



## International Collaboration

### Memoranda of Understanding and Research Cooperation Agreements [As of April 1st, 2023]

#### AUSTRIA

> International Institute for Applied Systems Analysis

#### CAMEROON

> Green Development Advocates

#### CHINA

- > East China Normal University
- > Hainan Provincial Center for Disease Control and Prevention
- > Hainan Provincial Preventive Medicine Association

#### GERMANY

> Institute for Advanced Sustainability Studies

#### INDIA

> Lovely Professional University

#### INDONESIA

- > Universitas Riau > Institut Teknologi Bandung
- > University of Lampung > The State University of Gorontalo
- > Halu Oleo University > Wakatobi Regency
- > Institut Teknologi dan Kesehatan Tri Tunas Nasional

#### REPUBLIC OF KOREA

> Institution for Marine and Island Cultures, Mokpo National University

#### LAOS

- > Lao Tropical and Public Health Institute, Ministry of Health, Lao PDR
- > The Faculty of Forest Science, National University of Laos

#### MALAYSIA

> Universiti Malaysia Sarawak > PACOS Trust

#### MYANMAR

- > Network Activities Group
- > Ministry of Natural Resources and Environmental Conservation, Environmental Conservation Department, The Republic of The Union of Myanmar

#### NETHERLANDS

> Copernicus Institute of Sustainable Development, Utrecht University

#### OMAN

> Sultan Qaboos University

#### SWEDEN

> Stockholm Resilience Centre at Stockholm University

#### UNITED STATES OF AMERICA

> University of California, Berkeley

### Publications

Many individual publications for general and specialist audiences, RIHN has partnered with Springer Nature and established the Global Environmental Studies book series. Titles in the series reflect the full breadth of RIHN scholarship.



### Message from the Director-General

Juichi Yamagiwa  
Director-General  
Research Institute for Humanity and Nature

Most human beings have benefited greatly from modern civilization. If we continue down the current civilizational path, however, weather and water-related natural disasters will intensify, ecosystem degradation and loss of biodiversity will increase, and human livelihood, health, and safety will be at ever-greater risk. Modern civilizations have incessantly expanded the scale of production and consumption, but at nature's expense, and humans are both the perpetrators and victims of this path of development. The Covid-19 pandemic clearly shows the result, as it was caused by ever-expanding global human activities.

New technological fixes will not offer fundamental solutions to such complex problems, unless human lifestyles also change to achieve harmonious relationships with nature on Earth. For the last 20 years RIHN has conducted research with the awareness that the roots of global environmental problems are found in human culture. Based on the results of our past projects, it is time for us to promote new practical research.

Cultural diversity is based on the diversity of nature. However, nature forms ecosystems in which regions are connected through the circulation of materials and energy, while cultures insist on their uniqueness and are sometimes in conflict. Solutions to global environmental problems therefore depend on connecting cultures through common environmental ethics. Great traditions of Eastern environmental wisdom and experience still exist, as do those of other regions; their valuable insights can help to break the deadlock in modern science and capitalism. It is for this reason that RIHN undertakes interdisciplinary research spanning the natural sciences, humanities, and social sciences, and in recent years, has evolved towards transdisciplinary research seeking to expand the kinds of knowledge that are considered valid in scientific inquiry.

RIHN has established three Research Programs, one Strategic Program, and the RIHN Center to promote such research.

We have enhanced collaboration within the institute, across the diverse research community linked to RIHN research projects, and with society in general. RIHN also collaborates with the international research platform Future Earth, which aims to integrate global environmental change research and contribute to the United Nations Sustainable Development Goals. As part of this effort, RIHN hosts the Japan Hub of the Future Earth Global Secretariat to strengthen research collaboration and capacity building across the region.

We will strive to expand these activities in the coming years, and implement new research initiatives in the search for solutions to the many environmental challenges of our planet.



RIHN original mascot character "Chikyū-ken" ▶



### Access

#### By City Subway

From Kyoto Station, take the Karasuma Line to Kōkusaikaikan Station (the last station), and transfer to Kyoto Bus.

