



MAGES-Workshop

*International Workshop on
Monsoon Asia Agricultural
Greenhouse Gas Emission
Study*

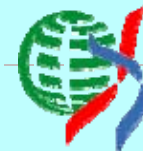
**December 13-14, 2006
Tsukuba, Japan**



MAGE-Workshop

International Workshop on Monsoon Asia Agricultural Greenhouse Gas Emissions

March 7-9, 2006
Tsukuba, Japan



MAGE-Workshop

International Workshop on

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Contents

- **Session 1: Keynote Lectures (4 lectures)**
- **Session 2: GHG Emissions from Croplands: Country Reports (5 presentations)**
- **Session 3: GHG Emissions from Croplands: Monitoring and Mechanisms (5 presentations)**
- **Session 4: GHG Emissions from Livestock (5 presentations)**
- **Session 5: Modeling GHG Emissions (4 presentations)**
- **Session 6: Discussion Session (2 hours)**
- **Poster session: 27 posters**



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aims;

- (1) To **exchange understanding** of the issues related to agricultural GHG emissions in monsoon Asian countries,
- (2) To **identify gaps** in knowledge, and
- (3) To **discuss future** research needs and possible forms of cooperation.

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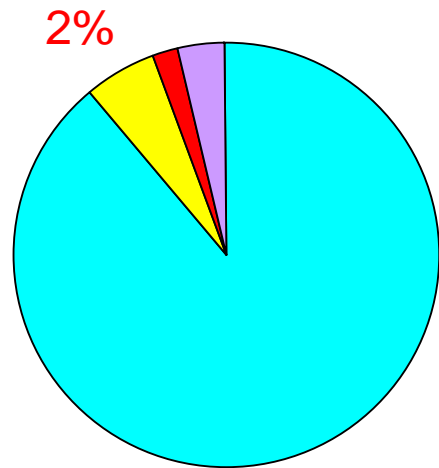
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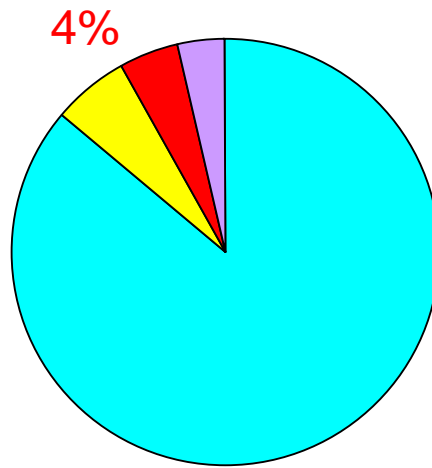
OUTPUT

- to make an outline of the Research Plan for the MAGES,
- which addresses research activities and their implementation strategies needed in the next 3-4 years.

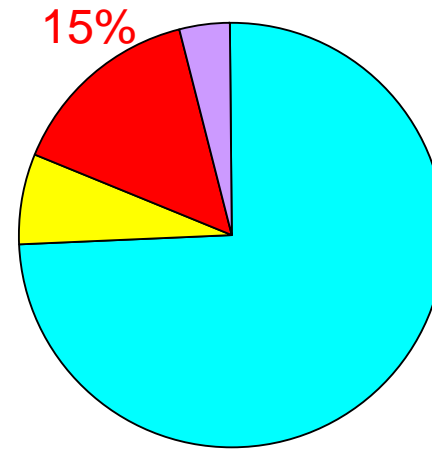
GHG Inventories in Selected Asian Countries



