

## Current Feasibility Studies

Feasibility Studies are based on proposals solicited annually by RIHN from the research community at-large. If approved by the Project Review Task Committee, lead researchers are granted seed funding in order to develop their proposal for Full Research. FS status can be maintained for no longer than two years.

FS/PR

### Adaptive Governance of Multiple Resources based on Land-Sea Linkages of the Water Cycle: Application to Coral Reef Island Systems

SHINJO Ryuichi, University of the Ryukyus

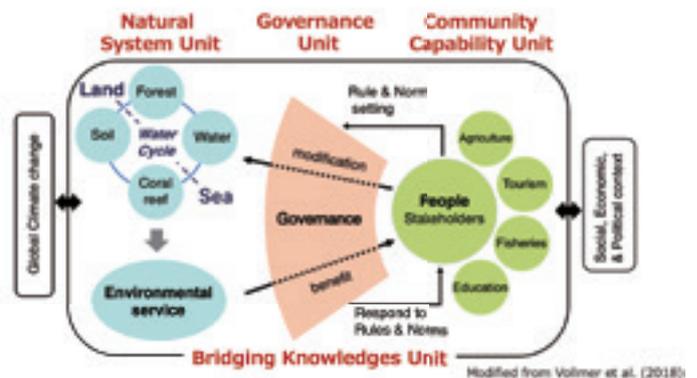
Area : Japan, Palau, Indonesia

Natural resources in small islands have been affected by global and local processes, human activities and related impacts. This research project explores how to strengthen adaptive governance of multiple resources in tropical and subtropical western Pacific coral reef

islands by integrating natural science research on land-sea resources linked by water cycle with those examining biological and cultural diversity and natural resource governance focusing on norms, institutions, processes and local-global linkages.



Student participation in an action research event in Southern Okinawa, Ryukyu Islands.



Research Framework.

**FS | Sustainable Ecosystem Approach for the Healthy Society**

**OKABE Kimiko**, Forestry and Forest Products Research Institute

Area : Japan and Cambodia

Biodiversity loss, land use change, and climate change are exposing societies to new pathogens. In order to reduce the risk of emerging zoonoses, it is necessary to take measures that are appropriate to the ecological and social factors of the region. In this study, we focus on the balance between ecosystem conservation and infectious disease control, and explore behavioral changes that can reduce the risk of newly emergent zoonoses due to human-ecosystem interactions.



The goal of the ecosystem approach is to explore how society can maintain appropriate relationships with natural ecosystems. It analyzes species interactions across ecosystems, and provides insight on appropriate behavioral changes.

**FS | Traditional Food Preservation and Cache Using Freezing Environment**

- Transformation and Heritage of “Food Life History” of the North under the Global Environmental Shift -

**SAITO Kazuyuki**, Japan Agency for Marine-Earth Science and Technology

Area : Alaska (USA), Siberia (Russia), Hokkaido and Honshu (Japan)

This project explores the “Food Life History”, or FLH, of cold storage practices utilized by communities in Siberia and Alaska to preserve traditional foods. In the past few decades, underground caches have been failing due to natural and social changes. This project will combine objective investigations and community-based participatory collaborations in order to better understand the transformation of FLH associated with the changes in traditional cold-storage practices, and to design and propose sustainable/desirable future practices.



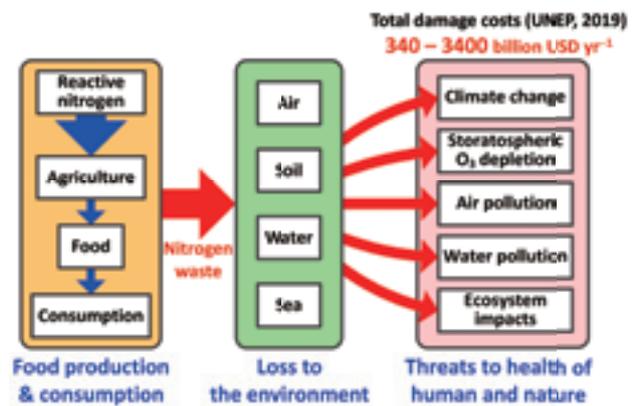
Problem setting scheme of the project

**FS** **Towards Sustainable Nitrogen Use Connecting Human Society and Nature**

**HAYASHI Kentaro**, National Agriculture and Food Research Organization

Area : Japan, Asia, and Global

Food production and consumption unintendedly causes nitrogen (N) pollution that threatens ecosystems and human health. This feasibility study will develop a research plan to elucidate unknowns in the dynamics of the nitrogen cycle and quantify the impacts of N loss to the environment. Project research will design a transdisciplinary framework to evaluate the benefits and threats of N use and the effects of specific control measures, including behavioral change, that can address the N issue in sustainable food systems.