#### By Eizan Railway

From Demachiyana Station in Kyoto City, take the Kurama Line. Get off at Kyoto-Seikadai-mae Station. RIHN is a 10-minute walk from the station.

#### By Kyoto Bus

From Kōkusaikaikan Station, take bus No.40, 50 or 52 to Chikyūken-mae. RIHN is at the base of the hill on your left.

457-4 Motoyama, Kamigamo, Kita-ku, Kyoto 603-8047, JAPAN

TEL. +81-75-707-2100 FAX. +81-75-707-2106

<https://www.chikyū.ac.jp>



Research Institute for  
**Humanity and Nature**  
大学共同利用機関法人 総合地球環境学研究所  
人間文化研究機構

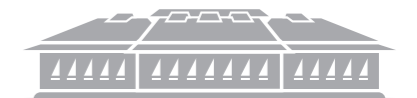


English

Photo: Ryuichi Shinjo



Research Institute for  
**Humanity and Nature**  
大学共同利用機関法人 総合地球環境学研究所  
人間文化研究機構



2023-2024



## RIHN Research

### RIHN Research Formation: Project-based Approach

RIHN promotes research through a project-based approach, in which research proposals submitted and selected through an international open-call are implemented as research projects lasting three to five years. 41 research projects have been completed thus far, and 7 research projects are currently underway.



### Comprehensive Research Across Disciplines

A diverse group of researchers from all fields, including natural sciences, humanities and social sciences, work together to conduct research. The laboratory space is 150 meters long with no doors, and researchers from different academic fields and disciplines collaborate with each other constantly.

### Solution-oriented Research in Collaboration with Society

RIHN research projects conduct research in many regions in Japan and abroad. Researchers collaborate with local communities in various ways, such as by concluding academic agreements (MoUs) with local governments.

## Organizational Structure

### Programs and Projects

RIHN research is organized into programs and projects rather than pre-existing academic disciplines or domains. Research Programs and Strategic Program are each home to multiple projects that carry out research in line with the program's broad direction.

#### Research Program

Research programs conduct research on specific global environmental issues through collaborative practice in society by promoting multiple research projects.

> [Global Environmental Culture](#)

> [Combining Knowledge for a Fundamental Innovation of Land Use](#)

> [Co-creation of the Earth-human System](#)

#### Strategic Program

In collaboration with research projects, strategic program aims to develop concepts and methodologies to solve global environmental problems in collaboration with society.

## Research Program

### Global Environmental Culture

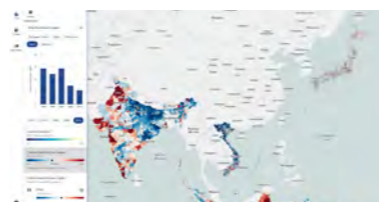
Program Director: **Motoji Matsuda**

Towards solving global environmental crises, this program strives to change our behaviors and values not only by advanced science and technology but also by combining science and culture.

2019-2023 [Global Environmental Culture] **Mapping the Environmental Impact Footprint of Cities, Companies, and Households**

Project Leader: **Keiichiro Kanemoto** **Supply Chain Project**

Rapid economic growth in China and other developing countries due to expanding global supply chains is causing severe environmental burdens. These burdens, such as PM2.5 emissions, have a critical effect on health hazards and other environmental problems, but the full extent is unknown. This project is investigating the effects of global supply chains in cities, companies, and households on the environment.



2019-2023 [Global Environmental Culture] **Co-creation of Sustainable Regional Innovation to Reduce Risk of High-impact Environmental Pollution**

Project Leader: **Masayuki Sakakibara** **SRIREP Project**

This project is based on sustainable and local innovation for mercury pollution from small-scale gold mining (ASGM) through the learning and practice of Transdisciplinary Communities of Practice (TDCOP) with residents using Transformative Boundary Objects (TBOs; local icons with high cohesive power for the residents). In addition, it is using "Mercury Free Society Networks" to link bottom-up and top-down approaches to build solutions.



### Combining Knowledge for a Fundamental Innovation of Land Use

Program Director: **Mikitaro Shobayashi**

This program, with interdisciplinary and transdisciplinary approaches, strives to fundamentally change land use in order to mitigate and adapt to the impacts on the global environment caused by socio-economic activities and changes in land use.

