

Future Direction of AIM

~For discussion toward next AIM project~

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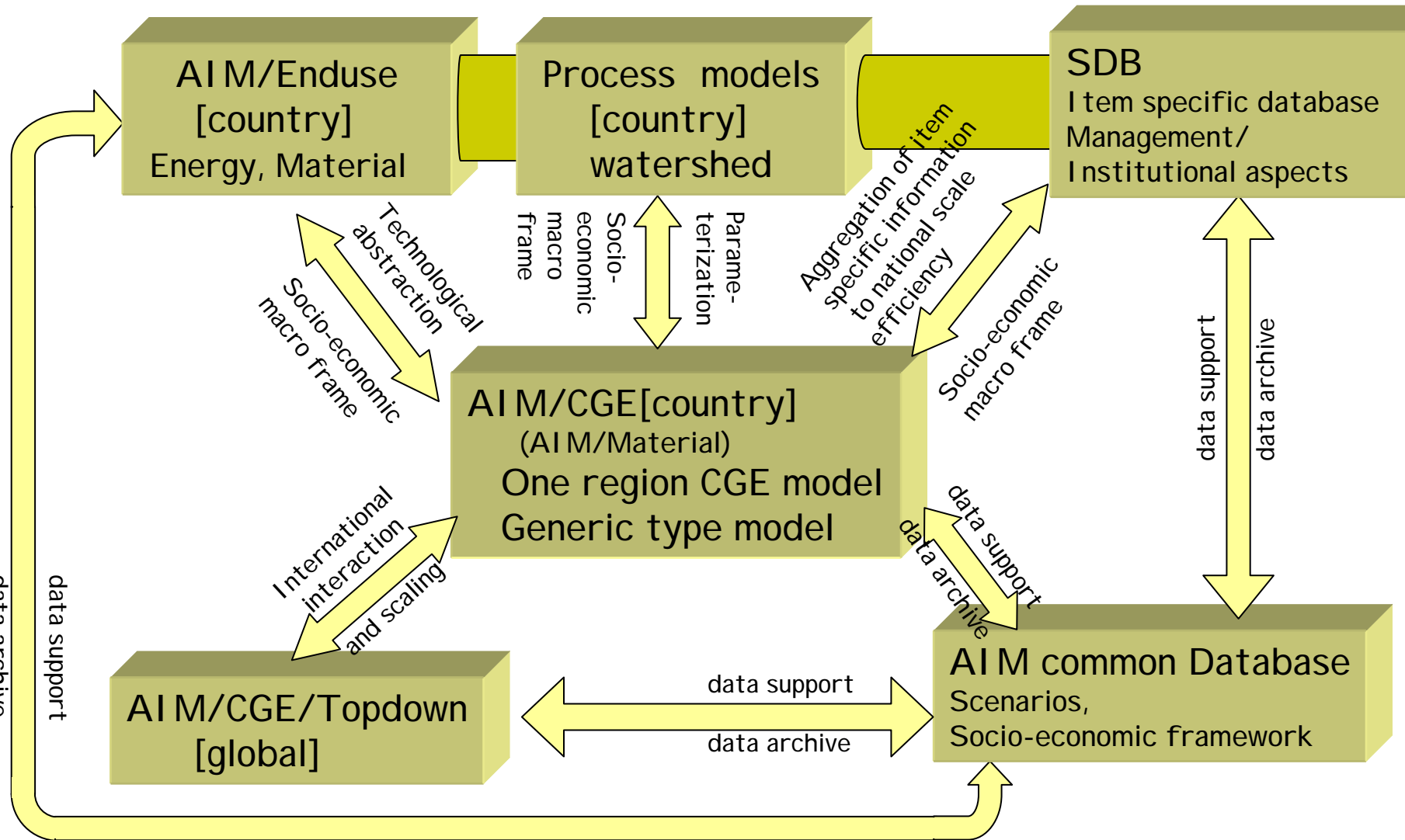
At Ohyama Memorial Hall

National Institute for Environmental Studies, 305-
8506, Tsukuba, Japan

AIM Model Family (FY 2003)

