#### Biodiversity-driven Nutrient Cycling and Human Well-being in Social-ecological Systems

#### OKUDA Noboru, Kyoto University

To solve the current nutrient imbalance associated with local and global environmental issues, this project develops a transdisciplinary framework of adaptive watershed governance that can link nutrient cycling and human well-being, and so improve social involvement in biodiversity conservation and environmental restoration, facilitating sustainable socio-ecological systems. It also establishes new methods to evaluate how biodiversity contributes to restoration of natural nutrient cycles and provides a variety of services and values that inspire citizens to practice community-based conservation activities.

Area : Watersheds in Asian developing and developed countries



Conceptual schema of adaptive watershed governance

## Integrating Environmental Wisdom in Local Agriculture: Overcoming Environmental Degradation Associated with the Rapid Expansion of Global Agriculture

#### FUNAKAWA Shinya, Kyoto University

This research aims to integrate the environmental wisdom embedded in local agriculture in order to mitigate or slow rapid environmental degradation related to the expansion of global agriculture. Project research firstly documents local knowledge in traditional agriculture in relation to different natural constraints in resource utilization, while also describing the current patterns of agriculture-caused environmental degradation. The second step clarifies the traditional ecological and technical measures that can counter environmental degradation while also seeking conceptual frameworks that can incorporate broader environmental values into agricultural production. We hypothesize that these approaches will be easily incorporated into contemporary agriculture because such ecological and technical tools are original to traditional societies.



Area : Indonesia, Tanzania, Laos, Kazakhstan, Brazil, Japan and others

Development of agriculture and generation of environmental problems. How can we utilize local environmental knowledge?

Co-development of Environmental Perception-Yielding Omniform Network towards Living with Chemical Imbalance Manifested as Environmental Risks in the Anthropocene in Peace

#### HANDOH Itsuki C., RIHN

We aim to examine and design environmental norms and governance to live with 'Chemical Imbalance Manifested as Environmental Risks in the Anthropocene (CHIMERA)' in peace. CHIMERA encompasses transboundary environmental problems such as chemical pollution and global warming, and the fears and benefits of chemicals have forced humanity to take very anthropocentric adaptations, namely environmental litigations and formulations of international regulations. Largely using our Android/iOS app, 'Value-Action Net for Futurability', we develop and practice Environmental Perception-Yielding Omniform Network (EPYON), to which global monitoring and modelling of CHIMERA and its associated environmental litigations, movements, laws, and values are integrated. This will be the first real test for a wide spectrum of stakeholders (including more than 100,000 app users) to co-create novel global environmental values and to inaugurate unprecedented, globalscale societal transformation towards futurability.



Our Android/iOS app, 'Value-Action Net for Futurability' is a terminal to 'Consilience Cyberspace', a cyber platform embodying a co-creation between science and society towards a unity of knowledge for futurability that helps identify the environmental values and perception network transformation among a large indefinite number of stakeholders.

Individual Collaboration FS

Individual Collaboration FS/PR

# Rebuilding Local Communities through the Creation of Local Standards and Reconstruction of the Theory of *Fudo*

#### KAJITANI Shinji, The University of Tokyo

This project will investigate the possibility of pluralistic society by discovering and shaping *local standards*, i.e. specific local values, which have far-reaching generality. For this purpose, we utilize the method of *philosophical dialogue*, where people can recognize the differences among themselves while having empathy for each other. We hope to rebuild local communities by creating *local standards* and to link our practice with the reconstruction of Watsuji Tetsuro's theory of *Fudo*.

Area : Japan (Kyoto, Kumamoto, Fukushima, etc.) and East Asia



OCICA, a new brand of jewelry made in a stricken area after the 2011 Tohoku earthquake. We consider it a good model for our project, which attempts to create local standards through the collaboration among dialogue, survey and design. (photo: NOSIGNER)

#### Designing Sustainable Agriculture and Forestry after Fukushima Accident

KANEKO Nobuhiro, Yokohama National University

Our lives are supported by the global economy, and food is no exception. Agriculture in the Fukushima area has been seriously affected by the Fukushima nuclear accident. Actions taken to control radio cesium crop contamination were very successful, but consumers still hesitate to purchase foods produced in Fukushima. Chemical fertilizers used in intensive farming systems reduce micronutrients such as zinc and selenium, and as a consequence crops produced under such management regimes are not always good for human health. Is it therefore possible to compare the risks posed by radiological contamination with those of intensive farming?

This project examines cropland nutrient pool and budgets and evaluates radio cesium contamination of food. Comparing conventional, organic and conservation farming methods, we will propose the scale of system that allows farmers and consumers to maintain effective nutrient cycling and reliable relationships.

