

**“Open Symposium on the Estimation of the Greenhouse Gas
(GHG) Emissions - How to Estimate the Emissions in the
Commitment Period”**

Asian efforts on the GHG inventory

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Outline of presentation

- Current status of Cambodian GHG inventory
- Overview of WGIA
- Japan's Int'l contribution for development of GHG inventories
- Asian countries' difficulties and challenges in GHG inventory preparation
- Proposed strategies for WGIA and/or Japan to assist Asian countries.

I. Current status of Cambodian GHG inventory

- The preparation of the first Cambodia's GHG inventory was started in October 1999 under Cambodia's Initial National Communication for the year 1994.
- Second Cambodian GHG inventory is being prepared under the Second National Communication for the year 2000.
- Three main GHGs are taken into account for Cambodia's GHG Inventory: CO₂, CH₄ and N₂O.
- The inventory covers five main sectors: Energy, Industrial Process, Agriculture, Waste, Land Use Change and Forestry.
- The inventory is mainly based on Revised 1996 IPCC Guidelines.

I. Current status of Cambodian GHG inventory

- First draft report of the Cambodia's 2000 GHG Inventory is almost completed.
- The inventory will be finalized in August 2009 and will submit to the COP in 2010.

I. Current status of Cambodian GHG inventory

Cambodia's 1994 GHG emissions by sources and removals by sinks

Sector	CO ₂ Emission (Gg)	CO ₂ Removal (Gg)	CH ₄ (Gg)	N ₂ O (Gg)	Total CO ₂ -eq. (Gg)
Energy	1,272		507	102	1,881
Industrial Process	50				50
Agriculture			339	11	10,560
Waste			7	0.42	273
LUCF	45,214	64,850	75	0.51	-17,907

Total National CO₂-eq. UPTAKE (Gg)