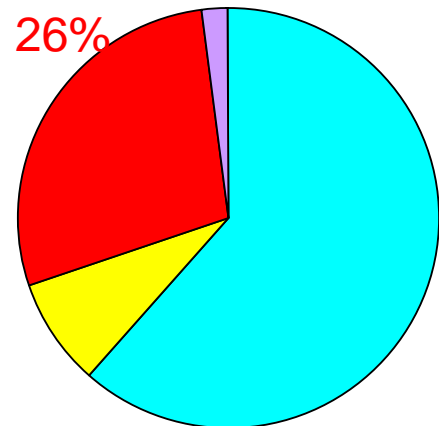
Japan (2004)
1,355 MtCO₂



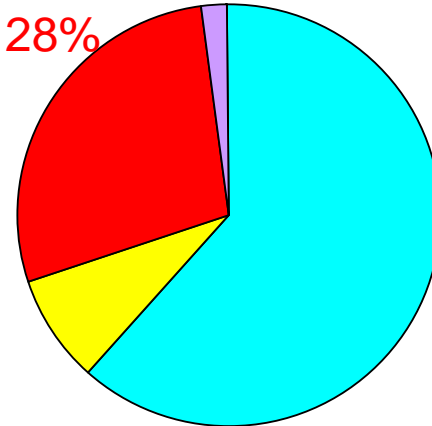
Korea (1990)
289 MtCO₂



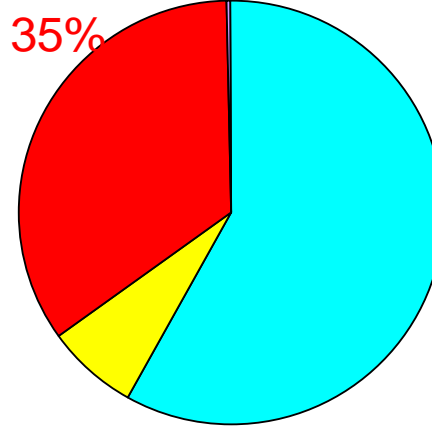
China (1994)
4,058 MtCO₂



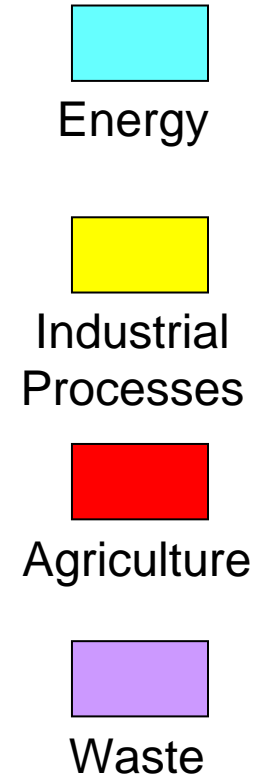
Indonesia (1994)
323 MtCO₂



India (1994)
1,214 MtCO₂



