

Japan-China Research Workshop
– On the road to Paris: Enhancing Common Understanding of Major Emitters' policies
Energy Resources Institute (ERI), China
2 July 2015

**Importance of Research Collaborations and
GHG Emissions Inventory Development in Asia
toward achieving the global 2 °C temperature change limit target**

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(NIES)*

NIES & AIM activities on research networks/collaborations and inventory development

- 1. AIM (Asia-Pacific Integrated Model)**
- 2. LoCARNet (International Research Network for Low Carbon Asia Research Network)**
- 3. WGIA (Workshop on Greenhouse Gas Inventories in Asia)**
- 4. SATREPS (Science and Technology Research Partnership for Sustainable Development) for Iskandar, Malaysia**



Overview of AIM (Asia-Pacific Integrated Model) activities



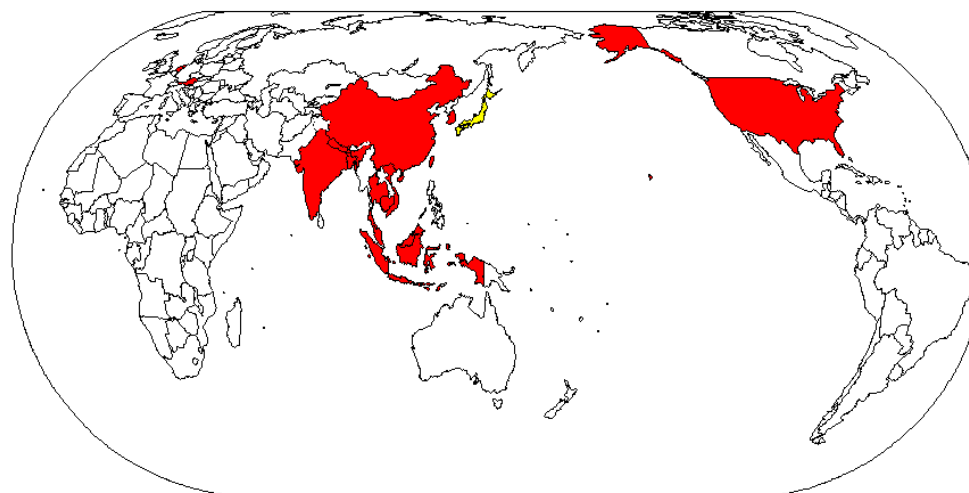
Asia-Pacific Integrated Model (AIM) is an integrated assessment model to assess mitigation options to reduce GHG emissions and impact/adaptation to avoid severe climate change damages. The model is extended to sustainable development with Asian researchers.

