

RIHN 21st International Symposium

**Nitrogen as a Lens for
Sustainability Challenges:
Transdisciplinary Approaches for
Future Generations**

November 4, 2026

Room D, Kyoto International Conference Center
Kyoto, Japan

Organized by

Research Institute for Humanity and Nature (RIHN)
National Institutes for the Humanities (NIHU)
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Language: English (Simultaneous interpretation available)

ABSTRACT

Nitrogen is a fundamental element for life and a cornerstone of modern society. Through the production of synthetic fertilizers, food production has increased dramatically over the past century, supporting population growth and economic development. At the same time, inefficient nitrogen use in agriculture, food systems, industry, and energy production has led to large releases of reactive nitrogen into the environment, contributing to climate change, air and water pollution, biodiversity loss, eutrophication, and other environmental challenges. Balancing the benefits of nitrogen use with its environmental consequences has therefore become a central sustainability challenge.

Because nitrogen is deeply embedded in food systems, energy systems, economic activities, and human well-being, it connects directly and indirectly with many of the major sustainability challenges facing the world today. Viewing these challenges through the lens of nitrogen may therefore reveal opportunities to address multiple problems simultaneously while avoiding unintended trade-offs.

As part of the N2026 program, the RIHN International Symposium brings together researchers, practitioners, and policymakers to explore how nitrogen can serve as a lens for understanding and addressing interconnected sustainability challenges. Building on RIHN's long-standing commitment to interdisciplinary and transdisciplinary research, the symposium seeks to foster dialogue across scientific disciplines, societal sectors, and governance levels.

Through presentations and panel discussions, participants will explore pathways for linking local and global actions, scientific knowledge and policy processes, and environmental and societal perspectives. The insights generated will contribute to the conference's Multi-stakeholder Roundtables and help shape a more policy-relevant and stakeholder-informed Kyoto Declaration toward Sustainable Nitrogen Management for Future Generations.

OUTLINE OF THE SESSIONS

(1) Linkages between Global Environmental Challenges and Nitrogen

This session will feature presentations centered on the Research Institute for Humanity and Nature (RIHN), Japan, which celebrates its 25th anniversary this year and has long pursued interdisciplinary and transdisciplinary approaches to addressing global environmental challenges. Speakers will explore sustainability challenges from diverse perspectives including reflections on human prosperity and conflict from primatology, the future of agriculture from a landscape farmer who integrates rice cultivation and cattle breeding, the role of meat consumption viewed through both wildlife and livestock systems, and cultural dimensions of human-environment relationships through the emerging field of Japan Environmental Studies. By viewing these topics through the lens of nitrogen, the session aims to identify connections among environmental, social, and cultural challenges and to explore opportunities for addressing multiple issues simultaneously.

(2) Science–Policy Engagement for Sustainable Nitrogen Management

This session focuses on the science–policy interface for sustainable nitrogen management. Two researchers who have played leading roles in connecting nitrogen science with policy processes will present their perspectives alongside two policymakers actively advancing nitrogen management initiatives at national and international levels. Speakers will reflect on the achievements, challenges, and future directions of major initiatives and governance processes, including the International Nitrogen Management System (INMS), the Global Partnership on Nutrient Management (GPNM), the International Nitrogen Initiative (INI), the International Nitrogen Networks (iN-Net), the United Nations Environment Assembly (UNEA) Resolutions on Sustainable Nitrogen Management, the UNEP Working Group on Nitrogen (WGN), and Japan’s Action Plan on Sustainable Nitrogen Management. By bringing together perspectives from science and policy, the session will explore how governance, collaboration, and knowledge-sharing can accelerate progress toward sustainable nitrogen management while contributing to broader sustainability goals.

