

# Key Findings and lessons learned from IGES MRV Capacity Building: How to make the Asia into Low Carbon Society?

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# 1. Outline of MRV Project at IGES

## ▶ Highlights of major activities

- Organize MRV (measurement, reporting and verification) workshop
- Country: China, India, Indonesia, Thailand, Cambodia, Lao PDR, Philippines, etc
- Participants: Central government, local government, private sector, research institutes, non governmental organization

## ▶ Major Research Area

### a. National level MRV:

Institutional framework development for NAMAs, National and Sub-national linkage, Existing mechanism in each country

### b. City level MRV :

Institutional arrangement by the central Gov., City-to-city cooperation, Urban development challenges

### c. Other approaches:

Case studies of Life Cycle Assessment(LCA), REDD+...etc.

## ▶ Target Sector

- Renewable energy    •buildings    •Wastewater    •Waste Management
- Energy efficiency    •Transport    •Composting    •Forestry (REDD+)

## 2. Four types of MRV should be distinguished in view of their purpose and nature.

- MRV can be categorized into four levels, organizational, project, national and policies by its target, purpose and implementation bodies
- MRV methodology should be developed and operated in accordance with purposes and targets of each level.

**Table 1: Four types of MRV**

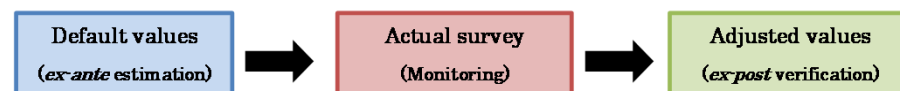
	<b>Type I: MRV of GHG emissions at organisation level</b>	<b>Type II: MRV of GHG reductions at project level for crediting</b>	<b>Type III: MRV of GHG emissions at national level</b>	<b>Type IV: MRV of GHG reductions by policy/action</b>
<b>Object</b>	GHG emissions at organisation level under GHG scheme	GHG reductions realized by individual project	GHG emissions at national/sub-national level	GHG reductions by policy/action at national/sub-national level
<b>Implementation body (M&amp;R)</b>	Covered organisation under GHG scheme	Project participant of individual project	National government/sub-national government	Unknown
<b>Examples operated</b>	<ul style="list-style-type: none"> <li>• EU-ETS</li> <li>• Climate Registry</li> <li>• California Climate Action Registry (US)</li> <li>• Tokyo Metropolitan Government ETS</li> <li>• JVETS (Japan)</li> </ul>	<ul style="list-style-type: none"> <li>• CDM</li> <li>• VCS</li> <li>• J-VER (Japan)</li> <li>• BOCM (Japan: under developing)</li> </ul>	Submission and review of National GHG Inventory	Unavailable

Source: Ninomiya 2012

### 3. Methodological simplification and optimal application are required to implement MRV at various situations and levels

- ▶ A trade-off between simplicity and stringency of MRV should be well recognized to adopt optimal MRV methodologies with purposes and capacity of implementation body.
- ▶ Data development (default value, etc.) is a important requirement in order to simplify MRV process.
- ▶ Toward NAMAs formulation or new mechanisms development, integrity of MRV should be enhanced with learning from lessens provided by existing mechanisms.

Figure1: Steps for using default values



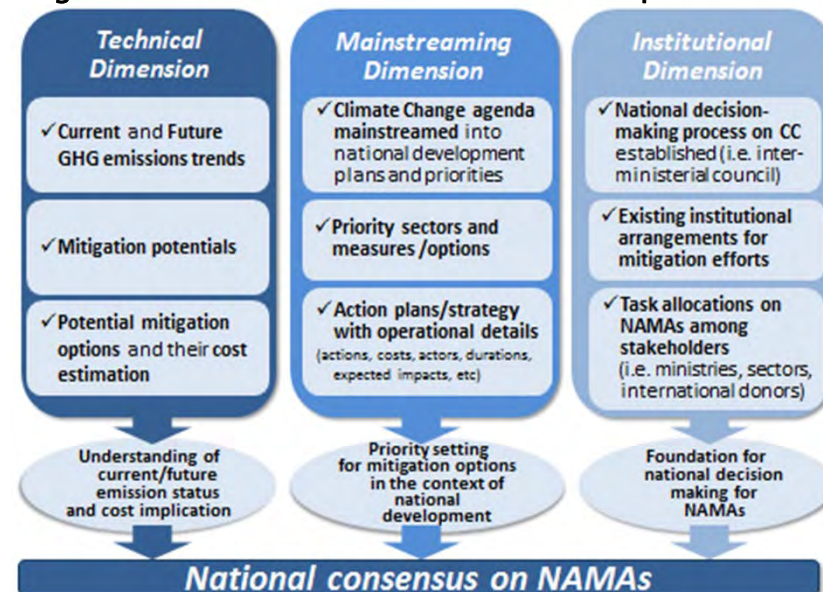
(Source: Romero, J. 2013)