See in detail on the website

<http://www-iam.nies.go.jp/aim/>

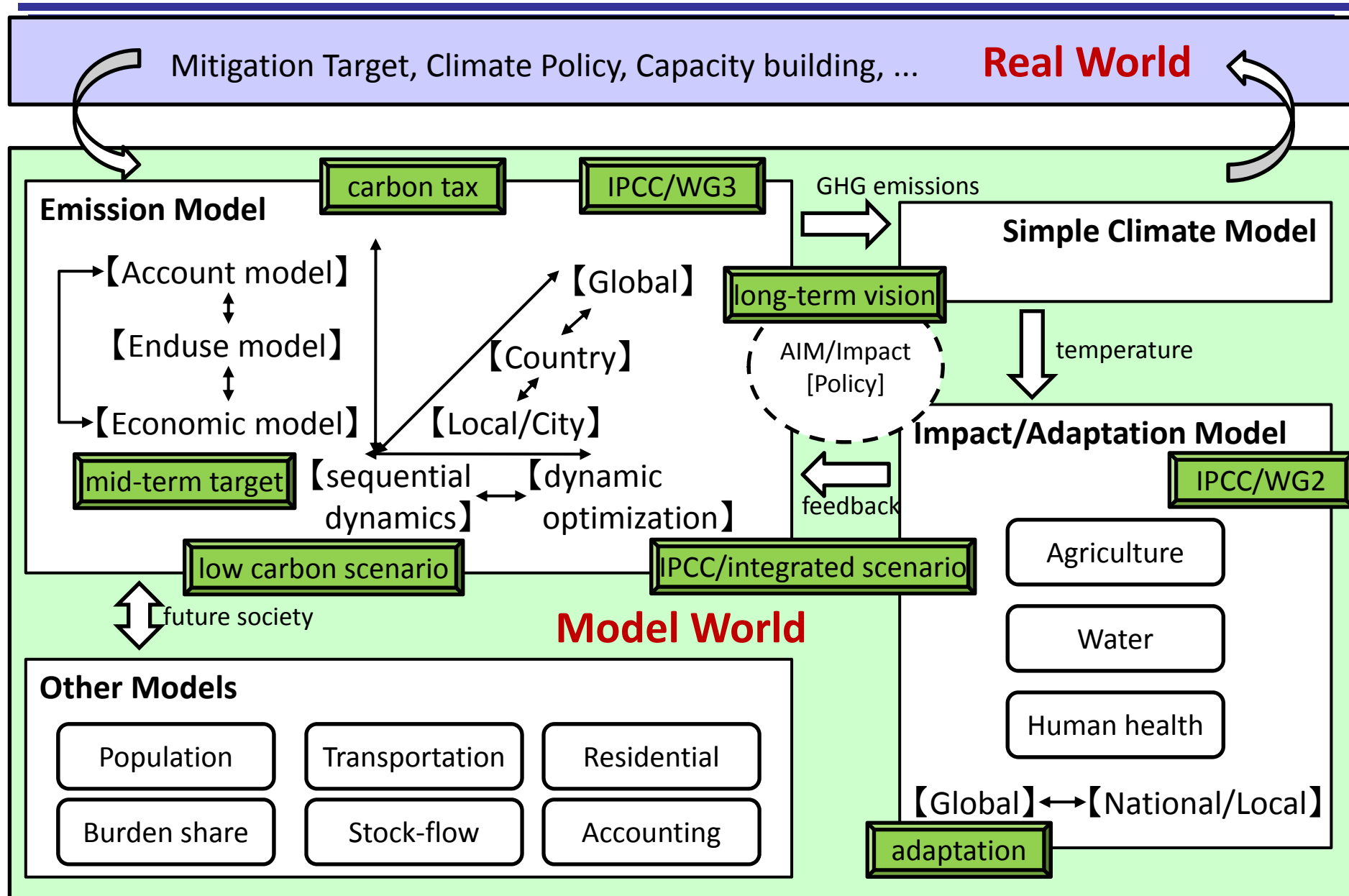


Japan	National Institute for Environmental Studies Kyoto University Mizuho Information Research Institute
China	Energy Research Institute, NDRC Institute of Geog. Sci. & Nat. Res. Research, CAS Institute of Env. & Sus. Dev. in Agri, CAAS Guangzhou Institute of Ene. Conversion, CAS
India	Indian Institute of Management, Ahmedabad School of Planning and Architecture, Bhopal
Korea	Seoul National Univ. Korea Environment Institute
Thailand	Asian Institute of Tech. Thammasat Univ. King Mongkut's Univ.
Malaysia	Univ. of Malaysia
Indonesia	Bogor Agri. Univ. Bandung Institute of Tech.
Austria	IIASA
Netherlands	PBL
USA	Pacific Northwest National Lab. Energy Modeling Forum, Stanford Univ.



In addition, collaborating with Vietnam, Cambodia, Bangladesh, Nepal, Taiwan, ...

