Future outlook on the activities relating to emission inventory and atmospheric simulation model in EANET

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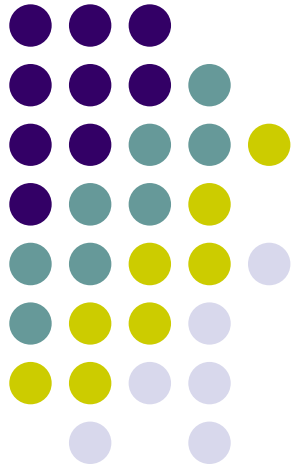
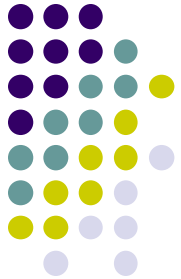
Acid Deposition and Oxidant Research Center

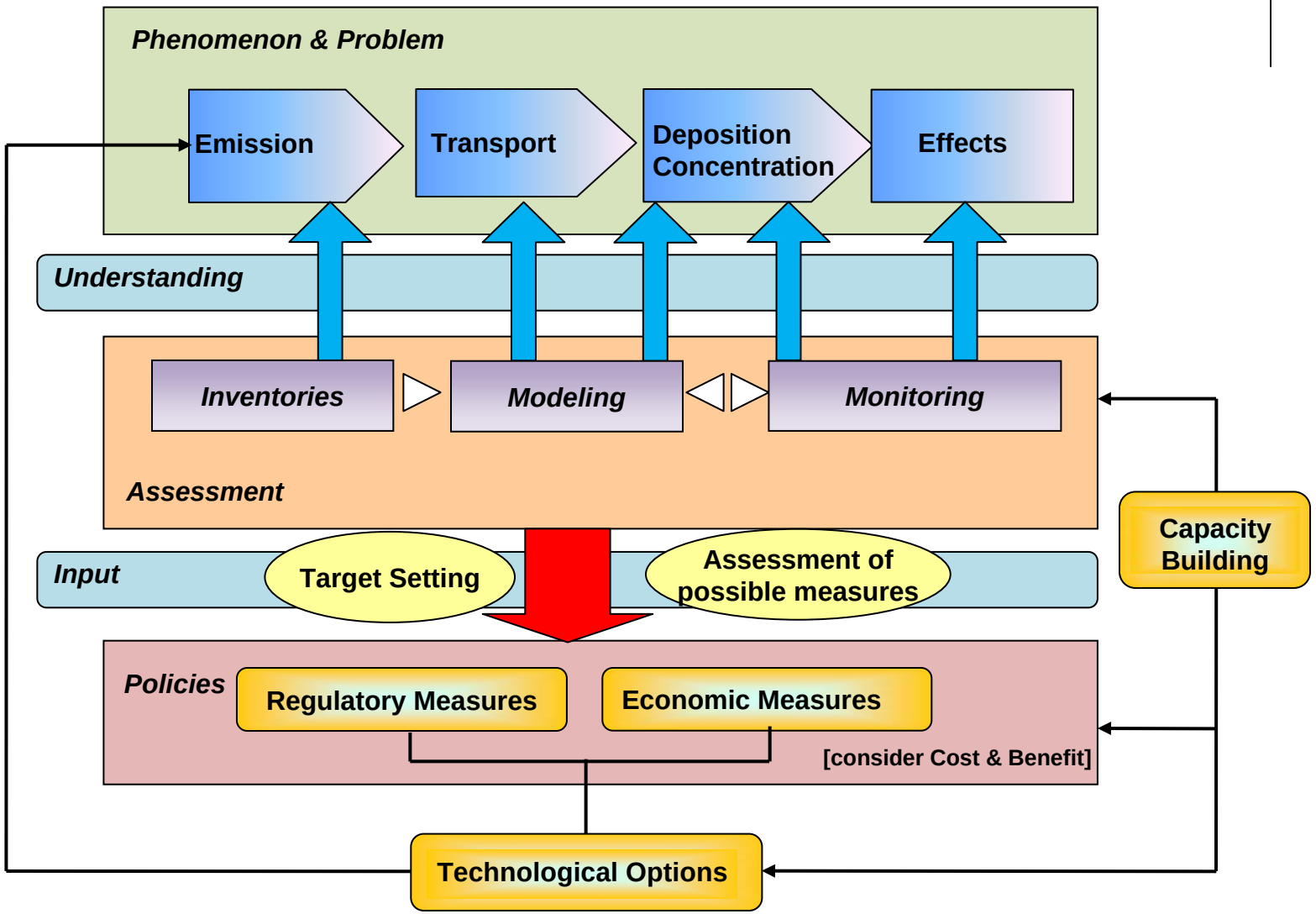


Objectives of EANET (Joint Announcement)

