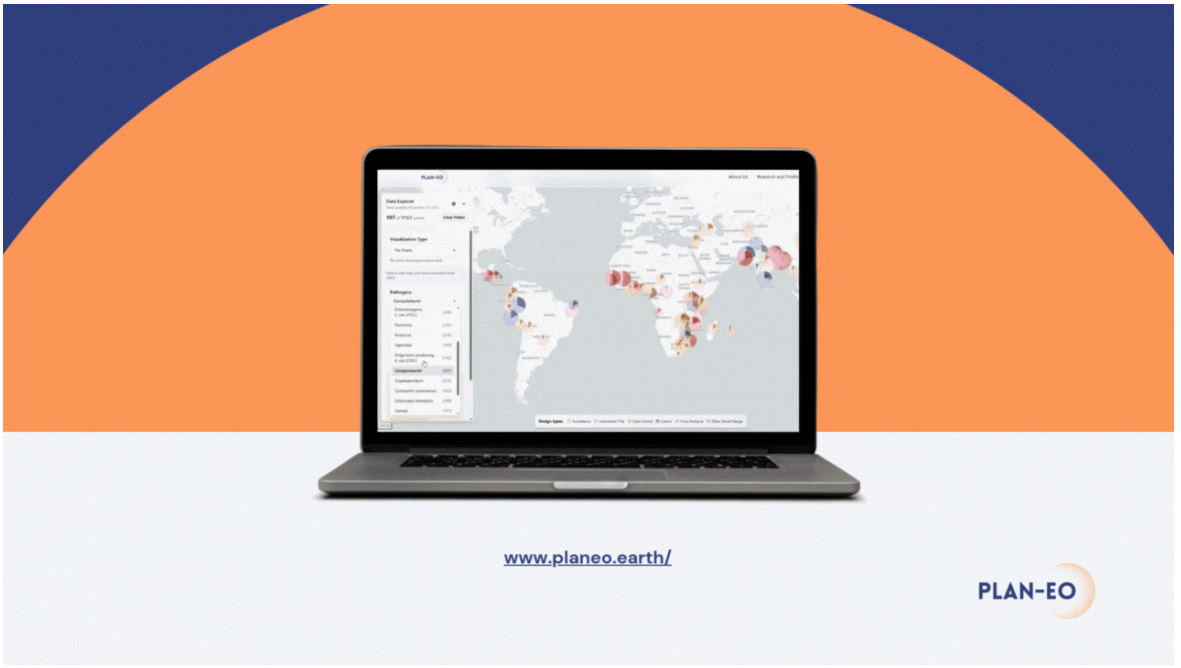
Welcome to another edition of the SPRINGS Watch Newsletter 📰

As SPRINGS moves into its second year, the work taking place across countries and disciplines is starting to come together in a more complete way. Our teams are combining climate science, epidemiology, anthropology, and policy analysis to understand how climate change is shaping waterborne disease risks and what this means for communities on the ground. Field teams, modellers, and public-health researchers have spent the past months refining tools, gathering evidence, and listening closely to the people and systems most affected.

In this edition, we share a glimpse of what this looks like in practice: from flood-prone landscapes in the Volta River area, and laboratory work in Haydom and Naples, to conversations with families and health workers in Timișoara. Together, these pieces offer a clearer view of the factors influencing water, health, and resilience, and of the growing knowledge base SPRINGS is building to help strengthen responses in the years ahead.

Enjoy your read!

Feature story



Plan-EO: The platform bringing climate and health data together

Plan-EO - The Planetary Child Health & Enterics Observatory was created with a clear purpose: to fill data gaps in understanding diarrhoeal disease across low- and middle-income countries. While climate data is rich, detailed and readily accessible, epidemiological data on pathogens such as Campylobacter, Shigella, Cryptosporidium or Rotavirus remains sparse and highly localised. Plan-EO bridges this divide by using climate information to model disease patterns where direct evidence is limited, helping build a bigger picture of transmission at regional scale.

Founded by epidemiologist Josh Colston, Plan-EO emerged from early collaborations between climate scientists and public-health researchers. Their idea was straightforward but transformative: use high-resolution climate variables to infer pathogen prevalence across wider geographies. Over time, the team has developed a “living evidence system” that integrates individual-level data shared through collaborations, aggregate findings from the literature, and continuously updated climate inputs. The result is a user-friendly platform where researchers and decision-makers can explore published and predicted

prevalence, compare regions and identify areas where interventions may be most relevant.

