

RIHN 8th International Symposium

Risk Societies, Edge Environments:
Ecosystems and Livelihoods in the Balance

October 23-25, 2013
Kyoto, Japan

Organized by

The Research Institute for Humanity and Nature (RIHN)
National Institutes for the Humanities (NIHU)
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PREFACE

Risk Societies, Edge Environments: Ecosystems and Livelihoods in the Balance

How do societies conceptualize the significance of environmental change? How do they respond? In recent years we have learned that humanity is in danger of transgressing the planetary 'boundaries' that describe the environmental conditions of the Holocene, the geological period in which all civilization has arisen. Similarly, some claim that humanity is now a determinant ecological force, and that the Earth has therefore entered a new geological epoch, the Anthropocene. Such concepts indicate that humanity now confronts increasing uncertainty in regard to the environmental cycles on which human societies depend, and that societies themselves are a major source of this uncertainty.

Scientists and citizens seek ways of describing such uncertainty and balancing it against the basic social need to plan for the future. The concept of risk allows conceptualization and estimation of the potential social, economic and environmental 'losses' that can be associated with contemporary environmental change. It can be applied to extreme events such as flood, fire, and drought, or it can refer to the dangers of ecosystem degradation or environmental pollution. In any case, the concept of risk also refers to the costs of social action — or inaction — in relation to environmental change.

Based on the research of three RIHN projects, this symposium examines social and ecological risk in several 'edge' environments, boundary zones that typically exhibit high rates of biodiversity and many livelihood niches, but that are also particularly susceptible to change. Drawing on extensive project research in the arid lands of Eastern and Northern Africa, the Siberian arctic, and the watershed environments of Lake Laguna, Philippines, this symposium invites us to examine how contemporary environmental change and climatic uncertainty is interwoven with social change and human wellbeing.

SESSION THEMES

Session 1: Human Subsistence in Relation to Invasive and Endangered Species

Arab societies maintained effective regimes of resource management in arid lands for over a thousand years. This session will discuss the current status of traditional agricultural, pastoral, and fishing systems in Sudan, and the dimensions of contemporary conservation and resource management which put these systems at risk. Mesquite (*Prosopis juliflora*) was introduced to Sudan in the 1980s in order to prevent desertification, but recent GIS-based analysis shows that this species is invasive and highly absorptive of scarce water resources, and may thus cause imbalances in indigenous ecosystems. In coastal Sudan, meanwhile, local diets and livelihoods rely on reef fishing and an offshore conservation zone has been established to protect rich coral ecosystems. This new coastal regulation may instead endanger local livelihoods, as it will likely prohibit use of gillnets due to the fact that they can also entangle the endangered dugong (*Dugong dugon*). Project research has obtained GPS-based location data of 3 individual dugongs, allowing analysis of the spatio-temporal overlap of fishing activity and dugong movement. This session therefore will allow integrated discussion of spatially-explicit data related to resource management and conservation in order to understand how such management schemes relate to local livelihoods.

Session 2: Global Warming Risk in the Far North

This session addresses the social and ecological risks presented by global warming in the far north, including Russia. Over centuries and millennia, people in the far north have adapted to a cold climate, but these techniques are now tested by disasters, such as flooding, which have increased due to current climate warming. New adaptation strategies are therefore needed. Case studies will describe how indigenous people, local government, and citizens' organizations recognize contemporary environmental change and deal with the risk it presents.

Session 3: Transdisciplinary Approach to Food/Health Risk in Southeast Asian Watersheds

In Southeast Asia, urbanization and suburbanization leads to high economic growth, but at the same time causes an increase in food and health risks due to environmental degradation and decreases in ecosystem services. Populations in these areas depend on rice produced in wet fields as a staple food and fish and shellfish caught from lakes and rivers as major sources of protein. Sound governance of lake and river watersheds is therefore a critical issue. Due to the blessings of nature (plenty of fresh water, fertile soil, biodiversity), this area has been able to accommodate a high population density, but urbanization, industrialization, and construction has accelerated population inflow and increased risks to food and health. Market mechanisms and national-level legislation and regulation have not provided sufficient solutions. Based on case studies in Southeast Asia, this session will discuss the potential of transdisciplinary approaches and community-based watershed governance systems to address food/health risk in the region.

