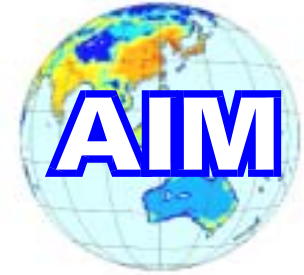


**The 7<sup>th</sup> AIM International Workshop**  
**15-17 March 2002**  
**National Institute for Environmental Studies, Tsukuba, Japan**



# **Overview of AIM Modeling**

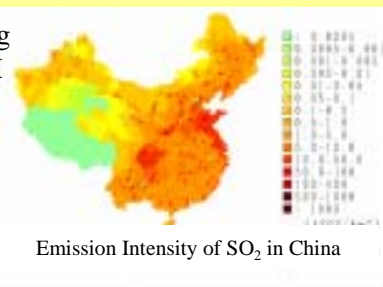
**AIM Project Team**

**Mikiko Kainuma (NIES, Japan)**

# Recent Activities of AIM Team

**AIM/Local/Country/Inter-Provincial**

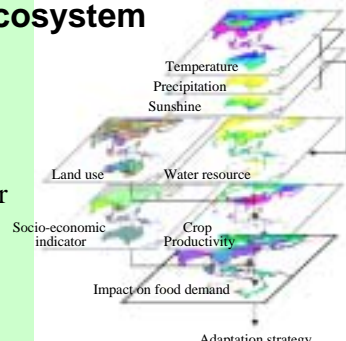
Developed for linking CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>2</sub>, SPM reduction program



Emission Intensity of SO<sub>2</sub> in China

**AIM/Impact/Ecosystem**

Detailed process model for climate change impact assessment focused on surface water recycling, crop productivity and vegetation



**AIM/End-use**

Country Based Technology Model

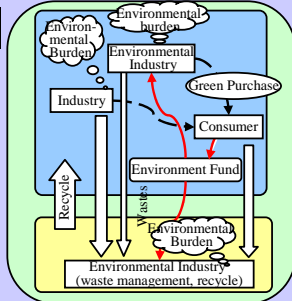
**AIM/Top-down**

World Economic Model

## AIM Family

**AIM/Material**

One country CGE model with CO<sub>2</sub> and material balance, interface with environmental technology model

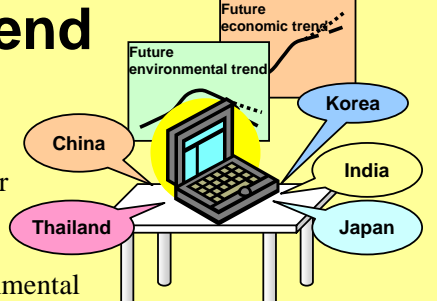


Technology assessment ↑ ↓ Technology needs

Research on new technologies

**AIM/Trend**

Developed as a communication platform in order to construct Asia-pacific regional environmental outlook supported with multi-regional environment-economic CGE model



# Recent Activities of AIM Team

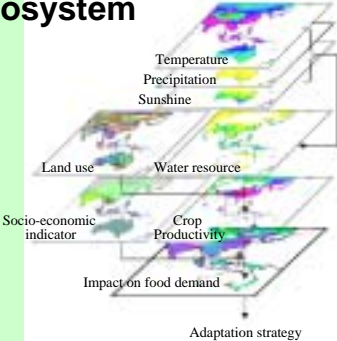
**AIM/...**

Developed CO<sub>2</sub>, SO<sub>2</sub> reduction

**Assess impact of climate change water, agriculture, vegetation, economy, ...**

**AIM/Impact/Ecosystem**

Detailed process model for climate change impact assessment focused on surface water recycling, crop productivity and vegetation