The partnership with SPRINGS marks a significant step forward. Until now, Plan-EO has mainly focused on present-day predictions. SPRINGS introduces the ability to look into the future. Through its climate modelling working group, SPRINGS is generating downscaled climate projections for Ghana, Tanzania, Italy and Romania, the project's four case study regions. These projections will be integrated into Plan-EO's models, enabling the platform to estimate how pathogen prevalence may shift in response to changing climate conditions through to 2050 and beyond.

SPRINGS also contributes essential insights on potential public-health interventions. The project's policy and stakeholder engagement work identifies priority scenarios, such as vaccination strategies or sanitation improvements, that Plan-EO can layer onto its predictions. This ensures that projections reflect not only environmental change but also the policy choices communities may adopt.

One example of this alignment is the SPRINGS case study in Ghana. Here, environmental and epidemiological data are being collected in parallel from the outset, offering a rare opportunity to embed planetary-health thinking directly into study design, an approach that strengthens Plan-EO's modelling foundations.

Over the next few years, Plan-EO will continue refining its datasets, expanding risk-factor layers and enhancing its interface. By the end of the SPRINGS project, users are expected to be able to toggle between current predictions and future projections, exploring disease risks across different climate scenarios.

👉 **Read the article**

Project milestones and progress in the field

Clearer understanding of climate patterns

SPRINGS' climate team has deepened its understanding of how environmental factors and human systems shape exposure to climate-related hazards. Work in the Volta Basin has shown that hydropower dams, irrigation schemes, and other infrastructures strongly influence local hydrology, and this insight is guiding how the team tailors its climate projections for downstream epidemiological modelling.

Parallel efforts are mapping flooding hotspots along the Volta Basin and developing an agent-based epidemic model that simulates outbreak dynamics under different climate futures. The next months will focus on refining downscaled climate projections, translating them for hydrological models, and aligning outputs with the health modelling team's requirements.

Steady progress in health modelling

Over recent months, the health working group has strengthened the shared modelling architecture that underpins the project, aligning inputs, outputs, and risk layers across teams and countries.
Modelling of the project's first index pathogen, Campylobacter, is progressing well, feeding into SPRINGS' broader effort to map risk across environmental and social dimensions. The team is now expanding its focus to include additional water-, sanitation- and hygiene-related risk factors, and preparing the protocol paper that will guide the next phase of comparative modelling.

Turning evidence into action: shaping adaptation strategies

SPRINGS' policy translation group has continued to refine the project's approach to identifying and prioritising adaptation interventions that can reduce the burden of waterborne diarrhoeal diseases.

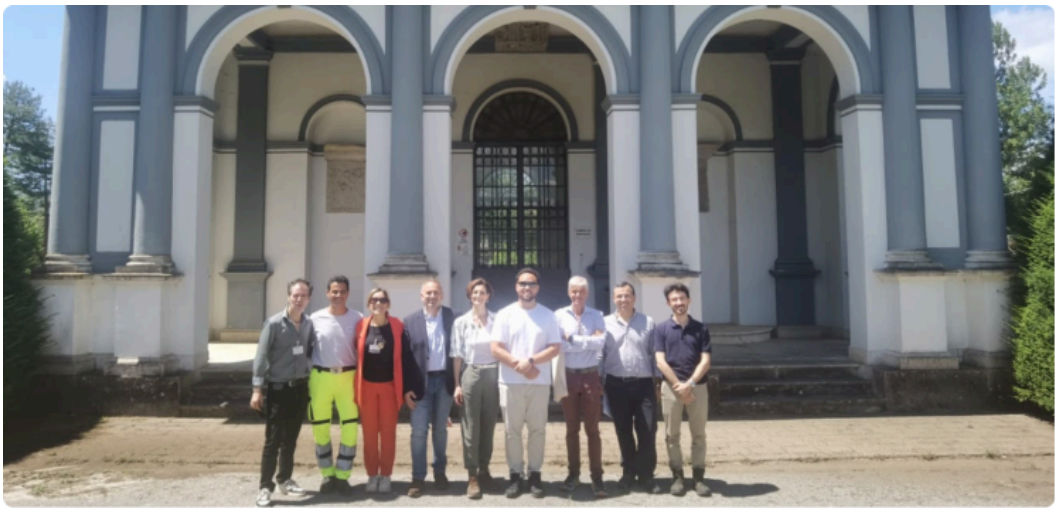
A global mapping of potential interventions is now complete, laying the foundation for country-level discussions in Ghana and Romania. Ethical procedures are underway for a survey that will explore how decision-makers value different criteria, such as feasibility, cost, health impact, and equity, when assessing adaptation options.