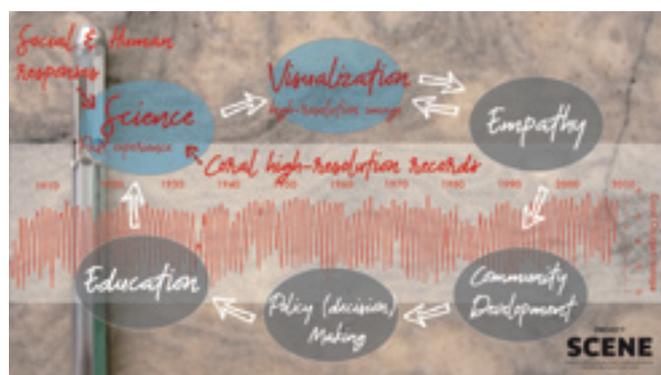
Nitrogen input to the food system as fertilizer induces a variety of environmental impacts threatening the health of humans and nature.

**FS** **Influence of Global Environmental Changes and Regional Catastrophic Events on Social Vulnerability**

**WATANABE Tsuyoshi**, Hokkaido University

Area : Kikai-jima, Amami Islands, Polynesia, Asia

Climate change has profoundly affected terrestrial and marine ecosystems, human migration, settlement, human lifestyle, and civilization. Recent economic development, population growth, and globalization could trigger societal vulnerability, perhaps leading to simplifying lifestyles. This research compares high-resolution coral records with archaeological-historical records to reconstruct historical global climate change and catastrophic environmental events that influenced past social vulnerability. Project research will estimate the impact of future environmental change on human society and suggest sustainable frameworks and lifestyles.



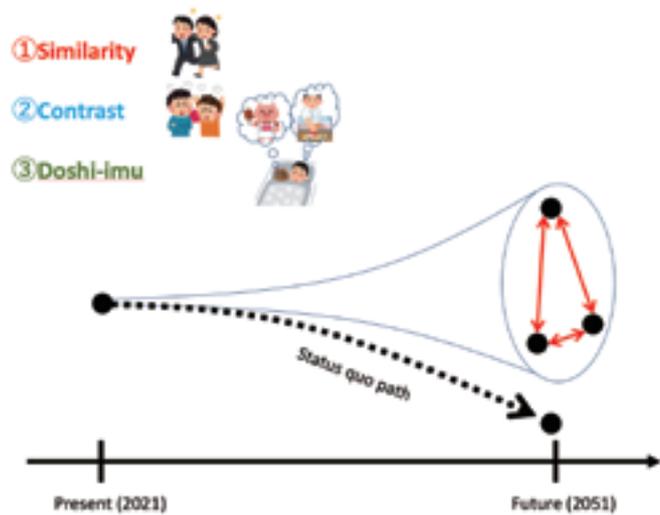
The cycle of scientific knowledge to societal implementation adopted in this study

## Development of a Future Design Methodology for the Multi-level and Pluralistic Implementation of Sustainable Visions

NAKAGAWA Yoshinori, Kochi University of Technology

Area : Kochi Prefecture, Japan.

This study investigates how different visions (i.e., desirable future states), generated by imaginary future generations using the methodology of Future Design, can co-exist, in the sense that individuals with different visions have the potential to make a consensus regarding the current options (i.e., regarding what must be done by the present generation). Our ultimate research goal is to realize a state where stakeholders create their own multi-level visions (e.g., from national to municipal ones), taking the perspective of the future generations, which may not be consistent with one another, by means of which the society as a whole can gradually make progresses in a sustainable manner.



Individuals taking the perspective of the future generations in specific future states may be able to make consensus regarding the present generation's options in at least three different scenarios: (1) similarity; (2) contrast; and (3) dosho-imu (literally "to dream different dreams in the same bed").