

How Deeply Can Asia Decarbonize? Message from Asia to the World

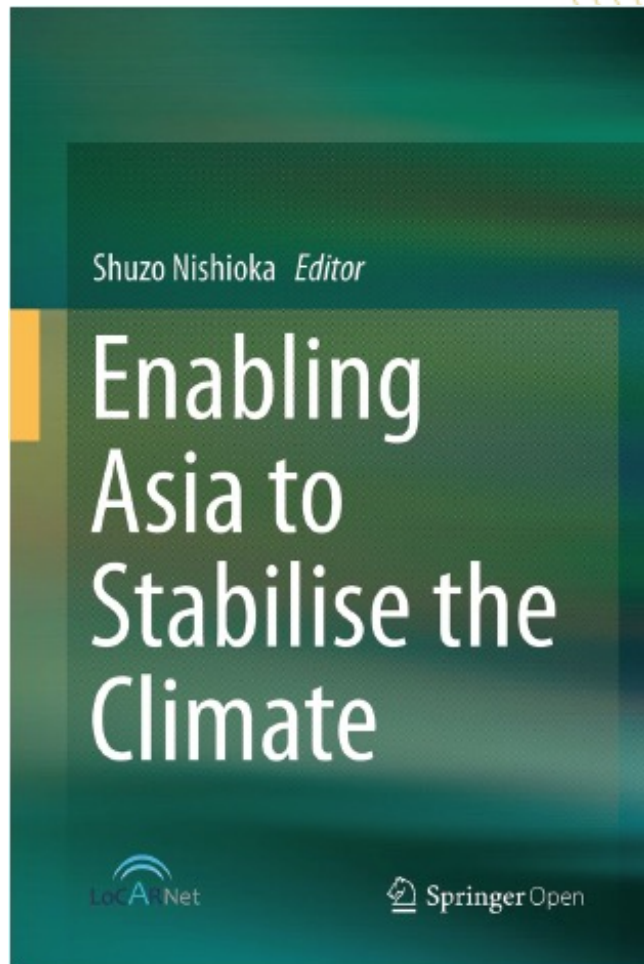
Prof. P. R. Shukla
Co-Chair of IPCC WG III

5 December 2015

SIDE EVENT at COP21 Japan Pavilion

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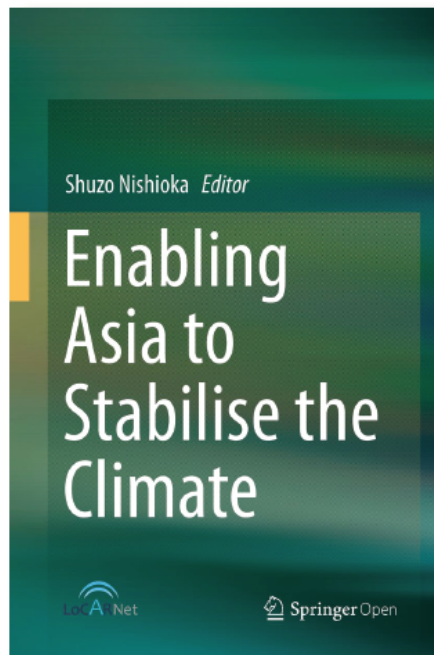
Enabling Asia to stabilise the climate



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S. Nishioka (Ed.)

Enabling Asia to Stabilise the Climate

- ▶ Provides a quantitative analysis of GHG mitigation potentials in the Asian region as a whole as well as in selected key countries
- ▶ Features roadmaps for achieving drastic emission reductions, and presents case studies where analysis and roadmaps are integrated within the actual policy development process
- ▶ Introduces good practices in selected key sectors, providing valuable points of reference for policymakers, international organizations, researchers, and the private sector
- ▶ Sends a clear and encouraging message: "Asia can achieve a low-carbon society"

This book presents good practices in Asia and ASEAN countries for effectively promoting advances in response to climate change, which can help to achieve sustainable development in Asia and around the world. As a proposal, the aim is to influence the