Thailand (1994)
224 MtCO₂



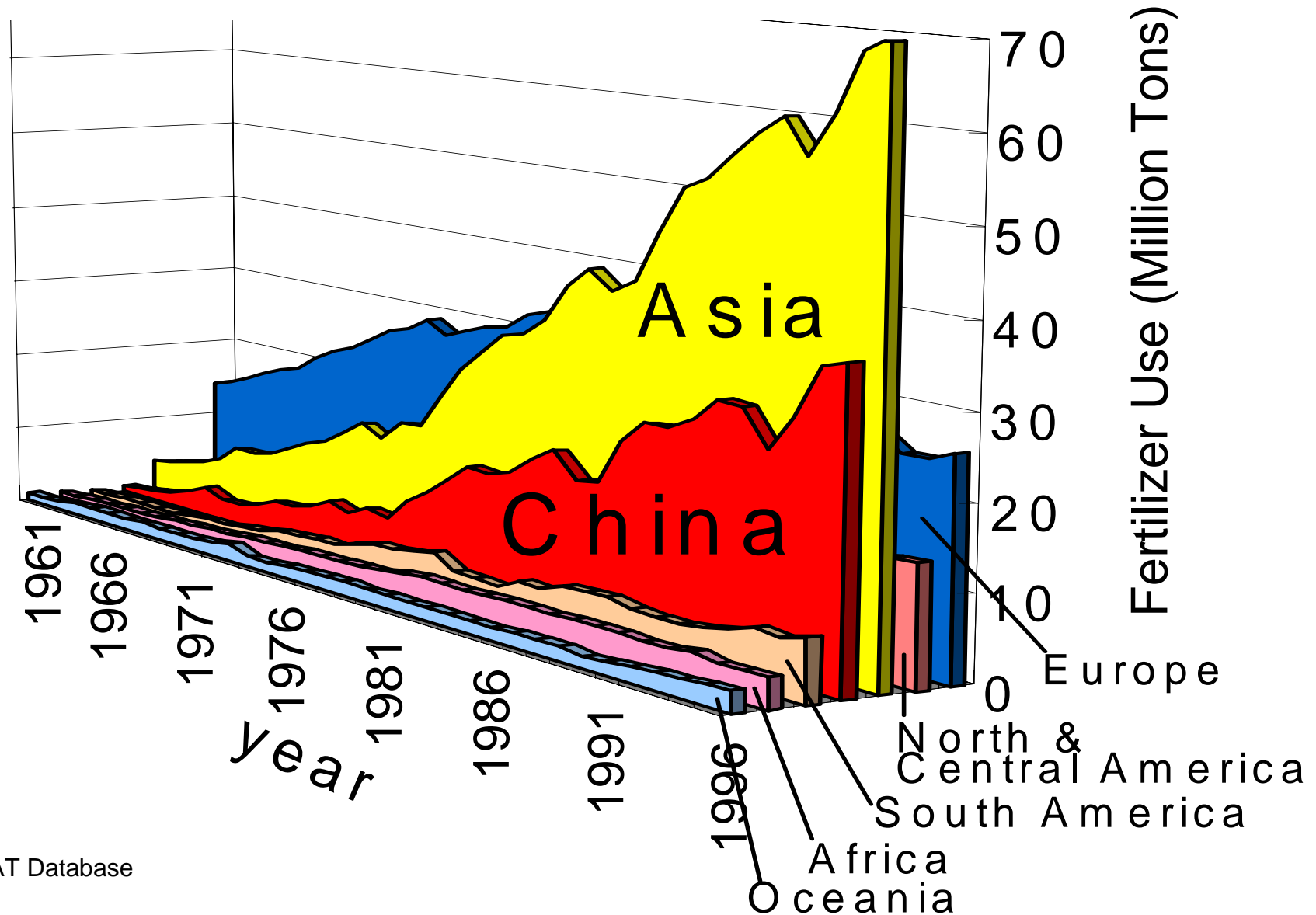
Data source:
a UNFCCC Report





World Fertilizer Consumption

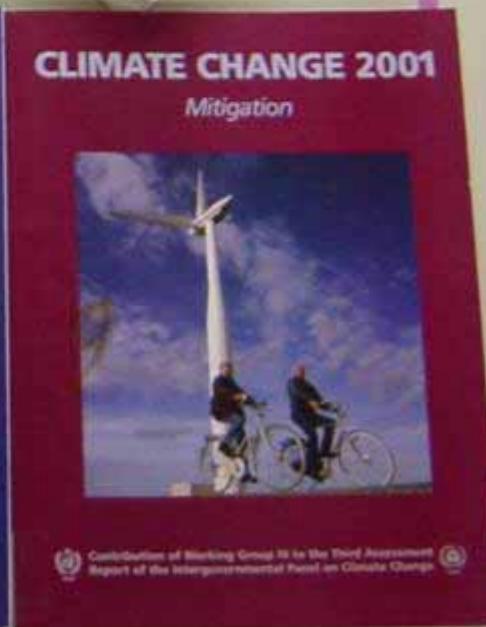
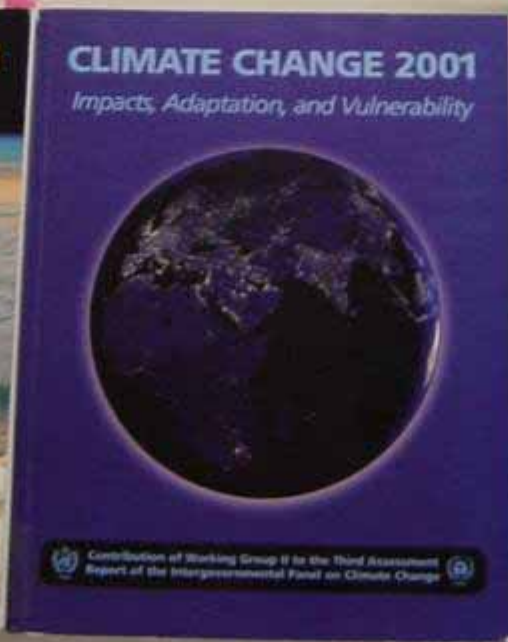
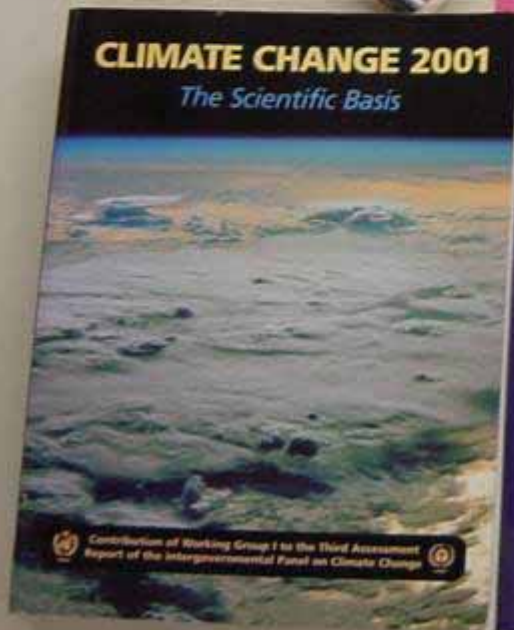
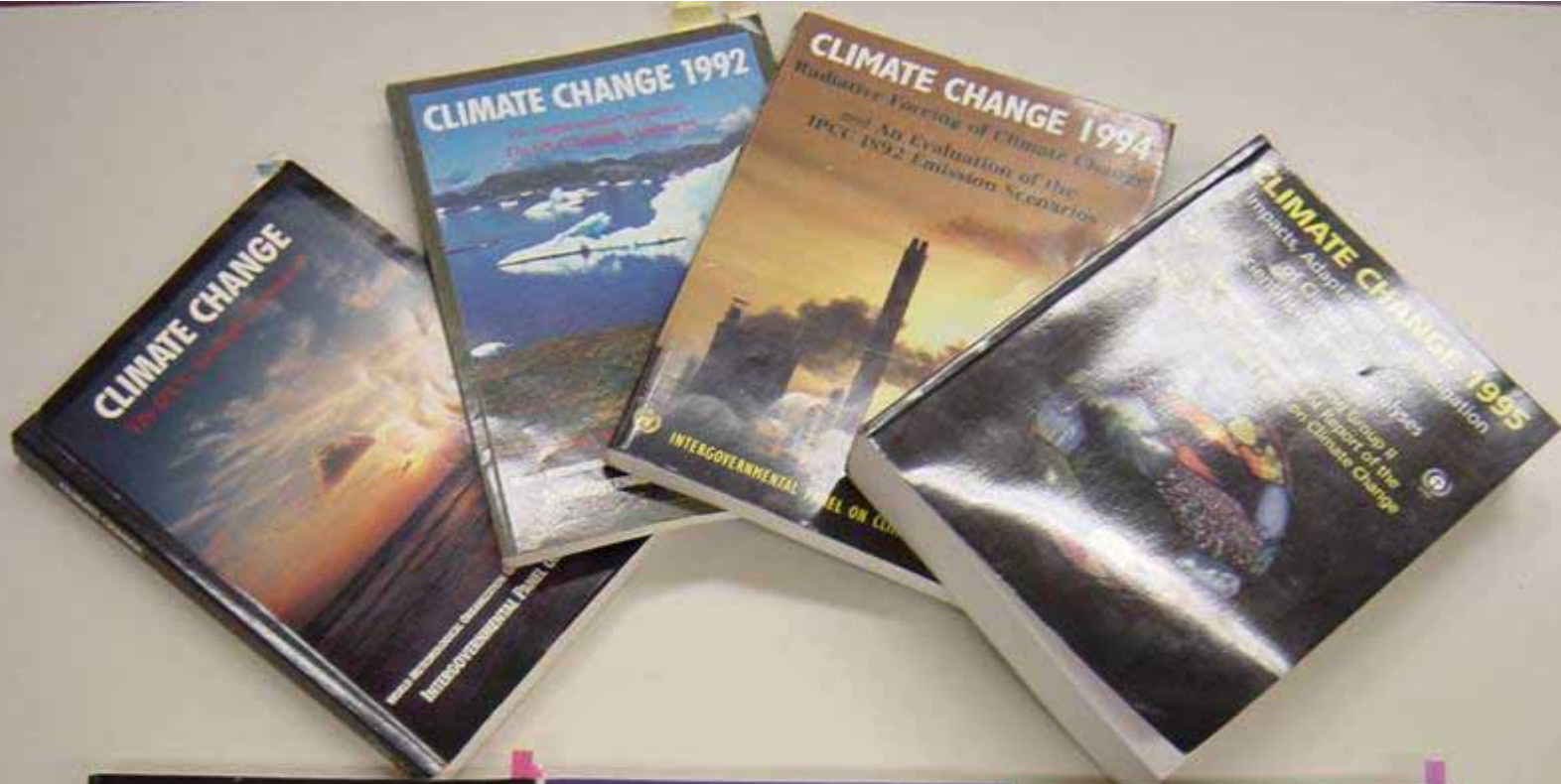
世界の化学肥料消費動向