Contents of the current AIM

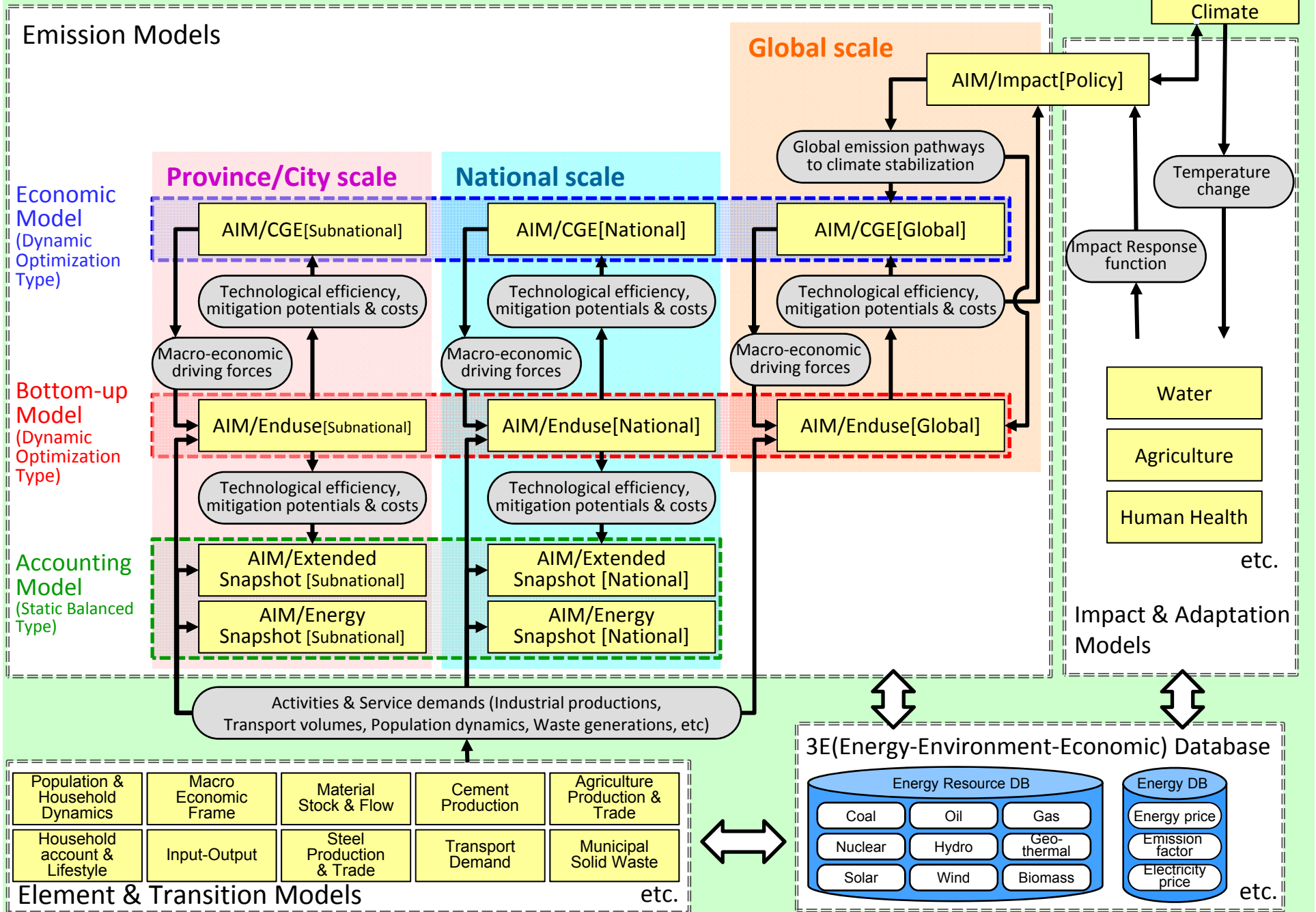


AIM models for LCS analyses

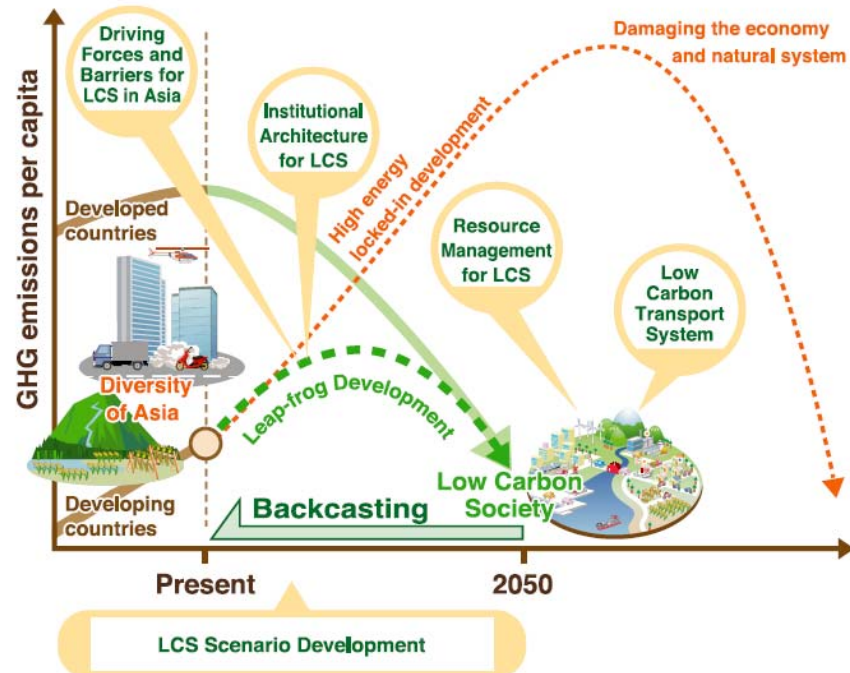
Model

Variable

Database



Low Carbon Asia Research Project FY2009 – FY2013



- How much will GHG emissions from Asia need to be reduced to halve global emissions by 2050 (2 degree target)?



Symposium: "Challenges to Low Carbon Asia" at UNU, 17 October 2013

What policies are keys?

“Ten Actions toward Low Carbon Asia” provides a guideline to plan and implement strategies for an LCS in Asia.

It considers the interrelationships between individual policies and the sequence in which they should be implemented.