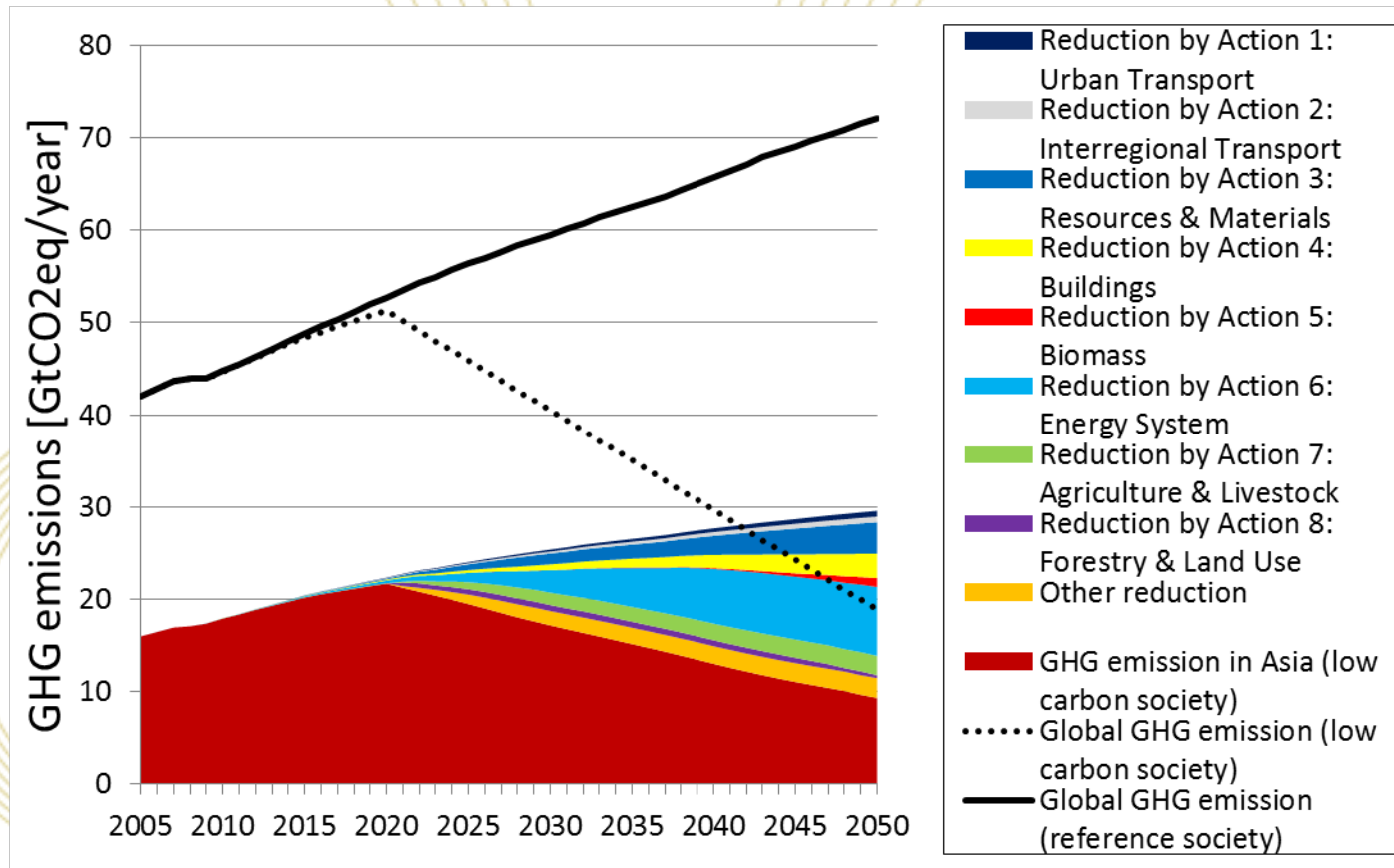
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GHG Reduction Potential in Asia

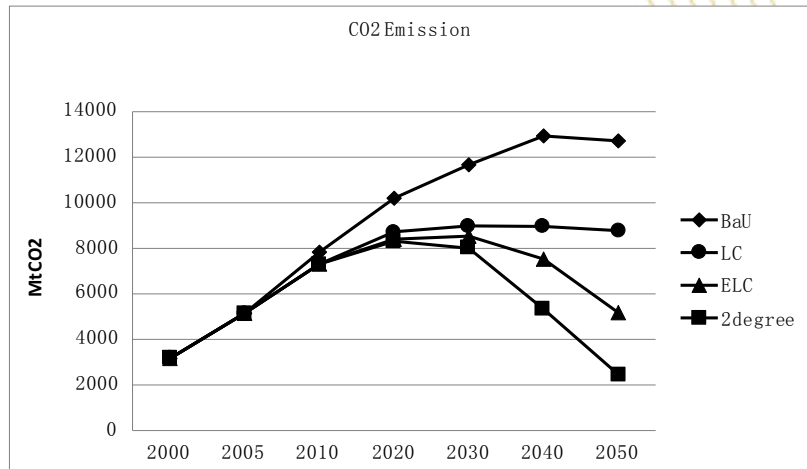
Toshihiko Masui, Shuichi Ashina, Shinichiro Fujimori, and Mikiko Kainuma



Asia can reduce 69% of emissions compared with reference scenario in 2050 by applying 10 actions.

