



# GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

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ANIMAL HEALTH & GREENHOUSE GAS EMISSIONS INTENSITY NETWORK

Şeyda Özkan, Nick Wheelhouse, Lydia Lanzoni

Animal Health & Greenhouse gas intensity network  
September 2024-update

# Aims

AHN aims to bring together researchers, governments, non-governmental organizations, private sector from multiple backgrounds to:

- Discuss and find inter-disciplinary approaches to understand and tackle the impacts of climate change on animal health and the impacts of animal health on the environment.
- Advance the process of integrating animal health interventions to policy settings
  - linking animal health data and disease surveillance systems to Tier 2 GHG inventories and the updates of Nationally Determined Contributions (NDCs).



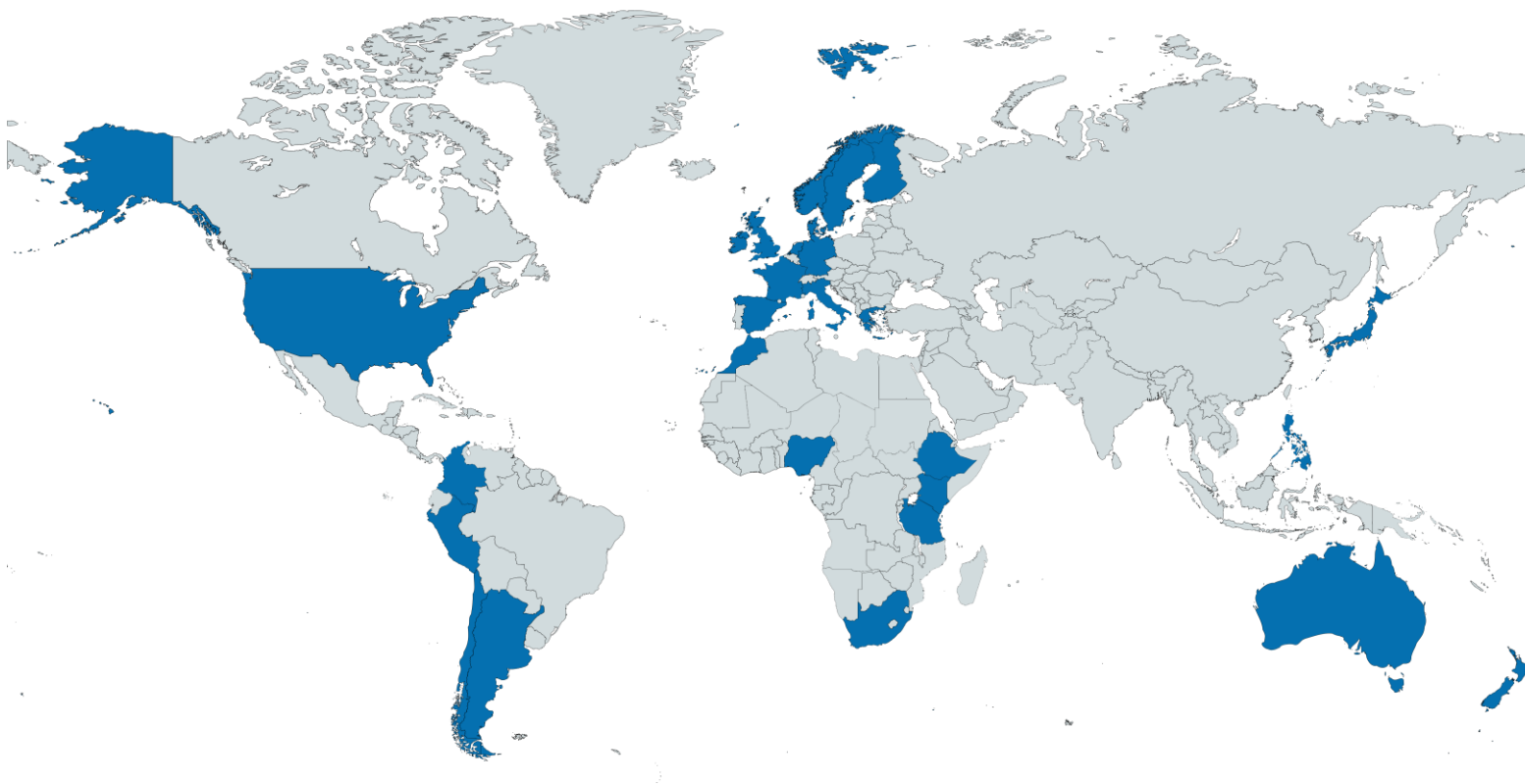
<https://globalresearchalliance.org/research/livestock/networks/animal-health-network/>

