

RIHN 12th International Symposium

Trans-scale Solutions for Sustainability

December 20 - 21, 2017

Kyoto, Japan

Sponsored by

The Research Institute for Humanity and Nature (RIHN)

National Institutes for the Humanities (NIHU)

Inter-University Research Institute Corporation

Supported by

International Institute for Applied Systems Analysis (IIASA)

and

Future Earth Research Unit, Kyoto University

OBJECTIVE

In this symposium, we discuss new approaches towards a sustainable future, focusing on the conflicts of resources, values, and governances among stakeholders across time and space. Behind the current understanding of the local tragedy of commons there exist trans-spatial issues such as local, national and global scale conflicts/synergy, as well as trans-temporal issues encompassing past, present and future, which need to be identified and solved. Analysis of the conservation and development of natural, social and institutional capitals is key to new directions of research. In particular, water and water-related issues under the conditions of climate change and shortage of land will be highlighted with scenario developments, and with the use of integrated indices and socio-ecological-economic models.

SESSION SCOPES

Session 1 Trans-spatial Connections (Local-Regional-Global Connection, Climate-Hydro-Ecosystem-Economic Connections)

In this session, we will focus on the synergy/conflicts of multi-resource utilizations among spatial scales. Interlinkages among multi-resources and conflicts over resources, including ecological resources, among those stakeholders who utilize them are key issues to be solved to attain sustainable resource utilization. Such a synergy/conflict structure may exist across spatial scales, from the local between urban and suburban areas, to the global through international trade. We would like to discuss the possibilities to develop technology to analyze this complicated structure of the interlinkages among spatial scales, and models or scenarios with new approaches.

Session 2 Trans-temporal Connections

This session will discuss research perspectives to make fuller use of future projection for today's decision making. When decisions are made for future planning, they have been done at scales smaller than the country level, and goals for the residents' wellbeing were set only in a short-term perspective. To achieve the sustainability of the entire earth, however, more emphasis should be put on environmental sustainability involving a broader range of stakeholders and longer temporal and greater spatial dimensions, and this applies to local decision making as well. We try to identify the key elements to fill this gap, for example, by 1) finding good indices, other than economical values, which make it possible to convert long-term sustainability into short-term target relevant to planning, 2) understanding the nature of human being in terms of sense of values about future generations and 3) integrating the possible causal-interactions between present decision and future environmental status, with which we try to clarify the necessary elements and conditions to develop scenarios which can bridge the gap.

Session 3 Social Responses to Tipping Points

In this session, we consider the notion of tipping points in both trans-spatial and trans-temporal terms, focusing on the methodological question of how to identify the critical moments of social responses to tipping points on natural resources. They include the surge of citizen's movements, and policy and institutional changes, as well as deeper changes in values, norms and principles, some of which involve a very long period of time. We take up water and water-related issues as a case study, and invite discussions on the possible applications of these research findings to tipping points in other spheres.

PROGRAM

Wednesday, December 20, 2017

Plenary Session

Chair: TANIGUCHI Makoto (RIHN)

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| 10:00-10:05 | Welcome and Introduction to Plenary Session
TANIGUCHI Makoto |
| 10:05-10:15 | Opening Remarks
YASUNARI Tetsuzo (Director-General, RIHN) |
| 10:15-11:20 | Keynote Address
Pathways to Global Sustainability: Multi-scale Tradeoffs
Peter H. VERBURG (Vrije Universiteit Amsterdam, the Netherlands) |
| 11:20-12:30 | Lunch |

Session 1 Trans-spatial Connections

Chair: TAYASU Ichiro (RIHN)

- 12:30- 12:45 Introduction to Session 1
Trans-spatial Connections and Environmental Traceability Methods
TAYASU Ichiro (RIHN)
- 12:45-13:15 Isotopes and Isoscapes: Tools for Understanding and Explaining
Spatial and Temporal Variations in Local Ecosystems and Suggesting
Solutions to Global Environmental Issues
Carol KENDALL (United States Geological Survey, USA [emeritus])
- 13:15-13:45 Mapping the Carbon, Air Pollution, and Biodiversity Footprints of
Nations: A GIS + GLOBAL SUPPLY CHAINS
KANEMOTO Keiichiro (Shinshu University)
- 13:45-14:15 Understanding Integration with Nexus Approach: Developing
Transferable, Scalable, & Sustainable Methods
ENDO Aiko (RIHN)
- 14:15-14:30 Coffee Break
- 14:30-15:00 Towards Integrated Solutions for Water, Energy, and Land Using an
Integrated Nexus Modeling Framework
WADA Yoshihide (International Institute for Applied Systems Analysis
(IIASA), Austria)
- 15:00-16:00 Roundtable Discussion
Chair: NAKASHIZUKA Tohru (RIHN)
The above speakers, Jiaguo QI (Michigan State University, USA) and
OHTA Nobuhito (Kyoto University)
- 17:00- Reception

Thursday, December 21, 2017

Session 2 Trans-temporal Connections

Chair: ISHII Reiichiro (RIHN)

- 09:00-09:15 Introduction to Session 2
Towards the Reconciliation between the Regional Plannings and the
Global Projections of Future Environmental Sustainability
ISHII Reiichiro (RIHN)
- 09:15-09:45 Integrated Analyses of Climate Policies for Simultaneous Realization
of the Paris Agreement and the SDGs
TAKAHASHI Kiyoshi (National Institute for Environmental Studies)
- 09:45-10:15 Inclusive Wealth Report 2018
MANAGI Shunsuke (Kyushu University)
- 10:15-10:30 Coffee Break
- 10:30-11:00 Tipping Points in the Anthropocene: Drivers, Connections, and
Impacts
Garry PETERSON (Stockholm Resilience Centre, Sweden)
- 11:00-11:50 Roundtable Discussion
Chair: SAIJO Tatsuyoshi (RIHN)
The above speakers, SAIZEN Izuru (Kyoto University) and WADA
Yoshihiko (Doshisha University)
- 11:50-13:00 Lunch

Session 3 Social Responses to Tipping Points

Chair: TANIGUCHI Makoto (RIHN)

- 13:00-13:05 Introduction to Session 3
TANIGUCHI Makoto (RIHN)
- 13:05-13:35 Social Decisions for the Water-Energy-Food Nexus
TANIGUCHI Makoto (RIHN)
- 13:35-14:05 The Groundwater Commons Game: Modelling Cultural Values,
Triggering Social Tipping Points, and Embarking on Sustainable
Pathways towards Groundwater Conservation
Juan CASTILLA (Commonwealth Scientific and Industrial Research
Organization (CSIRO), Australia)
- 14:05-14:35 Taking Social Responses to “Tipping” Points Seriously – Challenges
and Opportunities
Victor GALAZ (Stockholm Resilience Centre, Sweden)
- 14:35-14:50 Coffee Break
- 14:50-15:40 Roundtable Discussion
Chair: SUGIHARA Kaoru (RIHN)
The above speakers, Line GORDON (Stockholm Resilience Centre,
Sweden) and HIYAMA Tetsuya (Nagoya University)

General Discussion

Chair: TANIGUCHI Makoto (RIHN)

15:45-16:35 Session summaries and discussion across all sessions

16:35-16:40 Closing Remarks
KUBOTA Jumpei (RIHN)