(3) Panel Discussion: Integrated Approaches to Addressing Multiple Challenges Simultaneously

Following the presentations, speakers from both sessions will join a panel discussion with audience participation to explore pathways for addressing nitrogen challenges together with broader environmental and societal issues. The discussion will seek to bridge local and global perspectives, scientific knowledge and policy processes, and top-down and bottom-up approaches. Reflections and messages emerging from the N2026 youth events, including the high school and young generation activities held on the previous day, will also be brought into the discussion. Key insights generated through the panel will be provided as input to the Multi-stakeholder Roundtables, which will integrate perspectives from across the N2026 program to refine the draft Kyoto Declaration toward Sustainable Nitrogen Management for Future Generations.

PROGRAM

Wednesday, 4 November 2026

- 8:45-9:15 Registration begins and ice-breaking time
- 9:15-9:20 Opening Remarks
YAMAGIWA Juichi (Director-General, RIHN)
- 9:20-9:30 Introduction and Symposium Overview
HAYASHI Kentaro (RIHN)

Session 1. Linkages between Global Environmental Challenges and Nitrogen

Moderator: **ASARI Misuzu** (RIHN)

- 9:30-10:00 Keynote speech:
Food and Fight: A Gorilla's Perspective on Human Prosperity and Conflict
YAMAGIWA Juichi (RIHN)
- 10:00-10:30 A Family Farming Model for Nitrogen Cycling, Carbon Neutral, and Nature-,
Human-, and Water-Positive Outcomes in Aso, Japan
OTSU Eri (O2Farm/RIHN)
- 10:30-11:00 Coffee break
- 11:00-11:30 Wild Meat in Tropical Rainforests: A Lens on Nitrogen and Sustainability
HONGO Shun (RIHN/Kyoto University)
- 11:30-12:00 Cultural Aspects of Japanese Diet and Environments
YOSHIKAWA Narumi (RIHN)

Session 2. Science–Policy Engagement for Sustainable Nitrogen Management

Moderator: **TANIGUCHI Makoto** (RIHN)

- 12:00-12:30 Mobilizing the Nitrogen Circular Economy
Mark A. SUTTON (Centre for Ecology and Hydrology, United Kingdom)
- 12:30-13:30 Networking lunch
- 13:30-14:00 The Role of the Scientific Community in Nitrogen Governance
David R. KANTER (New York University, United States of America)

- 14:00-14:30 The UNEP Nitrogen Working Group: Perspectives on Global Nitrogen Governance
Mihai CONSTANTINESCU (Ministry of Environment, Waters and Forests, Romania)
- 14:30-15:00 Overview and Implementation of Japan's National Action Plan on Sustainable Nitrogen Management
KUBO Makiko (Ministry of the Environment, Japan)
- 15:00-15:30 Coffee break

Session 3. Panel Discussion: Integrated Approaches to Addressing Multiple Challenges Simultaneously

15:30-16:40

Moderator: **HAYASHI Kentaro** (RIHN)

Mihai CONSTANTINESCU
David R. KANTER
KUBO Makiko
Mark A. SUTTON
OTSU Eri
HONGO Shun
YAMAGIWA Juichi
YOSHIKAWA Narumi

- 16:40-16:45 Closing Remarks
ASARI Misuzu (Deputy Director-General, RIHN)
- 18:00-20:00 Reception

Food and Fight: A Gorilla's Perspective on Human Prosperity and Conflict

YAMAGIWA Juichi
Research Institute for Humanity and Nature



Prof. Juichi Yamagiwa, Director-General of RIHN, is a world-renowned researcher and expert in the study of primatology and human evolution. Awarded Doctor of Science from Kyoto University in 1987. After holding positions at the Karisoke Research Center, Japan Monkey Center, and Primate Research Institute Kyoto University, he was Professor of Graduate School of Science at Kyoto University from 2002-2014. Dean of Graduate School and Faculty of Science, 2011-2013. 26th President of Kyoto University, 2014-2020. Served as President of International Primatological Society, 2008-2012, also as Editor in Chief of *Primates*, a quarterly peer-reviewed scientific journal of primatology published by Springer Science+Business Media, 2010-2014. Domestically, he served as the president of JANU, the president of Science Council of Japan, and the ongoing member of Environmental Policy Committee of Ministry of Environment. His passion for fieldwork research frequently made him travel to some countries of Africa, where he discovered an abundance of new findings related to gorillas, through his unique viewpoint of evolution.