Area : Japan, Indonesia, Madagascar

### Lifeworlds of Sustainable Food Consumption: Agrifood Systems in Transition

#### Steven R. MCGREEVY, RIHN

How can we create ecologically and socially sustainable agrifood systems? Since we all eat, we are all stakeholders in the circumstances and outcomes of the systems that provide us with food. We argue that sustainable food consumption practices can act as a vehicle to elicit changes in the larger infrastructures of food provisioning, expanding the available range of sustainable food choices and transitioning regimes toward greater sustainability and resilience. This project aims to facilitate this transitional process and to co-design/co-produce more sustainable agrifood systems by realizing concrete collective-action, society-oriented outcomes together with various stakeholders, including food producers, distributors, retailers, government officials, citizen-consumers, and scientists.



A farmers' market in Japan

Area :Japan, North America, South East Asia, China, Australia

#### Toward the Regeneration of Tropical Peat Land Societies: Establishment of an International Research Network and Proposal of its Future

### MIZUNO Kosuke, Kyoto University

This project focuses on global environmental issues relating to tropical peat swamp forest, a very fragile ecological system with huge amounts of carbon and water. The purpose of this project is to offer perspectives for the "futurability" of tropical peat land society by discussing and implementing appropriate, concrete methods to conserve and utilize the peat swamp. Project research pays marked attention to the ecological and social characteristics of the particular area and local peoples, and reflects such information in the proposal.



Photo1 Fire at the dried degraded peat land. Dried peat land is vulnerable to fire. Even abandoned cigarette butts can start fires there.

Institutional Collaboration FS



Photo2 Tree planting at dried degraded peat land at Riau province, Indonesia. Local people and research team members gather around a recently planted indigenous species.

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Individual Collaboration FS

Individual Collaboration FS

Initiative-based

FS

# Biocultural Diversity in the Asia-Pacific: Towards Dynamic Transmission of Traditional Ecological Knowledge

## ONISHI Masayuki, RIHN

This project will improve understanding of the relationships between biological diversity and cultural diversity in the diversity hotspots of the Asia-Pacific Region. Project research will document and analyze the traditional ecological knowledge systems that provide the key interface between these twin realms of diversity. The project has been codesigned by researchers and local people, and will include documentation of diversity, production of an integrated multidisciplinary database, and analysis of the drivers of change from environmental and social perspectives. In bringing project findings to decision makers at the national, regional and global levels of governance, the project will contribute to development of dynamic models of biocultural heritage transmission that will lead to the improvement of local lives and the maintenance of local ecosystems.

Area : The Asia-Pacific region, including, Sikkim/North Bengal/ Jharkhand (India), Laos, Okinawa, and Bougainville (Papua New Guinea)

# A Transdisciplinary Study of Military Environmental Problems

#### TANAKA Masakazu, Kyoto University

The project will analyze the environmental consequences of military activities in Japan and Korea on local residents, exploring local social movements and their proposals for preserving environments and building peace. Our approach is transdisciplinary, but we will use fieldwork to grasp local perspectives and will share our findings through documentary films as well as academic papers. Through our research we hope to achieve a better understanding of the environmental issues related to military activities as well as to establish reliable relationships with local persons that will permit more comprehensive studies and systematic endeavors in the near future.

Area : Japan and other areas

# Specialized Co-design Researchers

Diversity Evaluation Cultural Documentatio Transmission Change-Driver Analysis Pacific Islands **Continental Asia** Local people Bougainville Okinawa India Laos and researchers peech communities **Dynamic Transmission** 

Decision Makers

Global Regiona

Diversity

Conceptual Framework of the Project

#### Individual Collaboration FS



Environmental issues related to the military

#### Understanding "Securitization of Nature": History, Mechanism and Impact to Society and Nature

#### UBUKATA Fumikazu, Okayama University

In this study we conceptualize the recent emergence of carbon market as a process of "securitization of nature"; an advanced version of the "commoditization of nature". Taking examples of various commercialization processes, especially politico-economic frameworks (i.e. emissions trading and REDD-plus) designed to establish "low-carbon" societies, this study explores the historical origin and mechanism of "securitization", as well as the impact of such schemes on society and nature. Methodologically, we synthesize the following four levels of research: knowledge, technology, policy, and actual impact.



Vanishing Tropical Forest in Southeast Asia. Deforestation is believed to be a significant source of carbon emission. (Sarawak, Malavsia, 2008)

Area : Laos, Cambodia, Indonesia, and Japan

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**Policy Proposal** 