The team has also begun working with local economists to prepare health technology assessment approaches that will help quantify the added value of specific interventions. These elements will contribute to a practical framework that countries can use to compare and select climate-health adaptation strategies.

Updates from ongoing case study sites 🔍

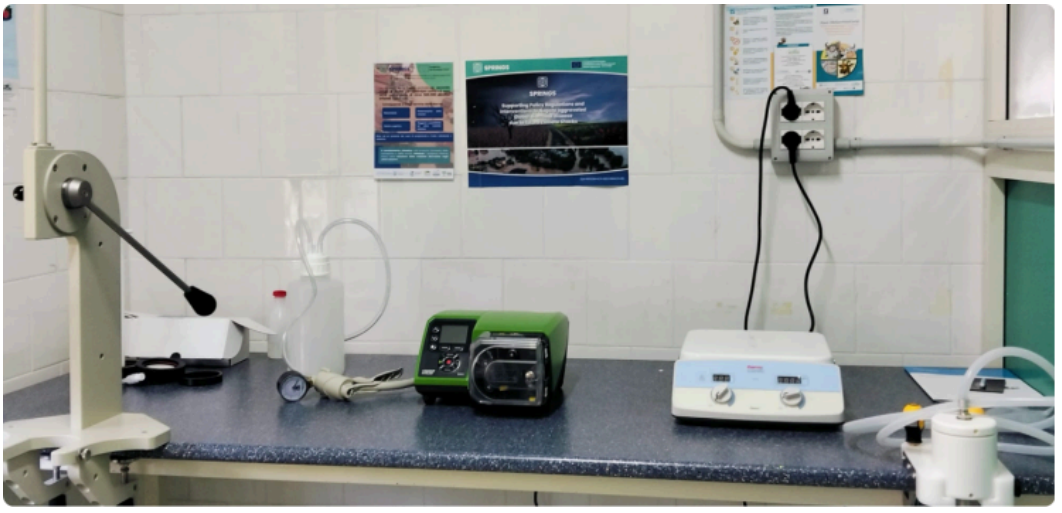
🇮🇹 Italy: tracing risks across communities and water systems

In Naples, the Italian case study continues to integrate multiple layers of work, from water quality monitoring to community engagement.
A summer site visit by Università degli Studi di Napoli Federico II (UniNa) / University of Naples Federico II and RIVM National Institute for Public Health and the Environment to ABC Napoli a.s. provided detailed documentation of the water supply system and its climate-related vulnerabilities. This material is now informing the case study's upcoming analysis of local risks.



👉 Read more about the visit in this article:Climate-ready water: How ABC Napoli and SPRINGS are building urban resilience

Additionally, monthly water sampling is ongoing, with new protocols for detecting Giardia and Cryptosporidium under evaluation. At the same time, the digitisation of case report forms is helping ensure accurate and secure health data collection for the diarrhoeal disease surveillance component.