Transition to a Low Carbon Future in China towards 2°C Global Target

Jiang Kejun, Chenmin He and Jia Liu



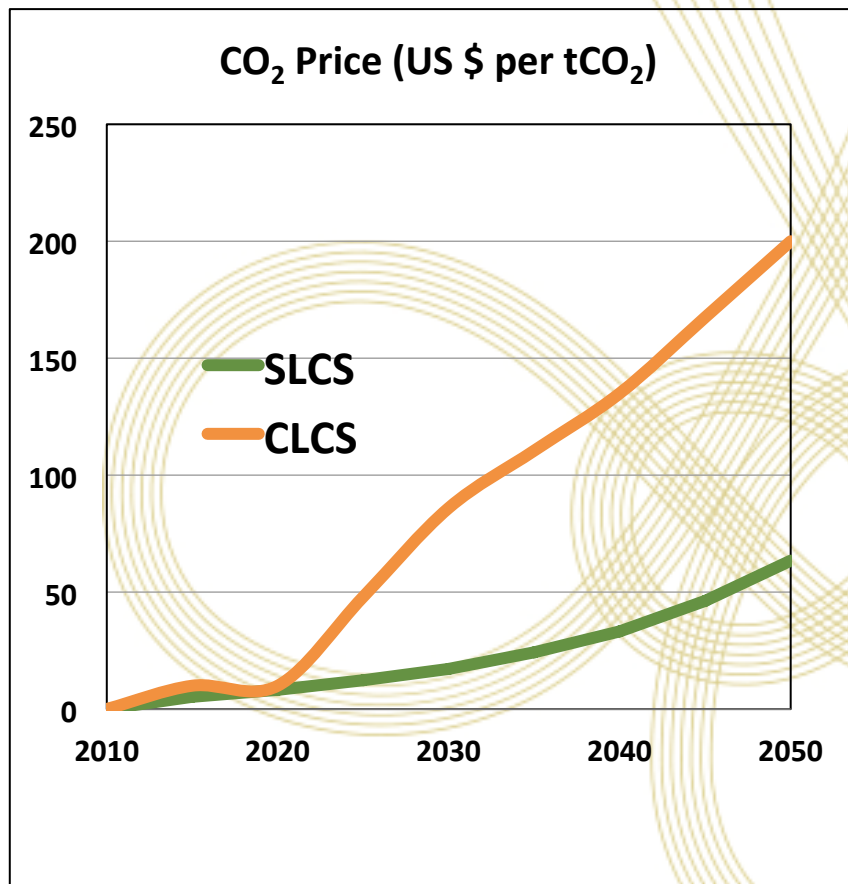
CO2 emission scenario in China

- In order to achieve '2 degree' global target, China's CO2 emissions have to be peak before 2025.
- China can peak CO2 before 2025 and reduce emission 70% by 2050 compared with that in 2020.
- Setting a cap for CO2 emissions in China is an effective way to limit CO2 emission increases.

India's GHG Emission Reduction and Sustainable Development

P.R. Shukla and Subash Dhar

Co-benefits of Sustainable Pathway



- Same mitigation however at a lower social cost of carbon
- Higher energy security
- Early improvement in air quality

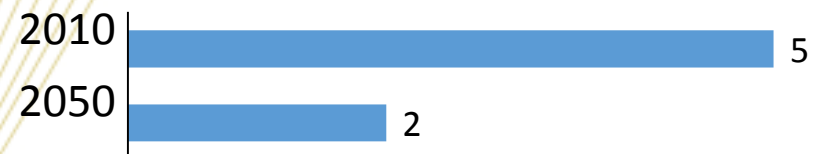
80% Reduction Scenario in Japan

Toshihiko Masui, Ken Oshiro, and Mikiko Kainuma

- Japan's mitigation target in 2050 is set to be by 80% reduction, and in order to achieve this target, three efforts (energy efficiency improvement, decarbonization of electricity and electrification of end-use) are important.