PROGRAM

Wednesday October 23, 2013

Opening Session

Chairs: **Hein MALLEE** (RIHN) & **Steven R. MCGREEVY** (RIHN)

- 10:00-10:10 Opening Remarks
YASUNARI Tetsuzo (Director-General, RIHN)
- 10:10-10:20 Objectives of the Symposium
Daniel NILES (RIHN) / **ABE Ken-ichi** (RIHN)
- 10:20-11:20 Keynote Address 1
Responding to Risk: Perception and Decision Making
Heinz GUTSCHER (University of Zurich, Switzerland)
- 11:20-11:30 Coffee break
- 11:30-12:30 Keynote Address 2
The Research Challenge from Global Risks
Carlo C. JAEGER (Global Climate Forum, Germany)
- 12:30-14:00 Lunch

Session 1 Human Subsistence in Relation to Invasive and Endangered Species

Chairs: **Moamer Eltayeb Ali MOHAMED** (Red Sea University, Sudan) &
Sudhindra Nath PANDA (Tottori University, Japan)

- 14:00-14:30 Resources Use of Coastal Fisheries in Sudan
Adel Mohamed SALEH (Red Sea University, Sudan)
- 14:30-15:00 Current Status and Distribution of Dugongs (*Dugong dugon*) in Sudan
Badr eldinn Khalaf alla ADAM (Red Sea University, Sudan)
- 15:00-15:30 Evaluation of the Invasion Strategic of Mesquite (*Prosopis juliflora*) and Risk Management in Eastern Sudan Using Remotely Sensed Technique
HOSHINO Buho (Rakuno Gakuen University, Japan)
- 15:30-15:50 Coffee break
- 15:50-16:20 Root System Development of Prosopis Seedlings under Different Soil Moisture Conditions
YODA Kiyotsugu (Ishinomaki Senshu University, Japan)
- 16:20-16:50 Mesquite (*Prosopis spp.*) Water Uptake under Different Simulated Drought Conditions
YASUDA Hiroshi (Tottori University, Japan)
- 16:50-17:10 Comment: **Mahgoub Suliman MOHAMEDAIN** (RIHN/Sudan University of Science and Technology, Sudan),
NAWATA Hiroshi (RIHN/Akita University, Japan)
- 17:10-17:30 General Discussion
- 18:15- Reception

Thursday October 24, 2013

Session 2 Global Warming Risk in the Far North

Chair: **HIYAMA Tetsuya** (RIHN)

- 10:00-10:30 Political Economy of Extreme Events: Storms and Floods in Northern Finland
Monica TENNBERG (University of Lapland, Finland)
- 10:30-11:00 Flood Risk and Migration in the Republic of Sakha (Yakutia)
FUJIWARA Junko (RIHN)
- 11:00-11:30 Climate Change in the Eyes and Actions of the Northern Native Peoples of Sakha
Valentina I. DMITRIEVA (North-Eastern Federal University, Russia)
- 11:30-11:50 Coffee break
- 11:50-12:20 Adaptation Strategies for Risk and Uncertainty: The Role of an Interdisciplinary Approach including Natural and Human Sciences
OKUMURA Makoto (Tohoku University, Japan)
- 12:20-12:40 Comment: **TAKAKURA Hiroki** (Tohoku University, Japan)
- 12:40-13:10 Discussion
- 13:10-14:30 Lunch

Session 3 Transdisciplinary Approach to Food/Health Risk in Southeast Asian Watersheds

Chair: **MASUDA Tadayoshi** (RIHN)

- 14:30-15:00 Food and Health Risk and Watershed Management in South Asia
Roberto F. RAÑOLA Jr. (RIHN/University of the Philippines Los Baños, the Philippines) and **KADA Ryohei** (RIHN/Yokohama National University, Japan)
- 15:00-15:30 Economic Development, Environmental Degradation, and Public Health: The Case of Langat River Basin, Malaysia
Wai-Ching POON (Monash University Sunway Campus, Malaysia)
- 15:30-16:00 The Effects on Household Food Security and Health of Transient Displacement due to Flooding Events in Communities in the Silang-Santa Rosa Sub-Watershed Area: A Venue for Trans-Disciplinary Management
Noel R. JUBAN (University of the Philippines Manila, the Philippines)
- 16:00-16:20 Coffee break
- 16:20-16:50 Yaman ng Lawa Social Action Agenda: The “Yankaw Fish Garden Sanctuary”
Rogelio N. CONCEPCION (University of the Philippines Los Baños, the Philippines)
- 16:50-18:00 Discussion
Discussant 1: **OTSUKA Kenji** (Institute of Developing Economies, Japan)
Discussant 2: **Bam H. N. RAZAFINDRABE** (University of the Ryukyus, Japan)

Friday October 25, 2013

Session 4 Synthesis and Summary Discussion

Chairs: **Daniel NILES** (RIHN) & **Steven R. MCGREEVY** (RIHN)

- 10:00-10:15 Synthesis of session 1
NAWATA Hiroshi (RIHN/Akita University, Japan)
- 10:15-10:30 Synthesis of session 2
HIYAMA Tetsuya (RIHN)
- 10:30-10:45 Synthesis of session 3
KADA Ryohei (RIHN/Yokohama National University, Japan)
- 10:45-11:00 Coffee break
- 11:00-11:30 Comments
Heinz GUTSCHER (University of Zurich, Switzerland)
MORI Soichi (Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan)
Sander VAN DER LEEUW (RIHN/Arizona State University, USA)
- 11:30-11:55 Summary Discussion
- 11:55-12:00 Closing Remarks
SATO Tetsu (Deputy Director-General, RIHN)
- 12:00-12:25 Publication meeting
- 12:25 Excursion