



Food and Agriculture
Organization of the
United Nations



Nitrogen Challenges in Agri-food systems: Halve Nitrogen Waste by 2030

Webinar

Monday 7 December 2020 | 14:00– 16:00 CET

Concept note, draft agenda and speakers' profiles



Concept note

Nitrogen is abundant in the atmosphere, land and water and is a crucial element for building structures of living organisms. The reactive forms of nitrogen are an essential component of animal, plant and microbial life processes, as a key element of DNA, RNA and proteins. The Haber-Bosch process to convert atmospheric nitrogen into reactive forms used in agriculture and food production, mainly as synthetic fertilizer, has greatly enhanced food security and nutrition of a growing world population.

The excessive and inadequate use of nitrogen in agriculture, however, has major negative impacts on people and the planet. Emissions of ammonia and nitrogen oxide contribute to the formulation of the particulate matter causing significant health issues related to air pollution. Nitrogen loads in fresh and marine water can lead to eutrophication affecting aquatic ecosystems and fisheries, threatening livelihoods of people that depend on them and causing biodiversity loss. High emissions of nitrous oxide contribute also to climate change at the global level. To address global warming and protect biodiversity, it is vital to manage reactive nitrogen more efficiently.

Some farmers around the world are already applying technical solutions and good practices to reduce excessive nitrogen losses from agri-food systems. These solutions range from the best management practices for fertilizer and manure application to croplands and grasslands, improvement of soil health, reduction of crop yields gaps, improvement of grassland productivity, improvement of animal productivity and better manure management systems. Other solutions are related to the circular bio-economy through manure recycling and use of food leftovers and crop residues as feed for livestock. Designing policies to support the integration of crop and livestock production and to incentivize farmers on the adoption of best management practices can also enhance nitrogen use efficiency and reduce pollution in agri-food systems.

The United Nations Environment Assembly (UNEA) recognized the importance of a coordinated and collaborative approach to sustainable nitrogen management in March 2019. A resolution titled "Sustainable Nitrogen Management" (UNEP/EA.4/L.14) recognized the multiple pollution threats resulting from anthropogenic reactive nitrogen, with adverse effects on the environment and highlighted solutions to better manage nitrogen to achieve the SDGs. This resolution was further supported by the Colombo Declaration on Sustainable Nitrogen Management in 2019. The 2021 United Nations Food Systems Summit, furthermore, will offer an opportunity to address among others nitrogen challenges through the transformation of the agri-food systems.

The objective of the event is to raise awareness about the nitrogen challenges and potential technical solutions and policies in agri-food systems and highlight the ongoing efforts to better manage nitrogen. The event will provide an opportunity to learn about the multiple roles of nitrogen in agri-food systems and on how different stakeholders can help to achieve sustainable nitrogen management.

The two hours seminar welcomes all stakeholders from public, private sector, NGOs, CSOs interested in sustainable nitrogen management.

Register online [here](#)

AGENDA		
Time	Topics	Speakers
14:00–14:05	Welcome address and moderator of the Opening session	Mr Henning Steinfeld , Chief, Livestock Information, Sector Analysis and Policy Branch, FAO
14:05 –14:25	Opening remarks	Mr Eduardo Mansur , Director, Office of Climate Change, Biodiversity and Environment (OCB), FAO Ms Leticia Carvalho , Head, Marine and Freshwater Branch, Ecosystems Division, UNEP Hon. Mahinda Amaraweera , Minister of Environment, Sri Lanka (<i>keynote video message</i>) H.E. Johannes Petrus Hoogeveen , Ambassador and Permanent Representative of the Kingdom of the Netherlands to FAO
14:25–15:25	Key-note presentations Moderator: Prof. Ramesh Ramchandran , Ministry of Environment, Forest and Climate Change, India and Chair of Global Partnership on Nutrient Management (GPNM, UNEP) <i>Nitrogen Science support for the environment and sustainable development</i> (8 min) <i>Nitrogen emissions in the livestock sector</i> (8 min) <i>Fertilizer code and nitrogen challenges in crop production</i> (8 min) <i>Soils, GHG and climate change: what is the role of Nitrogen in carbon sequestration efforts?</i> (8 min) <i>Progress, updates and opportunities on the UNEA4 resolution on Sustainable Nitrogen Management</i> (8 min) Q&A (20 min)	Prof. Mark Sutton , Director, INMS Mr Aimable Uwizeye , Livestock Policy Officer, FAO Mr Kim Haekoo , Agricultural Officer, FAO Mr Ronald Vargas , Land and Water Officer, FAO Mr Mahesh Pradhan , GPNM Coordinator, UNEP
15:25–15:50	Panel discussion Moderator: Prof. Mark Sutton , Director INMS, UK Centre for Ecology & Hydrology	Mr Pierre Gerber , Senior Agriculture Economist at World Bank and Special Professor at Wageningen University and Research Ms Anna Engleryd , Senior Policy Advisor, (Swedish Environmental Protection Agency) Geneva Convention on Long-Range Transboundary Air Pollution, UNECE Prof. N. Raghuram , Chair, International Nitrogen Initiative Ms Isabelle Van Der Beck , GEF IW Task Manager, UN Environment (UNEP)
15:50–16:00	Closing remarks and way-forward	Mr Henning Steinfeld , Chief, Livestock Information, Sector Analysis and Policy Branch, FAO