Abstract

Gorillas live in small groups in African tropical forests, feeding primarily on plants without territories. Human ancestors must have lived in a similar way. However, shortly after diverging from a common ancestor shared with chimpanzees seven million years ago, humans began bipedal walks and left the rainforests into the grasslands. While great apes occasionally share food, they do not carry it. Humans, however, likely gathered food scattered across the savanna using their free hands, brought it back to a safe place, and consumed it together. This act of sharing food represents the oldest form of human culture. Subsequently, humans increased meat consumption, using fire and cooking techniques. Caloric intake fueled an increase in brain volume and enhanced the social cognitive abilities required for living in large groups. Urban civilizations emerged, followed by the Industrial Revolution and the advent of industrialized society. Technologies to boost food production were developed in rapid succession; the production of ammonia fertilizer using the abundant nitrogen in the atmosphere was one such development. However, as populations grew and people settled down to produce food, conflicts over territory and resources became constant. Most modern violence and warfare stem from disputes over territory and ownership. The solution to this issue can be found in the societies of nonhuman primates. When a conflict occurs among monkeys, the members of a group quickly support a dominant individual. In gorillas, however, a third party intervenes to mediate, leading to an equal outcome or a draw. Throughout our long evolutionary history, humans likely resolved conflicts through various forms of mediation without fixating on winning or losing. In recent years, however, we have adopted an efficiency-oriented approach like monkeys, prioritizing the rapid determination of winners and losers. This

appears to be a regression in evolution. Currently, the value of goods is determined by the market, and since a person's worth is defined by the ownership of these goods, inequality arises. We need to build a society—centered on sharing—where material objects serve to connect people. Furthermore, we must not forget that a meal is an occasion for sharing among people, as well as a means of reconciliation and peace.

A Family Farming Model for Nitrogen Cycling, Carbon Neutral, and Nature-, Human-, and Water-Positive Outcomes in Aso, Japan

OTSU Eri
O2Farm / Research Institute for Humanity and Nature



Ms. Eri Otsu is female farmer and self-described “Landscape Farmer” based in Minamiaso, Kumamoto, where she grows rice, cattle, and four children. Born in Germany and raised in Tokyo, studied environmental studies at Keio University and landscape planning at the Technical University of Munich. Since 2003, practicing landscape-conscious, resource-circulating farming and direct sales. Played a role of President of NPO Inaka no Heroines, a national network of women farmers for ten years. Got several honors include Nikkei Woman of the Year, the FAO Model Farmer Award, and major biodiversity and sustainability awards.

Abstract

Monsoon Asia, including Japan, has a long history of rice cultivation in paddy fields and is recognized as one of the world’s richest regions in terms of biodiversity. It is also a region where agricultural systems have historically been developed in close relationship with local ecosystems and have remained fundamentally sustainable over long periods.

This presentation introduces a case study from a family-run farm located in the mountainous area of Kyushu, southwestern Japan. The farm maintains a traditional combination of agricultural and land-management practices consisting of paddy rice cultivation, pasture-based cattle production, and small-scale forest management. Drawing on practical experience from the farm, the presentation examines how these interconnected activities contribute to effective nitrogen cycling, carbon neutrality, and Nature-, Human-, and Water-Positive outcomes.

Nutrients generated through cattle production are returned to farmland and used in rice and forage production, helping to reduce dependence on external inputs. Grazing contributes to the maintenance of grasslands and rural landscapes, while paddy fields support water retention, groundwater recharge, flood mitigation, food production, and habitats for diverse species. Forest management also supports watershed conservation, carbon storage, and the sustainable use of local resources. Together, these practices create an integrated agricultural landscape in which food, nutrients, water, biodiversity, energy, and human livelihoods are closely connected.