Energy efficiency

(Energy intensity of GDP [MJ/\$])



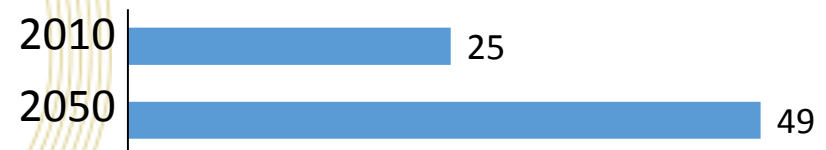
Decarbonization of electricity

(Electricity emissions intensity [gCO₂/kWh])



Electrification of end-use

(Share of electricity in total final energy [%])



Potential of Low Carbon Development in Vietnam, from Practices to Legal Framework

Nguyen Tung Lam

Year		1994		2000		2005	
Sector		CO ₂ t/đ	%	CO ₂ t/đ	%	CO ₂ t/đ	%
Energy		25,637.09	24.7	52,773.46	35.0	101,934.90	56.0
Industries		3,807.19	3.7	10,005.72	6.6	14,590.82	8.0
AFOLU	Agriculture	52,450.00	50.5	65,090.65	43.1	83,828.40	46.1
	LULUCF	19,380.00	18.7	15,104.72	10.0	-27,020	-14.8
Waste		2,565.02	2.4	7,925.18	5.3	8,643.41	4.7
Total		103,839.30	100.0	150,899.73	100.0	181,977.53	100.0

GHG inventories of Vietnam - Great potential exist in energy, waste and AFOLU sectors in Vietnam

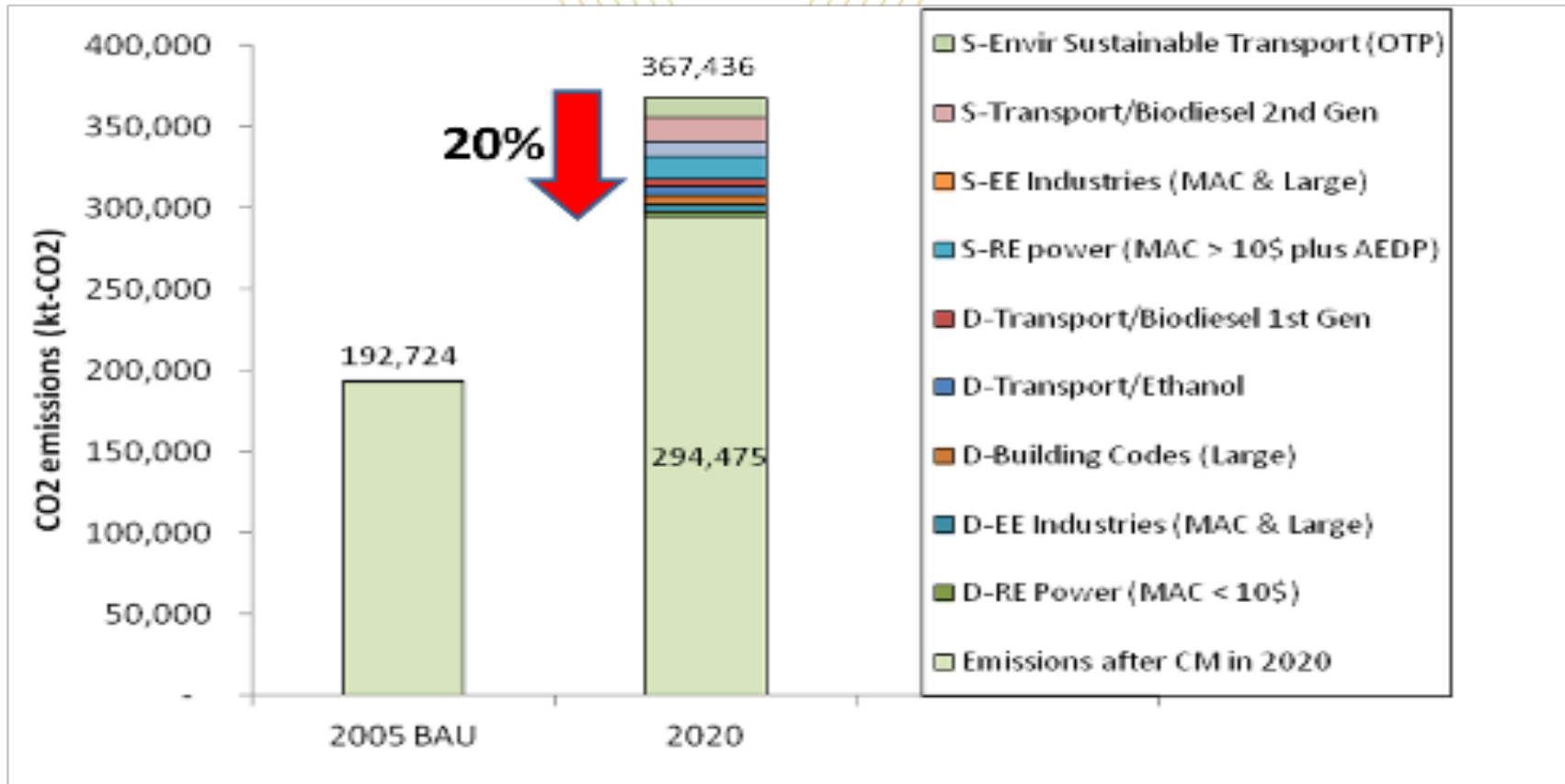
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- ‘Science-to-Action’ of the Sustainable Low Carbon City-region
Chin Siong Ho, Loon Wai Chau, Bor Tsong Teh, Yuzuru Matsuoka and Kei Gomi

