

Country Name	Project for Development of Low Carbon Society Scenarios for Asian Regions
Malaysia	

I. Project Outline

Background	With rapid economic growth, urban environmental issues became increasingly significant and the amount of emissions of greenhouse gases (GHG) increased in Malaysia. As means to achieve reduction of GHG emission, the Government of Malaysia emphasized on development of low carbon society (LCS) with innovative technologies as its core ² . In order to realize the LCS that could also address urban environmental issues, it was necessary to promote change of energy consumption and lifestyle patterns. Meanwhile, in Iskandar Development Region (Iskandar Malaysia: IM) in Johor Province State, large-scale development was ongoing. In order to realize the LCS in IM, it was necessary to adopt social engineering methods in Iskandar regional development.		
Objectives of the Project	The project aimed to develop and apply methodology to create LCS scenarios ³ in Malaysia and to disseminate the research findings to Asian countries, through developing a methodology to create the LCS scenarios which is appropriate for Malaysia, creating and utilizing the LCS scenarios for policy development in IM, quantifying co-benefit ⁴ of the LCS policies on air pollution and on recycling-based society in IM, and preparing organizational arrangement of University of Technology Malaysia (UTM) to conduct training on the LCS scenarios for Malaysia and Asian countries and establishing a network for the LCS in Asia, thereby contributing to application of the methodology to create LCS scenarios to other areas in Malaysia (i.e. areas other than IM) and Asian countries and implementation of the LCS scenarios and policies in IM towards realization of the LCS. 1. Expected Overall Goal: N.A. 2. Project Purpose: Methodology to create LCS scenarios is developed and applied in Malaysia, and the research findings are disseminated to Asian countries.		
Activities of the Project	1. Project site: Iskandar Malaysia (IM), Malaysia 2. Main activities: 1) Development of methodology to create the LCS scenarios; 2) Creation and utilization of the LCS scenarios for policy development in IM; 3) Quantification of co-benefit of the LCS policies on air pollution and on recycling-based society in IM; 4) Preparation of organizational arrangement of UTM to conduct training on the LCS scenarios for Malaysia and Asian countries as well as establishment of a network for LCS in Asia. 3. Inputs (to carry out above activities) (as of Terminal Evaluation in October 2015) Japanese SideMalaysian Side 1) Experts: (long-term) 1 person; (short-term) 13 persons1) Staff allocated: 27 persons (UTM (18), IRDA (6), JPBD (3)) 2) Trainees received: 150 persons2) Land, building, office: An office for a long-term expert in UTM; facilities of UTM-Low Carbon Asia Research Center (LCARC) 3) Equipment: Video conference system, air quality monitoring system, universal oven & electronic top pan balance, Single control automatic calorimeter, high performance computers, laptops & Microsoft software etc.3) Local cost for Project's administrative expenses, equipment transportation charges etc. 4) Local cost for research activities		
Project Period	June 2011 –June 2016	Project Cost	(ex-ante) 204 million yen, (actual) 207 million yen
Implementing Agency	University of Technology Malaysia (UTM); Iskandar Regional Development Authority (IRDA); Federal Department of Town and Country Planning Malaysia (JPBD)* *Abbreviation was changed to PLANMalaysia after the project completion.		
Cooperation Agency in Japan	Kyoto University; National Institute for Environmental Studies (NIES); Okayama University		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- For this SATREPS project, the Expected Overall Goal was not identified in the logical framework. Meanwhile, in the Terminal Evaluation Report, expansion of outputs, more specifically methodology to create LCS scenarios, to other areas in Malaysia and Asian countries as well as implementation of the LCS scenarios in IM, was mentioned as a major impact. Therefore, it was assumed that expected impact at the time of terminal evaluation, which could be deemed as “Expected Overall Goal”, was “Application of the methodology to create the LCS scenarios is expanded to other areas in Malaysia (i.e. areas other than IM) and Asian countries and the LCS scenarios and policies are implemented in IM towards realization of the LCS”.
- In view of the above, application status of the methodology in other areas in Malaysia and Asian countries as well as implementation status of the LCS scenarios and policies in IM was confirmed as an indicator for the Expected Overall Goal in this evaluation. In line with the framework of

