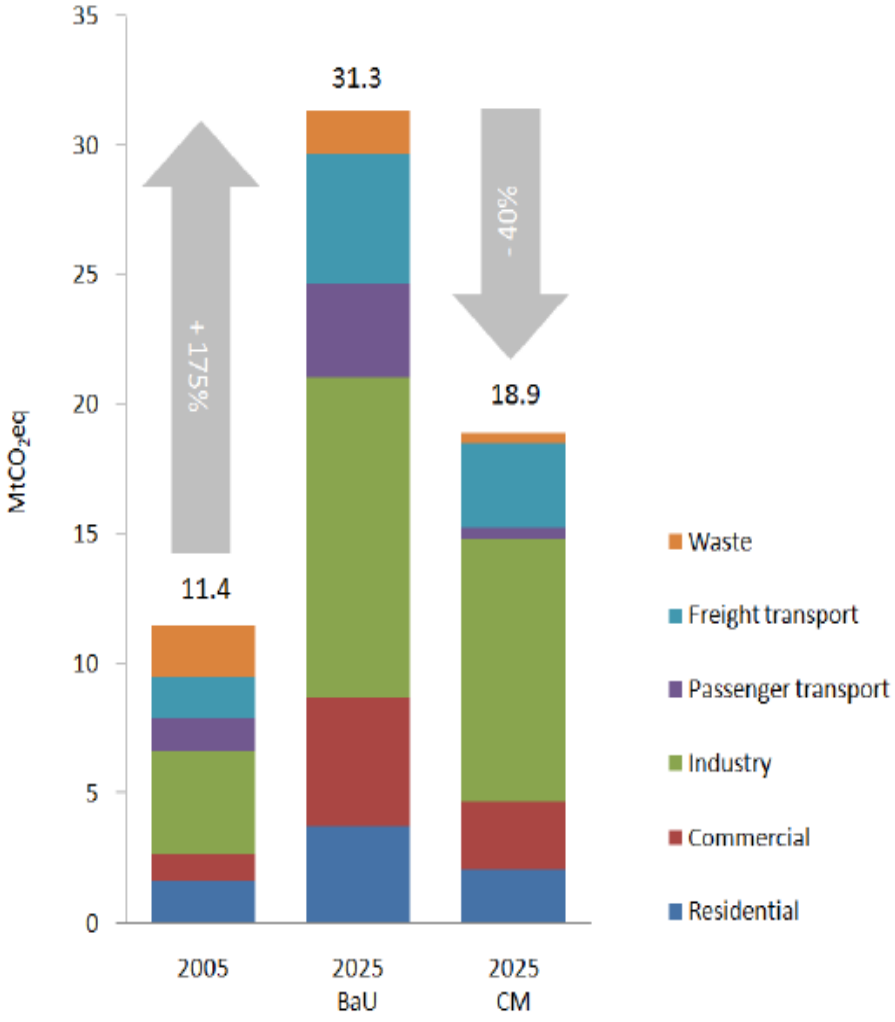
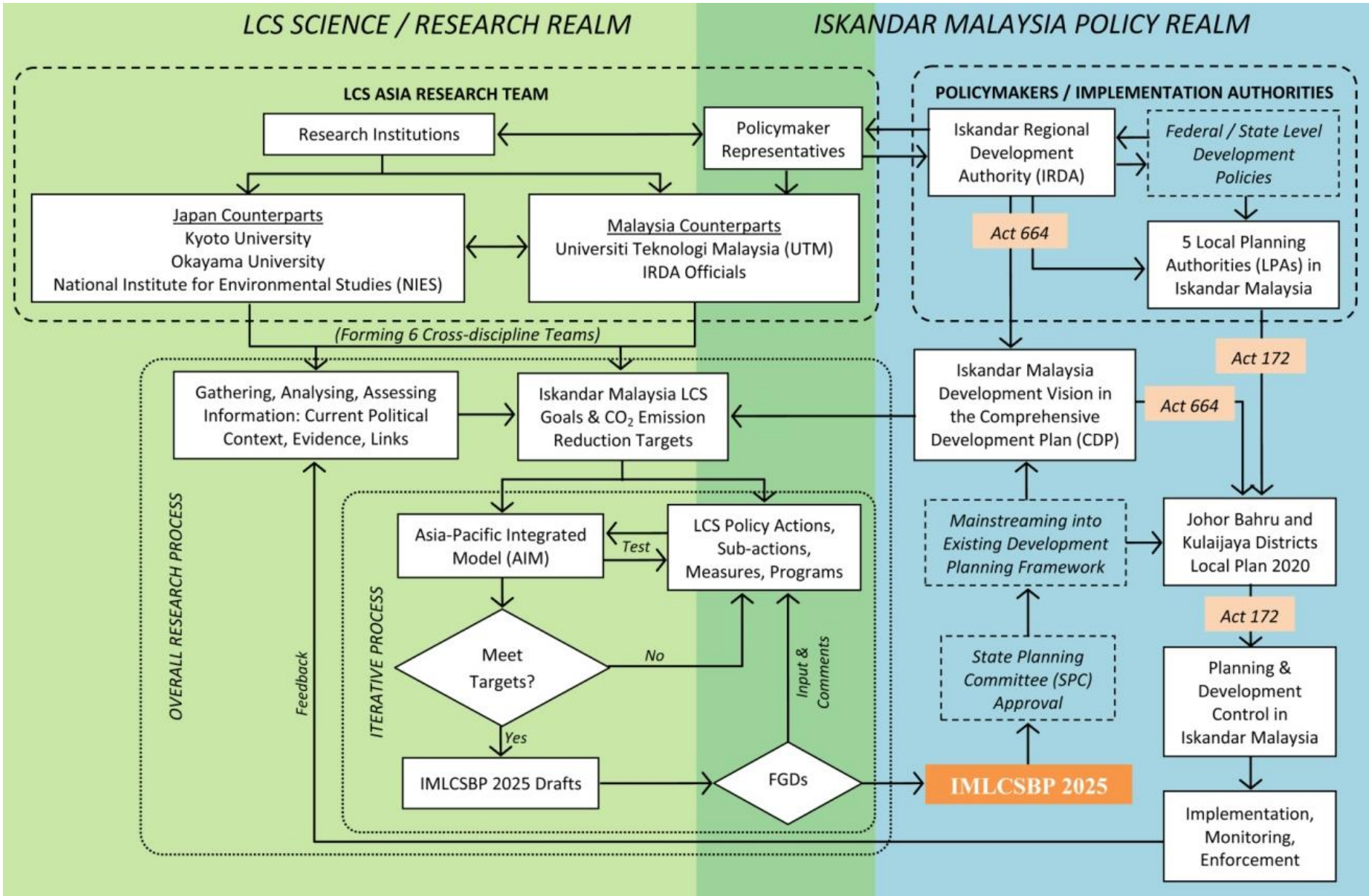


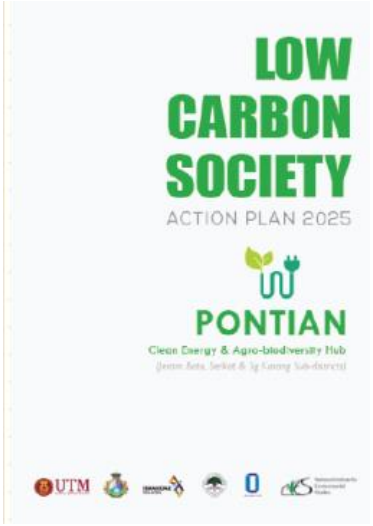
Figure 1: GHG emissions by sectors

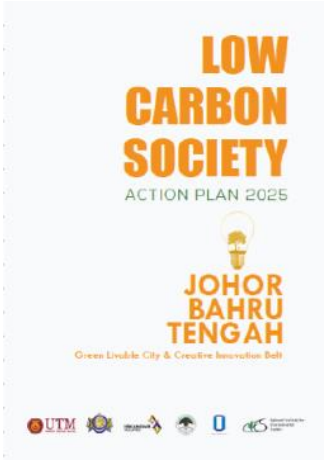
Source: *Low Carbon Society Blueprint for Iskandar Malaysia 2025 – Summary for Policymakers (2nd Ed.), 2013, p.1*