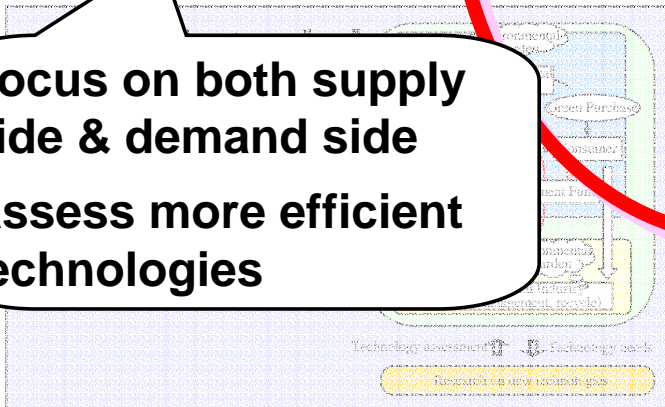
Temperature  
Precipitation  
Sunshine  
Land use  
Water resource  
Socio-economic indicator  
Crop Productivity  
Impact on food demand  
Adaptation strategy

**AIM/End-use**

Country Based Technology Model

**Focus on both supply side & demand side**

**Assess more efficient technologies**



Technology assessment Technology bank

## AIM Family

**AIM/Top-down**

World Economic Model

**Global CGE model**

**Assess cost of CO<sub>2</sub> reduction and benefit of mitigation policies**

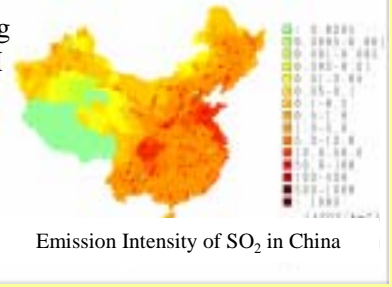
**AIM/...**

Developed comprehensive regional economic model to construct Asia-Pacific regional economic outlook supported by multi-regional environment-economic CGE model

# Recent Activities of AIM Team

**AIM/Local/Country/Inter-Provincial**

Developed for linking CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>2</sub>, SPM reduction program



Emission Intensity of SO<sub>2</sub> in China

**City, county or country scale model**  
**Database + end-use + GIS**  
**Assess co-benefit of CO<sub>2</sub> and air pollutant reduction**

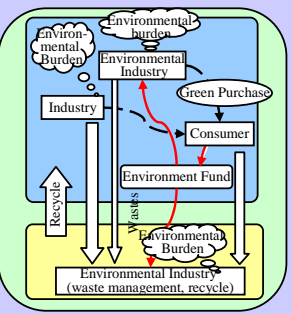
**Country based CGE**  
**Integration of CO<sub>2</sub> reduction & material flow**

## AIM Family

**Communication tool for policy makers to assess environmental policies**

**AIM/Material**

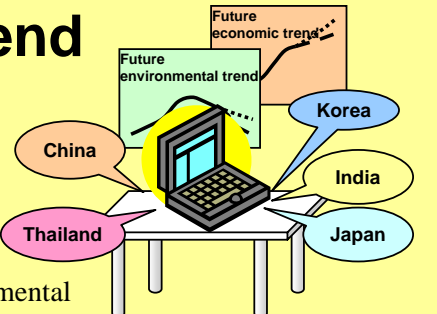
One country CGE model with CO<sub>2</sub> and material balance, interface with environmental technology model