¹ SATREPS: Science and Technology Research Partnership for Sustainable Development² Source: Terminal Evaluation Report of the project attached to the Minutes of the Meeting (25/10/2015).³ “LCS scenario” indicated a set of “LCS vision” and “policy roadmap”. “LCS vision” was a vision of the LCS described quantitatively for the future target year by adopting the integrated model of socio-economic, disparity and GHG emission assessment. “Policy roadmap” was a long-term schedule (up to 20 years or above) prepared by adopting the back-casting model for implementing the LCS-related policies as well as for actions of the concerned stakeholders in order to achieve the LCS Vision, as is LCS Blueprint in IM.⁴ “Co-benefits” are the added benefits we get when we act to control climate change, above and beyond the direct benefits of a more stable climate. They are sometimes referred to as “multiple benefits” or “synergies”. They do not include the direct benefits of climate policy arising from a more stable climate.

ex-post evaluations of SATREPS projects, confirmed results were described in the evaluation report under <Status of Achievement for Expected Overall Goal> and assessment of achievement status of the Expected Overall Goal was tried. It should be also noted that the achievement status of the Expected Overall Goal was considered as a part of expected positive impact.

1 Relevance

<Consistency with the Development Policy of Malaysia at the Time of Ex-Ante Evaluation >

At the time of ex-ante evaluation, the project was consistent with the 10th Malaysia Plan (2011-2015), which aimed at economic growth that could meet challenges from the climate change.

<Consistency with the Development Needs of Malaysia at the Time of Ex-Ante Evaluation >

As stated in “Background”, the project was consistent with the development needs of Malaysia for development of LCS scenarios suitable for the country.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Country Assistance Program for Malaysia (2009), which highlighted “assistance for climate change related issues” under “Environment and energy aspect” of one of the priority areas i.e. “Overcoming Challenges Caused by Rapid Growth” as well as “Japan-Malaysia Cooperation Initiative for Environment and Energy” (2010), which stipulated “Formulating a road map of measures for LCS based on LCS Scenarios so that usefulness and effectiveness of the scenario through implementation process would be enhanced”.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project achieved the Project Purpose at the time of project completion. As many as 87 publications on the LCS by researchers in Malaysia were published and 80-time conference presentations on the LCS were made by researchers in Malaysia (Indicator 1). Research activities on the LCS scenarios were carried out by eight research groups from Asian countries (e.g. Indonesia, Thailand, Viet Nam, and Nepal) after participating in the symposiums organized by the project (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects were continued at the time of ex-post evaluation. UTM continued 3 research activities and started 3 new research projects based on the research outputs of the project. In IM, IRDA started a new research project using the research outputs of the project, and Institute Sultan Iskandar continued the related research in collaboration with a Japanese institute. (To the knowledge of UTM, at least 4 publications and 21-time conference presentations by researchers in Malaysia were made.) As far as UTM was aware, research activities using the research outputs of the project, were continued or newly started in 3 other Asian countries (i.e. Indonesia, Viet Nam and Thailand). LCARC of UTM, founded under the project, continuously conducted/coordinated training on the LCS scenarios, targeting researchers, local council members, senior officers of local governments, etc., using the technical guides developed under the project. All the equipment provided by the project was utilized by UTM for training and research related to the LCS scenarios. UTM and IRDA continuously utilized networks with International Conference for Low Carbon Asia (ICLCA) and Low Carbon Asia Research Network (LoCARNet)/Institute for Global Environmental Strategy (IGES), established through the project, for knowledge sharing, etc. As for application status of the methodology to create LCS scenarios and implementation status of the LCS scenarios/policies in IM developed under the project, please see <Status of Achievement for Expected Goal> below.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal was achieved at the time of ex-post evaluation. Application of the methodology to create the LCS scenarios was expanded to 8 additional cities/districts in Malaysia, in which 10 scenarios were created or being created (for reference, 3 were already approved and 2 of them were already at implementation stage). In addition, to the knowledge of UTM, the methodology was expanded to at least 2 other Asian countries, in which 2 scenarios were created (for reference, both were approved). (Indicator 1). Through the project, the LCS scenarios and policies for IM and its local authorities were developed and approved (i.e. “LCS Blueprint for IM (LCSBPIM) 2025”, “Roadmap towards Low carbon IM 2025”, “Actions for A Low Carbon Future” with 10 Actions for IM, including Eco-Life Challenging Program, a modified version of the program with the same name in Kyoto City, and LCS Action Plans for 5 local authorities). All of them were implemented by the relevant authorities except for 2 out of 10 Actions for A Low Carbon Future for IM, which were not proceeded mainly due to financial infeasibility (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