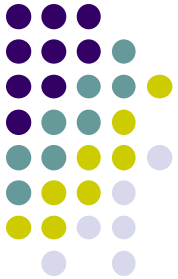


- to create a common understanding of the state of the acid deposition problems in East Asia
- to provide useful inputs for decision-making at local, national and regional levels aimed at preventing or reducing adverse impacts on the environment caused by acid deposition
- to contribute to cooperation on the issues related to acid deposition among the participating countries

Integrated approach for Air Quality Management



Major activities of EANET



1. Monitoring
- Acid deposition monitoring
- Compilation, evaluation, storage and provision of data
- Quality assurance and quality control (QA/QC)
- Technical support and capacity building

2. Research
- Research activities
- Cooperation with other international activities

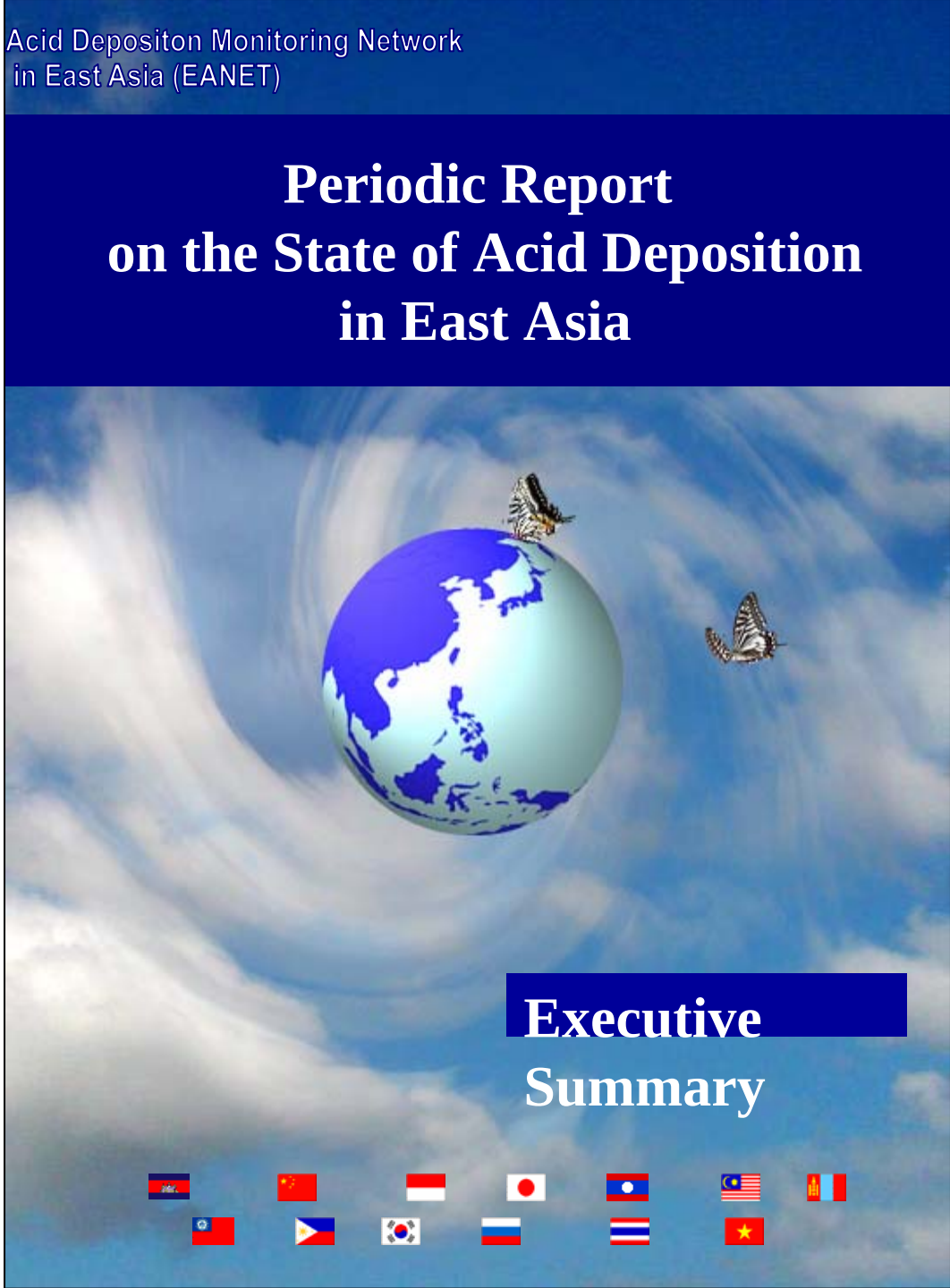
3. Promotion
- Periodic Report on the State of the Acid Deposition in East Asia
- Public Awareness
- Report for Policy Makers