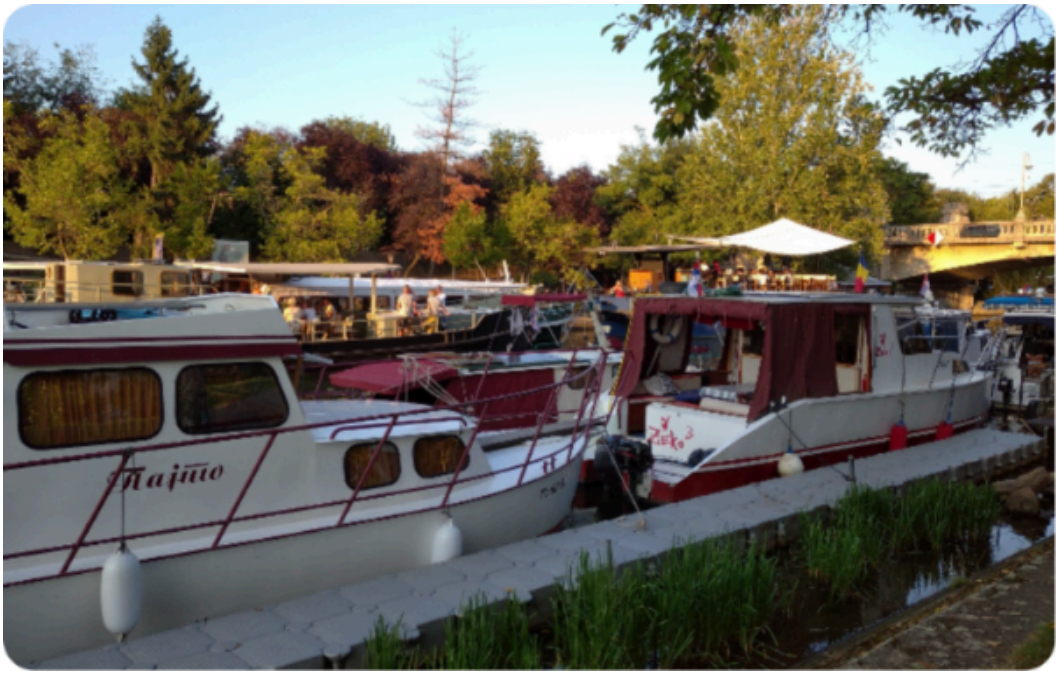


The team is also building a Citizen Advisory Group, bringing together a wide range of local actors, from public health professionals to community organisations, who will contribute to discussions around vulnerability, exposure, and adaptation strategies.

🇷🇴 Romania: listening, observing, understanding

Long-term fieldwork in Timișoara is offering a picture of local water practices, sanitation challenges, and perceptions of disease risk. Interviews with specialists and residents, combined with ethnographic observations, suggest strong cultural preferences for fountain water, limited awareness of waterborne pathogens, and social inequalities that shape exposure and outcomes.

The Bega River has emerged as a central place for recreation and a potential exposure site, highlighting its importance for future WASH-related interventions. At the same time, the team has broadened its network to include architects, environmental scientists, and designers whose work intersects with water issues in the region.



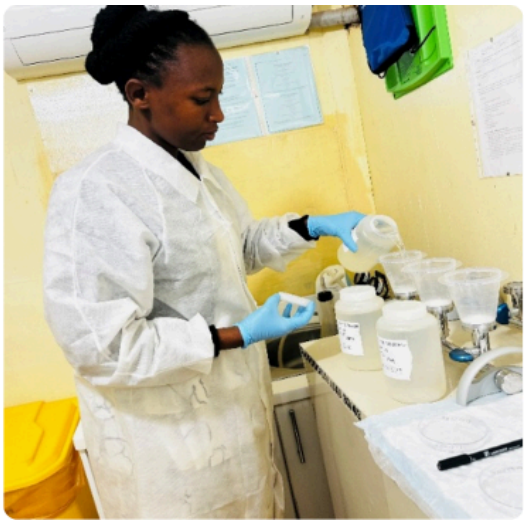
In the coming period, researchers will analyse paediatric diarrhoea data from the Louis Țurcanu Children's Hospital alongside meteorological records, and continue deepening engagement with vulnerable communities.

🇹🇿Tanzania: steady progress in water sampling and analysis

In Haydom, the water sampling campaign has collected 379 samples from 20 water sources, including surface waters, unprotected wells, protected

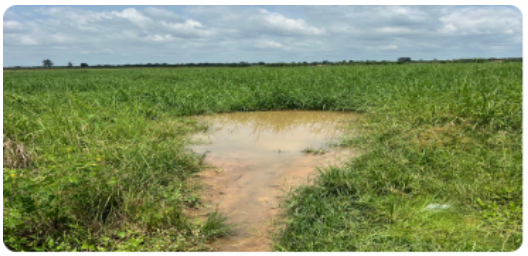
wells, and boreholes. The laboratory team is currently processing samples, extracting DNA, and conducting PCR analyses.

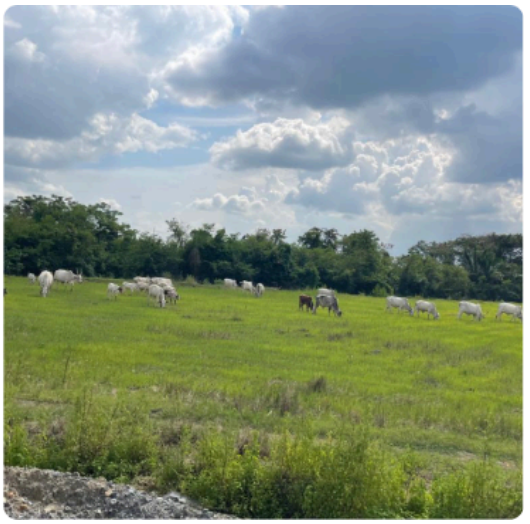
Next steps will focus on completing sample processing and integrating the results into SPRINGS' hydrological and epidemiological models to better understand how climate conditions shape pathogen exposure in rural settings.