-5,142

II. Overview of WGIA



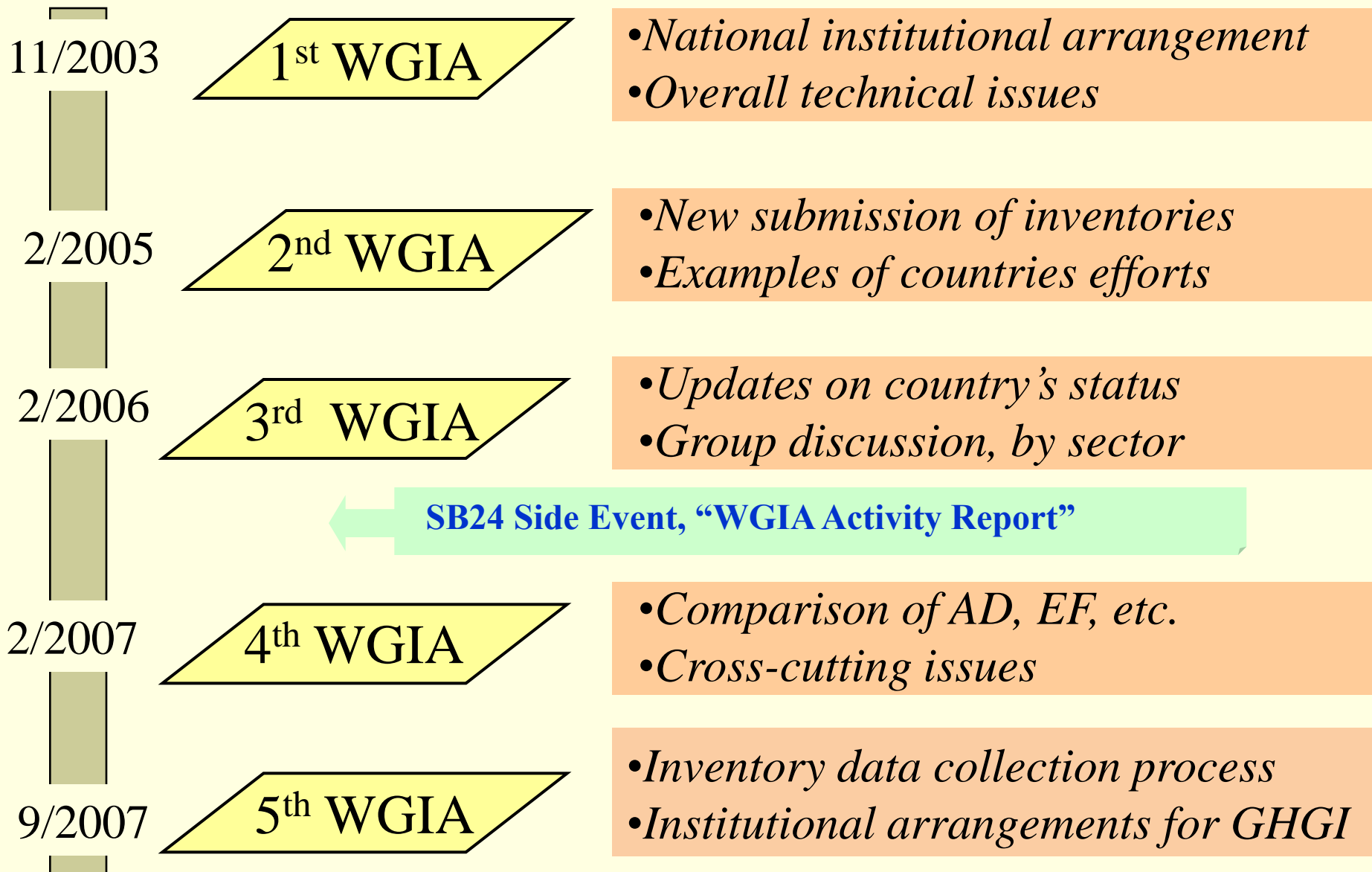
Workshop on GHG Inventories in Asia

Objective	To support countries in Asia to improve the quality of inventories via regional information exchange
Style	Annual workshop since 2003
Participants	[One researcher + One government official] from 14 countries + UNFCCC Secretariat, etc.
Funds	Ministry of the Environment, Japan

➤ WGIA has achieved to:

- Identify common issues and possible solutions to improve the quality of GHG inventories
- Share countries efforts and practices that can be learnt by others
- Update each other on the national status of inventory development regularly
- Establish WGIA network platform to exchange information on climate change and mitigation of GHG emissions as well as GHG inventory
- Publish a WGIA activity report entitled “*Greenhouse Gas Inventory Development in Asia - Experiences from Workshops on Greenhouse Gas Inventories in Asia*”
- Publish regular proceedings of the workshops

Regional Network (WGIA)





Potential approaches using the regional network

- Sharing the successful experiences
 - *Annual Workshop*
 - *Mailing list for WGIA experts*
- Stock of experiences and information (EFs, good practices, successful experiences...)
- Identification and plans for the development of proposals for collaborative research on development and improvement of EFs and AD in the region

Ongoing WGIA-Network Activities


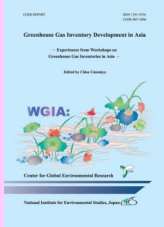




□ On line discussion of WGIA6 topics

➤ *To develop the contents of the workshop most relevant to its participants*

□ Data collection

➤ *To promote exchange of information through WGIA mailing list as well as information dissemination through WGIA-website.*

- *Country or region-specific emission factors that were used in GHG inventories in INC as well as newly developed EFs since the submission of INC*
- *List of experts' publication related with climate change issues and GHG inventory*
- *About awareness raising activities (one of the needs identified in WGIA5) on climate change mitigation of GHG emissions in country and GHG inventory.*

	2006	2007	2008	2009
UNFCCC/ KP	SB24 COP12/ MOP2	SB26 COP13/ MOP3	SB28 COP14/ MOP4	SB30 COP15/ MOP5
IPCC	← 2006 GL →		EFDB	→
WGIA	 	  September 6-8, 2007 Malaysia	 July 16-18, 2008 Japan	
Other events			G8 in Japan	
SWGA		●	●	●
MSM Follow-up Project		●	●	●

Notes: SWGA is “Improvement of Solid Waste Management and Reduction of GHG emission in Asia”; MAGES is “Monsoon Asia Agricultural Greenhouse Gas Emission Studies”.