3 volumes:

- **Executive Summary**
- **Part I: Regional Assessment**
- **Part II: National Assessments**

- **Assessment of monitoring data during 2000-2004**

- **Next Periodic Report will be prepared in 2011 based on monitoring data during 2005-2009**



New Activities by Japan

- Strategic Research
- A project proposed for 2009-2013
- 3 sub themes
- Funded by Ministry of the Environment of Japan

New Activities by Japan

- Strategic Research

i. Making understanding on the wider area air pollution in East Asia

- elaborate a modeling of ozone and aerosol
- analyze the contribution from the emission source

ii. Development of the scenario on the reduction of the air pollutants considering the co-benefit with green house gas measures

- improve emission inventory using satellite data and data reflecting the actual emission
- develop a reduction scenario by the assessment of the possible reduction of the emission and its cost

iii. Consideration of an international framework on the air quality management in Asia

- assess the impact to ecosystem and human health by ozone and aerosol
- study a possible design of the international institution for the air pollution management

New Activities by Japan

- Clean Asia Initiative
- published by Ministry of the Environment of Japan in 2008
- aiming to realize the sustainable economic development in Asia supporting with the environmental technologies and experiences of Japan
- Collaborate with the Strategic Research

New Activities by Japan

- Clean Asia Initiative
- For air pollution control

i. a pilot study on emission inventory in some countries in Asia

ii. survey on a situation of the emission from industries with its country governments

iii. consider an international institutional framework on air pollution control in East Asia

Atmospheric simulation model

- to cover the sparse monitoring sites
- to grasp the dynamic atmospheric transportation in the monsoon

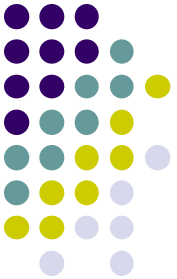
The assessment of acid deposition/regional air pollution in EANET should include the result of modelings.
It is hoped that next Periodic Report of EANET will use modeling results.

Promotion of model into EANET

How we can make models acceptable for policy makers in Asia?

- Low cost
- Participation from Asian countries
- Reliable model (Scientific oriented, neutral, usage of appropriate emission inventory)

To make use of modeling for EANET



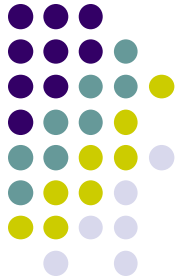
- To have regional model its domain covering all EANET countries
- To build capacity
- for researchers to utilize the modelings
- for government staffs to deepen the understanding of the modelings
- Experiences of MICS-Asia are useful

Emission inventory

Two kinds of emission inventories will be needed

1. To provide input for simulation modelings developed by researcher's project
2. To make quantitative understanding of actual emission and strengthen the cooperation among EANET countries developed by countries

Emission inventories in Asia and the World



RAINS*-*GAINS is developed by International Institute for Applied System Analysis (IIASA) to estimate emissions of air pollutants including GHG.

EDGAR is developed by National Institute for Public Health and the Environment (RIVM) to estimate emissions of air pollutants and GHG.

GEIA has been developing inventories of global gas and aerosol emissions as part of International Geosphere - Biosphere Programme (IGBP).

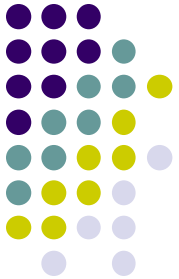
LTP is a joint research program among China, Japan and Korea. Its purpose is the monitoring/modeling of Air pollutants to improve understanding of transboundary air pollutants in Northeast Asia.

ACESS is developed by Argonne National Laboratory to support the Aerosol Characterization Experiments and Transport and Chemical evolution over the Pacific Experiments.

REAS is developed by Frontier Research Center for Global Change and National Institute for Environmental Studies to understand the role of trace constituents in the atmosphere.

EA-Grid is developed by the Ministry of the Environment in Japan to understand transboundary air pollutants in Northeast Asia.

