

Message from the Director-General

The Research Institute for Humanity and Nature was established in April 2001 by the Government of Japan to promote integrated research in the field of global environmental studies. As a national institute, RIHN solicits, develops, hosts, and funds fixed-term research projects on pressing areas of interaction between humanity and nature. RIHN thus promotes coordinated, problem-centered, context-specific, and multi-dimensional science. RIHN projects can last from three to five years; they are always multidisciplinary and employ multiple methodologies, and they are supposed to offer solutions to the problems under study. This is not an easy task, but it is a necessary one and our science must address it.

As I assume my position as Director-General I should acknowledge my debt and gratitude to those who have worked so diligently to make RIHN what it is today. RIHN's founding Director-General, Professor Hidaka (2001-2007), presided over the establishment of this innovative institute more than ten years ago, and I note that his generosity and wisdom is still remembered fondly by many today. My immediate predecessor, Professor Tachimoto (2007-2013), has advanced the institute tangibly in several key areas, especially in strengthening its internal capacity to promote synergies between existing research projects and in linking RIHN research more closely to important current initiatives in international environmental studies.

If the fruits of my colleagues' labors have been many, so have those of the many fine researchers who have joined them at RIHN over the years. As of 2013 RIHN has now completed twenty-two research projects, each of which has established important research networks in order to make important contributions in its area of specialization. I should note that in 2010-11 RIHN synthesized and published the key research findings and contributions of its first decade as The RIHN Encyclopedia of Global Environmental Studies. A second volume, Towards Environmental Humanics of the Earth System: The RIHN 2001-2010, summarized the institute's first decade of experience and looked forward to future prospects.

As Director-General it is my privilege, and my burden, to further such efforts. I would like to reaffirm RIHN's commitment to conduct first-quality research and to make substantial contributions to the growing international efforts to address the linked social and environmental problems that we face as individuals, communities, nations, species, and planet. As always, your continued cooperation, support, and guidance are greatly appreciated.