III. Japan's Int'l Contribution for Development of GHG Inventories

UNFCCC
adopted in 1992

KP
adopted in 1997

KP
entered into force
in 2005

NAPIID
in 2000-02



GIO/NIES

WGIA1 in 2003

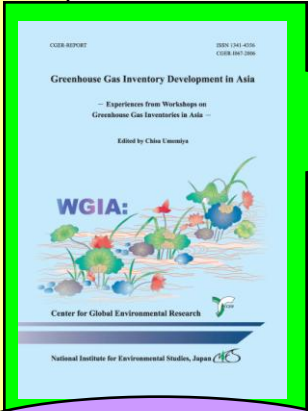
WGIA2 in 2005

WGIA3 in 2006

WGIA4 in 2007

WGIA5 in 2007

**Capacity Building
Research Project
in 2003-2006
(Cambodia, Thailand)**



Activity Report



Rice paddy



Landfill



Forest biomass

*** WGIA is sponsored by MoEJ. The Capacity Building Research Project was conducted with the funds from the Asia-Pacific Network for Global Change Research CAPaBLE Programme.

Project under APN CAPaBLE

- 3-year research project for capacity building with pilot studies in Cambodia and Thailand
 - ▣ **Cambodia:** Comprehensive Approach
 - KC Analysis → Forest survey → New inventories
 - ▣ **Thailand:** Source-Specific Approach
 - Measurement equipment for rice fields → New EFs
 - Advanced methodology for landfills → Evaluation of the method



IV. Difficulties and challenges for Asian countries in GHG inventory preparation

Sector	Difficulties/challenges	Possible solution
Energy sector	Collection of activity data	Share experiences on data collection focusing on key categories., e.g. transportation, power plants and heavy industries.
	Development of improved emission factor	Prepare a table for country-specific emission factors with basic consumption adopted.
	Implementation of quality assurance /quality control (QA/QC)	<ul style="list-style-type: none"> - Make different database for comparison; - Describe outline process and tasks for implementing agencies
	Implementation of uncertainty assessment	Follow up and update data and information

IV. Difficulties and challenges for Asian countries in GHG inventory preparation

Sector	Difficulties/challenges	Possible solution
Agriculture	Development of region-specific emission factors for the Asian region	<ul style="list-style-type: none">- Develop and implement regional research project;- Collaborate with regional and international experts;- Share database and expertise.
	Establishment of a network of monitoring station for GHG emission	
	Funding for research and capacity building in the region	

IV. Difficulties and challenges for Asian countries in GHG inventory preparation

Sector	Difficulties/challenges	Possible solution
LULUCF	Different level of detail in forest categories and strata between states and provinces.	Enhance and encourage local research agency/universities.
	Difficulties in defining appropriate number of destructive sampling which is cost effective.	Additional data/information from other sources, such as from other countries in the region.
	Difficulties in developing good activity data and emission factors for key categories	Apply the 2000 IPCC Good Practice Guidance (GPG 2000)

IV. Difficulties and challenges for Asian countries in GHG inventory preparation

Sector	Difficulties/challenges	Possible solution
Waste	Lack of accurate information on waste generation, degradable organic carbon (DOC), waste treatment and management.	<ul style="list-style-type: none"> - Enhance and encourage local research agency/universities to conduct site measurements in waste area. - Seek supports from local authorities for inventory works - Develop database of activity data . - Share information with other country in the region
	Uncertainty related to migrating human population to urban areas	<ul style="list-style-type: none"> - Apply the 2000 IPCC Good Practice Guidance (GPG 2000) in a number of region/province that contribute to the national GHG inventory. - Conduct site measurement and sampling analysis.

V. Actions for WGIA and/or Japan to assist Asian countries.

- Playing leading role in capacity building in the region, especially for the countries with have limited resources.
- Continuing the current style of WGIA in exchanging information and experiences
- Conducting joint activities by group of experts for more practical information exchange
- Implementing regional research projects to develop region-specific emission factors
- Distributing the experiences of WGIA to other region
- Providing financial support for research projects in collaboration with the countries in the region.



THANK YOU FOR YOUR
ATTENTION