Monsoon Asia

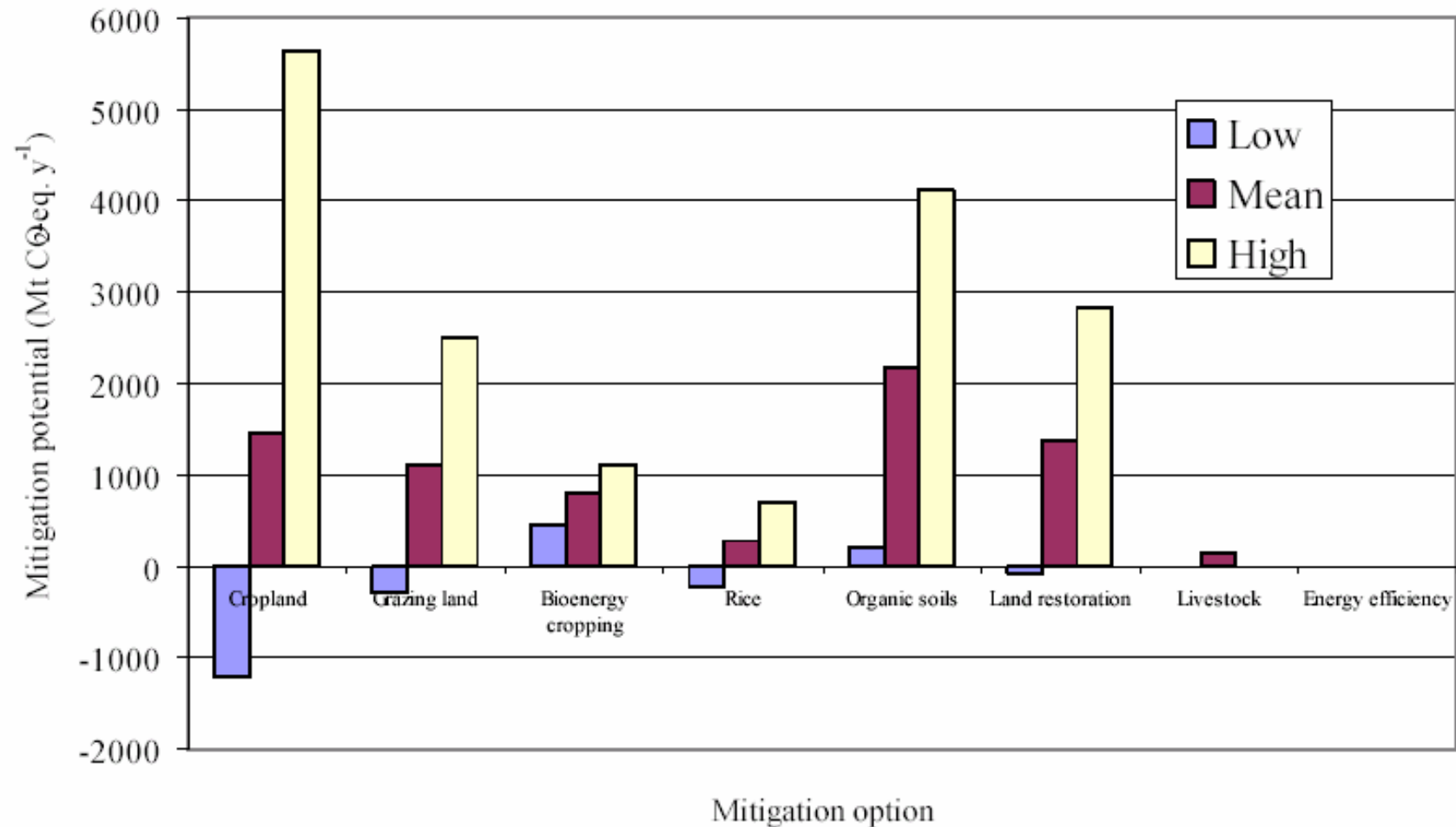


- importance of agricultural activities in the area
 - many common issues about agricultural GHG emissions in the area
 - many research outputs on agricultural GHG emissions up to the present
 - also many international cooperative research projects are exist
-



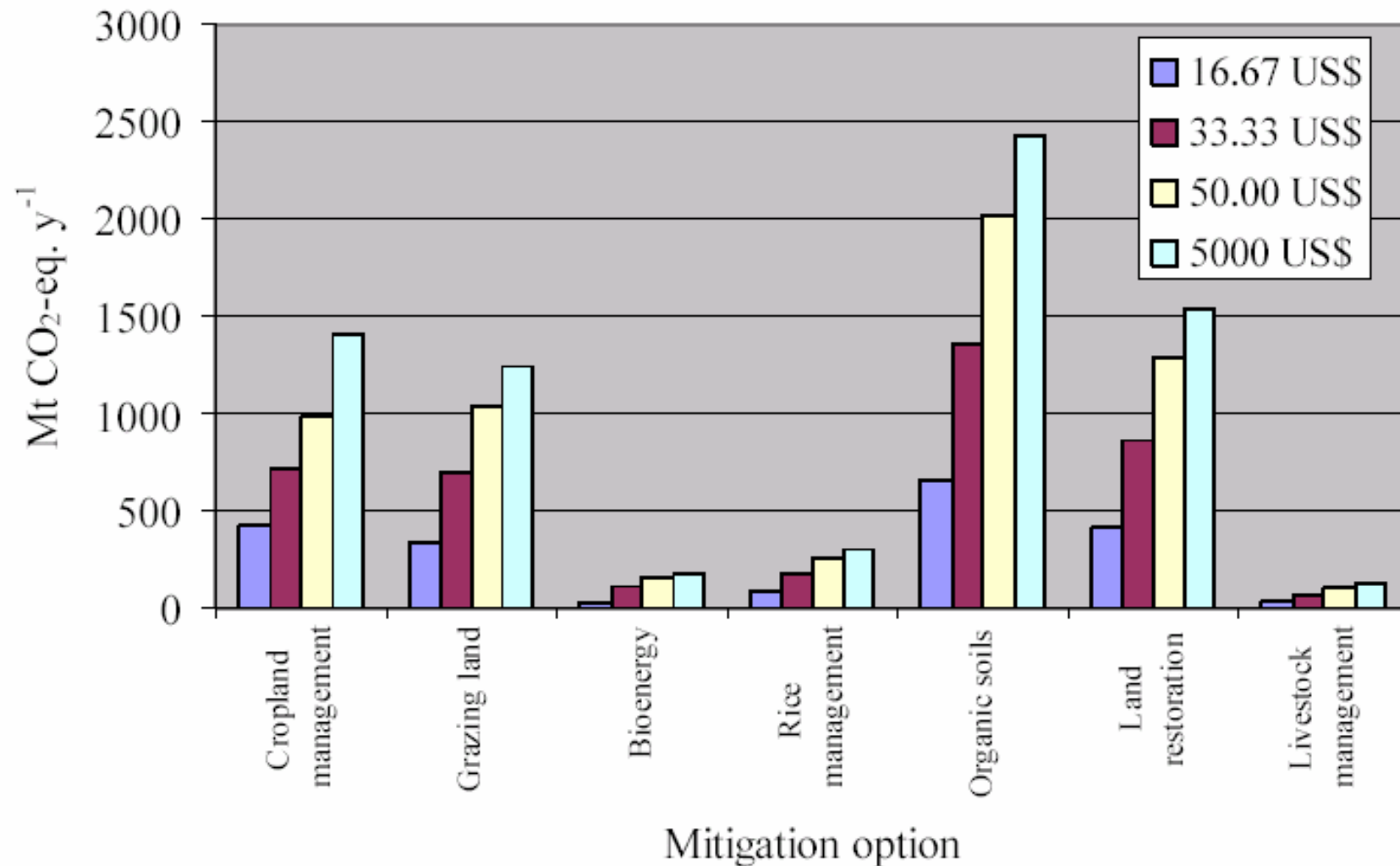
IPCC AR4 WGIII

Chapter 8: GHG Mitigation in Agriculture



IPCC AR4 WGIII

Chapter 8: GHG Mitigation in Agriculture



Revised 2006 IPCC Guidelines



Volume 1: Cross-Cutting Issues and Reporting Tables
分野横断的問題と報告表

Volume 2: Energy
エネルギー

Volume 3: Industrial Processes and Product Use
工業過程と生産物の使用

Volume 4: Agriculture, Forestry and Other Land Use
(AFOLU) 農林業とその他の土地利用

Volume 5: Waste
廃棄物

Has just published in the web-site:

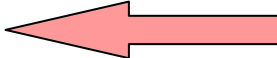
<http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.htm>

IPCC- GLs2006

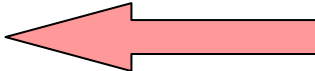
Volume 4: AFOLU

Key points of the revision

- Integration of previous reports
 - ▶ GLs1996 + GPG2000 + GPG-LULUCF
- ‘Agriculture’ + ‘LULUCF’
- Being based on landuse and its change
 - ▶ xxxland remaining xxxland
 - ▶ xxxland converted to yyyland
- Revisions of some EFs
 - ▶ CH₄ from rice: 130 mg m⁻² day⁻¹
 - ▶ Direct N₂O from fertilizer: 1.0% (0.3% for flooded rice)
- Updating of methodologies that make possible to evaluate mitigation options



Obligation to reports
soil C changes



To calculate for all
the landuses

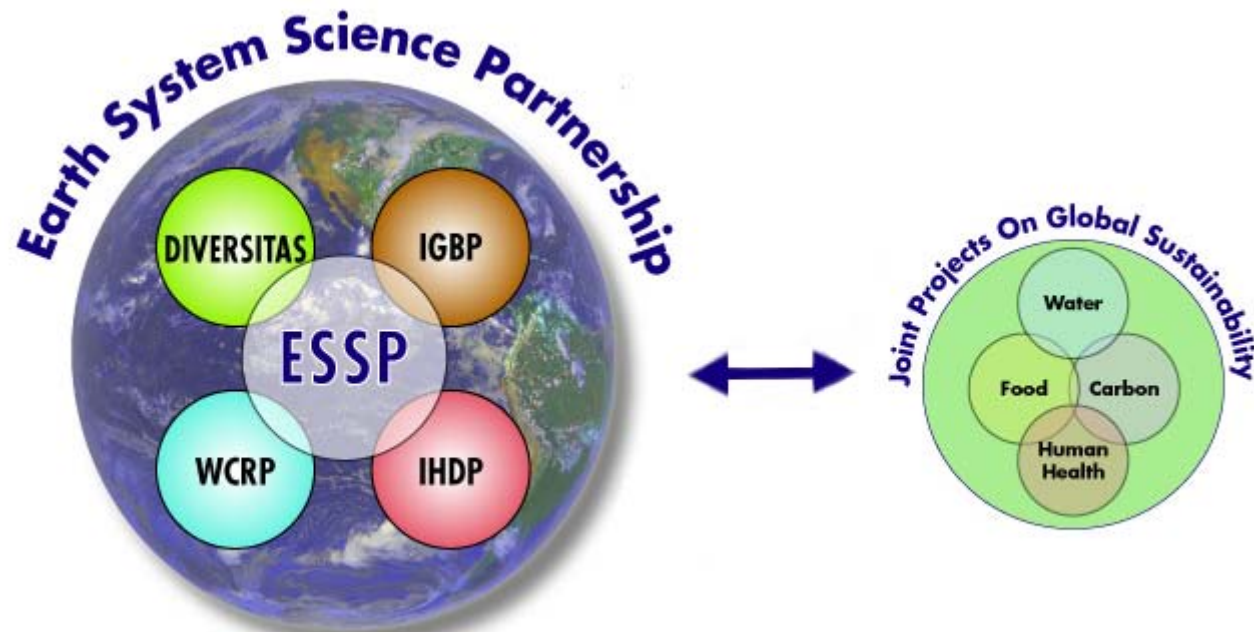


Earth System Science Partnership

DIVERSITAS, IGBP, IHDP, WCRP

A partnership for:

- the integrated study of the Earth System,
- the changes occurring to the System, and
- the implications for global sustainability.



IGBP II Core Projects

iLEAPS

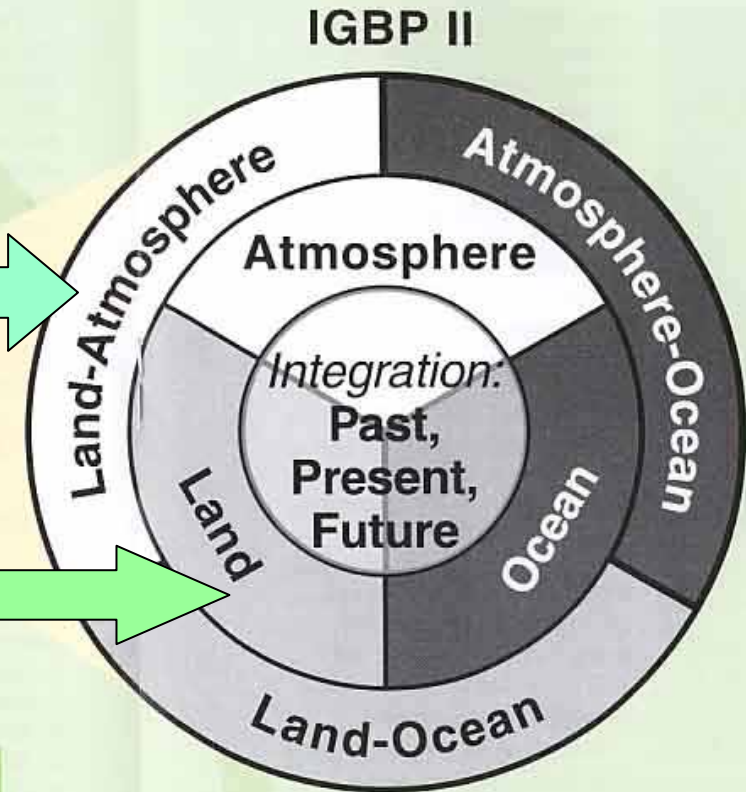
(Integrated Land Ecosystem -
Atmosphere Processes)

← a part of IGAC+BAHC

GLP (Global Land Project)

← GCTE+LUCC

Integration: **PAGES, AIMS**
 Atmosphere: **IGAC II**
 Ocean: **GLOBEC, IMBER**
 Atmosphere-Ocean: **SOLAS**
 Land-Ocean: **LOICZ II**



IGBP Organisational Structure

As described in detail in this newsletter, IGBP is moving from its previous scientific structure of eight core projects and two framework activities (including the jointly-sponsored START) to the new structure of 6 projects and 2 integrating activities shown in the figure. The six research activities will be centred on the three major Earth System compartments – ocean, land and atmosphere – and the interfaces between them, with PAGES and GAIM providing the integrative system perspective.