Action 1 Urban Transport
Hierarchically Connected Compact Cities



Action 2 Interregional Transport
Mainstreaming Rail and Water in Interregional Transport



Action 3 Resources & Materials
Smart Ways to Use Materials that Realize the Full Potential of Resources



Action 4 Buildings
Energy-Saving Spaces Utilizing Sunlight and Wind



Action 5 Biomass
Local Production and Local Consumption of Biomass



Action 6 Energy System
Low Carbon Energy System Using Local Resources



Action 7 Agriculture & Livestock
Low Emission Agricultural Technologies



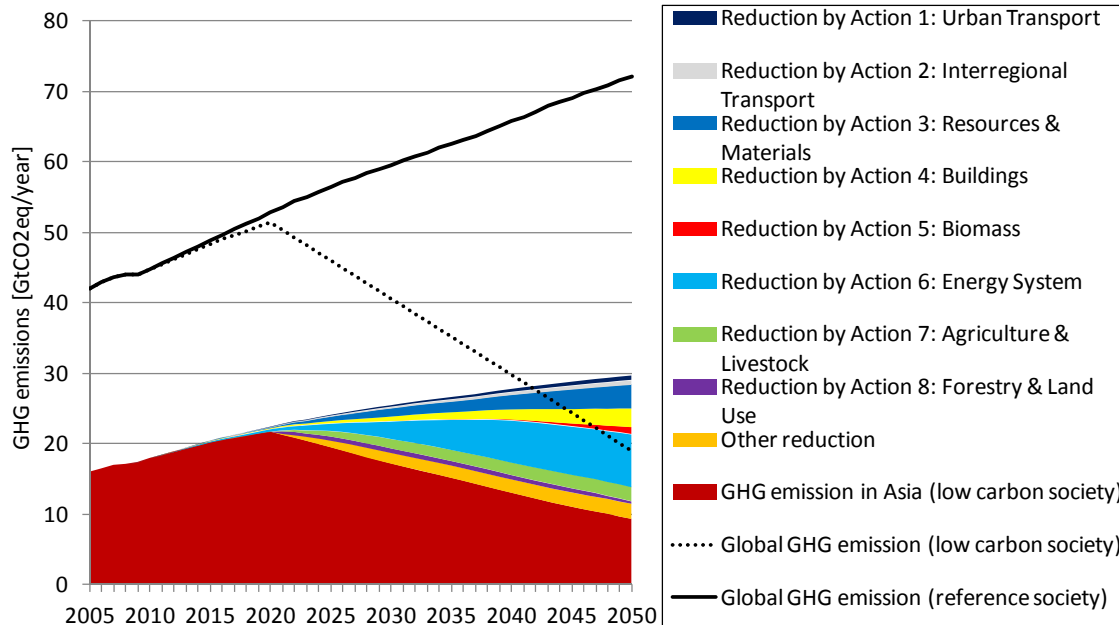
Action 8 Forestry & Land Use
Sustainable Forestry Management