2022-2025 [Combining Knowledge for a Fundamental Innovation of Land Use] **Fair for Whom? Politics, Power and Precarity in Transformations of Tropical Forest-agriculture Frontiers**

Project Leader: **Grace Wong** **FairFrontiers Project**

In the tropics of Central Africa and Southeast Asia, frontier deforestation is rapidly transforming landscapes, livelihoods, and the well-being of its local people. This is not only a global environmental problem, but also a crisis of local social and ecological systems. This project is conducting case studies on the development and transformation of the forest frontier to identify conditions that will enable more equitable and sustainable development.



2023-2027 [Co-creation of the Earth-human System] **Towards Sustainable Nitrogen Use Connecting Human Society and Nature**

Project Leader: **Kentaro Hayashi** **Sustai-N-able Project**

Nitrogen provides great benefits to humankind as a fertilizer, industrial material and fuel. However, our use of nitrogen unintentionally causes nitrogen pollution and threatens the health of humans and nature. In this project, we will elucidate the dynamics of nitrogen, of which much remains unknown; quantify the environmental burden and impact of nitrogen use; evaluate its benefits and threats and the effects of countermeasures and behavior change; and design the future to realize sustainable nitrogen use.



### Co-creation of the Earth-human System

Program Director: **Makoto Taniguchi**

This program strives to understand the various thresholds and linkages in the earth-human system, and to transform the relationship between humanity and nature for the sustainable future.

2020-2024 [Co-creation of the Earth-human System] **An Interdisciplinary Study Toward Clean Air, Public Health and Sustainable Agriculture: The Case of Crop Residue Burning in North India**

Project Leader: **Prabir K. Patra** **Aakash Project**

A large amount of rice straw is burned after the harvest of kharif crops (summer crops such as rice and corn) in the state of Punjab in northwest India, releasing large amounts of pollutants into the atmosphere. The air pollution effects of this practice extend to Delhi and beyond. The Aakash project is exploring ways to shift people's behavior to sustainable agriculture in the Punjab region to reduce the health hazards caused by air pollution.



2022-2026 [Co-creation of the Earth-human System] **Adaptive Governance of Multiple Resources Based on Land-Sea Linkages of the Water Cycle: Application to Coral Reef Island Systems**

Project Leader: **Ryuichi Shinjo** **LINKAGE Project**

Focusing on coral reef island systems located in the Ryukyu Arc as well as in the tropical and subtropical western Pacific, we are elucidating the connections between land and sea through the water cycle, the biocultural diversity and community capability, and the evolution and structure of organizations and institutions that govern the use and management of multiple resources. By integrating and visualizing the above interconnected components, we aim to shed light on adaptive governance of multiple resources based on the water cycle.



## Strategic Program Program Director: Makoto Taniguchi

2022-2024 **Development and Pluralistic Coexistence of Sustainability Visions Through Future Design**

Project Leader: **Yoshinori Nakagawa** **Future Design Project**

Our goal is to formulate a vision of a sustainable society that incorporates the perspectives of its future populations and to develop methods that apply this vision. Since future populations do not exist currently, it is impossible in principle to incorporate their perspectives. Therefore, we are trying to capture these future perspectives into scientific language.

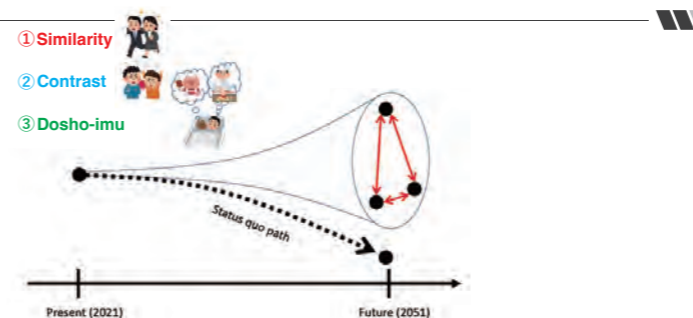


Photo: Ken-ichi Abe