# Membership

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69 now on the mailing list or working with the network across 24 Countries





# Network outputs

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## RESEARCH UPDATE

December 2023

# Improving animal health: A key to sustainable livestock production and better human health

Claudia Arndt<sup>1</sup>, Endale Balcha<sup>1,2</sup>, Brend Brunsvoort<sup>3</sup>, Elizabeth Cook<sup>4</sup>, James Gibbons<sup>5</sup>, Felix Lankester<sup>6,7</sup>, Şeyda Özkan<sup>8</sup>, Peri Rosenstein<sup>9</sup>, George Semango<sup>9</sup>, Nick Wheelhouse<sup>10,11</sup> and Andreas Wilkes<sup>12</sup>

<sup>1</sup>International Livestock Research Institute, Kenya, <sup>2</sup>Mekelle University, Ethiopia, <sup>3</sup>University of Edinburgh, UK, <sup>4</sup>Bangor University, UK, <sup>5</sup>Washington State University, USA, <sup>6</sup>Global Animal Health Tanzania, Tanzania, <sup>7</sup>Food and Agriculture Organization of the United Nations, Italy, <sup>8</sup>Environmental Defense Fund, USA, <sup>9</sup>Nelson Mandela African Institution of Science and Technology, Tanzania, <sup>10</sup>Edinburgh Napier University, UK, <sup>11</sup>New Zealand Agricultural Greenhouse Gas Research Centre, New Zealand

## I. Introduction

Livestock production significantly contributes to global greenhouse gas (GHG) emissions, with ruminants being major contributors due to the methane they produce. This research update underscores the interconnectedness of cattle health, methane emissions, and food security. Improving animal health will reduce GHG emissions, advance national climate commitments, bolster livestock adaptation to climate change, and increase the production of animal-sourced food.

## II. The Livestock Paradox in LMICs

While wealthier nations discuss reducing livestock consumption to address climate change, lower-middle-income countries (LMICs) face a critical issue of protein and micronutrient deficiency. Globally, more than half a billion women are affected by anemia and almost one quarter of children under five years old are stunted. This nutritional gap has tangible health consequences, particularly for children and pregnant women. With the increasing population in Africa, the challenge lies in meeting nutritional needs while ensuring environmental sustainability of food systems. Diets that include animal products lie at the heart of prevention of malnutrition and some of the diseases in humans.

## III. The Path to Sustainability:

## IV. Preliminary Results and Key Findings

Preliminary results from the seed project have revealed the following:

### A. Tanzania:

- Pregnancy losses in dairy cattle lead to reduced milk and meat output, increasing GHG emission intensity by up to 14%. This loss is equivalent to the protein requirements of a million Tanzanians.

### B. Kenya:

- Chronic mastitis exists in over 50% of tested dairy cattle. Mastitis has been linked directly with reduced milk production and can lead to clinical complications which are associated with an increased use of antibiotics representing a significant production and economic loss and increase risk of antimicrobial resistance (AMR).
- The death of beef calves before reaching one year old escalates GHG emission intensity by 6% for beef products. This represents a nutritional void for 3.6 million Kenyans.

## V. Towards a Healthier Future for All

Improving animal health is imperative for sustainable livestock production, with wider implications for environmental preservation and human

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# Improving animal health: A key to sustainable livestock production and better human health

Published 08 Dec 2023

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Themes ENVIRONMENT

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# Newsletter

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## ANIMAL HEALTH & GREENHOUSE GAS EMISSIONS INTENSITY NETWORK

NEWSLETTER VOL. 4 • DECEMBER 2023



## ANIMAL HEALTH & GREENHOUSE GAS EMISSIONS INTENSITY NETWORK

NEWSLETTER VOL. 5 • SEPTEMBER 2024





# Funding

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## Animal Health as a Climate Solution: Phase I



Edinburgh Napier  
UNIVERSITY



**USAID**  
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# Funded activities

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## Animal Health as a Climate Solution: Phase I

### Quantifying the impact of animal health on climate change

A Virtual Expert Workshop Convened by Environmental Defense Fund (EDF) and the Animal Health and Greenhouse Gas Emissions Intensity Network of the Global Research Alliance on Agricultural Greenhouse Gases (GRA AHN)