The presentation also introduces the initiatives of an active female farmer who is seeking to preserve the traditional values of Aso while creating new economic, environmental, and social value for future generations. Aso has been designated by the Food and Agriculture Organization of the United Nations as a Globally Important Agricultural Heritage System. Building on this heritage, the farmer is exploring new approaches to renewable energy, regional resource circulation, environmental education, value-added food production, and community engagement. These efforts demonstrate how family farming can contribute to resilient rural development while linking agricultural heritage with innovation.

Wild Meat in Tropical Rainforests: A Lens on Nitrogen and Sustainability

HONGO Shun
Research Institute for Humanity and Nature/Kyoto University

Dr. Shun Hongo is a conservation scientist at the Research Institute for Humanity and Nature (RIHN) and the Hakubi Centre for Advanced Research at Kyoto University, Japan. Shun conducted socioecological research of mandrills in Gabon and received his PhD from Kyoto University. His current research interests encompass wildlife conservation and the sustainability of local hunting in the context of the wild meat sustainability challenge in tropical rainforests. Leading the Fashloks Project at RIHN, he works with local hunters in Cameroon and Colombia to co-develop locally led hunting management.



Abstract

Wild animals perform diverse ecological functions in tropical rainforest ecosystems, including nutrient redistribution through foraging, movement, excretion, and death. Wild meat, meanwhile, connects forest ecosystems to local communities' diets, livelihoods, economies, and cultures. Excessive hunting and associated defaunation—central to the wild meat crisis—may therefore undermine both ecological and social sustainability. Potential responses include stricter wildlife protection, improved access to alternative protein sources in rural areas, locally led systems for managing hunting, and campaigns to reduce urban demand for wild meat. Each approach has potential benefits and costs. However, current debates rarely consider how these interventions may affect nitrogen flows within forests, dietary nitrogen intake, and nitrogen pollution arising from alternative protein systems. In this talk, I will review current knowledge of the wild meat crisis and principal responses proposed to address it. I will then use nitrogen as a lens to examine the links among defaunation, forest nutrient cycling, human nutrition, and the environmental consequences of replacing wild meat with alternative protein.

Cultural Aspects of Japanese Diet and Environments

YOSHIKAWA Narumi
Research Institute for Humanity and Nature



Prof. Narumi Yoshikawa has a Ph.D. in agricultural economics specializing in agri-anthropology. She is the head of the Uehiro Research Center for Japan Environment Studies and specially appointed professor at RIHN. She is also a Professor at the Prefectural University of Hiroshima and a Visiting Professor at Waseda University. Her current research interests include environmental studies of Japan from a cultural perspective. Her research emphasizes social implementation, such as the establishment of Community Supported Agriculture projects, which became the foundation of Japan's organic farming movement. Dr. Yoshikawa has gained extensive skills in education, program management, fieldwork design, and facilitation. She designed environmental education programs connecting universities in 10 Asian countries through the Asian Environmental Students' Platform (ASEP) and served as the director of the International PEACE Management Institute at Prefectural University of Hiroshima. She has taught the "Nature and Culture" lecture series at Waseda University, connecting experiences of environmental degradation in SATOYAMA and SATOUMI with indigenous knowledge. Her notable publications include "Climate Change, Insight and Dialogue of New Environmental Ethics", (2018), "Convivialism, Philosophy of the Art of Living Together" (2017), and "Chinese Reforestation: Beyond Socialism and Capitalism" (2016).

Abstract

Subtitle: Katemono and the Ethic of Sufficiency in the Age of Nitrogen

The nitrogen problem is usually framed as one of excess and loss—over-fertilization, food waste, and low nitrogen-use efficiency. Yet for most of human history the struggle ran the other way, toward scarcity. This lecture argues that the food knowledge forged in scarcity can illuminate the nitrogen age from its reverse side, and that Japanese diet and environments offer a cultural lens for rethinking nutrient cycles.