Action 9 Technology & Finance
Technology and Finance to Facilitate Achievement of LCS



Action 10 Governance
Transparent and Fair Governance that Supports Low Carbon Asia

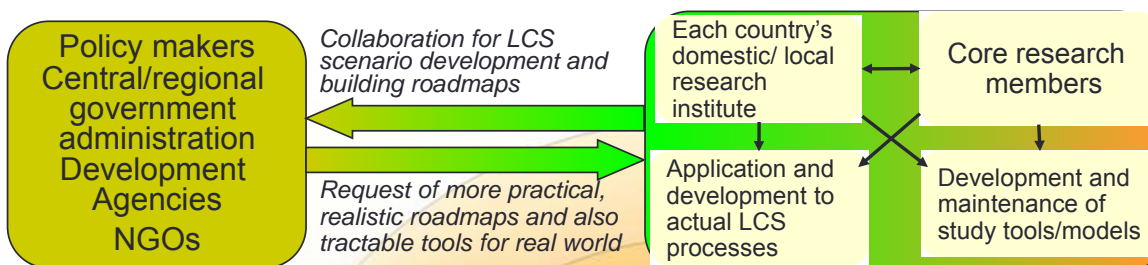


Main findings

- ◆ The global emissions will become 1.8 times larger compared to the 2005 level, and emissions in Asia will be doubled under the reference scenario.
- ◆ There is potential to reduce GHG emissions by 69% compared to the reference case in Asia in 2050, by considering 10 actions.

Developed National & Local Scenarios in Asia

- Bridging Research and Policy -



See in detail on the website
<http://2050.nies.go.jp/LCS/>



Capacity building related to AIM

- Training Workshop at NIES -



- Trainings to young researchers in Asia, about AIM/Enduse and AIM/CGE model.



Overview of International Research Network in Asia - LoCARNet (Low Carbon Asia Research Network)-



What is LoCARNet ?

- Low Carbon Asia Research Network -

- An open network of researchers, research organisations, as well as like-minded relevant stakeholders that facilitates the formulation and implementation of science-based policies for low-carbon development in Asia.
- Proposed at **ASEAN+3 EMM** in October 2011
- Officially launched at “**East Asia Low Carbon Growth Partnership Dialogue**” in April 2012
- Three major activities: policy dialogue, knowledge sharing, and capacity development



ASEAN+3 EMM in Cambodia (Oct. 2011)

- **Network of leading researchers/experts** who are deeply involved in low-carbon development policy processes in Asia
- **Science-Science / Science-Policy Dialogue**: LoCARNet promotes research and training for policies towards low-carbon development by enabling a sufficient amount of dialogue among/between scientists and policy-makers.
- **Ownership of knowledge by countries**: LoCARNet encourages collaboration amongst researchers in-country whose research capacity and scientific knowledge are firmly grounded in their home countries.
- **Regional Collaboration**: LoCARNet aims to increase in research capacity in the AP region through knowledge sharing and information exchange, in the scheme of regional S-S-N cooperation.



Junichi FUJINO
Japan



Nguyen Tung Lam
Vietnam



Jakkanit
KANANURAK
Thailand



Ho Chin
SIONG
Malaysia



Priyadarshi
SHUKLA
India



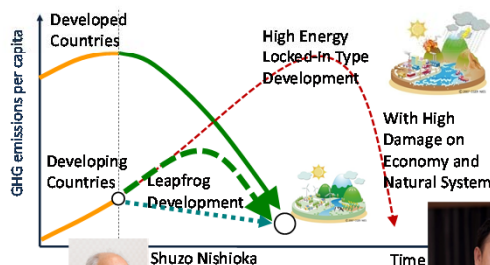
Mikiko
KAIMUMA
Japan



Srintornthep
Towprayoon
Thailand



Bundit
LIMMEECHOKCHAI
Thailand



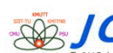
Shuzo Nishioka
Japan
Secretariat



Jakkanit
KANANURAK
Thailand



Jiang
KEJUN
China



Lessons learnt from activities and outcomes from dialogues between Researchers and Policy-makers in Asia



Synthesis Reports:
<http://lcs-rnet.org/publications/index.html>



LCS-RNet/LoCARNet Secretariat

<http://lcs-rnet.org/index.html>

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Overview of WGIA (Workshop on Greenhouse Gas Inventories in Asia)

What is WGIA ?