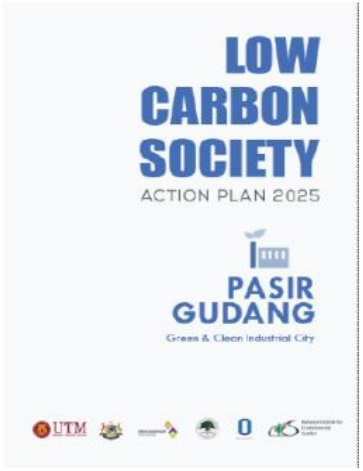
POLICYMAKING WITH IMPLEMENTATION IN MIND: THE S2A CASE OF IMLCSBP 2025



ISKANDAR MALAYSIA
(5 Local Authorities)





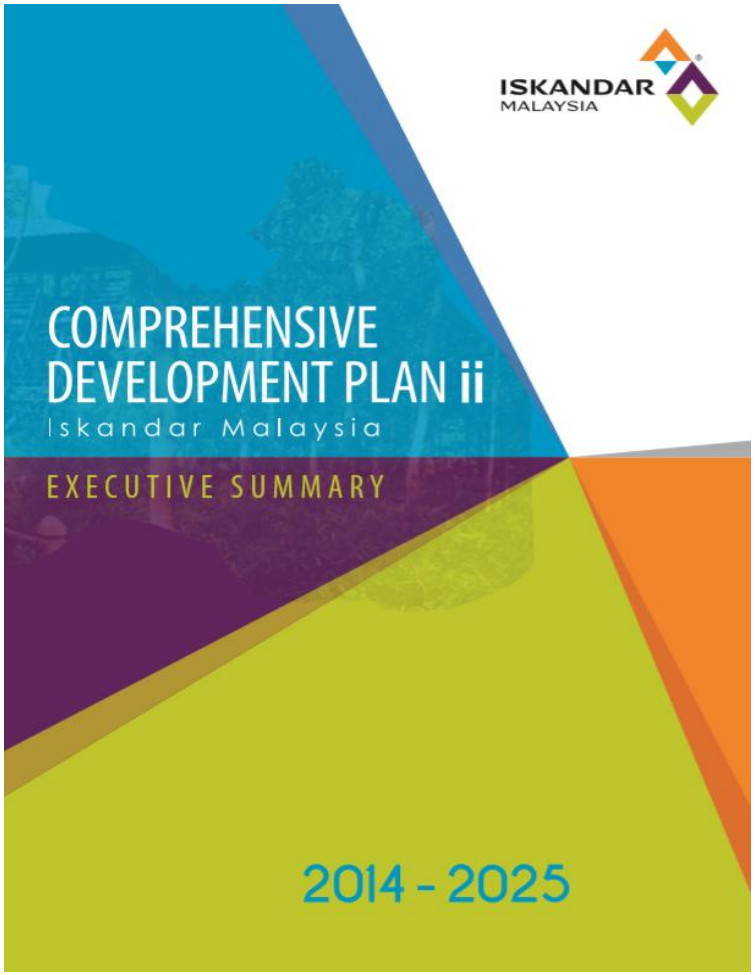


Iskandar Malaysia

main southern development corridor in Johor, Malaysia

LCS MAINSTREAMED INTO THE ISKANDAR MALAYSIA COMPREHENSIVE DEVELOPMENT PLAN-2 (CDP-II)

Iskandar Malaysia CDP-ii is a statutory plan prepared under Parliamentary Act No. 664



Iskandar Malaysia
Circle of Sustainability: LCS as one of the CDP-ii's three main pillars

Launching of Regional Centre of Expertise (RCE Iskandar) by State government

REGIONAL CENTRE OF EXPERTISE ON EDUCATION FOR SUSTAINABLE DEVELOPMENT

ACKNOWLEDGED BY

UNITED NATIONS UNIVERSITY

english.astroawani.com/business-news/iskandar-malaysia-declared-rce-20745

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MALAYSIA WORLD BUSINESS SPORTS ENTERTAINMENT TECHNOLOGY LIFESTYLE POLITICS OPINIO

NEWS | BUSINESS

Iskandar Malaysia declared as RCE

Bernama | February 08, 2015 07:33 MYT

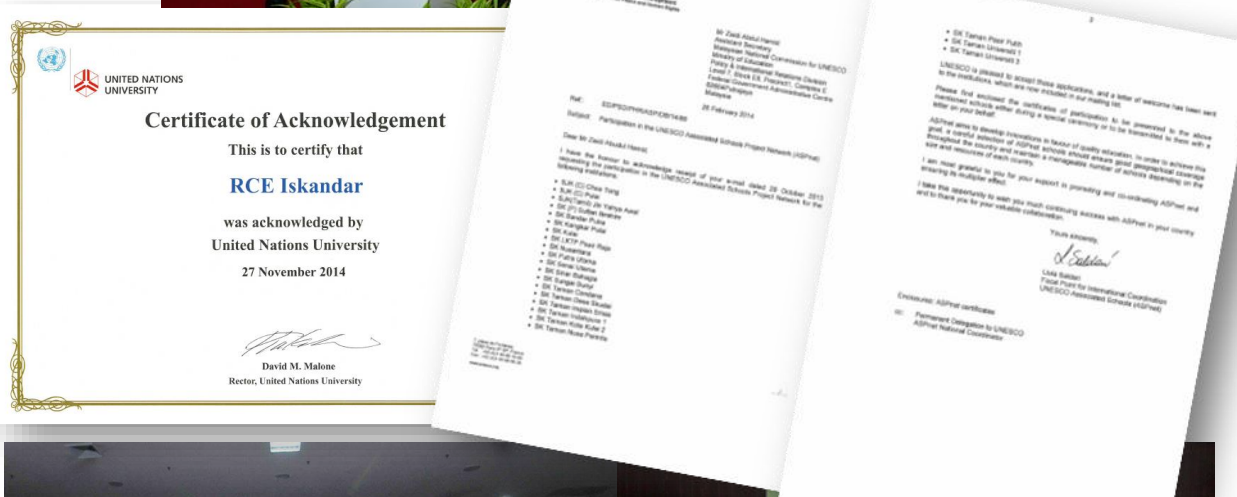
RCE Iskandar is the third REC in Malaysia after RCE Penang and RCE Central Malaysia.

JOHOR BAHARU: Iskandar Malaysia has been declared as the Regional Centre of Expertise for Sustainable Development (RCE).