IGBP Structure



國際窒素戰略 International Nitrogen Initiative

Overall Goal

- Optimize nitrogen's beneficial role in sustainable food production
- Minimize nitrogen's negative effects on human health and the environment resulting from food and energy production

**Nanjing Declaration on Nitrogen Management
on 16 October, 2004**

What we should do NOW?

● Integration

- $\text{CO}_2 + \text{CH}_4 + \text{N}_2\text{O}$ (+ $\text{NH}_3 + \text{NO}_3\text{-N} + \dots$)
- Monitoring-modeling-projection
- Mitigation options with feasibility or cost analysis
- Link with C&N cycles in agroecosystems

● Cooperation

- Most of the existing cooperative research projects are isolated from the other projects
- Therefore, it is needs to have a common research plan as a base of broader cooperation, just like IGBP strategy

Research Networks in Europe

NitroEurope

- A developing effort for **integrated European research** into the nitrogen cycle
- Focuses on the nitrogen cycle and its influence on the **European greenhouse gas balance**

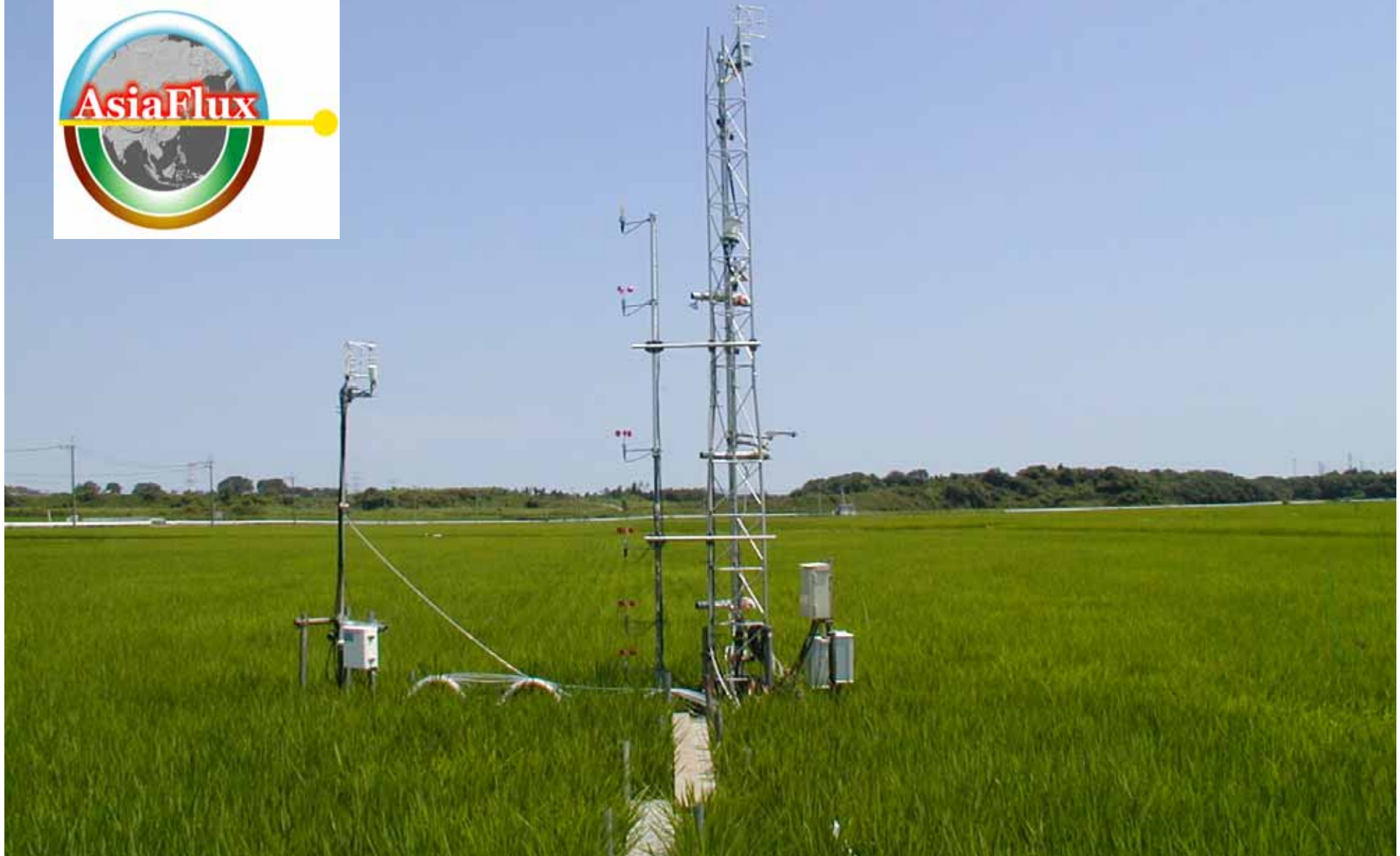


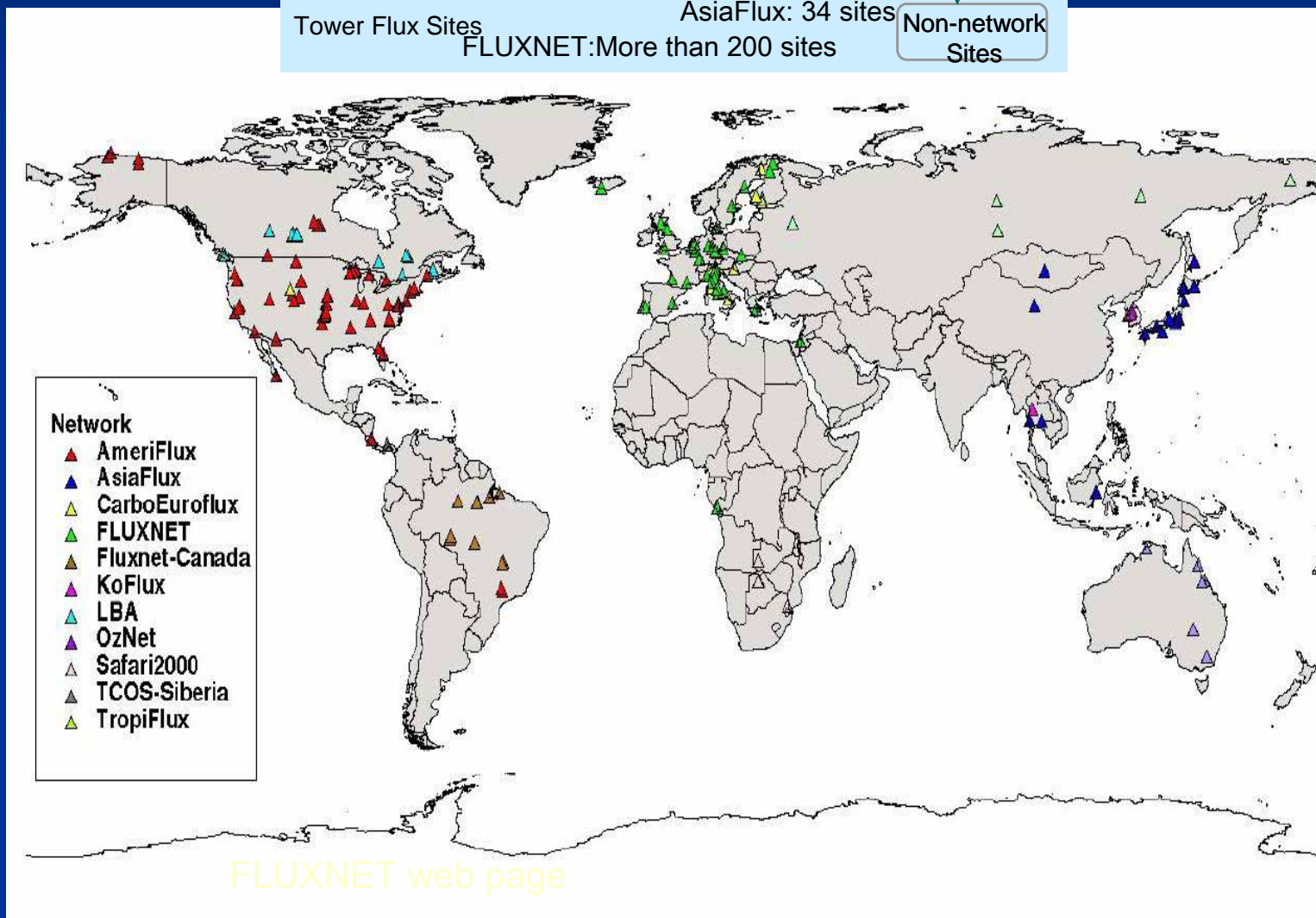
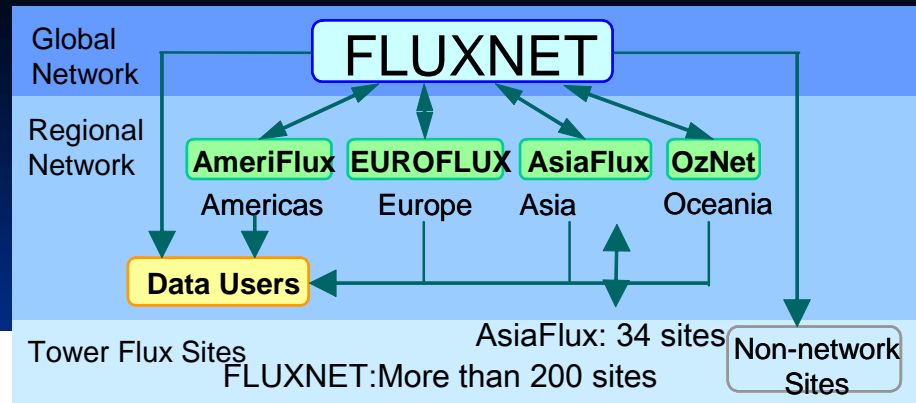
CarboEurope

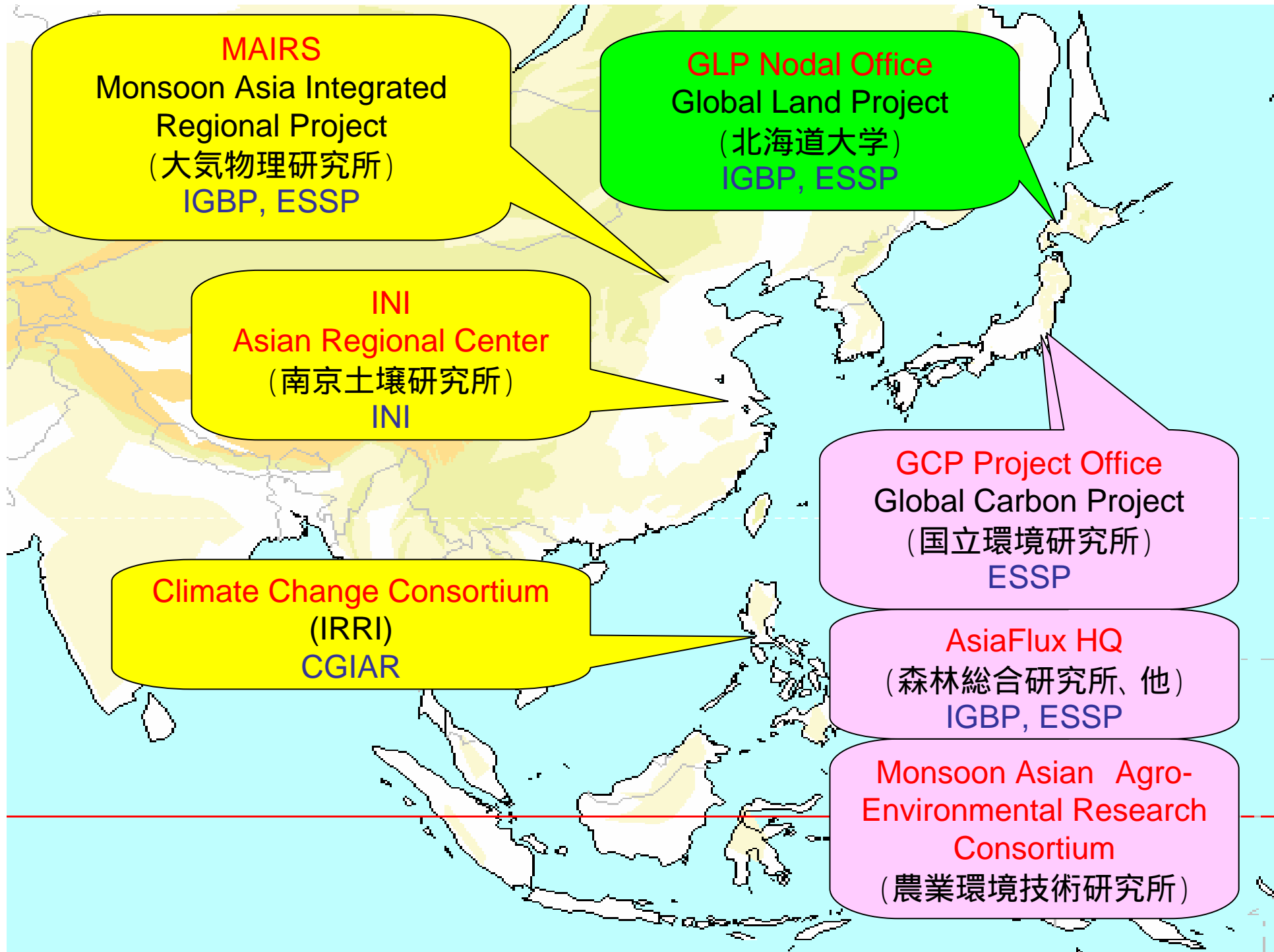
- To provide a multi-disciplinary, fully integrated framework to verify behaviour of **carbon sources and sinks** and to assess their socio-economic drivers and consequences.
- To make use of state-of-the-art technologies for **carbon accounting and modelling**.
- To adopt a full consistent **carbon accounting strategy** across scales from ecosystems to the continental.
- To identify the gaps in our knowledge in order to improve the negotiation capacity of the European Union for implementation of **the Kyoto protocol**.