Various other positive impacts were observed. For example, the research capacity of UTM was improved through the project, which was reflected in accreditation of LCARC as Regional Center of Expertise on Education for Sustainable Development (RCE) by United Nations University at organizational level, and promotion of 5 project participants to professors and completion of post-graduate degrees by 5 other project participants at individual level. Scientific literacy and awareness of the related government organizations and policy makers about LCS was improved through participating in the project both at the planning and implementation stages, which contributed to implementation of the LCS programs after the project completion. In IM, many of community works based on the LCS scenarios and policies developed under the project, such as “LCSBPIM 2025” and “Actions for A Low Carbon Future” involved significant female participation. In addition, there was a synergetic effect with a JICA’s Technical Cooperation for Grassroots Human Security Project for “Capacity Building & Community Development for Low Carbon Society” (2016-2018), which supported implementation of Eco-challenging Program in IM and whose experiences were reflected in Pengerang LCSBP 2030. Meanwhile, no negative impacts were observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose)	1. Number of	Status of the Achievement: achieved (continued)

Methodology to create LCS scenarios is developed and applied in Malaysia, and the research findings are disseminated to Asian countries.	publications and conference presentation on LCS scenarios by researchers in Malaysia.	(Project Completion) -Total of 87 publications were published and 80- time conference presentations were made on the LCS scenarios by the researchers in Malaysia. (Ex-post Evaluation) -Research activities on the LCS scenarios were continued in Malaysia. To the knowledge of UTM, at least 4 publications were published and 21- time conference presentation was made by the researchers in Malaysia after the project completion.			
	2. Research activities on LCS scenarios by researchers in Asian countries.	Status of the Achievement: achieved (continued) (Project Completion) -Eight research groups from other Asian countries (e.g. Indonesia, Nepal, Thailand, and Viet Nam) created or started to create the LCS scenarios. (Ex-post evaluation) - As far as UTM was aware, research activities on the LCS scenarios, including creation of the LSC scenarios, were continued or newly started in Indonesia, Viet Nam and Thailand, using the methodology developed by the project.			
(Expected Overall Goal) Application of the methodology to create the LCS scenarios is expanded to other areas in Malaysia (i.e. areas other than IM) and Asian countries and the LCS scenarios and policies are implemented in IM towards realization of the LCS.	1. Expansion of application of the methodology to create LCS scenarios to other areas in Malaysia (i.e. areas other than IM) and Asian countries.	(Ex-post Evaluation) achieved >In Malaysia (other than IM) - Application of the methodology to create the LCS scenarios was expanded to 8 additional cities/districts in Malaysia, in which 10 scenarios were created or being created, *A=Draft under preparation, B=draft approved. C=At implementation stage			
			Name of LCS scenario created/being created using the research outputs of the project	(For reference) Status of scenario *	
		1	Putrajaya Green City 2025	C	
		2	Greener and Better Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030	B	
		3	Pengerang LCSBP 2030	C	
		4	Muar Local Plan	A	
		5	Muar District Climate Action Plan	A	
		6	Penampang District Climate Action Plan	A	
		7	Tawau Municipal Climate Action Plan	A	
		8	Kg Bahru Climate Action Plan	A	
		9	Hangtuah Jaya Municipal Council Climate Action Plan	A	
		10	Kuala Lumpur Local Plan 2040	A	
		>In Asian countries *A=Draft under preparation, B=draft approved. C=At implementation stage			
			Name of country	Name of LCS scenario created/being created using the research outputs of the project	(For reference) Status of scenario *
		1	Indonesia	Semarang Low Carbon Development Plan	B
2	Viet Nam	Danang Low Carbon Development Plan	B		
-In addition, information sharing was ongoing by UTM in Riau in Indonesia and in Ho Chi Minh and Haiphong in Viet Nam.					
2. Implementation of the LCS scenarios and policies in IM.	(Ex-post Evaluation) achieved -All of the LCS scenarios and policies for IM and its local authorities developed under the project were implemented, except for 2 out of 10 Actions for A Low Carbon Future for IM, which were not proceeded mainly due to financial infeasibility.				