Designing a National Policy Framework for NAMAs

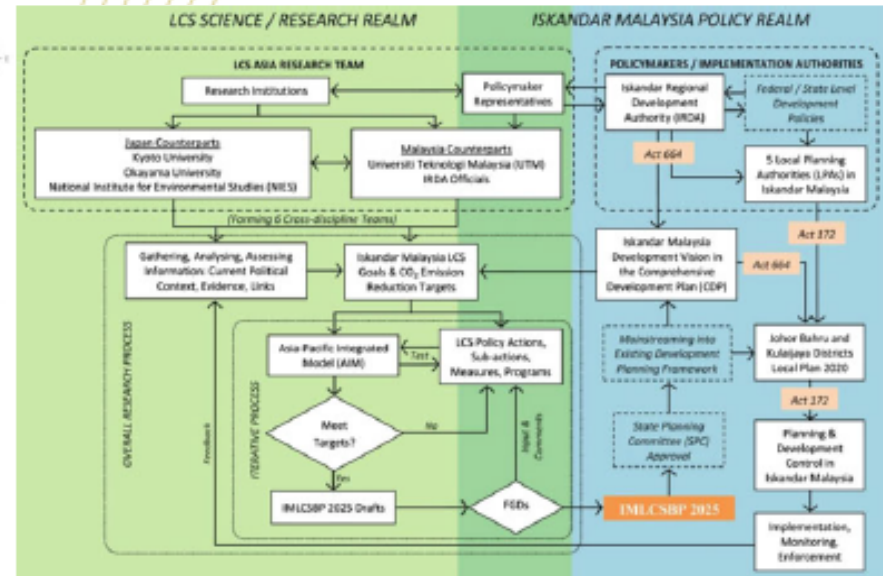
Bundit Limmeechokchai



Potential of CO2 reduction in Thailand's NAMAs 2020

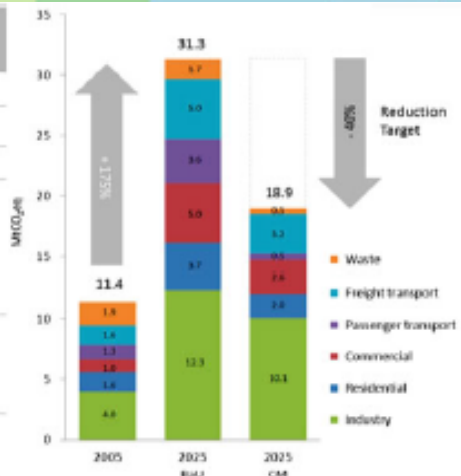
'Science to Action' of the Sustainable Low Carbon City-region

Chin Siong Ho, LOON Wai Chau, BOR TSong Teh, Yuzuru Matsuoka and Kei Gomi



Effective integration of science, policymaking and implementation (science to action, S2A) is the way forward to reducing GHG emission of rapid urban-regional growth, as epitomised by Iskandar Malaysia LCS.