AsiaFlux, China Flux, KoFlux, ThaiFlux,







Monsoon Asian Agro-Environmental Research
Consortium (MARCO)

**Final Statement of This
Symposium**

- To host periodical International **Meetings**
- To support **fellowship** from monsoon Asian countries
- To open a **web-site**

MAGES

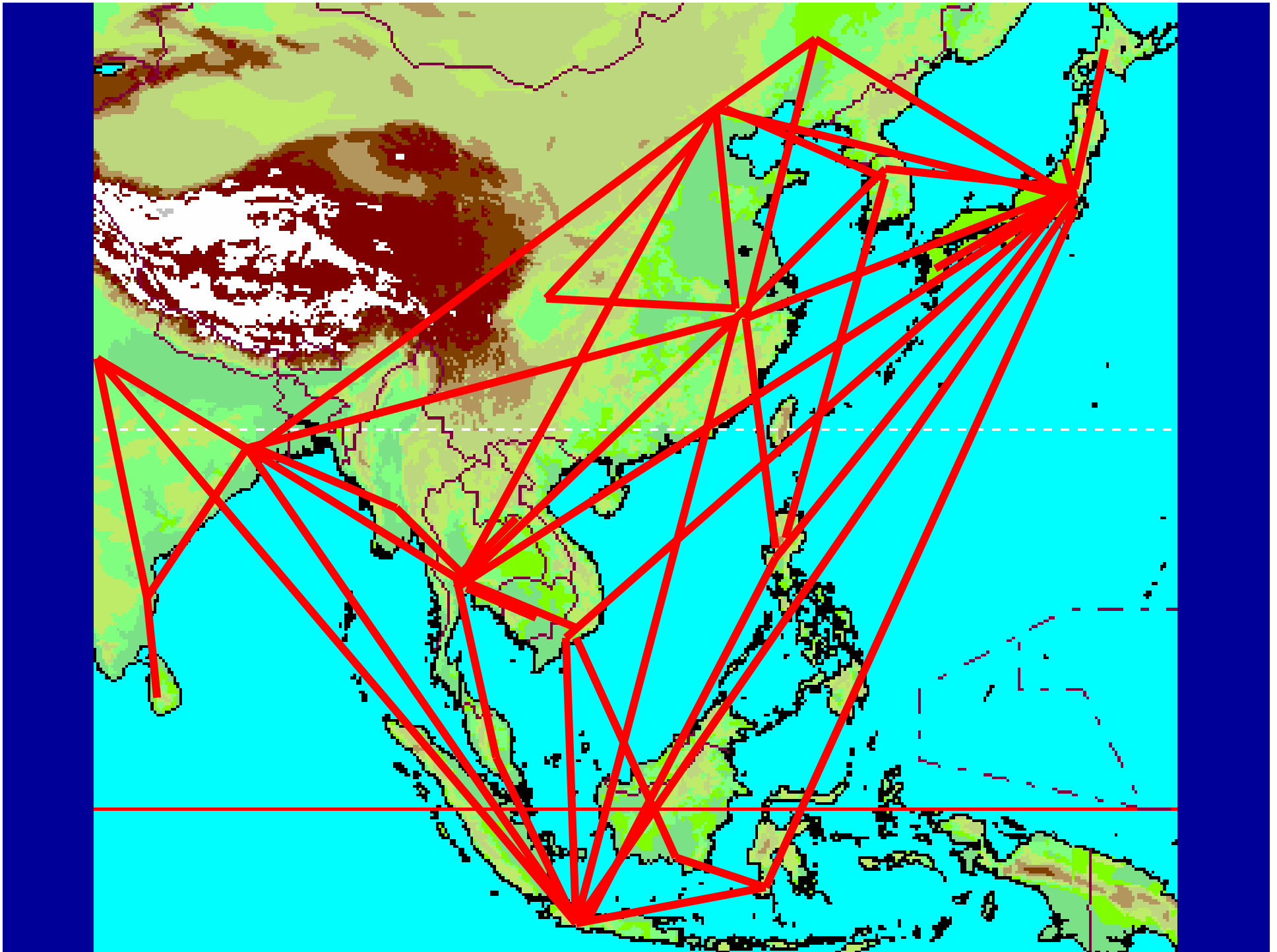
Monsoon Asia Agricultural Greenhouse Gas Emission Study

Possible Targets

- More accurate regional estimation of Agricultural GHG emissions
- Provide feasible mitigation options and their potentials
- Assess the influences of changing GHG emissions due to changes of management on regional land ecosystems and the atmosphere

Tools

- Field measurements
- Database compilation and analysis
- Modeling and GIS



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PROGRAM

Wednesday

- Country reports
- Plenary discussion
- Break-out group discussion

Thursday

- Break-out group discussion
- Plenary discussion & Wrap up

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Official Language:

The official language of the Workshop will be **English**. **However**, voluntary service of simultaneous translation for any monsoon Asian languages are welcome, in particular during the discussion sessions.