SPEAKERS' PROFILES



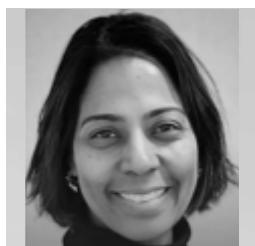
Mr Henning Steinfeld, Chief, Livestock Information, Sector Analysis and Policy Branch, FAO

Mr Steinfeld is a leading agricultural economist and sustainability expert with specialized expertise in livestock policies, climate change, agricultural development. As Chief of the Livestock Information, Sector Analysis and Policy Branch at FAO he has implemented major programmes in livestock and natural resources, climate change and pro-poor livestock policies and supported work on livestock diseases and human/environmental health (One Health). In 2010 he developed the global policy dialogue platform Global Agenda for Sustainable Livestock. He has been working on agricultural and livestock policy for more than 25 years and he has worked in an agricultural development project in different African countries.



Mr Eduardo Mansur, Director, Office of Climate Change, Biodiversity and Environment (OCB), FAO

Mr Mansur is the Director of the Office of Climate Change, Biodiversity and Environment (OCB) since 2020 and he was previously the Director of the Land and Water Division since 2016. Mr Mansur has an extensive career in FAO where he was Project Coordinator and then served as Forest Officer with the Forestry Economics and Policy Division. From 2007 to 2008, he worked as Senior Forestry Officer at the Regional Office for Africa in Accra, Ghana. In 2008, he served as Assistant Director with the International Tropical Timber Organization (ITTO) in Japan. In 2012, Mr Mansur re-joined FAO as Director of the Forest Assessment, Management and Conservation Division. Mr Mansur holds a Master of Science in Forest Economics from the University of Helsinki in Finland, and a Bachelor of Science in Forestry from the Federal University of Paraná in Brazil.



Ms Leticia CARVALHO, Head of the Freshwater, Marine and Coastal Ecosystems Branch (UNEP)

Ms Carvalho has over 15 years of experience in environmental policy-making and implementation for the Brazilian Government. Previously, she was Director of Environmental Quality at Industry and Manager of Chemicals Safety, for the Ministry of the Environment of Brazil, focused on chemicals and waste management and air pollution regulations. Before these positions, she was a senior official for the sensitivity mapping of coastal and marine ecosystems and adviser for the National Contingency Planning against oil spills. She was also Coordinator of a project-portfolio on sustainable fisheries, for the National Fund of the Environment. Ms Carvalho is a national of Brazil. She has a Master Degree in Sustainable Development from the University of Brasilia, and a Bachelor's Degree in Oceanography from the University of Rio Grande.



Hon. Mahinda Amaraweera, Minister of Environment, Sri Lanka

Committees Involved at Present

- Committee on Parliamentary Business
- Committee on Public Enterprises
- Ministerial Consultative Committee on Environment

Committees Served

- House Committee (Eighth Parliament of Sri Lanka)
- Liaison Committee (Eighth Parliament of Sri Lanka)
- Ministerial Consultative Committee on Agriculture (Eighth Parliament of Sri Lanka)
- Committee on Parliamentary Business (Eighth Parliament of Sri Lanka)

-
- Backbencher Committee (Eighth Parliament of Sri Lanka)
 - Ministerial Consultative Committee on Mahaweli Development & Environment (Eighth Parliament of Sri Lanka)
 - Committee on Parliamentary Business (Eighth Parliament of Sri Lanka)