Cooperation with existing emission inventory



- Provide information for improvement

- Consider to input for the model which will provide information on the assessment of air pollution in EANET

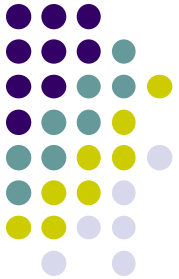
As a first step;
ADORC will participate in the project to improve REAS from this year

Promotion of emission inventory into EANET

How we can make Asian countries to develop emission inventories?

- Low cost
- Easy and harmonized methodology
- Useful for domestic air pollution control policy
- Capacity building

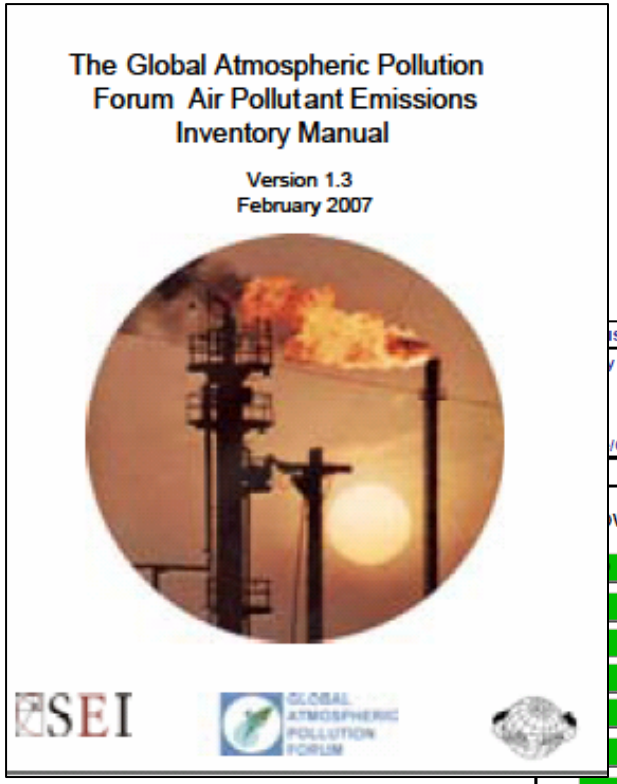
Development of emission inventories by countries



Provide appropriate manual for emission inventory taking account the level of the capacity in Asian countries

- Based on GAP Forum manual
- Suitable items
- Emission factors, activity data
- Insight to have a harmonized reporting system of inventory

GAP Forum manual



Sheet: 1.1.1b Fuel consumption in thousands of tonnes oil equivalent per year (ktoe/year)

BACK TO MENU

Sector:		Combustion in the Energy industries						
Sub-sector:				Manufacture of Solid Fuels and Other Energy				
Fuel type		Public Electricity and Heat Production[1]	Petroleum Refining[2]	Coke ovens[2]	Patent fuel, BKB[2]	Gas works[2]	Charcoal production	Other own use[3]
Coal	Coking Coal							
	Other Bituminous Coal & Anthracite							
	Sub-Bituminous Coal							
	Lignite							
	Patent Fuel							
	Coke Oven Coke							
	Gas Coke							
	BKB (Brown coal briquettes)							
	Coke Oven Gas							
	Blast Furnace Gas							
Gas	Gas Works Gas							
	Natural Gas							
Oil	Crude Oil							
	Natural Gas Liquids							

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VERVIEW

	Menu1	Sectors 1. to 4. Fuel combustion activities
	Menu2	Sector 5. Fugitive emissions (non-combustion) for fuels
	Menu3	Sector 3. Fuel combustion activities. Sector: Transport (Detailed method)
	Menu4	Sector 6. Industrial processes (non-combustion) emissions
	Menu5	Sector 7. Solvent and other product use
	Menu6	Sector 8. Agriculture
GO	Menu7	Sector 9. Vegetation fires and Forestry.
GO	Menu8	Sector 10. Waste
GO	Menu9	Large Point sources
GO	Sheet 9	Summary sheet - Annual emissions of each pollutant by source sector
GO	References	

Preparation of the manual

- Gather information in Asian countries
- Emission factor
- Activity data
- Cooperation with each country
- Pilot study
- Workshop

Capacity building for countries

- Some Asian countries have experiences to development of inventory (national. Local, urban)

  > Each EANET country are in different stages about the emission inventories
- Training course
- Trial in some countries
- Promotion with GHG inventory

Future Collaboration with IIASA

- Asia has the variety of economic, social, environmental situation.
- It is necessary to provide neutral input on environmental pollution, especially relevant to reason and its impact, to policy makers

We hope IIASA to provide supports for emission inventory and modeling (source-receptor analysis) from neutral and fair position

Thank you

We hope continuous cooperation and support with all