	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



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Part III Best Practices and Recommendations in Each Sector to Make It Happen

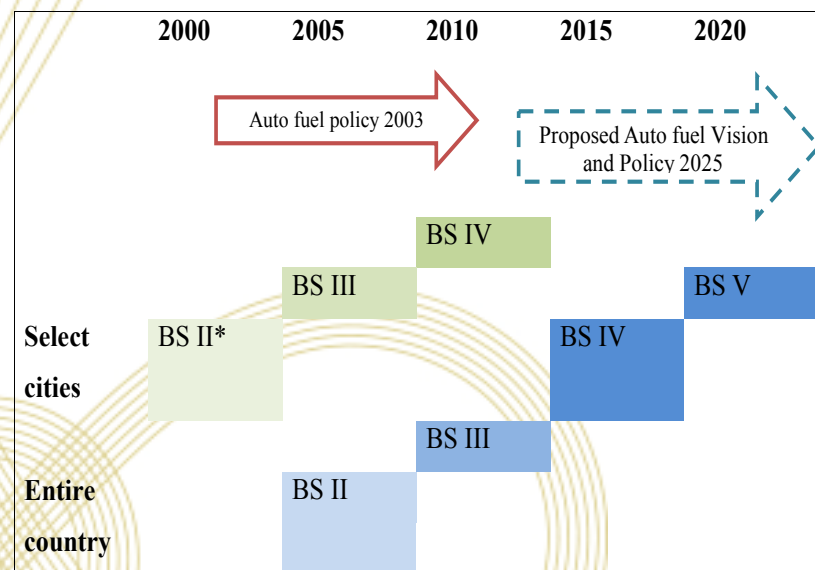
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Low Carbon Transport in India

P.R. Shukla and Minal Pathak

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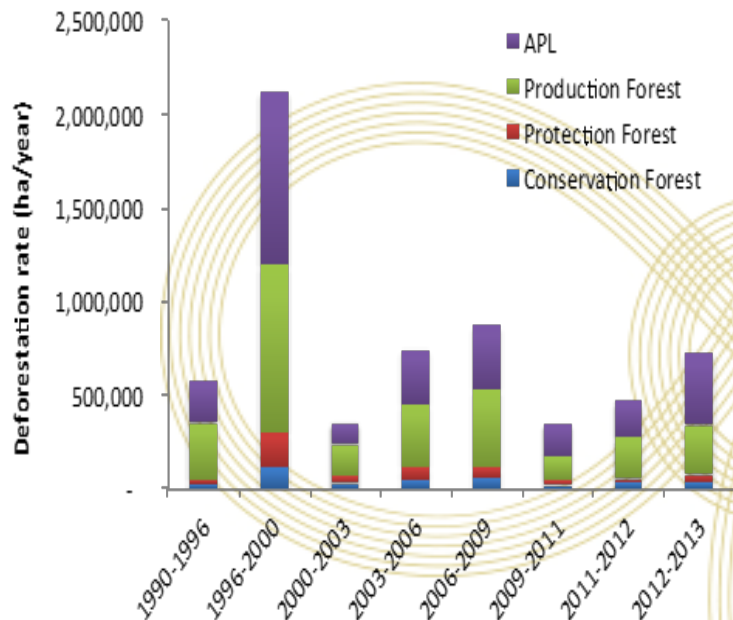
- Changing Transport Landscape at the National and sub-national levels
- Aligning transport policies with local, national and global objectives
- Emerging 'best practices' have the potential to deliver sustained carbon mitigation and co-benefits
 - Urban Transport: Metro, BRTS, NMT
 - Dedicated Freight Corridors
 - High Speed Rail
 - Vehicle Emission Norms and Clean Fuels
 - Fuel Economy Standards
 - Policy on biofuels and Electric Vehicles
- Governance system, including monitoring, reporting, evaluation and correction
- Cooperation and knowledge sharing vital for cross-learning and transfer of best practices
- Need for Technology cooperation and carbon finance



Forest: Great Potential for Reductions, Initiation of Practical Early Crediting System of REDD+