Ministerial Portfolio Held

- Minister of Fisheries and Aquatic Recourse Development
 - Minister of Disaster Management
 - Minister of Water Recourses
 - Minister of Urban Development
 - State Minister of Mahaweli Development
 - Deputy Minister of Health
-



H.E. Johannes Petrus (Hans) Hooegeveen, Ambassador and Permanent Representative of the Kingdom of the Netherlands to FAO

Dr Hooegeveen serves as Ambassador / Permanent Representative of the Netherlands to the FAO. Before that, he was the Director-General for Agriculture and Nature Management at the Netherlands Ministry of Economic Affairs. As such, Dr Hooegeveen is the most senior civil servant to lead the agriculture, agribusiness, food safety, food security, veterinary and plant health, international affairs, including the European Common Agricultural Policy and the Common Fisheries Policy, international food security, the FAO and other UN affairs, trade liberalisation (WTO), market access and nature/biodiversity management agendas. Dr Hooegeveen served in numerous international functions, including as Chair of the Bureau of the Seventh Session of the United Nations Forum on Forests that adopted in 2007, under his leadership, an international instrument on forests which was called a landmark achievement by the UN Secretary-General after fifteen years of stalled international negotiations. For his achievements within the Forum, Dr Hooegeveen received a UN award during the High-Level Special Event on the UN General Assembly's adoption of the international forest instrument.



Prof. Ramesh Ramchandran, Ministry of Environment, Forest and Climate Change, India and Chair of Global Partnership on Nutrient Management (GPNM, UNEP)

Prof. R. Ramesh, Director of the National Centre for Sustainable Coastal Management, Ministry of Environment, Forest & Climate Change, Government of India. His expertise includes coastal ecosystem biogeochemistry and coastal zone management. Ramesh has been involved in several national and international expert committees on coastal management. He is currently the Chair of the Global Partnership in Nutrient Management (GPNM) of the UNEP-GPA. Prof. Ramesh, who has been associated with and supportive of the work of the GPNM since its inception back in 2009.



Prof. Mark Sutton, Director, INMS

Mr Sutton is an environmental physicist based at the UK Centre for Ecology & Hydrology, in Edinburgh. An expert on atmospheric ammonia, he leads international research activities on nitrogen at the science-policy interface. He is a former chair of the International Nitrogen Initiative (INI) and currently directs the UNEP/GEF International Nitrogen Management System (INMS) and the UKRI Global Challenges Research Fund's South Asian Nitrogen Hub.



Mr Aimable Uwizeye, Livestock Policy Officer, FAO

Mr Uwizeye possesses more than twelve years' experience in livestock development, animal health and environmental assessment of the livestock sector. At the Food and Agriculture Organization of the United Nations (FAO), Mr Uwizeye leads a programme aiming at improving the sustainability of global livestock systems, while considering the vulnerability of the sector to climate change and addressing food security through the Koronivia Joint Work of Agriculture (KJWA). He also provides technical expertise to the Livestock Environmental Assessment and Performance (LEAP) Partnership. Mr Uwizeye has led the research on nitrogen use, flows and emissions along livestock supply chains using the Global Livestock Environmental Assessment Model (GLEAM) and is currently supporting the update of GLEAM model to assess other domains such as greenhouse gas emissions, water use, and soil carbon stock change and biodiversity. His research interests focus on global change, nitrogen challenges, environmental performance, climate change and ruminal acidosis. Mr Uwizeye holds a Doctorate in Veterinary Medicine and a double Master's Degree in Sustainable Development in Agriculture, focusing on Sustainable Livestock Production and Farming Systems in subtropical and tropical regions. He also holds a PhD in Animal Production Systems from Wageningen University and Research, The Netherlands, in collaboration with FAO and the Irish Agriculture and Food Development Authority (Teagasc).



Mr Kim Haekoo, Agricultural Officer, FAO

Mr Kim is a plant physiologist with over 10 years of experience in various agriculture disciplines from fundamental science to applied research (plant physiology, crop modelling, plant hydrodynamics and agronomy) developing high-throughput phenotyping, precision agriculture and remote sensing tools. Before joining FAO in 2019, he worked at the National Institute of Agricultural Sciences (Rural Development Administration) in South Korea where he worked on sesame genetic resource and high-throughput phenotyping. He also worked for 4 years as a Farming Systems Agronomist at CIMMYT (International Maize and Wheat Improvement Center) based in Ethiopia where he backstopped projects on sustainable intensification, fertilizer optimization and biofortification in Eastern and Southern Africa (Ethiopia, Kenya, Tanzania, Rwanda, Malawi, Zimbabwe, Mozambique). Mr Kim completed his MSc in Plant Breeding and Biodiversity at Université de Rennes and a joint-PhD on Plant physiology and Crop Modelling at the University of Queensland (Australia) and Université de Montpellier (France).