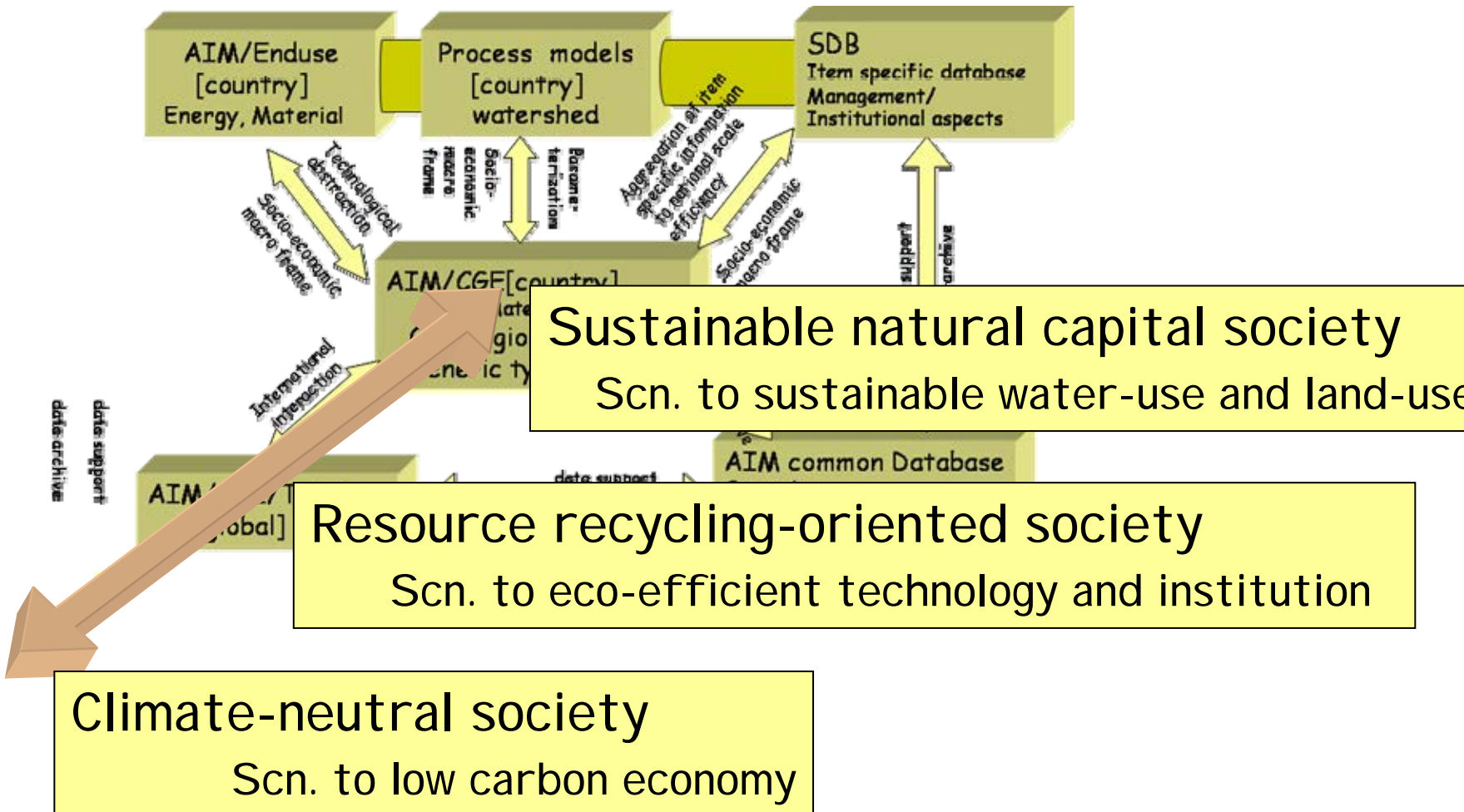
	Top-down/CGE			End-use, Energy, Technology Bottom-up					Impact Assessment				
	AIM/Ecosystem	AIM/Material	AIM/CGE	AIM/Trend	AIM/Enduse[local]	AIM/Enduse[country]	AIM/Enduse[global]	AIM/Impact	AIM/Impact[Country]	AIM/Impact[policy] (tentative name)	AIM/DVM-LU (tentative name)	AIM/Water	
Category	Conservation of ecosystem/ water stress/ landuse/ pollution in developing countries	CO2 reduction, energy consumption, waste management, environmental industry, and recycling-based society	Energy, GHG Control	Evaluate country-wise environmental problems	GHG,SO2,NOX,PM abatement technology	GHG,SO2,NOX,PM abatement technology	GHG,SO2,NOX,PM abatement technology	Impact assessment of climate change	Impact assessment of climate change	Integration of mitigation policy evaluation and impact assessment	Impact assessment of climate change and land-use change	Impact assessment	
Objective	Modeling of relationship among economic activities, land use and ecosystem	Economic and material flow impact by waste management and climate policy	Long-term global warming	Quantification and analysis of energy and environmental variables	Technology selection for global warming, regional air pollution	Technology selection for global warming, regional air pollution	Technology selection for global warming, regional air pollution	Impact assessment at global scale	Impact assessment at country scale	Investigation of stabilization level and mitigation policy with considering consequent impacts	Integrated assessment of the interaction among climate, vegetation and land-use	Integrated assessment of water supply and demand focusing on urban area	
Model type	Global economic model + various process models such as water	Country economic model	Global economic top-down model	Country-level econometric model	Country-level or regional-level bottom-up model	Country-level or regional-level bottom-up model	Country-level or regional-level bottom-up model	Process model based on raster GIS data	Process model based on raster GIS data	Tool for synthesizing current knowledges	Integrated model (process model + global economic model)	City model (coupling process and statistical model)	
Target year	~ 2100	~ 2030-2050	~ 2100-2150	~ 2032	~ 2030	~ 2050	~ 2050	~ 2100	~ 2100	~ 2050 (Mitigation policy) ~ 2100 (Impact)	~ 2150	~ 2050	