- Workshop on Greenhouse Gas Inventories in Asia -

- Capacity building for Measurability, Reportability and Verifiability -

Objective:	To support countries in Asia to improve the quality of inventories via regional information exchange
Organizers:	Ministry of the Environment of Japan National Institute for Environmental Studies A host country from participating countries
Participating countries:	Cambodia, China, India, Indonesia, Japan, Republic of Korea, Lao P.D.R., Malaysia, Mongolia, Myanmar, Philippines, Singapore, Thailand, Vietnam (14 countries)
Observers	UNFCCC Secretariat, IPCC Task Force on National Greenhouse Gas Inventories, USEPA, Australia, JICA, etc.
Number of participants	Approximately 100 to 120 people
Style:	Annual workshop since 2003 (the latest one is the 12th WGIA held in 2014)
Funds:	Ministry of the Environment of Japan



Plenary session in WGIA12

- Sharing experiences concerning inventory development , preparation
- Updating inventory related information of each participating countries
- Identifying common issues and discussing possible solutions
- Discussion on cross-cutting and sector-specific issues concerning inventory
- Mutual Learning since 2011: In-depth methodological discussion between 2 countries by inventory-compilers

Outcomes

- Development of a network for inventory experts
- Development of “Roster of Regional Experts” and “WGIA-EFDB”
- Presentations made by the participants in the work shop are available on URL: <http://www-gio.nies.go.jp/wgia/wgiaindex-e.html>
- Workshop proceeding are published





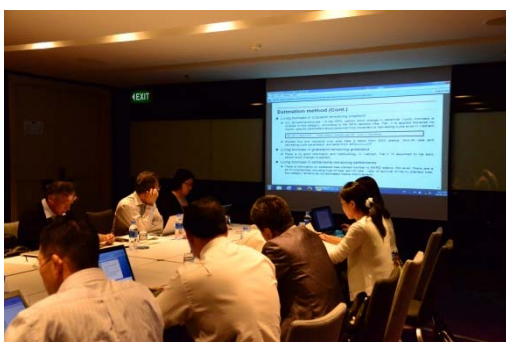
Mutual learning on agriculture in WGIA12

- There are various issues for inventory preparation in each sector.
- It is good to discuss such sector-specific issues among sectoral experts for deeply discussing the issues.
- WGIAs provide the sectoral working group sessions in order to discuss particular sector-specific issues and to find some elements for solving the issues.

Sectoral Working Group Sessions held in WGIAs



Mutual learning on energy in WGIA12



Mutual learning on waste in WGIA12

	Cross-cutting	Energy	Agriculture	LULUCF	Waste
WGIA6	Awareness raising of GHG inventories		Strategies to improve reliability of data	Use of remote-sensing data	Strategies to improve reliability of data
WGIA7		Statistics for energy sector	Emission factors utilized for NCs	Activity data from remote-sensing and GIS	Improvement of data collection scheme
WGIA8	Institutional arrangements for inventory preparation		Estimation methods and development of parameters	Follow up of WGIA7 (remote sensing and GIS data)	Information exchange on the current status of sectoral inventory preparation
WGIA9	-Non-CO ₂ gas estimation - QA/QC systems	Estimation of CO ₂ emissions from transport sector			Development of waste statistics
WGIA12	-GHG Inventory at various levels		Relationship between national GHG inventories and mitigation measures, specifically NAMAs		



Overview of SATREPS (Science and Technology Research Partnership for Sustainable Development) for Malaysia Iskandar



Research Team: Universiti Teknologi Malaysia (UTM), Kyoto University (KU), Okayama University (OU), National Institute for Environmental Studies (NIES)

Joint Coordinating Committee: Iskandar Regional Development Authority (IRDA), Federal Department of Town and Country Planning (JPBD), Malaysia Green Technology Corporation (MGTC)

Sponsorship: Japan International Cooperation Agency (JICA) , Japan Science and Technology (JST)

Project Period: 2011 - 2016

Research Output:

- i. **Methodology** to create LCS scenarios which is appropriate for Malaysia is developed.
- ii. **LCS scenarios** are created and utilised **for policy development** in IM.
- iii. **Co-benefit of LCS policies** on air pollution and on recycling-based society is quantified in IM
- iv. **Organizational arrangement of UTM** to conduct trainings on LCS scenarios for Malaysia and Asian countries is consolidated, and a network for LCS in Asia is established



Size: 2,216.3 km²

Population: 1.3 mil. (2005) | 3.0 mil. (2025)

GDP: 35.7 bil. RM (2005) | 141.4 bil. RM (2025)



CO₂ Reduction target in Malaysia:

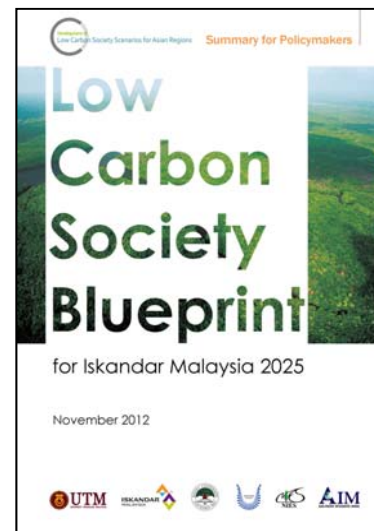
Voluntary 40% reduction of CO₂ emission intensity by 2020

Issues

Rapid urbanization and industrialization

Higher energy demand and CO₂ emission

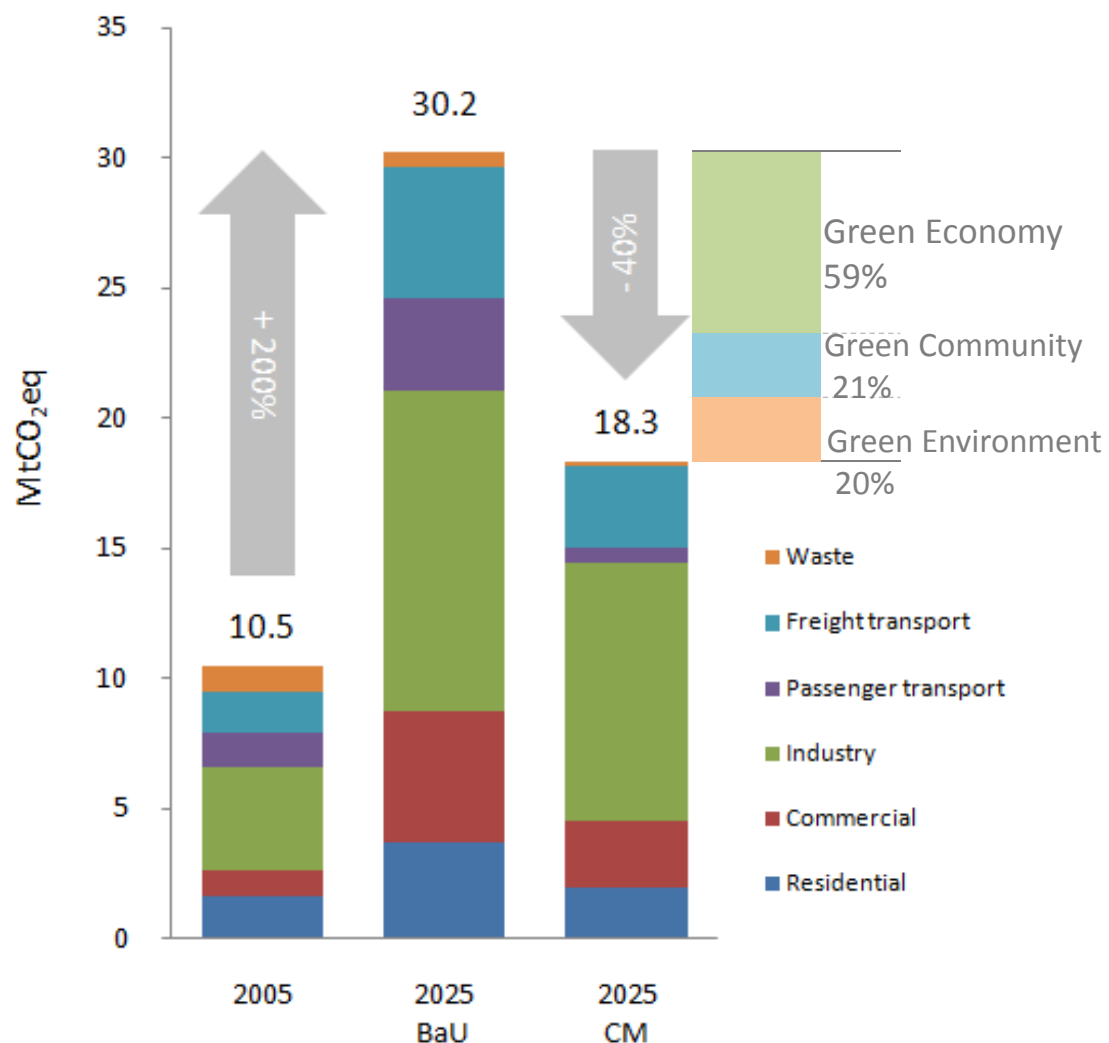
Decouple economic growth and emission on fossil fuel



