



Recent research on climate change impacts assessment and adaptation policies in Japan

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19th AIM International Workshop 2013 @ NIES

Toward to Adaptation

-Japanese Research Activities-

- **Environment Research & Technology Development Fund “S-8”**
 - **Ministry of Environment**, FY2010-14, **12** sub-teams, Assessment of climate change impacts and adaptation strategy on whole Japan and local government
- **Research Program on Climate Change Adaptation**
 - **Ministry of Education, Culture, Sports, Science and Technology**, FY2010-14, **12** programs, downscaling, assimilation, simulation for CC adaptation
- **Special Coordination Funds for Promoting Science and Technology**
 - **Japan Science and Technology Agency**, FY2010-14, **4** programs, Reform program for generating new social systems adapted to climate change
- **Development of mitigation and adaptation technologies to address global warming in the agriculture, forestry and Fisheries**
 - **Ministry of Agriculture, Forestry and Fisheries**, FY2010-14 , **7** programs

Toward to Adaptation

-Japanese Adaptation Policies-

- **Fourth Basic Environmental Plan (April, 2012)**

- Necessity of adaptation consideration and promotion is included for the first time.

- **Innovative Energy/Environmental Plan (September, 2012)**

- From the view point of dealing with unavoidable climate change impacts, national adaptation plan will be drawn up.

- **Integrated report on observation, projection and impact assessment of climate change (March, 2013)**

- **National Adaptation Plan**

- Establishment of the subcommittee “climate change impact assessment” in the Central Environment Council (July, 2013)
- Organizing the scientific knowledge of climate change, projection, impact and risk assessment (March, 2013)
- Finalizing the climate change impact/risk assessment (September, 2014)
- National Adaptation plan will be approved by the Japanese cabinet (summer, 2015)

Environment Research & Technology Development Fund “S-8”

- **Ministry of the Environment**
- Targeted area : **Whole** and **regional** area in **Japan** and **Asia-Pacific region**
- Targeted fields: **Water resources, forests, agriculture, coastal zones, human health**
- Research period:
 - Period I (**2010**-2012) + Period II (20013-**2014**)
- Project leader: **Nobuo MIMURA**, Ibaraki University
- Number of sub-themes: **12**
 - Impact assessment in whole Japan: **9**
 - Impact assessment in Japanese regional area: **2**
 - Impact assessment in Asian developing countries: **1**

Objectives of S-8 project

- To assess climate change **impact assessment** focusing on **whole Japan** under different GHG concentration stabilization scenarios and adaptation strategies
 - Utilization of **new climate scenario** with high accuracy and resolution
 - Development of advanced model for assessment of climate change impacts and **adaptation strategy**
- To develop a planning method for **adaptation strategy** focusing on **Japanese local government and developing countries in Asia-Pacific region**
 - Development of **simplified tool** to assess the impacts of, and vulnerabilities and adaptation to, climate change
 - Consideration of **uncertainty** in the assessment

Socio-Economic Scenarios

Climate Scenarios

【Theme 1】 Research on highly reliable quantitative assessment of climate change impacts throughout Japan



Climate Scenario downscaler

Economic assessment

Integrated assessment model

Simplified assessment method

Regional assessment method

Feedback from local government

Feedback from developing country

【Theme 2】

Research on impact assessment and comprehensive adaptation policies at the local government level



Local government consortium

【Theme 3】

Research on indexes of vulnerability and adaptation effects in the Asia-Pacific Region