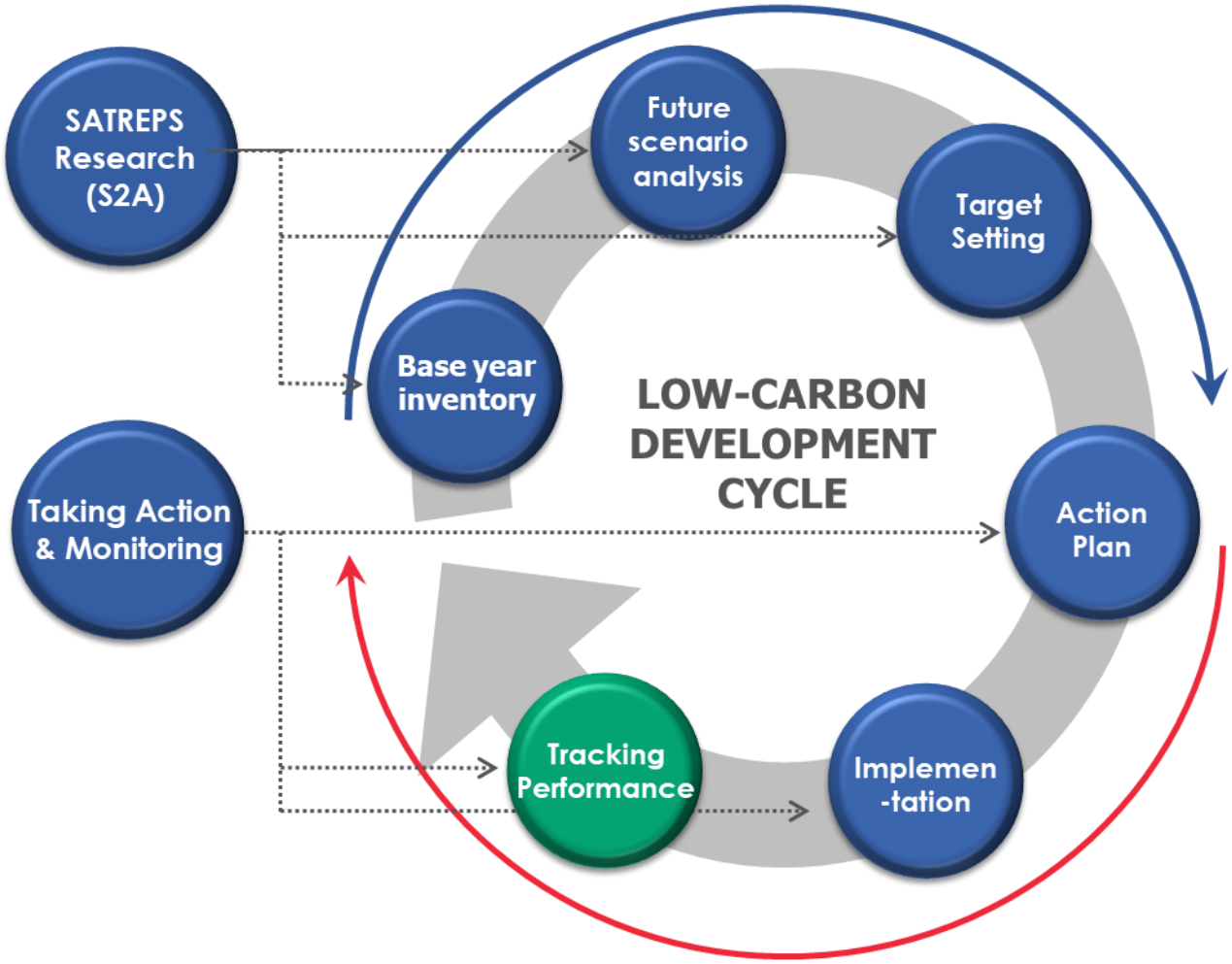
State Health and Environment Committee chairman, Datuk Ayub Rahmat, said Iskandar RCE is a platform to bring together individuals and organisations to promote sustainable development.

"This recognition is a step towards ensuring that Iskandar Malaysia achieve 50 percent reduction in carbon dioxide emission by 2025," he told reporters after closing the Iskandar Malaysia Sustainable and Low Carbon Exhibition organised by University of Technology Malaysia (UTM), here Saturday.

Sustainable & Low Carbon Schools Exhibition



ISKANDAR MALAYSIA LCSBP COMES FULL CYCLE



2011-2016

- LCS baseline study
- LCS scenario development
- GHG modelling
- LCS policy design
- IM (regional) level action plan

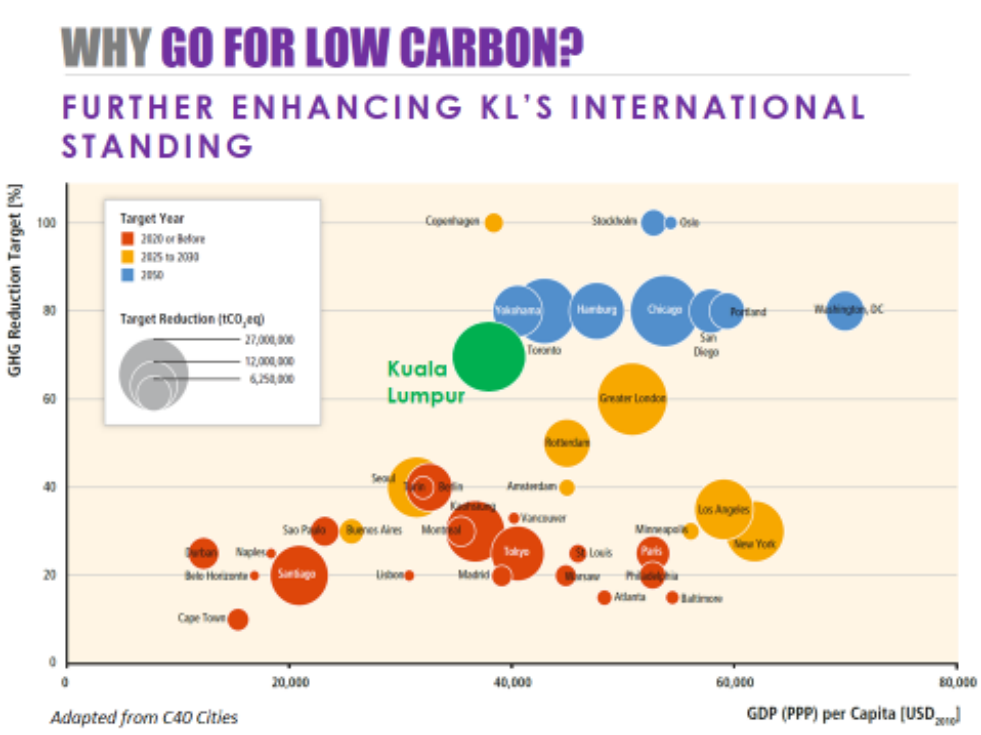
2016-2021

- City level detailed action plan
- Implementation of LCS programs
- Performance tracking
- GHG monitoring
- Review & refinement

EXTENDING ISKANDAR MALAYSIA'S EXPERIENCES –

DRAFT KUALA LUMPUR
LOW CARBON SOCIETY BLUEPRINT 2030

UTM · National Institute for Environmental Studies · IGES · E KONZAL



POLICY COPING & FRAMEWORK FOR KL LCSBP 2030

Current Vision KLSP 2020 Draft KLCP 2020	WORLD CLASS CITY 2020		
LCS Vision for Kuala Lumpur	WORLD CLASS SUSTAINABLE CITY 2030 70 by 30: A Greener Better Kuala Lumpur		
Triple Bottom line of sustainability	Economy	Social	Environment
Thrusts	Thrust 1 Prosperous, Robust and Globally Competitive Economy	Thrust 2 Healthy, Creative Knowledgeable and Inclusive Community	Thrust 3 Ecologically Friendly Liveable and Resilient Built Environment
Sustainable Development Goals 2030	Goals: 1,2,7,8,9,11,12,13,17	Goals: 3,4,5,10,11,12,13,16,17	Goals: 6,11,13,14,15,17
New Urban Agenda Transformative Commitments	Sustainable and Inclusive urban prosperity and opportunities for all	Sustainable urban development for social inclusion and ending poverty	Environmentally sustainable and resilient urban development
Key Principles Draft KL City Plan 2020	World-class Business Environment	World-class Working Environment	World-class Living Environment
	World-class Governance		
KL Low Carbon Society Actions	Green Growth Energy Efficient Spatial Planning Green Mobility Sustainable Energy System	Community Engagement and Green Lifestyle	Low Carbon Green Buildings Green and Blue Network Sustainable Waste Management Sustainable Water and Wastewater Management
	Green Urban Governance		

KUALA LUMPUR: LOW CARBON SOCIETY'S PROGRAMMES

Transportation

- Rail system
- Bicycle lane
- Bus system
- Pedestrian Network

Buildings

- Green Building Index (GBI)
- Energy Management (KLCH Tower 1)

Solid Waste

- Reduce Reuse Recycle 3R program

Water

- River of Life (ROL)
- Rain water harvesting

Energy

- Energy –efficient buildings
- Euro5 NGV for Public Transport
- B10 Trial Project

Infrastructure & Digital Technology

- Integrated Transport Information System (ITIS)
- LED Street Lanterns

Environment

- Open spaces
- Tree Planting
- Vertical green
- Community garden
- Preserving Forest
- Laneway projects

Transportation

BUS SYSTEM: GO KL FREE RIDE

Go KL City Bus

- The Go KL City Bus service was introduced in 2012 to improve public transport within city centre
- Go KL is a free bus service which was designed to function as a feeder bus service providing last-mile connectivity integrating other modes of public transport.
- Thre are four lines (within downtown KL):