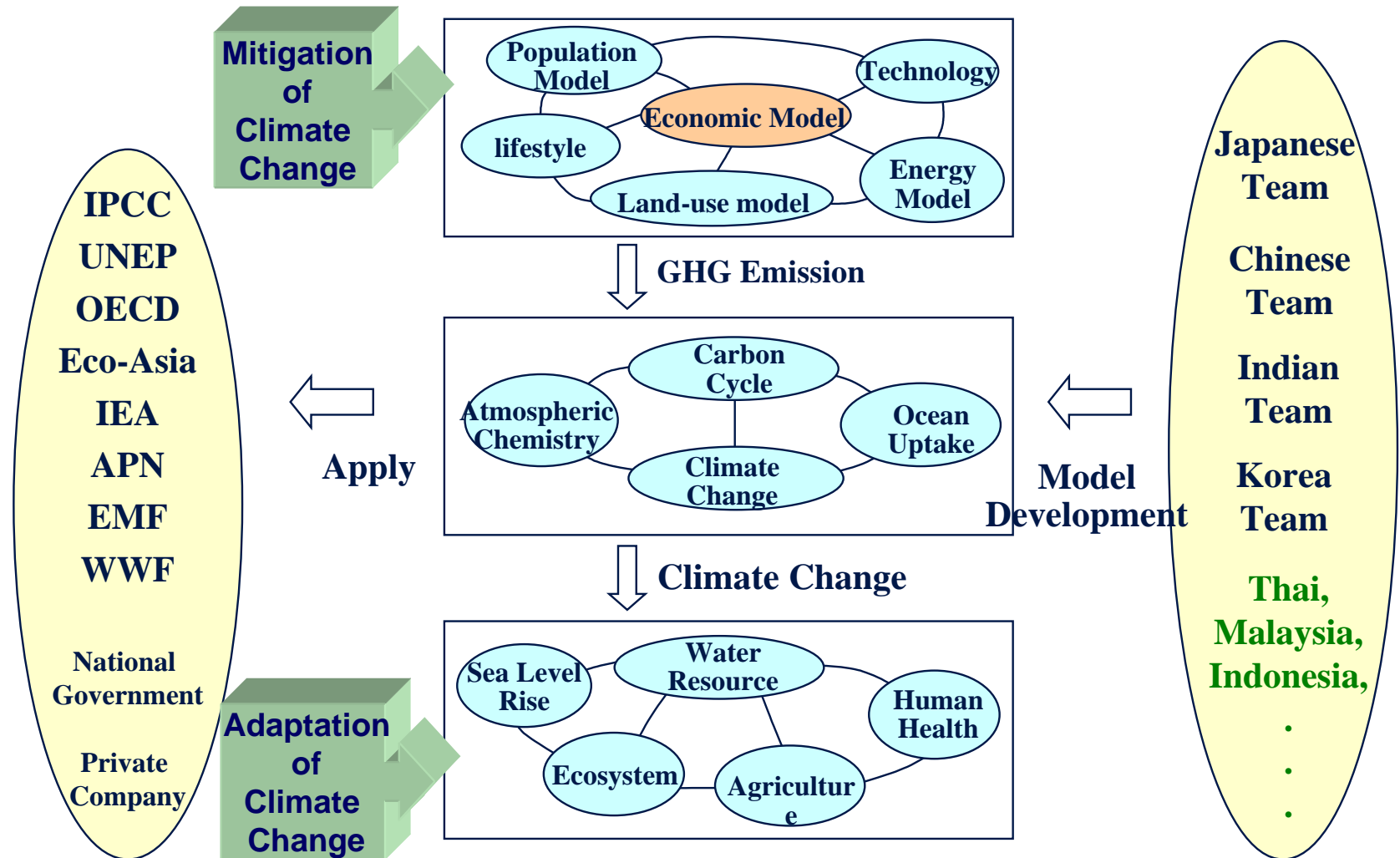
Technology assessment ↑ ↓ Technology needs  
 Research on new technologies