Mr Ronald Vargas, Land and Water Officer, FAO

Mr Vargas is a soil scientist with over 15 years of working experience in natural resources management with a focus on sustainable soil management for food security and ecosystem services. He joined FAO in 2011 as a Land and Water Officer and is the Secretary of the Global Soil Partnership (GSP) since its establishment in 2012. He has supervised the implementation of the GSP, its regional soil partnerships and the establishment of the Intergovernmental Technical Panel on Soils. He initiated and facilitated the successful implementation of the International Year of Soils 2015. Since 2014, he is leading the preparation of audience-specific technical and communication material for the World Soil Day campaigns. He also directed the preparation of key publications related to soils, including the revised World Soil Charter, the Status of the World's Soil Resources Report, the Voluntary Guidelines for Sustainable Soil Management, the International Code of Conduct for the sustainable use and management of fertilizers, the Protocol for the assessment of Sustainable Soil Management and the Protocol for measurement, monitoring, reporting and verification of soil organic carbon in agricultural landscapes.



Mr Mahesh Pradhan, GPNM Coordinator, UNEP

Mr Mahesh has been with the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) since August 2019, providing the Secretariat function for the Global Partnership for Nutrient Management (GPNM). Prior to this, he was based at UNEP's International Environmental Technology Centre (IETC) in Osaka, Japan, where he focused on holistic waste management, waste to energy, and disaster waste management for over 3 years. He was the Head of the UNEP's Environmental Education and Training Unit in Nairobi during 2011-2015. Mahesh was based at UNEP's Regional Office for Asia and the Pacific from 1993 to 2011, where he was concurrently appointed interim Director of the UNEP AIT Regional Resource Centre for Asia and the Pacific in Bangkok, Thailand during 2009-11.



Mr Pierre Gerber, Senior Livestock Specialist at World Bank and Special Professor at Wageningen University and Research

Mr Gerber possesses 20 years of experience in analyzing trends in global livestock systems and their interactions with the environment. He leads activities aiming at mainstreaming climate and environmental considerations within the global portfolio of livestock operations at the World Bank Group. Mr Gerber is appointed Special Professor at Wageningen University and Research.



Ms Anna Engleryd, Senior Policy Advisor, (Swedish Environmental Protection Agency) Geneva Convention on Long-Range Transboundary Air Pollution, UNECE

Ms Engleryd is a Senior Policy Advisor at the Swedish Environmental Protection Agency. For the last 15 years, she has been a lead negotiator on air pollution for the Swedish Government in several international fora. Since 2014, she is the chair of the Executive Body to the UNECE Convention on long-range transboundary air pollution. She has a background in agronomy and energy systems analysis.



Prof. N. Raghuram, Chair, International Nitrogen Initiative

Prof. N. Raghuram is the Chair of the International Nitrogen Initiative and a Professor and former Dean of Biotechnology at the Guru Gobind Singh Indraprastha University, New Delhi. His lab research focuses on nitrogen use efficiency in rice. He co-led the Indian Nitrogen Assessment and facilitated the UN resolution on 'Sustainable Nitrogen Management'. He is currently co-leading South Asian nitrogen assessment under INMS and co-editing International Nitrogen Assessment. He is a Steering Committee member of the UNEP-GPNM and served on the UNEP-FAO-WHO Consultative Committee on Health and Environmental impacts of pesticides and fertilizers. He is the President of the Sustainable India Trust (UNEP-accredited NGO) and also Editor in Chief of the journal, Physiology and Molecular Biology of Plants (Springernature).



Ms Isabelle Van der Beck, GEF IW Task Manager, UN Environment (UNEP)

Ms Van der Beck is UNEP's Global Environment Facility (GEF) Task Manager overseeing projects funded under the GEF International Waters portfolio. These include projects that UNEP implements globally and those with regional scopes such as those in Asia and Latin America and the Caribbean. As Task Manager, she shepherds the process from project concept to implementation so that these align with the GEF's strategic funding priorities that are defined on a four-year fund replenishment cycle. She holds a Master of Science degree in Hydrology from the University of Louvain.