  Green Line : KLCC – Bukit Bintang (14 stops / 45 mins)
  Purple Line : Pasar Seni – Bukit Bintang (15 stops / 60 mins)
  Blue Line : Medan Mara – Bukit Bintang (17 stops / 45 mins)
  Red Line : KL Sentral – Jalan Tuanku Abdul Rahman (19 stops / 60 mins)

KUALA LUMPUR CITY – ACTIVE PARTNERSHIP WITH TMG, IGES, GCOM, C40

KUALA LUMPUR TRANSITION TO ZERO CARBON CITY AND SMART CITY - Partnerships

MUAR DISTRICT LOCAL PLAN 2030

the first statutory development plan to incorporate low carbon city measures into local spatial planning based on scientifically estimated baseline emissions

GOAL

'Leading District for economic development of the Northern Johor Region – based on Heritage, Smart Technology and Low Carbon Sustainable Society'

MUAR DISTRICT LOCAL PLAN 2030

The first local plan integrated with LCS

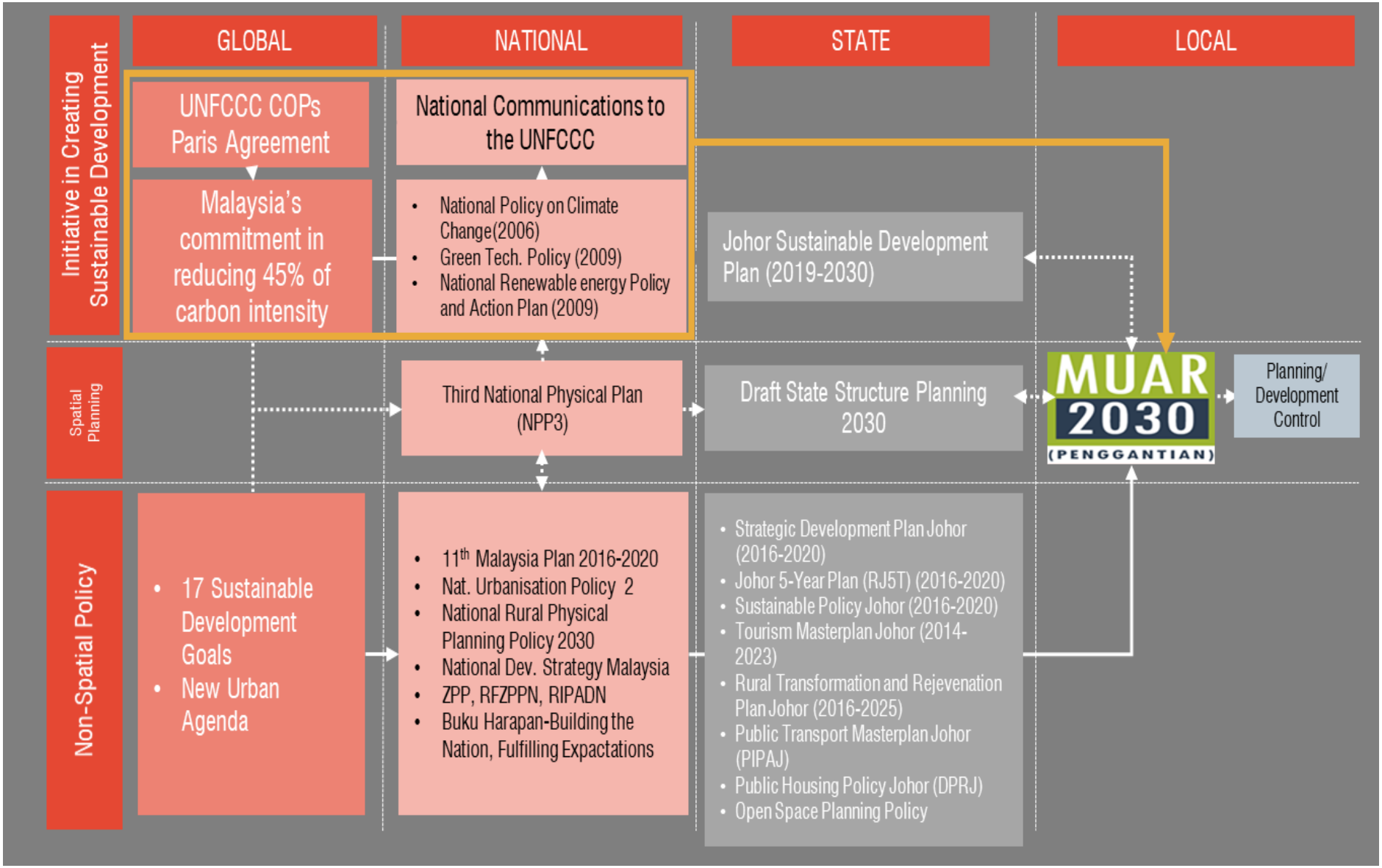
SPECIAL, SUSTAINABLE

LIVEABLE, LEADING

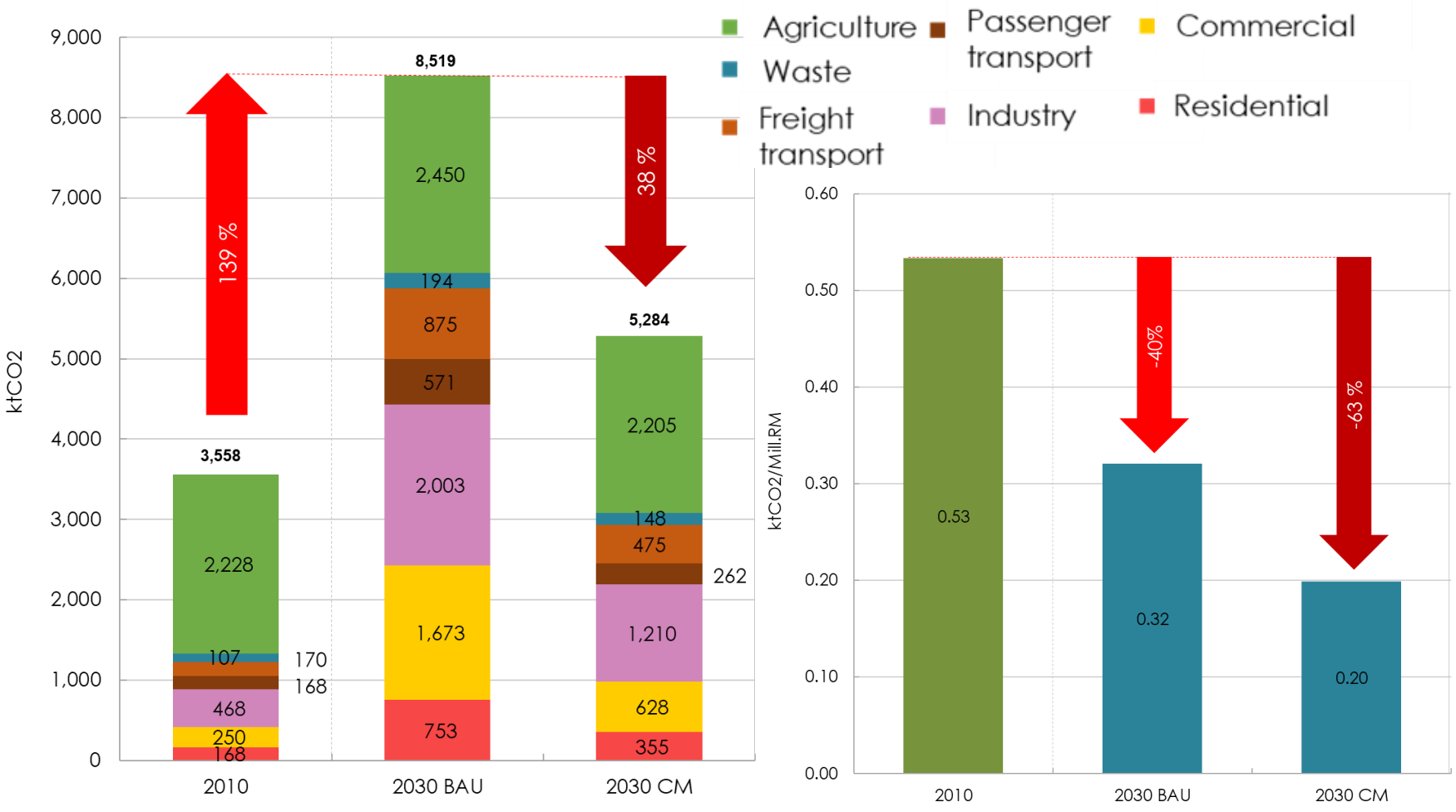
MUAR to LCS

COMPETITIVE, CONNECTED

POLICY FRAMEWORK

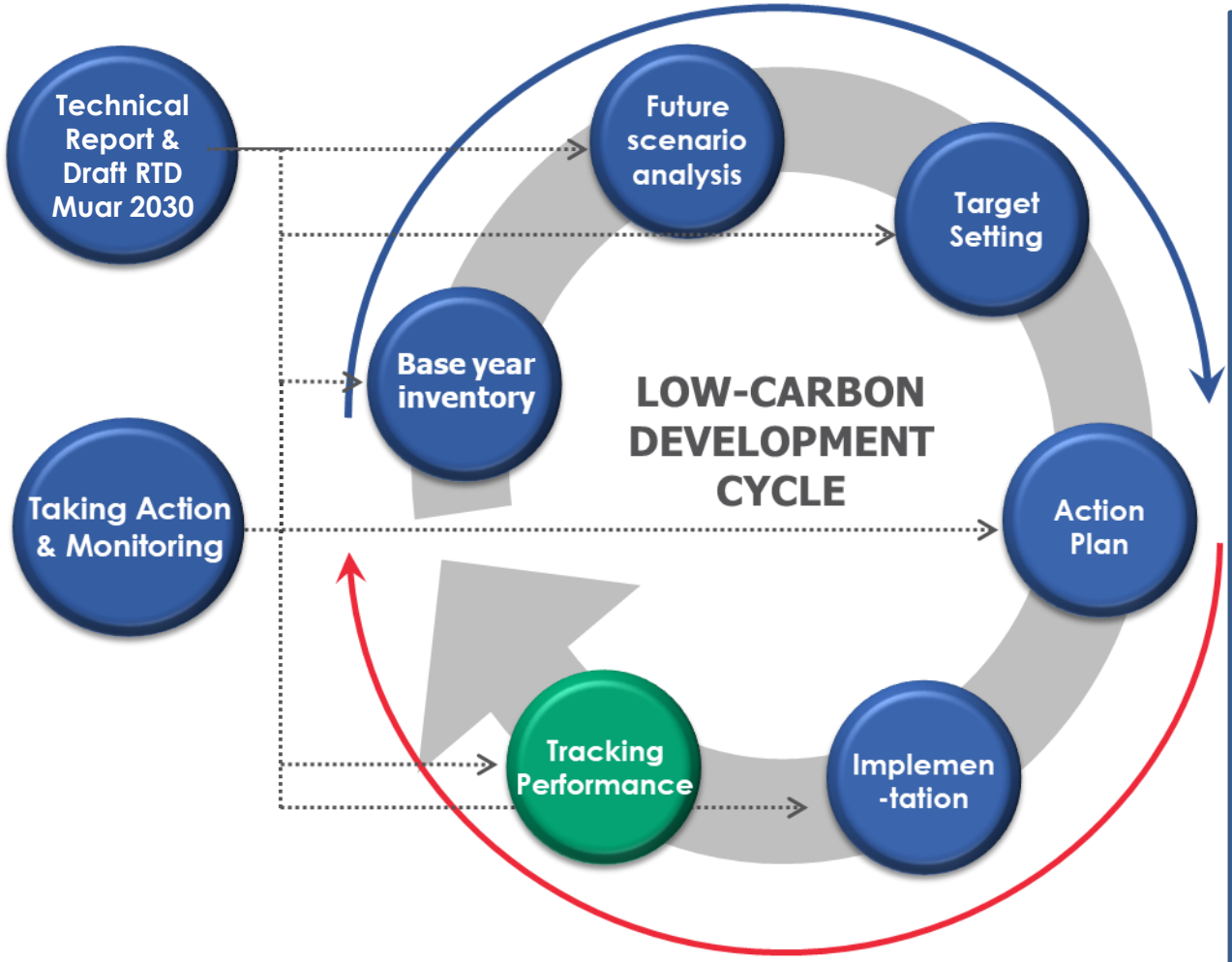


GHG EMISSION BY END USE SECTOR



- Total emission increase from **3.6 mil ton to 8.5 million ton in 2030 in BAU and 5.3 million in CM 2030**
- **Agriculture** followed by industry and commercial is main emission sector.
- EXSS model shows potential reduction of **63% emission** intensity by 2030

MUAR 2030 LCS CYCLE- Progress



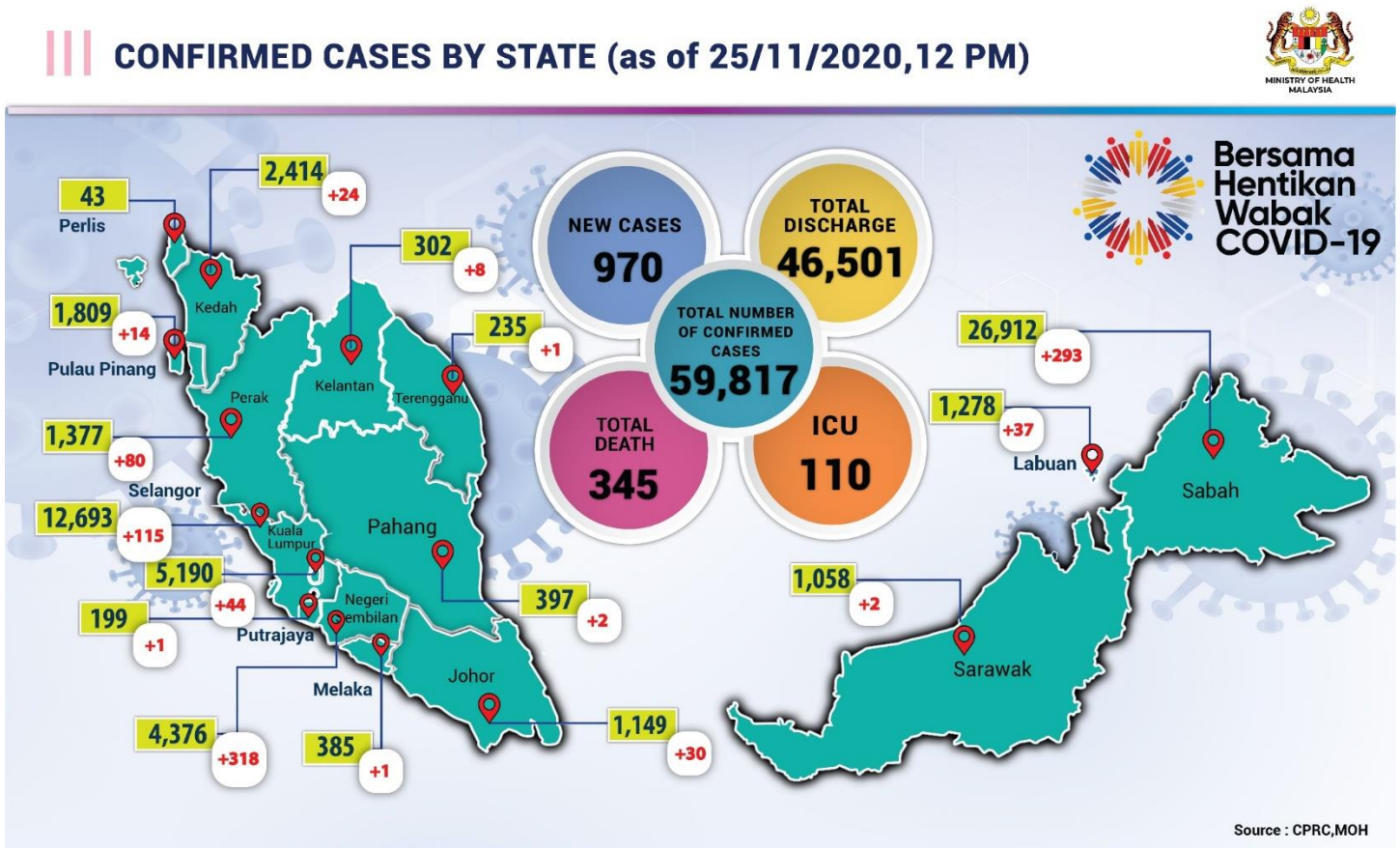
2019-2020

- LCS baseline study
- LCS scenario development
- GHG modelling
- LCS policy design
- LCS initiatives / programs

