

Introduction to Sessions 12 and 13

Presentations in the sessions 12 and 13

- **Session 12 : Global impacts** (Chair: Takahashi)
 - Global food insecurity under climate volatility: Dr. Tomoko Hasegawa (NIES, Japan)
 - Climate and biomass impacts on global land use: Dr. Ron Sands (USDA, USA)
 - Does linearity hold for climate change impacts between 2° C warming and other warming levels? Dr. Akemi Tanaka (National Agriculture and Food Research Organization, Japan)
 - Intercomparison of regulated river discharge among multiple global hydrological models under multiple forcings: Dr. Yoshimitsu Masaki (Hirosaki University, Japan)
- **Session 13: Regional/national impacts** (Chair: Dr. Hijioka)
 - Climate change impact on bio-climatic zone in North-east Asia: Prof. Seongwoo Jeon (Korea University, Korea) and Dr. Huicheul Jung (KEI, Korea)
 - Spatial optimization considering impact of climate change: Ms. Eunjoo Yoon (SNU, Korea)
 - Regional impact assessment on rice production in Indonesia to develop regional adaptation plans: Prof. Yuji Masutomi (Ibaraki University, Japan)

Impact-related research projects

- NIES Environment-Economy-Society Integration Research Program
 - Improvement of AIM for developing quantitative SD scenarios
[2016.4-2021.3]
- NIES Low-Carbon Society Research Program
 - Climate change and **global risk assessment**
[2016.4-2021.3]
- S10 (a.k.a. ICA-RUS) (funded by the MoE, Japan)
 - Development of **global climate risk management** Strategies
[2012.4-2017.3]
- S14 (a.k.a. MiLAI) (funded by the MoE, Japan)
 - Global mitigation and local **adaptation** to climate change
[2015.6-2020.3]
 - Balancing reduction of climate change risks, economic development, and conservation of ecosystem services for promoting global wellbeing
- SICAT (funded by MEXT, Japan)
 - Social implementation of climate change adaptation technology **in Japan**
[2015.11-]

Hasegawa
(12-1)

Tanaka
(12-3)

International collaborations/activities

- international research projects

- Inter-Sectoral Impact Model Intercomparison Project (**ISI-MIP**) [Hanasaki, Masaki]
- Impacts and Risks from High-End Scenarios: Strategies for Innovative Solutions (**EU-IMPRESSIONS**) [Takahashi, Hanasaki, Masui]
- **AGMIP-GlobEcon** [Hasegawa, Fujimori]

Masaki
(12-4)

Hasegawa
(12-1)

Sands
(12-2)

- IPCC

- Participation to the ‘**IPCC SR1.5 scoping meeting**’ (Aug. 2016) [Masui, Takahashi]

- bilateral collaborations

- Participation to the Japan – **Korea** International Workshop on adaptation study (SNU, Seoul, Feb. 2016) [Hijioka, Takahashi]
- MoE project for supporting the development of state-level adaptation plans in **Indonesia** [Takahashi]

Jeon, Jung
and Yoon
(13-1 & 13-2)

Masutomi
(13-3)

Refereed publications (Published/accepted in 2016)

- Climate change impacts on water/hydrology
 - Hanasaki, N., S. Yoshikawa, K. Kakinuma, and S. Kanae (2016), A seawater desalination scheme for global hydrological models, *Hydrol. Earth Syst. Sci.*, 20(10), 4143-4157, doi: 10.5194/hess-20-4143-2016
 - Pokhrel, Y. N., N. Hanasaki, Y. Wada, and H. Kim (2016), Recent progresses in incorporating human land–water management into global land surface models toward their integration into Earth system models, *Wiley Interdisciplinary Reviews: Water*, 3(4), 548-574, doi: 10.1002/wat2.1150.
 - Yano, S., N. Hanasaki, N. Itsubo, and T. Oki (2016), Potential Impacts of Food Production on Freshwater Availability Considering Water Sources, *Water*, 8(4), 163.
 - Konar, M., J. J. Reimer, Z. Hussein, and N. Hanasaki (2016), The water footprint of staple crop trade under climate and policy scenarios, *Environ. Res. Lett.*, 11(3), 035006.
- Climate change impacts on energy production/demand
 - Zhou Q., Hanasaki N., Fujimori S., Masaki Y., Hijioka Y. (2016) Model-based analysis of impact of climate change and mitigation on hydropower, *Journal of Japan Society of Civil Engineers, Ser. B1*, 72(4):19-24.
 - Hasegawa T., Park C., Fujimori S., Takahashi K., Hijioka Y., Masui T. (2016) Quantifying the economic impact of changes in energy demand for space heating and cooling systems under varying climatic scenarios. *palgrave communications*, 2 (16013), 1-8
- Climate change impacts on food and human health
 - Hasegawa T., Fujimori S., Takahashi K., Yokohata T., Masui T. (2016) Economic implications of climate change impacts on human health through undernourishment. *Climatic Change*, 1-14
- Other impact-related topics
 - Shiogama H., Stone D., Emori S., Takahashi K., Mori. S., Maeda A, Ishizaki Y., Allen M.R. (2016) Predicting future uncertainty constraints on global warming projections. *Scientific Reports*, 6
 - O'Neill B., Oppenheimer M., Warren R., Hallegatte S., Kopp R., Pörtner H., Scholes R., Birkmann J., Foden W., Licker R., Mach K., Marbaix P., Mastrandrea M., Price J., Takahashi K., van Ypersele J.P and Yohe G.: IPCC Reasons for Concern regarding climate change risks. *Nature Climate Change*. (Accepted).

ご清聴ありがとうございました
Thank you for your attention

AND PLEASE ENJOY THE SESSIONS.



Asia-Pacific Integrated Model

<http://www-iam.nies.go.jp/aim/index.html>