Destination	MA (millennium ecosystem assessment)/ APEIS/ General environmental analysis	Carbon tax/ APEIS/BKP/ Coming top-down fund	EMF21(Energy Modeling Forum) APEIS IPCC UNEP/GE04	ACROPOLIS	Tool for country and local level policy making by AIM team in each country, Estimation of future GHG inventories	Tool for country and local level policy making by AIM team in each country	ACROPOLIS EMF21 IPCC	APEIS AIAACC GEF	APEIS AIAACC GEF	BKP,IPCC,Initiative	Next generation of AIM model	APEIS	
Content	Ecosystem and landuse in global env. problems	Assess reduction of environmental loads by promoting recycle, environmental industry and investment	Main model for top-down energy model	Simple environmental burden estimation model that can be operated by policymakers in each country	Characteristics of regional detailed resolution, Interface between regional air pollution and energy management	Assess country-level energy and GHG reduction policy, Main tool to achieve reduction target for AIM team in each country	Bottom-up model covering world region and supplemented by AIM/CGE	Flagship model of AIM/Impact study	Distribution package for collaborative research teams of AIM	Communication tool for policymakers	Full couple model of land-use and land-cover changes	Urbanization, water use management, coupling water quantity and quality problem	
Work time schedule	Middle for MA/ Middle for APEIS	Short for carbon tax in Japan and BKP/ long for application to Asian countries	Short-term: EMF21, middle-term: APEIS, GEO4, long-term: IPCC	Operational	Operational	Operational	short-term: ACROPOLIS, EMF21, middle-term: APEIS, BKP, long-term:IPCC	Operational	Short/Mid term	Mid term	Mid/Long term	Short/Mid term	
1.MoE		carbon tax / BKP / recycling-based society				B K P	B K P			B K P			
2.APEIS													
3.MA													
4.EMF21													
5.ACROPOLIS													
6.IPCC													
6.GEO, etc		Asian countries	G E O 4	G E O 4					AIAACC,GEF	B K P Initiative			
Audience	Global	MoE/National gov.	Outside	Outside	each country, local government, outside	MoE, each country government, outside	MoE, each country government, outside	Outside	Outside	MoE/outside	Outside	Outside	
Task	Completion of model	Link with enduse model	Completion	To include more environmental indices	Link with AIM/AIR(air pollution model and GIS, revision of data	Revision of data	Link with the country models	Additional modules Manual writing	Additional modules and Manual writing	Fix specification and development schedule in detail	Make a linkage between land-use model and global dynamic vegetation model	Linkage of water resource assessment model	