Source: Terminal Evaluation Report; questionnaire answer by UTM, IRDA, and PLANMalaysia and interview.

3 Efficiency

While the project period was within the plan (ratio against the plan: 100%), the project cost slightly exceeded the plan (ratio against the plan: 101%). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

There is a strong policy framework to promote research on LCS and realization of LCS, such as the 11th Malaysian Plan (2016-2020), which set forth green growth for sustainability and resilience and the third National Physical Plan 2040, which includes “Low Carbon Cities and Sustainable Infrastructure” under one of the main thrusts “Spatial Sustainability and Resilience to Climate Change”. Malaysia intends to reduce the GHG emissions intensity of Gross Domestic Production (GDP) by 45% by 2030 relative to the emissions intensity of GDP in 2005 as pledged in its Nationally Determined Contribution (NDC).

<Institutional/Organizational Aspect>

Organizational structure required to utilize the research outputs/outcomes was well established in IM and in Malaysia. UTM-LCARC carried out research and consultancy work on the LCS. In IM, Environment Division of IRDA as well as local governments were responsible for low carbon aspects in their policies/programs. At national level, PLANMalaysia was responsible for transpiring the knowledge of low carbon into its spatial planning framework/guidelines at national, state, and local level based on scientific evidence. According to these institutions, the number of staff involved in the relevant units was sufficient since there was no difficulty caused by personnel shortage. UTM was responsible for operation and maintenance of the provided equipment and relevant staff was assigned to each equipment item.

<Technical Aspect>

The researchers of UTM sustained and improved their research capacity through participating in the LCS- related research projects and implementing training seminars/workshops on the LCS. They also sustained the skills and knowledge to properly operate and maintain the provided equipment through continued utilization. IRDA and PLANMalaysia further improved their scientific literacy through

implementation of the LCS scenarios/policies developed under the project and participating in creating LCS scenarios/policies and enhancement of collaboration with international organizations involved in climate change issues.

<Financial Aspect>

UTM continuously secured budget to utilize the research outputs/outcomes of the project and operation and maintenance for the provided equipment through research projects contracted by local authorities. IRDA and the local governments in Johor State secured the necessary budget for LCS implementation from their own budget and in-kind contribution from the private sector. It is noted that, in 2018 and 2019, additional fund was provided to IRDA by Sustainable Energy Development Authority (SEDA) Malaysia through a project “Green Technology Application for the Development of Low Carbon Cities (GTALCC)” (2015-2019) supported by UNDP.

Examples of research budget on the LCS secured by UTM

Research	Amount (Ringgit Malaysia (RM))	Source of fund	Budget period
Pengerang LCSBP	100,000	Johor State	2018
KL LCSBP	400,000	Kuala Lumpur City	2017-2019
Climate Action Plan - 5 pilot cities	150,000	Global Covenant of Mayors	2019-2020

Source: UTM

<Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

5 Summary of the Evaluation

The project achieved the Project Purpose (i.e. Methodology to create LCS scenarios is developed and applied in Malaysia, and the research findings are disseminated to Asian countries). The project effects were continued, and the Expected Overall Goal (i.e. Application of the methodology to create the LCS scenarios is expanded to other areas in Malaysia (i.e. areas other than IM) and Asian countries and the LCS scenarios and policies are implemented in IM towards realization of the LCS) was achieved. Regarding the Sustainability, no problems were observed in terms of the policy, institutional/organizational, technical, and financial aspects. As for the Efficiency, the project cost slightly exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Lessons Learned for JICA:

- Involvement of local governments both at the project planning and implementation stages has facilitated better understanding and commitments on the utilization of the project’s outputs by them towards actual realization of key actions for the LCS program developed under the project after the project completion.



UTM-Low Carbon Asia Research Centre



Air quality monitoring equipment