Blueprint – 3 main thrusts
– Green economy, community and environment.
=12 actions

Joint collaboration work of UTM, KU, NIES under SATREPS program

Green Economy, Green Community and Green Environment



Unit	2005	2025 BaU	2025 CM	2025BaU /2005	2025CM /2005
Final Energy Demand (Mtoe)	2.5	7.6	5.2	3.11	2.14
GHG emissions (MtCO ₂ eq)	10.5	30.2	18.3	2.88	1.74
Per Capita CO ₂ Emissions (tCO ₂ eq)	7.7	10.1	6.1	1.30	0.78
GHG Intensity (kgCO ₂ eq/RM)	0.29	0.21	0.13	0.73	0.44

12 Actions Towards Low Carbon Future

Green Economy

- 1 Integrated Green Transportation
- 2 Green Industry
- 3 Low Carbon Urban Governance
- 4 Green Building and Construction
- 5 Green Energy System and Renewable Energy

Green Community

- 6 Low Carbon Lifestyle
- 7 Community Engagement and Consensus Building

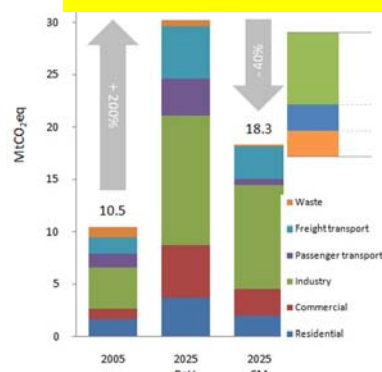
Green Environment

- 8 Walkable, Safe and Livable City Design
- 9 Smart Urban Growth
- 10 Green and Blue Infrastructure and Rural Resources
- 11 Sustainable Waste Management
- 12 Clean Air Environment

See in detail on the website

http://2050.nies.go.jp/cop/cop18/presentation/SPM_LCS%20Blueprint_IskandarMalaysia.pdf

COP17 (Dec 2011)



Identifying Low Carbonizing Potential in Iskandar Malaysia

Approval by Malaysia Prime Minister (Dec 2012)



Prime Minister approved Dozen Action as official program in Iskandar Malaysia

Roadmap towards Low Carbon IM



COP19 (Nov 2013)



1. Integrated Green Transportation – Mobility Management System
 2. Green Economy Guidelines
 3. Eco-Life Challenge Schools Project
 4. Portal on Green Technology
 5. Trees for Urban Parks
 6. Responsible Tourism and Biodiversity Conservation
 7. Bukit Batu Eco-Community
 8. CAIA – Green Accord Initiative Award
 9. Low Carbon Village FELDA Taib Andak
- Special Feature: Smart City-Nafas Baru Pasir Gudang: Green and Healthy City

Proposal of 10 Actions by IRDA

Continuous Discussion with Stakeholders including researcher, policymaker, business, NGOs



Launching Low Carbon Asia Research Center at Universiti Teknologi Malaysia



March 2014
Approvals and Implementation Committee (AIC) in IRDA endorsed the Blueprint and Roadmap as formal government plan

Timing is important!



Thank you for your attention!

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