Director-General Research Institute for Humanity and Nature



Breezeway between buildings

Project rooms

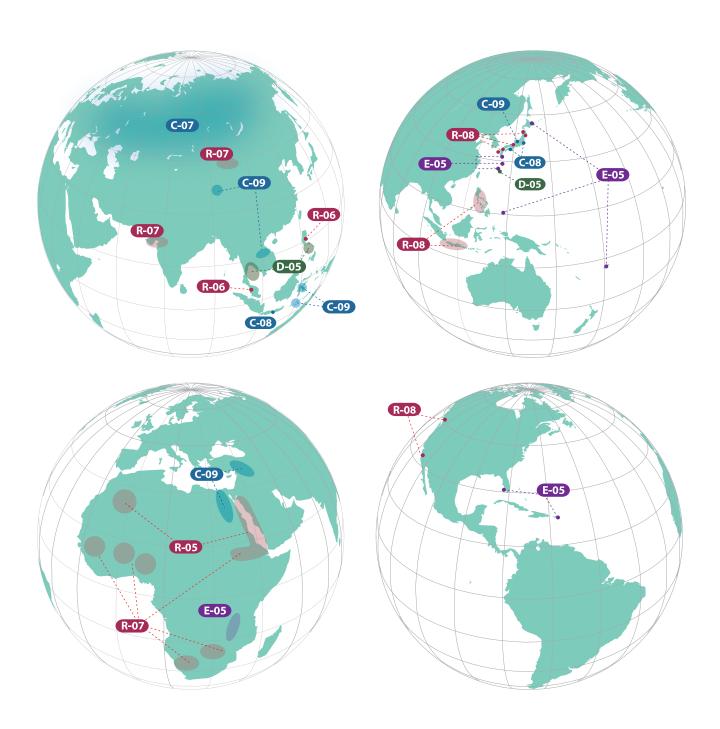




Two views of the RIHN building and site in the north of Kyoto

Project Index

Circu	ılation		
C-06	Effects of Environmental Change on the Interactions between Pathogens and Humans	KAWABATA Zen'ichii	ro 11
C-07	Global Warming and the Human-Nature Dimension in Siberia: Social Adaptation to the Changes of the Terrestrial Ecosystem, with an Emphasis on Water Environments	HIYAMA Tetsuya	12–13
C-08	Megacities and the Global Environment	MURAMATSU Shin	14–15
Dive	rsity		
D-03	Human Life, Aging and Disease in High-Altitude Environments: Physio-Medical, Ecological and Cultural Adaptation in "Highland Civilizations"	OKUMIYA Kiyohito	18
D-04	Collapse and Restoration of Ecosystem Networks with Human Activity	SAKAI Shoko	19
D-05	Coastal Area Capability Enhancement in Southeast Asia	ISHIKAWA Satoshi	20–21
Reso	urces		
R-03	Historical Interactions between Multi-Cultural Societies and the Natural Environment in a Semi-Arid Region in Central Eurasia	KUBOTA Jumpei	24
R-04	Environmental Change and Infectious Disease in Tropical Asia	MOJI Kazuhiko	25
R-05	A Study of Human Subsistence Ecosystems in Arab Societies: To Combat Livelihood Degradation for the Post-oil Era	NAWATA Hiroshi	26–27
R-06	Managing Environmental Risks to Food and Health Security in Asian Watersheds	KADA Ryohei	28-29
R-07	Desertification and Livelihood in Semi-Arid Afro-Eurasia	TANAKA Ueru	30–31
Ecoh	istory		
H-03	Environmental Change and the Indus Civilization	OSADA Toshiki	34
H-04	Neolithisation and Modernisation: Landscape History on East Asian Inland Seas	UCHIYAMA Junzo	35
Ecos	ophy		
E-04	Vulnerability and Resilience of Social-Ecological Systems	UMETSU Chieko	37
RIHN	N Initiative Projects		
C-09	Designing Local Frameworks for Integrated Water Resources Management	KUBOTA Jumpei	40-41
E-05	Creation and Sustainable Governance of New Commons through Formation of Integrated Local Environmental Knowledge	SATO Tetsu	42-43
R-08	Human-Environmental Security in Asia-Pacific Ring of Fire: Water-Energy-Food Nexus	TANIGUCHI Makoto	44–45





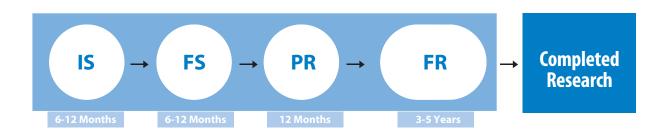
Philosophy and Structure

The Research Institute for Humanity and Nature is a national research institute established by the Government of Japan in 2001. RIHN's objective is to conduct integrative research on key areas of interaction between humanity and nature. RIHN solicits, funds, and hosts research projects lasting from between three to five years. Projects conduct high quality basic research; they are always multi-disciplinary and based on multiple methodologies. All projects are subject to a rigorous course of internal and external review.

There is an ever-increasing need for accurate and flexible knowledge of the world around, for coordinated, problem-centered, context-specific, and multi-dimensional science. Such knowledge should cross disciplinary boundaries and encompasses novel units of analysis and so correspond to the real dynamism of ecological processes and their intersections with human activity and institutions at multiple levels.*

At RIHN we seek concepts, theories and mechanisms capable of describing and enabling transformation of human-environment interactions. We use the term *futurability*, a translation of a Japanese word combining the ideographs for 'future' and 'potential', to express the wide range of possibility in future development. Similarly, RIHN research is increasingly transdisciplinary in that it seeks to redefine the role of science in society, improve dialogue between different traditions of knowledge, and stimulate local, national and international collaborations in the design and production of knowledge concerning key social and environmental problems.