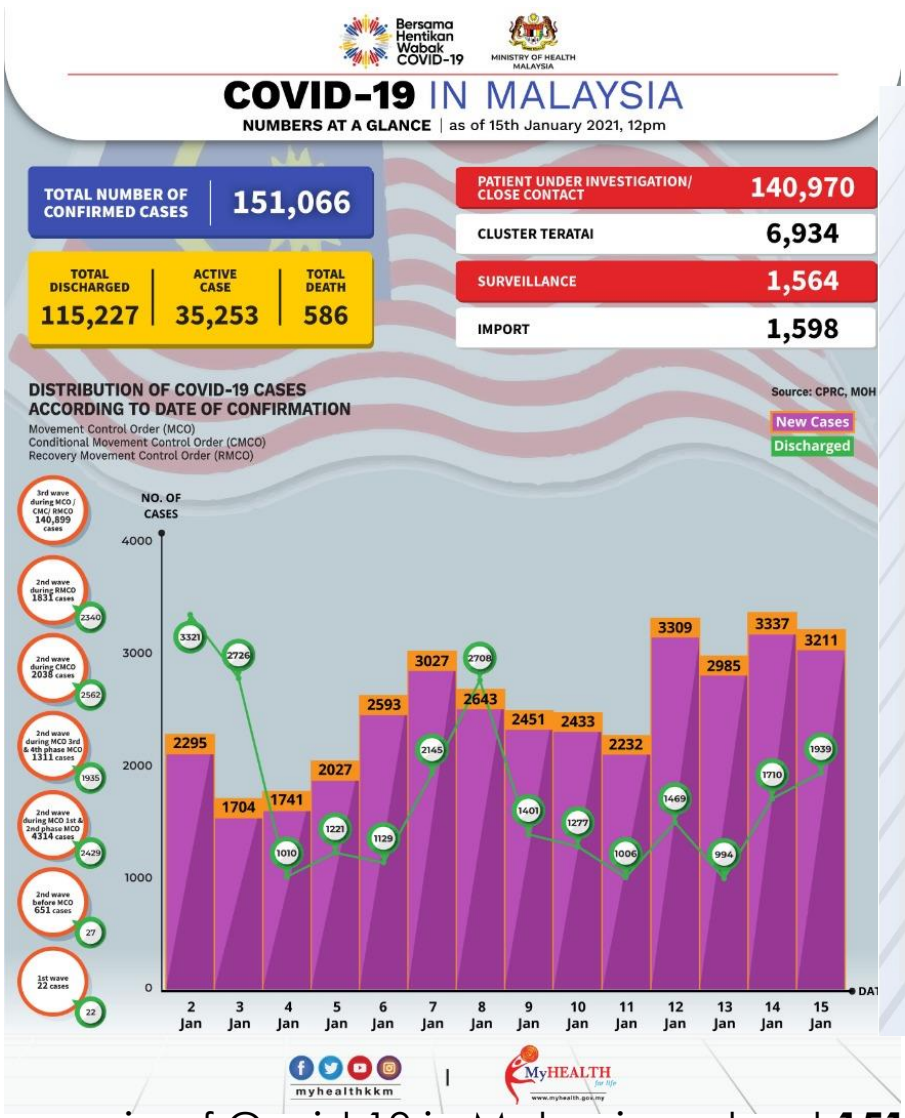
2021-2030

- Detailed LCS guidelines
- Implementation of LCS programs
- Performance tracking
- GHG monitoring
- Review and refinement

SCENARIO OF COVID-19 IN MALAYSIA Nov 2020 – MCO since March2020 & new Normal & BBB



SCENARIO OF COVID-19 IN MALAYSIA in JAN 2021 (more than doubled since Nov 2020)



Scenario of Covid-19 in Malaysia – about **151,066 cases** –daily new cases 1700-3500. Major **urbanized** states are Selangor,KL and Johor have high CoViD patients

NEGATIVE IMPACT OF COVID-19 IN MALAYSIA
(Economic, Social and Environment Perspective)

Migrant Worker Covid-19 Cluster Hits Malaysia

By CodeBlue | 8 May 2020

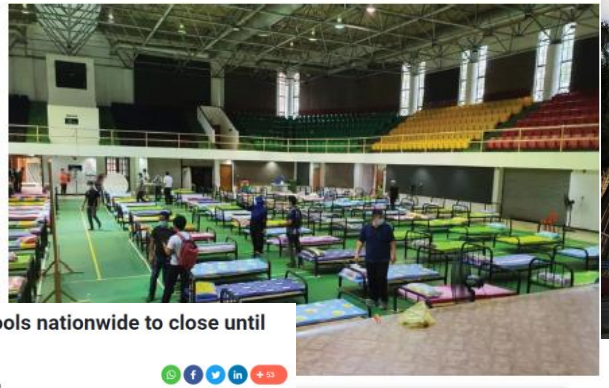
A coronavirus cluster at a factory in Pedas, Negri Sembilan, infected 53 foreign nationals and seven Malaysians.

New quarantine and treatment centre in Labuan to accommodate Covid-19 patients, says Health DG

By ALLISON LAI and ASHLEY TANG

NATION

Thursday, 29 Oct 2020 7:34 PM MYT



Q3 GDP contracted 2.7 per cent from the same period in 2019, less severe than the 3.2 per cent forecast Nov 2020

Covid-19 Cluster Hits Kluang Aged Care Home

By CodeBlue | 20 July 2020

The positive cases in the aged home cluster comprise 11 elderly residents, one worke and one family member, while one resident died.

Education Ministry: Schools nationwide to close until year end [NSTTV]

By Hana Naz Harun - November 8, 2020 @ 12:18pm

Economists cut forecasts for Malaysia's growth after new Covid lockdown and state of emergency Jan 13 2021

POSITIVE IMPACT OF COVID-19 IN MALAYSIA
(Economic, Social and Environment Perspective)

Can we keep the rivers clean post-MCO?

By Nor Ain Mohamed Radhi - April 30, 2020 @ 2:16pm

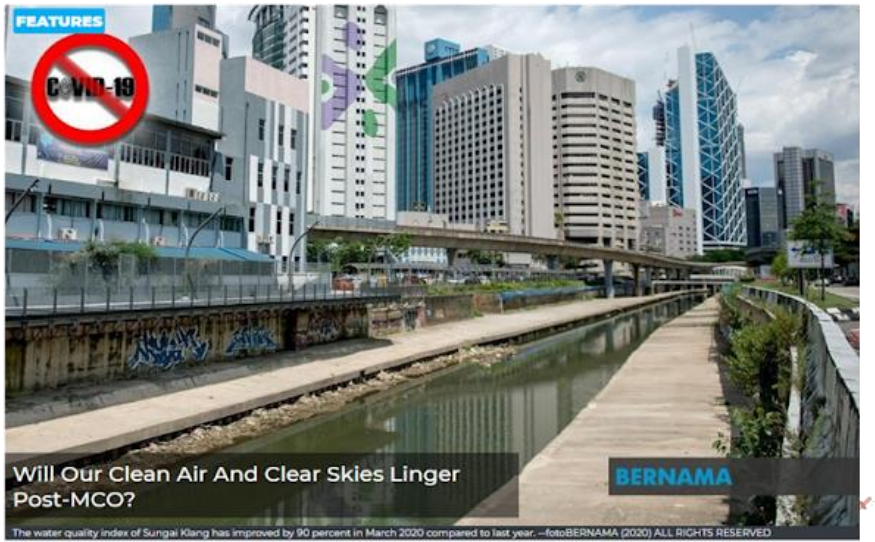
Blue skies, less waste: Covid-19 and the MCO's effects on the environment