Modeling dimension in the next project

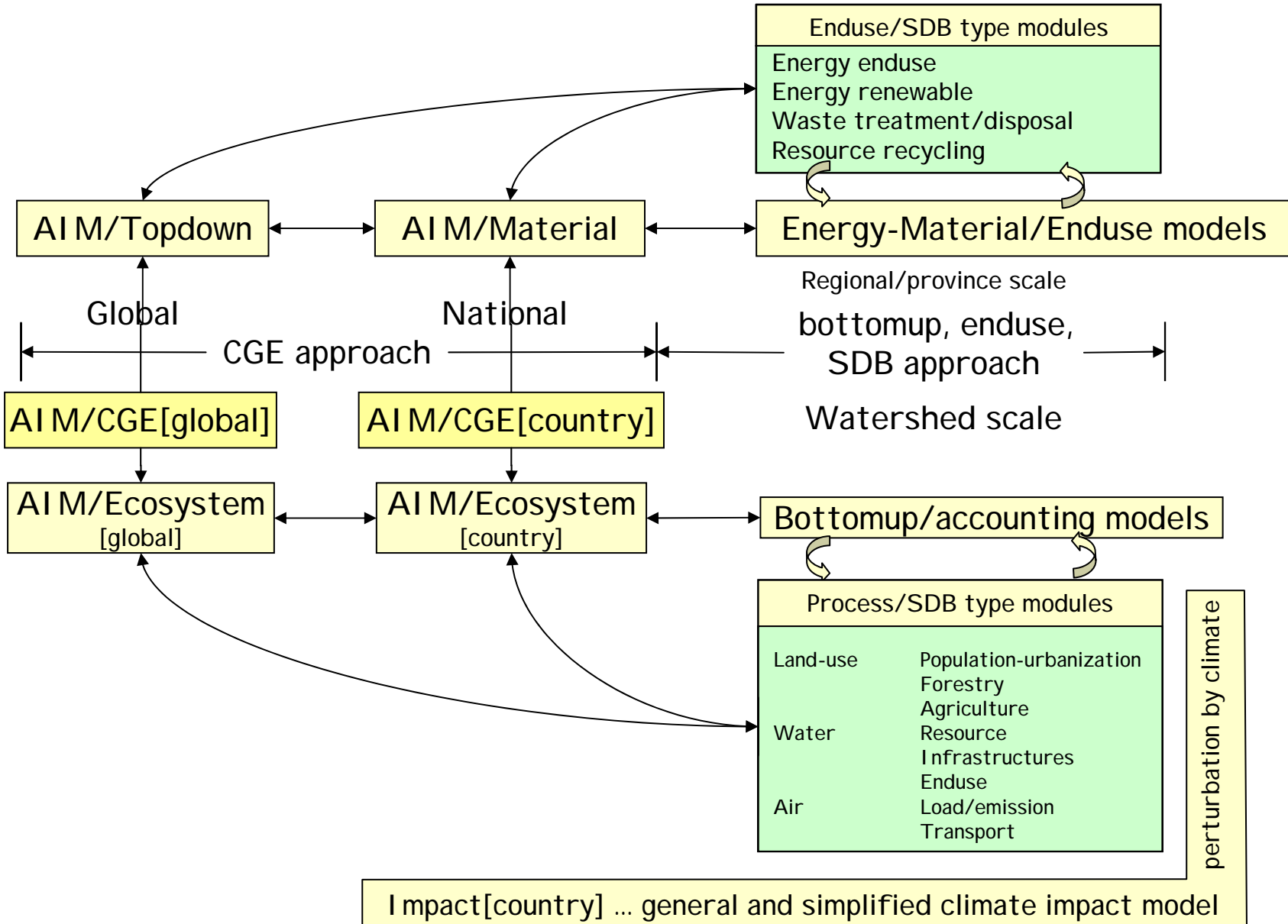


Issue dimension of next project

-Three issues of concern which interact each other-



Three approaches in the next project



Future Direction of AIM

From the view point of Asian-Pacific environment in the 21st century;

1. Focused on the three issues confronted;
Scenarios to 1) Low carbon economy, 2) Eco-efficient technology and institution , 3) Sustainable water-use and land-use
2. Focused on 1) Energy, 2) Material, 3) Water and Land uses and their control;
3. Three spatial scales and three temporal scale
1) Global/National/Sub-national or watershed,
2) 2020 /2050/after 2100

and

4. Intensify the role of an integration platform for the related study in Asian-Pacific region