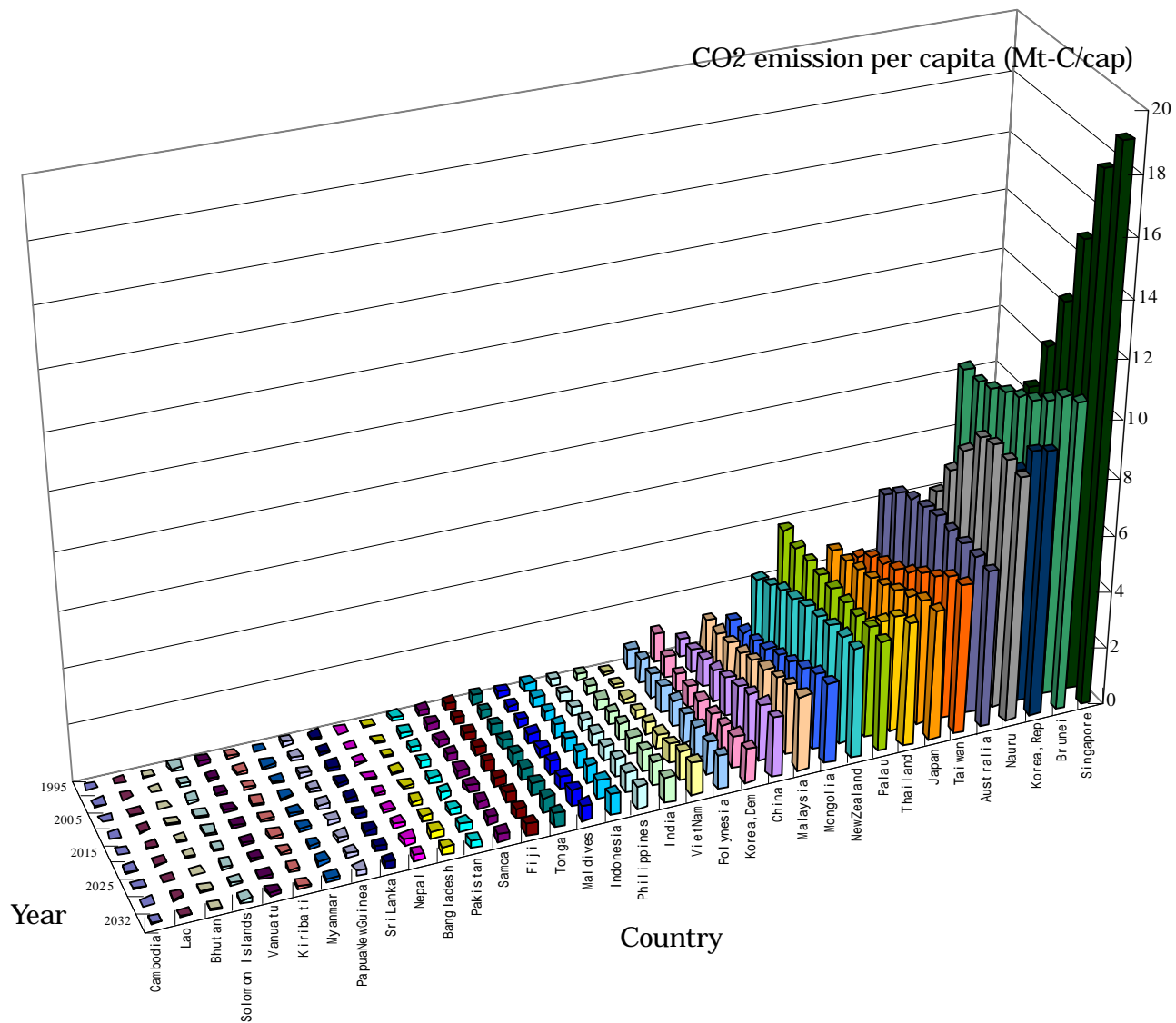
**AIM/Trend**

Developed as a communication platform in order to construct Asia-pacific regional environmental outlook supported with multi-regional environment-economic CGE model



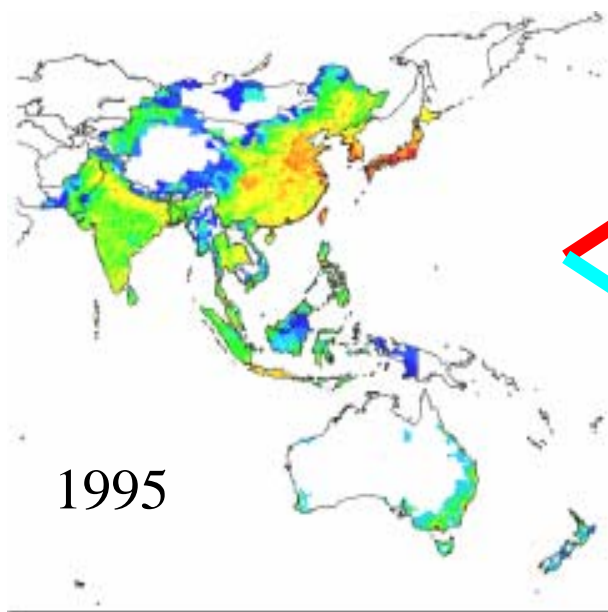
# Integrated Assessment Model of Climate Change: The AIM Approach