September 30 & October 1, 2024

### Workshop Meeting Dates, Times, and Link

Monday, September 30, 2024 (9 a.m.-11:30 a.m. EDT) & Tuesday, October 1, 2024 (9 a.m.-11:30 a.m. EDT); virtual ([link in invitation](#))



Field study- Nandi county Kenya investigating the impact of mastitis on productivity and emissions intensity





# AHN exposure



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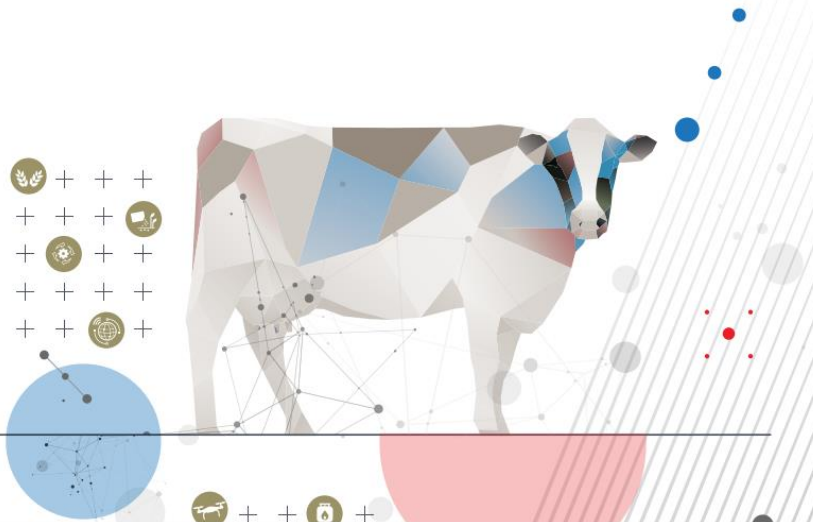
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Food and Agriculture  
Organization of the  
United Nations

## Pathways towards lower emissions

A global assessment of the greenhouse  
gas emissions and mitigation options  
from livestock agrifood systems



LD4D  
LIVESTOCK  
DATA FOR  
DECISIONS

Climate finance for  
livestock development

## The Climate Investment Case for the Livestock Sector

Unlocking Opportunities for  
Effective Climate Action

### Key Messages

- Livestock are vital for nutrition, food security, and livelihoods in low- and middle-income countries (LMICs), but climate change threatens these benefits.
- The livestock sector also presents an environmental challenge, contributing an estimated 12% of global anthropogenic greenhouse gas (GHG) emissions.
- With increasing global demand for animal products, there is likely to be an increase in the GHG footprint of the livestock sector.
- Sustainably increasing livestock productivity is crucial to balance livelihood support and emissions reduction goals.
- Investing in livestock can reduce greenhouse gas emissions while alleviating poverty, improving nutrition, and building climate resilience.
- Additional measures, supported by investments, are needed to abate emissions and increase carbon capture.
- Climate finance could support the shift towards sustainability, but investments to date have been limited.
- The brief identifies several barriers facing financing institutions wishing to invest in livestock and sets out potential solutions.
- There is a narrowing window to shape the nature of the sector's growth and therefore its environmental impact in emerging markets.
- Strategic sector investments are needed to target high-quality growth, reduce emissions, and address climate impacts on the livestock sector.





# We are looking for a new comms coordinator

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Our thanks  
to Lydia for  
her efforts  
over the  
last two  
years!!!

## Meet the AHN members

### Lydia Lanzoni: The new AHN's communication coordinator!



Credit: Lydia Lanzoni

Lydia is a veterinarian and a PhD student at the University of Teramo (Italy).

During her PhD she gained experience in Life Cycle Assessment, modelling and validation of non-invasive enteric methane measurement techniques (LMD). Her research project mainly focuses on

1. quantifying the environmental mitigation potential of improved animal welfare on sheep farms;
2. analysing the challenges of integrating animal welfare indicators in life cycle assessment and,
3. developing a European framework for assessing the environmental, economic and social sustainability of the sector within the LIFE Green Sheep project.

She will be coordinating the communication side of the AHN (e.g., newsletter, workshops and activities, updating the list of publications..) so feel free to drop an email if you know of a publication or an event relevant to the AHN, or if you would like to discuss ideas around the webinars and workshops planned.

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