CLIMATE

Wednesday, 22 Apr 2020
8:00 AM MYT

By MING TEOH

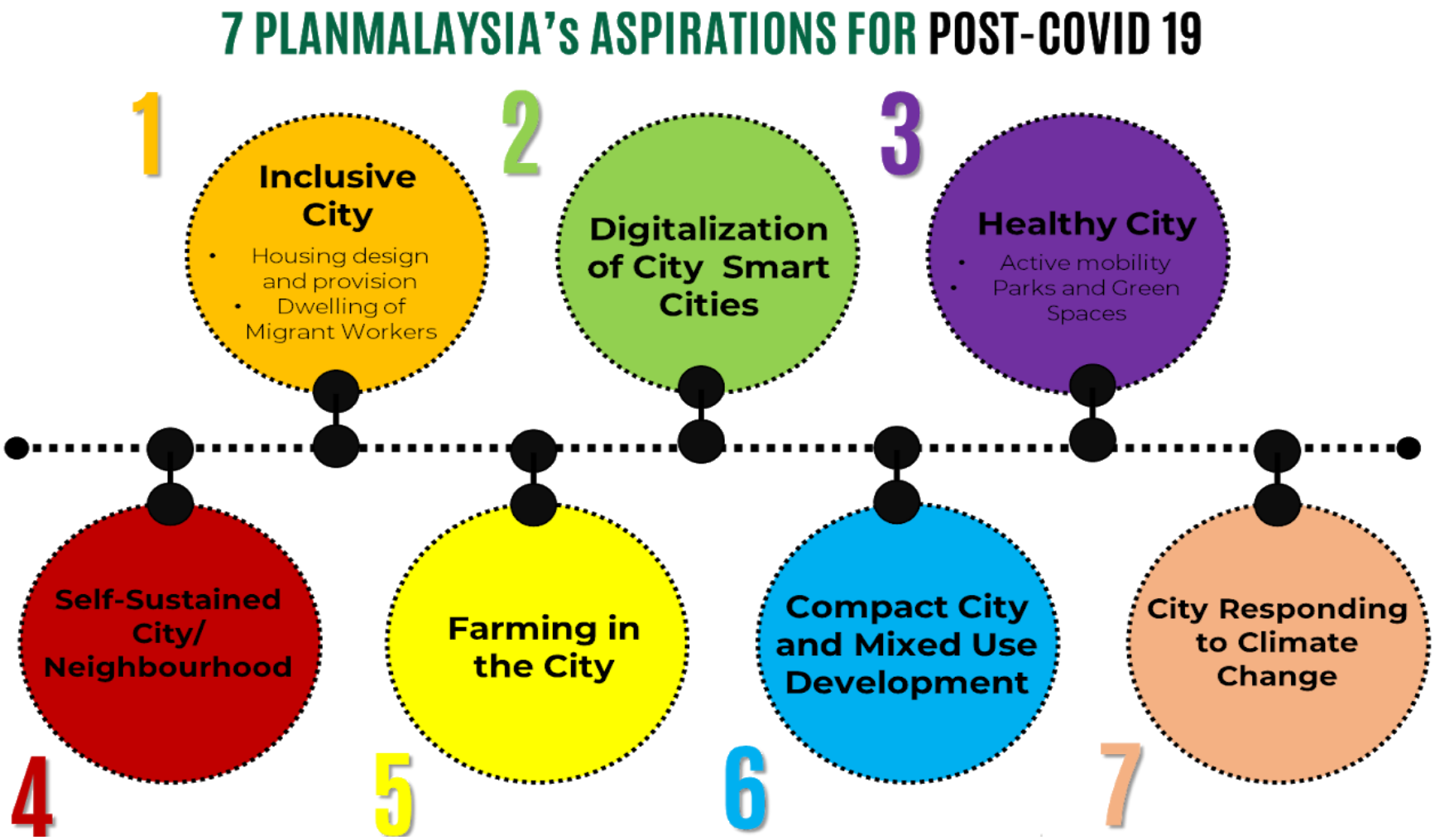
Cleaner air and clearer skies are one of the effects of the MCO. Photos: Filepic



Air and water quality improve during MCO

By Veena Babulal - April 18, 2020 @ 5:18pm

POST COVID-19 RECOVERY IN MALAYSIA CITIES- WAY FORWARD – Spatial Planning & BBB(Build Back Better)



Source: PLANMALAYSIA, 2020

POST COVID-19 RECOVERY IN MALAYSIA CITIES- WAY FORWARD Behavioural change which may contribute Carbon emission reduction/ Health benefit

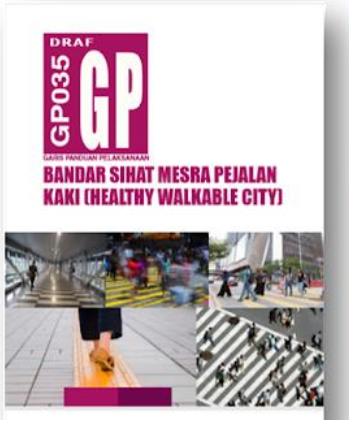
CITY FOR ACTIVE MOBILITY

CITIES PRIORITY
Improve active mobility, improve first and last mile connectivity to public transport.

LESSON LEARNT

i. An **OPPORTUNITY** for urban planners to **redesign** cities, giving more spaces to pedestrian and cyclist.

ii. **Extensive pedestrian and bicycle networks** will **ALLOW non-motorised movement** of people and goods **during crisis** (pandemic, natural disaster, war).



Planning Guidelines for Healthy Walkable Cities

To promote adoption by State and Local Authorities.

Condition in planning approval

To make provision of pedestrian walkways and bicycle lanes compulsory

Include Action Plan for Active Mobility in Local Plan and Special Area Plan

As a guide for project implementation by Local Authorities

Source: PLANMALAYSIA, 2020

POST COVID-19 RECOVERY IN MALAYSIA CITIES- WAY FORWARD – More Green space

PARK AND GREEN SPACES

A.

a. Providing enough open spaces for the people.
   - A minimum of 2 hectare of open spaces for every 1000 population, may increase the target as Malaysia has reached 2.39 hectare for every 1000 population in 2016

B.

b. Providing open spaces accessible by public
   - Hierarchical structure of park shall be promoted based on function and accessible by public.