Long before industrial nitrogen fixation, Japanese foodways already circulated reactive nitrogen within local landscapes. Soybeans—nitrogen-fixing legumes—became the foundation of the cuisine, transformed by microbial fermentation into miso, shoyu, and natto; wet-rice cultivation sustained a nearly closed nutrient economy, as the satoyama returned green manure, compost, and night soil to the fields. Food here was never detached from land—an ethic condensed in shindo-fuji, the inseparability of body and place.

The lecture centers on Katemono (1802), a famine-relief manual compiled in the Yonezawa domain at the command of Uesugi Yozan. It records some eighty-two wild plants—gathered from the margins of cultivation—together with ways to identify, cook, and store them. Katemono is less a survival technique than a practice of "knowing sufficiency," the precise inverse of today's loss-laden abundance.

It is paired with the sōmokutō, plant-memorial stones from the same Okitama region:

where the manual is about receiving nature's life, the stones are about returning it. Together they close an ethical circle of taking and giving back—an image close to Indra's net, the Buddhist figure of mutual interpenetration that curiously prefigures the very network diagrams by which we now trace nitrogen through soil, plant, animal, and human. Seen this way, nitrogen becomes not merely a substance to be managed but a matter of memory, care, and life—linking traditional knowledge to sustainable nitrogen science, policy, and future generations.

Mobilizing the Nitrogen Circular Economy

Mark A. SUTTON
Centre for Ecology and Hydrology, United Kingdom



Prof. Mark A. Sutton is an environmental physicist based at the UK Centre for Ecology & Hydrology (UKCEH) Edinburgh, and an Honorary Professor at the University of Edinburgh. An expert on atmospheric ammonia, he leads international research activities on nitrogen at the science–policy interface. Professor Sutton is Director of the UNEP/GEF International Nitrogen Management System (INMS) and the UKRI Global Challenges Research Fund’s South Asian Nitrogen Hub (SANH) and is a former Chair of the International Nitrogen Initiative (INI). He is Vice Chair of the Global Partnership on Nutrient Management (GPNM, hosted by UNEP) and a Co-Chair of the UNECE Task Force on Reactive Nitrogen (TFRN).

Abstract

To be provided.

The Role of the Scientific Community in Nitrogen Governance

David R. KANTER
New York University, United States of America



Dr. David R. Kanter is an Associate Professor of Environmental Studies at New York University, Chair of the International Nitrogen Initiative and Director of the International Nitrogen Network. His research examines the science and governance of nutrient pollution and how to manage the transition to a more sustainable agri-food system. He received his BSc in Chemistry and Law from the University of Bristol in the UK and his MA and PhD in Science, Technology and Environmental Policy from Princeton University.

Abstract

Nitrogen has risen rapidly up national and global policy agendas in recent years, with new commitments, targets and initiatives emerging across climate, biodiversity, air and water quality, stratospheric ozone and food systems. This growing policy visibility creates both an opportunity and a responsibility for the scientific community. If nitrogen science is to have greater societal impact, it must increasingly be designed not only to advance knowledge, but also to respond directly to the needs of policymakers and other stakeholders working to implement change.

This talk argues that meeting this moment requires changes in both the way nitrogen research is conducted and the forms in which it is communicated. First, it highlights the importance of collaborative, interdisciplinary and multi-stakeholder processes that help shape future research agendas around the most pressing knowledge gaps. Drawing on experiences from the International Nitrogen Network (iN-Net), it explores how researchers, policymakers, civil society and the private sector can work together to co-produce more policy-relevant science. Second, it discusses the need for accessible "boundary objects" that bridge the science-policy interface, including data dashboards, science briefs, webinars, technical guidance and stakeholder convenings that translate complex evidence into practical tools.