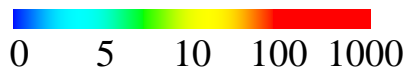


Projection of CO2 emission per capita for each country

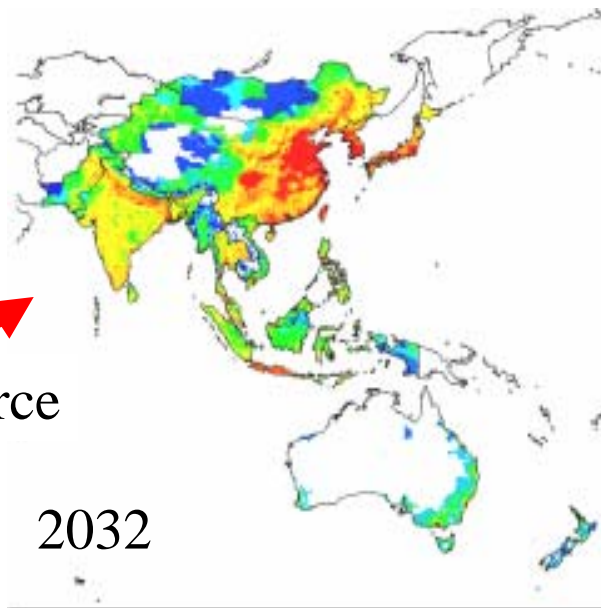
# CO2 emission intensity



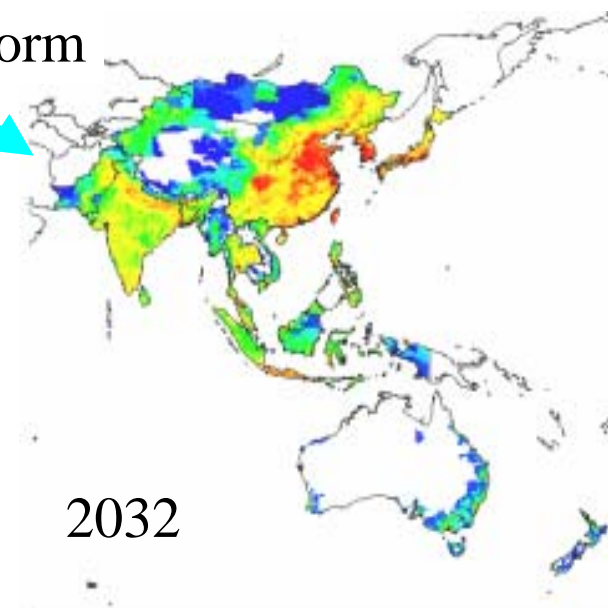
gC/m<sup>2</sup>/year

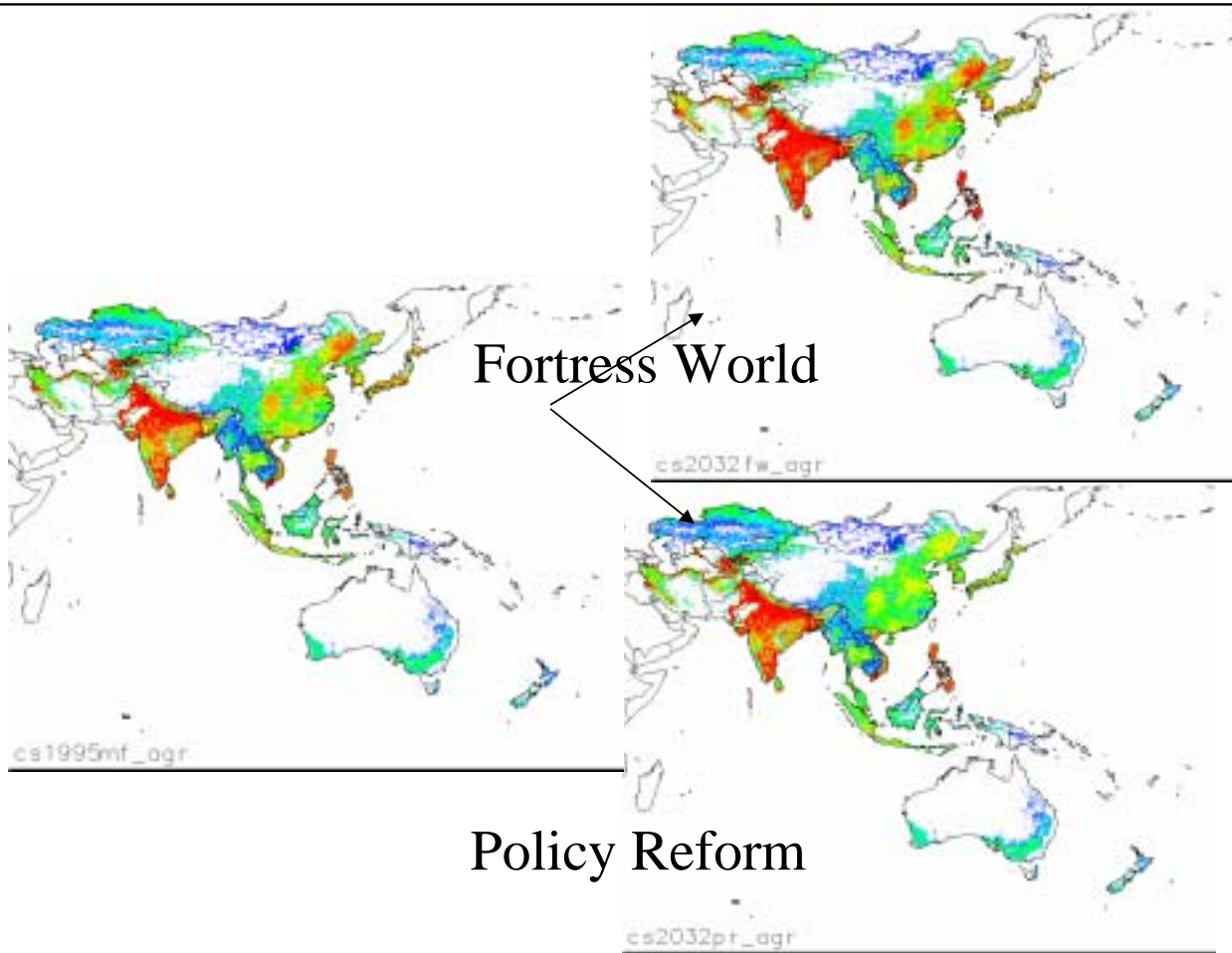


Market Force



Policy Reform





Fortress World

Policy Reform

$\text{m}^3/\text{ha}/\text{year}$

1 50 250 1000 2000

Water consumption intensity in 1995 and 2032 in agriculture sector<sup>8</sup>



# **The 7<sup>th</sup> AIM International Workshop**

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## **Session I: Opening**

## **Session II: Emission Inventory and Modelling**

- AIM/Trend**
- Emission Inventory and Modelling in China**
- Emission Inventory and Modelling in India**

## **Session III: Emission Inventory and Climate Change**

- Emission Inventory in Malaysia**
- CO<sub>2</sub> Reduction Policy in Selected Asian Countries**
- Russia's Climate Policy**

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## **Session IV: Impact Modelling**

- Recent Development of AIM/Impact Model**
- Database for AIM (Impact Model)/ China**
- Impact Assessment of Forest Influenced by Changing Global Climate**

## **Session V : Land Use and Impact Modeling**

- Impact Model Development**
- AIM/Water**
- Modeling Agriculture and Land Use**

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## **Session VI: Modelling in the Asia and Pacific Region**

- AIM/Country**
- AIM/Provincial and Inter Provincial**
- AIM/Database**

## **Session VII : Environmental Innovation Strategies in the Asia-Pacific Region**

## **Session VIII: Modelling of CO<sub>2</sub> Emission, Wastes and Material**

- Application to Korea**
- Modeling of Household Waste Generation Treatment by  
Bottom-up Approach**
- AIM/Material**
- Agriculture and Land Use**

## **Session IX: Future Direction of AIM Modeling**

Thank you