Various impact and adaptation studies in the Asia-Pacific region

Transmission of research results to domestic and international policymaking

Common scenario development

Background and objective

Common scenario: Multi-sector assessment of IAV to CC

Uncertainty: Multi Scenarios and GCMs

Issues to resolve: Number of scenarios

Common scenarios of first and second edition

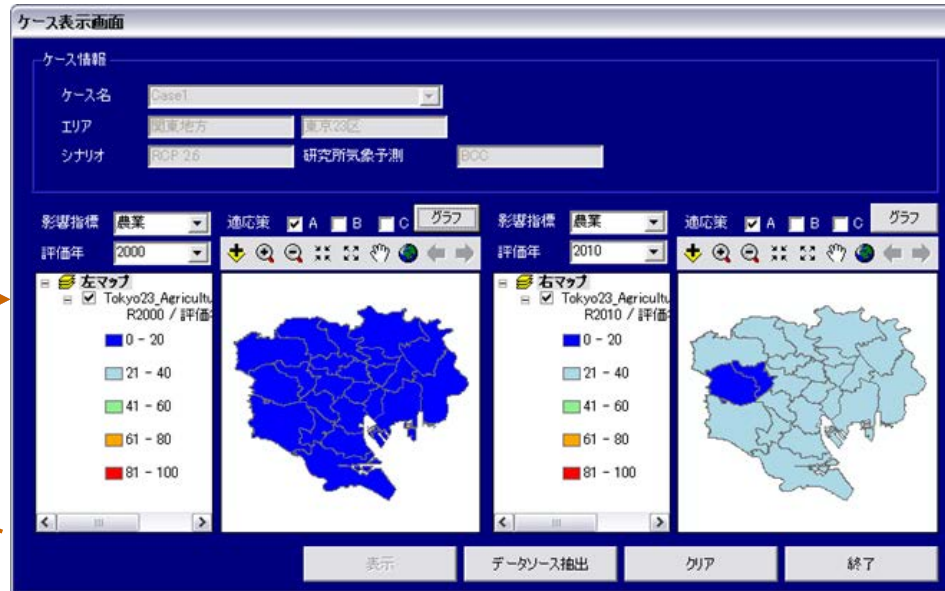
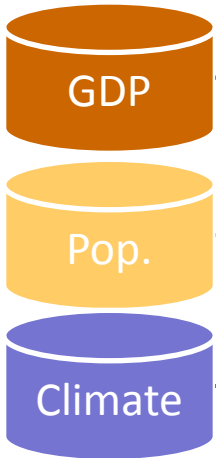
Common scenario	Climate scenario			Socio-eco. scenario	File distribution
	Data	GCM	Scenario		
S4 scenario	CMIP3	2	2	-	-
S8 fist edition	CMIP3	4	1	1	Finished
S8 second edition	CMIP5	4	3	9	Finished

AIM/Adaptation[Policy]

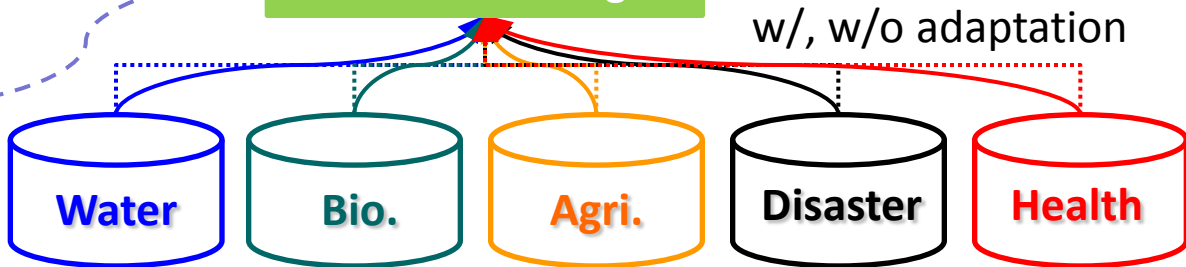
- **AIM/Adaptation[Policy]**
 - Objective
 - Integrating research outcomes developed by the theme 1
 - Providing the research outcomes to theme 2
 - Database type tool including socio-economic scenarios, Climate scenarios, Results of impact assessment
 - Prefectural and municipal levels

AIM/Adaptation[Policy]

Climate/
Socio-
economic
scenarios

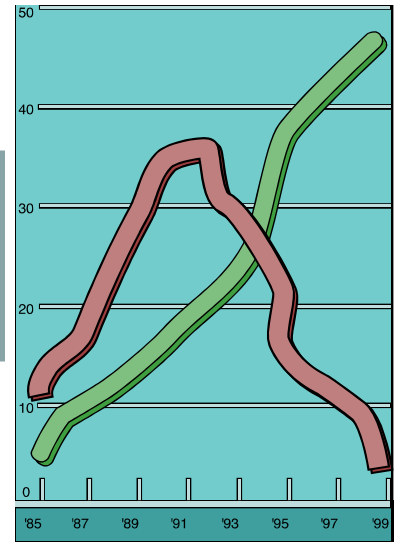


Pattern scaling



Impact response functions/Simulation results

Simple regression



Application of S-8 research results into regional adaptation strategies

- **Nagano Prefecture**

- Clarification of adaptation in “Environment and Energy Plan in Nagano – Third Prefectural Plan against Climate Change in Nagano”
- Participation in S-8 project

- **Saitama Prefecture**

- Setting Special committee as one part of the revision of global warming prevention
- Participation in S-8 project

- **Mie Prefecture**

- Implementing integrated assessment of climate change (2012)
- S-8 member’s consultation

Contribution to Japanese National Adaptation Plan

- **Consultation**

- Dr. Harasawa and Dr. Takahashi are formally involved in the subcommittee “climate change impact assessment” in the Central Environment Council.

- **Utilization of assessment models for climate change**

- AIM Impact Team been organizing to conduct impact assessment considering adaptation options collaborating with the S-8 members.

Conclusion

- **AIM Impact Team has managed the S-8 project and has been greatly contributing to the process of development of Japanese National Adaptation Plan.**
 - How can AIM Impact Team keep the Japanese IAV research network after finishing the S-8 project?
 - How can AIM Impact Team contribute to Japanese regional adaptation plans/strategies?

Thank you for your kind attention!