The presentation also argues that interdisciplinarity must move beyond the traditional model in which the social sciences and humanities are brought in only to quantify costs or assess policy impacts after scientific questions have already been defined. Instead, these disciplines should play a central role in framing research questions from the outset, helping to address the institutional, political and social dimensions of nitrogen governance, from farmer acceptance of new practices to power dynamics across the agri-food system. Ultimately, the talk proposes a mission statement for the global nitrogen research community: one that embraces co-production, interdisciplinarity and sustained engagement with stakeholders as essential components of research, positioning science not simply as a provider of evidence, but as an active partner in enabling more effective nitrogen governance.

The UNEP Nitrogen Working Group: Perspectives on Global Nitrogen Governance

Mihai CONSTANTINESCU
Ministry of Environment, Waters and Forests, Romania



Mr. Mihai Constantinescu has more than 20 years of experience in developing and implementing agricultural and rural development strategies and financing programmes in Romania and Western Balkan countries, working for the Romanian Ministry for Agriculture, European Commission, and Danish International Development Agency, Mihai joined the Romanian Ministry of Environment in 2017. With financial support from GEF and the World Bank, Mihai has been developing and implementing national policies on nitrogen management, for the prevention and reduction of the pollution with nitrates and ammonia emission. Particularly, he works on national legislation and guidelines preparation (in cooperation with the research institutes), delivering farming community investments for manure management, setting up farmers' discussion groups having topics on nitrogen management, and delivering awareness campaigns on nitrogen pollution. He serves as the Director of the Management Unit for the Pollution Prevention and Reduction in Rural Areas, Ministry of Environment, Waters and Forests of Romania, and the Co-chair of the UNEP Working Group on Nitrogen.

Abstract

Reactive nitrogen is a major driver of the global "triple planetary crisis," cascading through various pathways in the environment.

Annually, **200 million tons** of nitrogen are wasted, translating to a **\$200 billion** economic loss. Currently, UNEA Resolutions 4/14 and 5/2 represent the only active international agreements targeting sustainable nitrogen management.

To address these vulnerabilities, the WGN operates under a dedicated governance structure:

- **Establishment:** Set up by the UNEP Executive Director and operationally supported by UNEP.
- **Extended participation of the MS:** 97 country focal points.
- **Completed Milestones:** The group has successfully established a strategic roadmap to implement UNEA resolutions 4/14 and 5/2.
- **Core Mandate:** The WGN provides technical policy recommendations, including a **National Action Plan (NAP) template**. This template aligns with the Convention on Biological Diversity (CBD) target to reduce excess nutrients lost to the environment by at least **50% by 2030**. It also functions as a central platform for member states to share information.

To successfully transition from scientific awareness to concrete state action, the WGN highlights several key focal areas:

- **Science - Policy Integration:** Developing integrated policies targeting multiple nitrogen compounds (nitrates, ammonia, nitrous oxide) and blending them into existing

national agendas and/or preparing specific action programmes. A strong science-policy cooperation remains essential.

- **Financing & Tech Transfer:** Securing adequate funding, documenting tangible results, and ensuring active knowledge/technology transfers from developed to developing nations to maintain agricultural productivity while curbing waste.
- **Enhanced Cooperation:** Forging tighter institutional links with major Multilateral Environmental Agreements (MEAs) and bodies, including the UNFCCC, Montreal Protocol, CBD, CLRTAP, and the European Commission.

Moving forward, the WGN will need to prioritize supporting Member States in preparing and monitoring their country-specific NAPs through regional workshops, harmonized indicator frameworks, and dedicated actions for addressing institutional capacity gaps.

Overview and Implementation of Japan's National Action Plan on Sustainable Nitrogen Management

KUBO Makiko
Ministry of the Environment, Japan



Ms. Makiko Kubo is a Deputy Director in the Environmental Management Division at Ministry of the Environment, Japan. Since August 2025, she has been involved in international discussions on sustainable nitrogen management, including UNEP initiatives, while overseeing international cooperation projects on marine plastic pollution and contributing to the Intergovernmental Negotiating Committee (INC) process on plastic pollution. Her previous work includes multilateral environmental negotiations, the development of Japan's national implementation plans for climate change measures, legislative drafting on nature conservation, including the designation of marine protected areas, and legal drafting under the Pesticide Act and Fertilizer Act during a secondment to the Ministry of Agriculture, Forestry and Fisheries.