Rizaldi Boer

Deforestation in Indonesia



Source: Directorate of Forest Resource Inventory and Monitoring, 2015

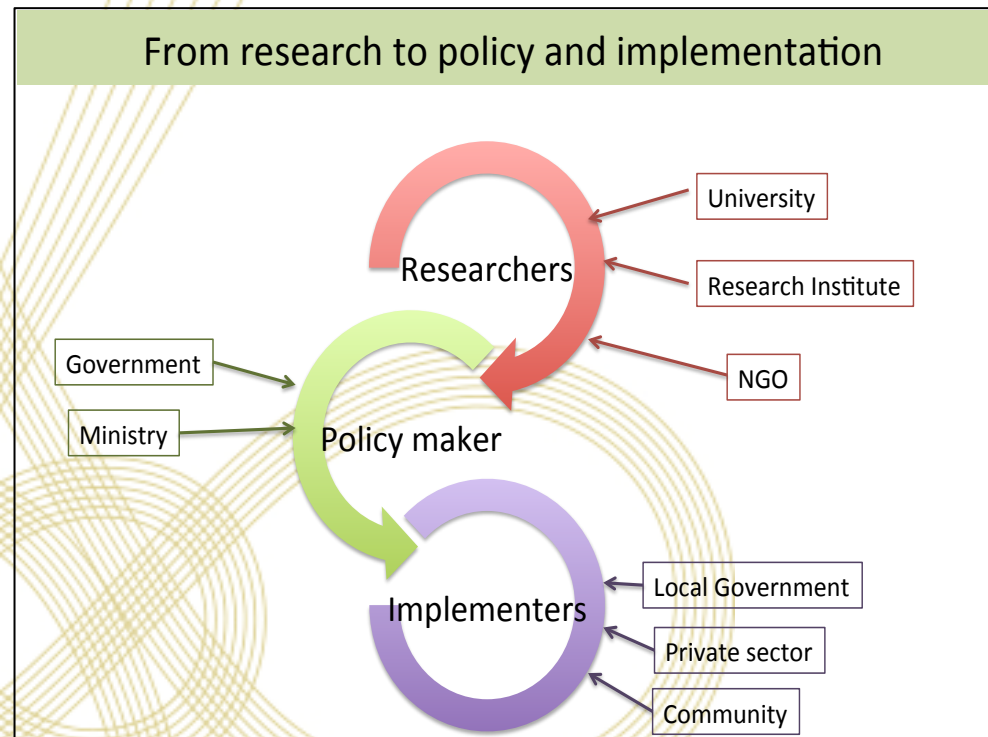
- Loss of large scale of tropical forest will bring more and intensify extreme weather/climate events.
- Loss of Indonesian forest account for most of deforestation in Southeast Asia: 0.822 Mha per year.
- Up to 2050, Indonesia potentially can reduce its deforestation rate to 0.337 Mha per year by increasing government expenses by 1% annually for facilitating changes in technologies without necessity of direct forest protection.
- Implementation of innovative policies on financing and incentive/disincentive system may further reduce emission from deforestation
- Payment from REDD might offset the government additional expenses incurred in facilitating changes in technologies and implementing the incentive policies

Fostering Capacity Development for ASIA

Leapfrog

Sirintornthep Towprayoon

- Capacity development is a basic need and urgent issue for ASIA to leapfrog.
- This can be done through knowledge transfer, research collaboration and joint education program among ASIA countries.



- A full loop of knowledge transfer from research to policy and to implementation is the key success for capacity building in Asia.



“Japan’s Comprehensive and Continual Support Package for the Creation of Scientific Climate Policies in Asia” cop21-japanpavilion.jp

Tomoko Ishikawa and Shuzo Nishioka

- Asia holds the key to global climate stability.
- Science based initiatives are indispensable to the formulation of climate policies.
- Japan has promoted the creation of scientific bases in Asia since the 1980s, which has aided in formulating policy, including INDCs in Asian nations.
- LoCARNet has organised relevant research communities based on ownership in each country, to engage in the challenge of low-carbon development in Asia.
- It is hoped Asia will take lead the way in a global transition to low-carbon societies, by establishing and implementing science-based policies.

Capacity Development on GHG Inventories in Asia

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Hiroshi Ito

- GIO has conducted a Workshop for Greenhouse Gas Inventory in Asia (WGIA) annually for 12 years.
- Workshop continuity helps develop networks.
- WGIA operates to exchange information among inventory experts.
- Face-to-face workshops are necessary for developing relationships of mutual trust.



Thank you very much
for your kind attention

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