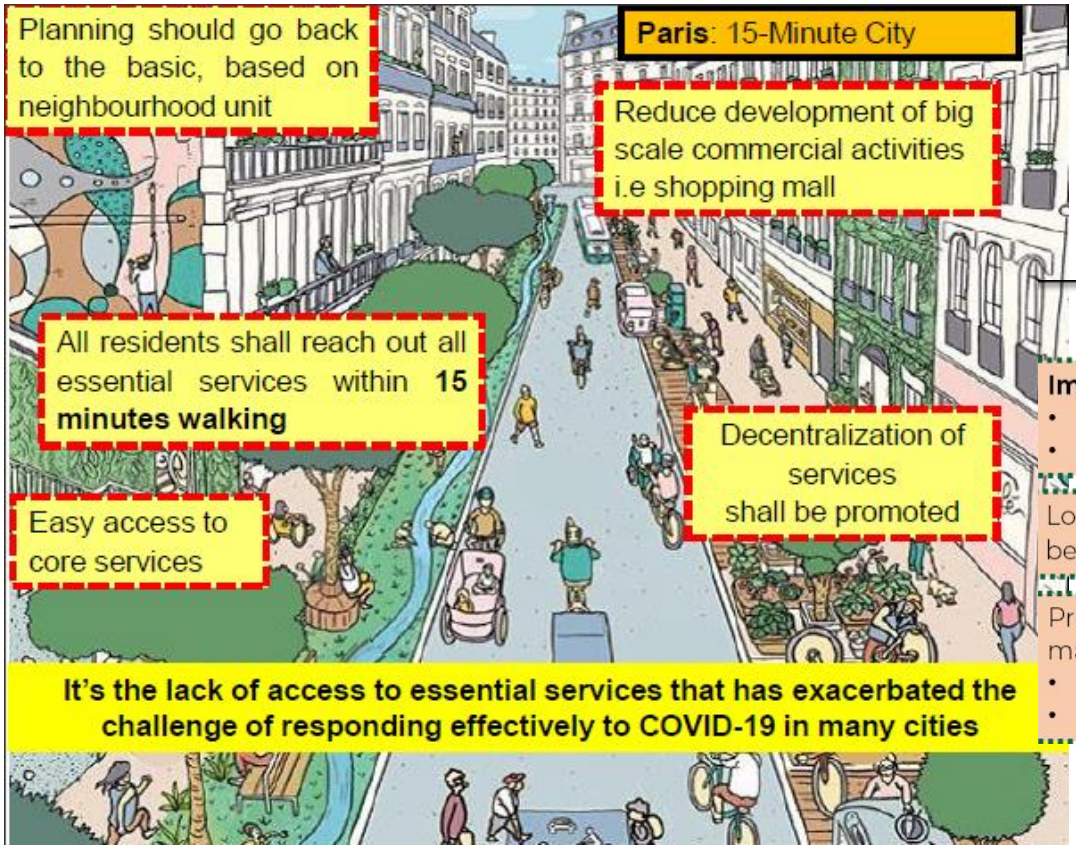
C.

c. Green linkages in cities
   - Interconnection of green spaces
   - Biodiversity corridor

Source: PLANMALAYSIA, 2020

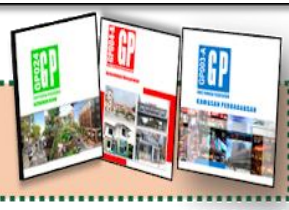
POST COVID-19 RECOVERY IN MALAYSIA CITIES- WAY FORWARD – Better community plan – 15 minutes NU

NEIGBOURHOOD BASED PLANNING



Limiting movement within neigbourhood may help to contain virus spread

POST PANDEMIC



Improve Planning Guidelines
- **Green Neighbourhood**
- **Commercial Development**

Local Plan - give weight to **neighbourhood based planning** (to be reflected in **ZONING PLAN** and **USE CLASS ORDER**.)

Promote implementation of planning guidelines into plan making and development control at State and Local Levels:
- **Planning Guidelines for Green Neighbourhood**
- **Planning Guidelines of Public Amenities**

Source: PLANMALAYSIA, 2020

POST COVID-19 RECOVERY IN MALAYSIA CITIES- WAY FORWARD – Food Security, Community Farming & Green NU

MEETING FOOD SECURITY

Minimise Disruption of food supply chain to the cities during lockdown

i. **Ensure continuous and uninterrupted food supply**

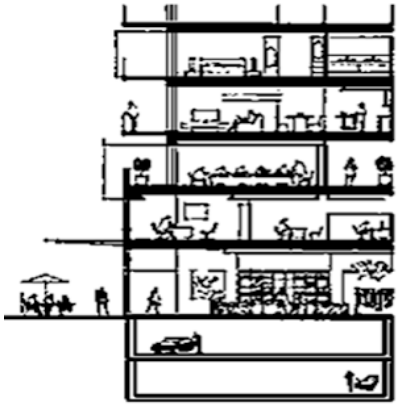
ii. **Can boost cities' local economy and ensure food security after pandemic.**

- **Integrate into Local Plan and Special Area Plan**
- **Utilise government reserved land for urban farming (Planning Guidelines for Green Neighbourhood)**
- **Reuse of old buildings, structures, sites (eg. factories) or redevelopment of new buildings**
- **Structure for high technology farming in the city and close to the dense population**

Source: PLANMALAYSIA, 2020

POST COVID-19 RECOVERY IN MALAYSIA CITIES- WAY FORWARD – TOD concept & sustainable density

COMPACT CITY AND MIXED USE DEVELOPMENT



The need to review mixed use development and high density TOD (Transit Oriented

Density may not be the sole predictor of infections. **hygienic space design and social discipline play important roles**.

Cities stay competitive with sustainable density.

Creating pedestrian-friendly environments, short distances between living, work, commercial and recreational destinations

Planning Guidelines for Transit Oriented Development

Planning Guidelines for Vertical Mixed-Use Development

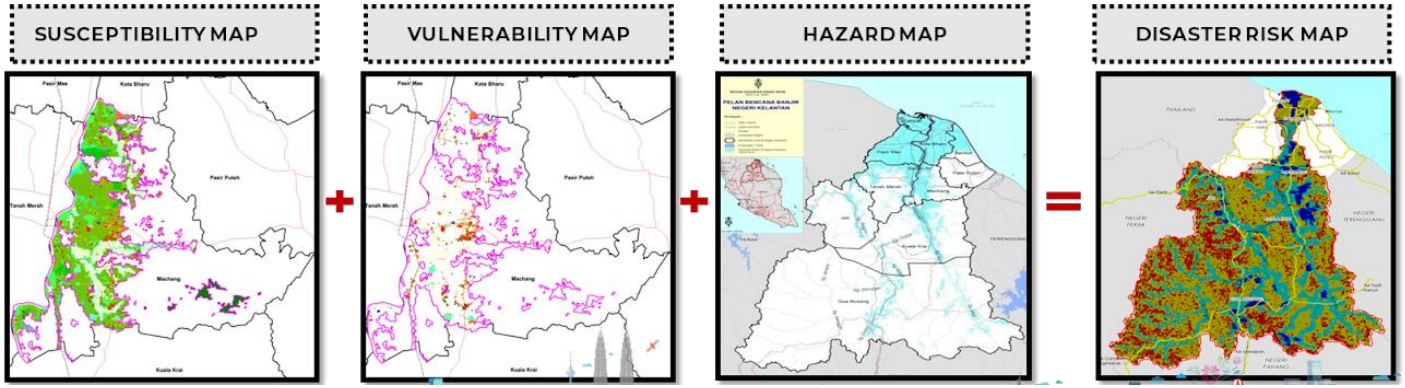
Planning Guidelines for Housing

Local Plan
- **plot ratio and**
- **density**

Source: PLANMALAYSIA, 2020

LINKING LCS INITIATIVES FOR POST COVID 19 RECOVERY – Integrate Resilience into development Plan

CITY RESPONDING TO CLIMATE CHANGE



Integrating disaster resilience into Local Plan to reduce, mitigate and eliminate disaster risks in locality.

Source: PLANMALAYSIA, 2020

CLIMATE ACTION PLAN FOR MALAYSIAN CITIES - LESSON LEARNED from Collaborative work

1

HOLISTIC CLIMATE CHANGE KNOWLEDGE

The discussion of climate change is **not always about GHG emissions** but also **climate related disaster.**

2

BENCHMARKING CLIMATE ACTIONS PRACTICES

Interesting to note and learn from other cities, including other global cities.

3

VARIOUS AVAILABILITY OF FINANCIAL SUPPORT MECHANISM

Important to learn about **financial support mechanism** for climate change

4

COMMON REPORTING FRAMEWORK

A **transparent and global recognised** methodology draws the participation of stakeholders and local community.

5

LEADERSHIP

Strong support from the **mayors and state government** to accelerate the climate change activities.

KUALA LUMPUR LOW CARBON SOCIETY BLUEPRINT 2030
@ THE COPS TO UNFCCC (C0P 22, MARRAKECH)

UTM-LCARC INTERNATIONAL ACTIVITIES

UTM-LCARC COMMUNITY ENGAGEMENTS

UTM-LCARC COMMUNITY ENGAGEMENTS

INDUSTRIAL SYMBIOISI KNOWLEDGE SHARING WORKSHOP

CLIMATE ACTION PLAN 2030 – HANG TUAH JAYA FGD

CLIMATE ACTION PLAN 2030 – PENAMPANG FGD

LOW CARBON SOCIETY ASIA NETWORK

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THANK YOU