Abstract

Nitrogen is indispensable for food production, economic development, and human well-being. However, excessive releases of reactive nitrogen contribute to multiple environmental challenges, including air and water pollution, climate change, and biodiversity loss. Sustainable nitrogen management is therefore essential for achieving sustainable development.

In September 2024, the Government of Japan adopted **Japan's National Action Plan on Sustainable Nitrogen Management** to promote a coordinated, cross-sectoral approach to reducing nitrogen losses while maintaining the benefits of nitrogen use. The Action Plan aligns with the Sixth Basic Environment Plan and contributes to international efforts under the United Nations Environment Assembly.

This speech will introduce the background, objectives, and key measures of Japan's National Action Plan, together with progress in its implementation. It will highlight Japan's integrated approach across agriculture, wastewater management, air quality, resource circulation, and public awareness, emphasizing collaboration among government, academia, industry, and other stakeholders.

The presentation will also discuss how Japan's experience can contribute to international cooperation on sustainable nitrogen management and support global efforts to translate scientific knowledge into effective policy and practical action for future generations.

CHAIRS & RAPPORTEURS

*Alphabetical order

Prof. Misuzu Asari's current special field is the research of waste management, especially plastic products/waste, disaster waste and food waste. She is also involved in a campaign to raise awareness of 3R (Reduce Reuse and Recycle), and hard at the "3R and Low carbon society"-Licensed/Leadership program for development of human resources (<https://3r-cc.jp/>). Additionally, she promotes 3R research network and manage international academic conference (<http://www.3rincs.org/>). One of her other fields is community sustainability. This theme includes environmental management system, environmental/SDGs related education, and lifestyle. She has continued environmental communication in Kyoto University and related institutes (<http://www.eco.kyoto-u.ac.jp/>). Also, her team focus on SATOYAMA (mountainous area) and maintain abandon school as "SDGs education & communication centre" (<https://www.kotos-kyoto.jp/>). She widens her field on SDGs concept and promote activities (<https://eco.kyoto-u.ac.jp/sdgs/kyoto-times/>). She is also focusing on the education and collaboration of future generations and presides over events such as the Global Environment Youth Summit (<https://kyoto-youthsummit.com/en/>).



Prof. Kentaro Hayashi is a biogeochemist and soil scientist at the Research Institute for Humanity and Nature, Japan. His research focuses on nitrogen cycling across diverse terrestrial ecosystems, including agricultural landscapes and polar regions, with a strong emphasis on sustainable nitrogen management in food and energy systems. He serves as Director of the East Asia Centre of the International Nitrogen Initiative and is a member of the Steering Committee of the Global Partnership on Nutrient Management. He chairs the Organizing Committee of the 10th International Nitrogen Conference (N2026), of which this symposium forms part.



Prof. Makoto Taniguchi is a hydrologist and Program Director at the Research Institute for Humanity and Nature (RIHN), Japan. He is an IUGG Elected Fellow, a JpGU Fellow, a Cooperation Member of Science Council of Japan, a Future Earth Assembly member, and a Steering Committee member of Water-Energy-Food Nexus KAN. He served as PI and Co-PI of many research projects including UNESCO-GRAPHIC, Groundwater in Asian Megacities, Water-Energy-Food Nexus, and the Belmont Forum SUGI Food-Energy-Water NEXUS. He has worked on water-related projects around the world, authored or co-authored over 180 articles, and edited or co-edited eight books.



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Research Institute for Humanity and Nature (RIHN)
457-4 Motoyama, Kamigamo, Kita-ku, Kyoto, 603-8047, JAPAN
Tel. +81-75-707-2152 Fax. +81-75-707-2106
kokusai@chikyu.ac.jp <http://www.chikyu.ac.jp>