Research projects are conducted within one of two structures. **Domain-based projects** conduct basic research within one of five research domains that reflect 'root metaphors' with meaning beyond single disciplines or fields of study: Circulation, Resources, Diversity, Ecosophy and Ecohistory. The thematic focus of each domain is described in the introduction to its respective project pages.



^{*} Niles, D. and N. Tachimoto. 2012. Science and the experience of nature. RIHN Working Paper No. 2. RIHN: Kyoto.



How should human societies act to enhance ecological integrity and improve human well-being in tandem, now and in the future? This is not simply a matter of defining the appropriate science and policy. Indeed, science and policy are liable to remain ineffectual unless they draw on deeper waters.*

After 10 years of domain-based research, the **Center for Research Development (CRD)** was developed to achieve two related goals.

First, the CRD is to enhance RIHN's capacity to benefit from its current and completed research projects. The CRD therefore actively facilitates dialogue and interaction between research projects and domains, encouraging critical reflection on key themes in international environmental research in relation to ongoing project objectives and completed project results.

Second, the CRD's Initiative Framework Unit is to facilitate new research proposals emerging from such internal dialogue. These **RIHN Initiative projects** advance RIHN research beyond the fields of the descriptive sciences and into the realm of **design science**. Informed by international trends in transdisciplinary research, design science should propose solutions to social-environmental problems that are informed by lived social practices and values and that increase human societal flexibility and capability.

Initiative projects therefore emphasize the co-design and co-production of knowledge. In their scope and methodologies, initiative-based projects stimulate dialogue between different realms of observation, action and aspiration, generating new understanding of the causes of, and possible solutions to, environmental problems.



The challenge of addressing environmental change in a proactive manner, and offering effective mitigations or sensible adaptations, brings one face-to-face with human culture. Empirical understandings of environmental change must be brought directly into dialogue with human experience as inhabitants of, and agents in, perpetually changing environments.

Our subject is always ultimately humanity in the midst of a dynamic, yet changeable nature.*



A Brief History of RIHN

—Prime minister's advisory panel on the Global Environment in 21st Century launched

1995 — "On the Promotion of Global Environmental Studies" published by The Science Council of Japan

—Report "On the core research institute for Global Environmental Studies" published by MEXT (Ministry of Education, Culture, Sports, Science and Technology)

2001 — RIHN Established on the Kyoto University campus

- HIDAKA Toshitaka, Director-General

—RIHN relocated to the former Kasuga Primary School

-5 FR projects implemented

—The 1st RIHN Forum

2003 — 5 Research Axes developed

−3 FR projects implemented

2004 — RIHN becomes a member of the National Institutes for the Humanities

-2 FR implemented

—The 1st RIHN Public Seminar

2005 —1 FR implemented

—The 1st RIHN Area Seminar











- 2006 RIHN relocates to current facilities in northern Kyoto
 3 FR implemented
 The 1st RIHN International Symposium
- 2007 TACHIMOTO Narifumi appointed as the second Director-General
 - —The Center for Coordination, Promotion and Communication established
 - Research Axes redefined as five Research Domains
 - RIHN-China established
 - —5 FR implemented First research projects concluded
- 2008 —3 FR implemented
 - The 1st Collaborative Symposium with the International Research Center for Japanese Studies
- 2009 The Earth Forum Kyoto and Earth Hall of Fame Kyoto Award established
 - —2 FR implemented
- 2010 —Core Research Hub established
 - —The RIHN Encyclopedia of Global Environmental Studies published
 - -1 FR implemented
- 2011 —RIHN 10 year anniversary and publication
 - -2 FR implemented, including the first initiative-based project
 - -GEC-Japan network established
- 2012 —3 FR implemented
- 2013 YASUNARI Tetsuzo appointed as the third Director-General
 - —The Center for Coordination, Promotion and Communication reorganized into the Center for Research Development and the Center for Research Promotion
 - -1 FR implemented