Table2: Status of NAMAs formulation in ASEAN countries

Progress Indicator	Laos	Cambodia	Vietnam	Indonesia	Thailand
Submission Status of NAMAs	Not Yet Submitted	Submitted	Not Yet Submitted	Submitted	Not Yet Submitted

(Source: Based on Fukuda, K. and Tamura.K. 2013)

Figure2: Three elements for NAMAs development



(Source: Based on Fukuda, K. and Tamura.K. 2011)

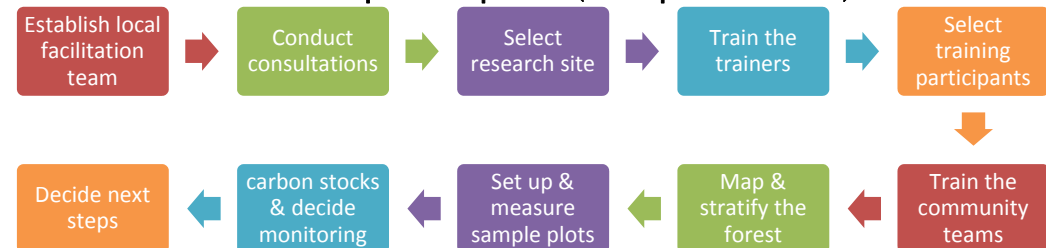
## 4. For promoting local level MRV, continuous human resource development and supportive policy implementation are key factors.

- ▶ City level MRV could be developed together with policy challenges or environmental visions of each city.
- ▶ The central government is required to support local efforts through incentive mechanism, institutional arrangement and city-to-city cooperation.
- ▶ Community can play a critical role for local level MRV.
- ▶ Capacity development of local government/community and ownership development would be a key factor for MRV at local level.

Figure3: Highlights of city level environmental actions

Sector	Surabaya	Ho Chi Minh	Nonthaburi	Kitakyushu
Waste	-Implement 3R policies -Composting in communities -Waste reduction at Landfill	-Implement 3R policies -Use of municipal waste for compost making materials -The land fill gas to energy project	-Reduce landfilled waste by maximising recycling -Reduce the landfilled waste	-Separate collection of waste; charge for garbage bag -Recycling of by-products
Water	-Sewage treatment plant -Communal wastewater treatment	-Recycle wastewater -Water leakage prevention -Rainwater harvest	-Reduce water use through awareness raising	-Reuse sludge -Improvement of water supply and sewerage -Decrease in the rate of leakage
Transport	-Bicycle lane -Intelligent transport system -Vehicle emission testing	-Develop metro rail routes -Use of CNG as fuel for urban public transport	-Promote mass transit use -Increase bicycle travelling	-Public transport and mobility management -Community bus
Energy	-Develop smart community -Combined heat & power system -Biogas utilisation	-Energy audit -Green energy -Solar water heating	-High efficiency equipment -Change electric bulbs -Find more renewable energy source	-Introduction of CEMS, BEMS and HEMS -Promotion of small hydropower plants -Waste power generation

Figure4: Process of community involvement and ownership development (Example of REDD+)



(Source: Scheyvens, H. et al. 2013)

## 5. Points at issues of MRV implementation towards “Low Carbon Society ” in Asia.

- ▶ How MRV methodology can be developed/implemented at each level, and establish comprehensive framework ?
- ▶ What is the favorable cooperation between central Gov. and city Gov.? And what kind of supportive policy should be provided by the central Gov.?
- ▶ What is the expected role of MRV in the trend of NAMAs formulation or new mechanism development such as BOCM and REDD+?
- ▶ What lessons can be learned from existing mechanisms and how those lessons can be shared?