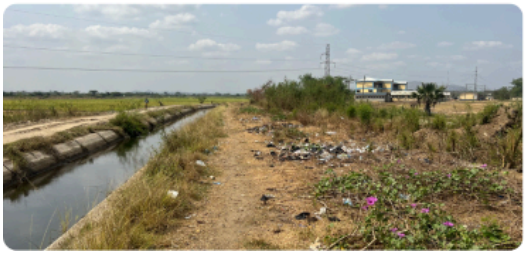


🇬🇭 Ghana: Understanding water use, risks and community realities

Over the past months, the SPRINGS Ghana team has carried out extensive fieldwork across communities in the Lower Volta area, combining environmental assessments with in-depth engagement. The work has focused on water access, daily water-use practices, sanitation conditions, and how climate variability shapes people's exposure to waterborne diseases. Water samples were collected from a wide range of sources, alongside interviews with households, institutions and community leaders.







Anthropological observations have provided insights into how families access, store and use water, and how infrastructure limitations, such as broken boreholes, saline groundwater, damaged polytanks or incomplete sanitation facilities, amplify contamination risks. The team documented several pathways for exposure, including direct use of unsafe water, aerosols, livestock presence around canals, and widespread waste-management gaps. A notable development during this period was the installation of a new treatment system in Dzogbedzi and improving local access to clean water.

The sampling framework has expanded significantly, now covering 40 points across the district and supported by detailed photographic documentation. In the next phase, the team will complete water-quality analyses, conduct validation workshops with communities, and begin the next round of sampling to capture seasonal changes. Qualitative work will continue with focus groups and household visits to better understand perceptions of diarrhoea, care-seeking behaviours, and the everyday strategies households use to manage water and hygiene. These insights will directly support the development of grounded, community-informed recommendations for water safety and public health planning in Ghana.

Policy Watch

Engaging policy and knowledge networks

Collaboration doesn't stop at the case study sites. SPRINGS is contributing to the EU's Planetary Health Cluster, sharing insights with fellow researchers and policy professionals in Amsterdam, Brussels, and beyond. These efforts aim to integrate climate-health evidence into policy pathways that can support healthier and more resilient communities across Europe and Africa.

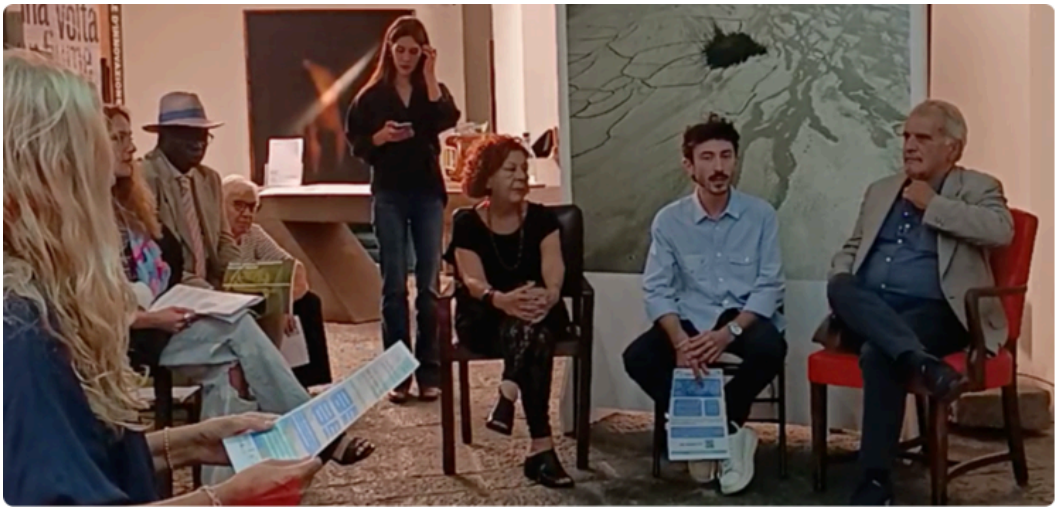
👉 Read the article here: The Planetary Health Cluster meets in the Netherlands and participates in PHAM 2025

Engaging in key events

SPRINGS in the world: Sharing knowledge & building connections

Alongside research and field activities, SPRINGS partners have been actively engaging with communities, policymakers, and the wider scientific world to strengthen the dialogue between climate and health. These efforts ensure that the project's insights are not only advancing academic knowledge but also reaching those who can benefit from them most.

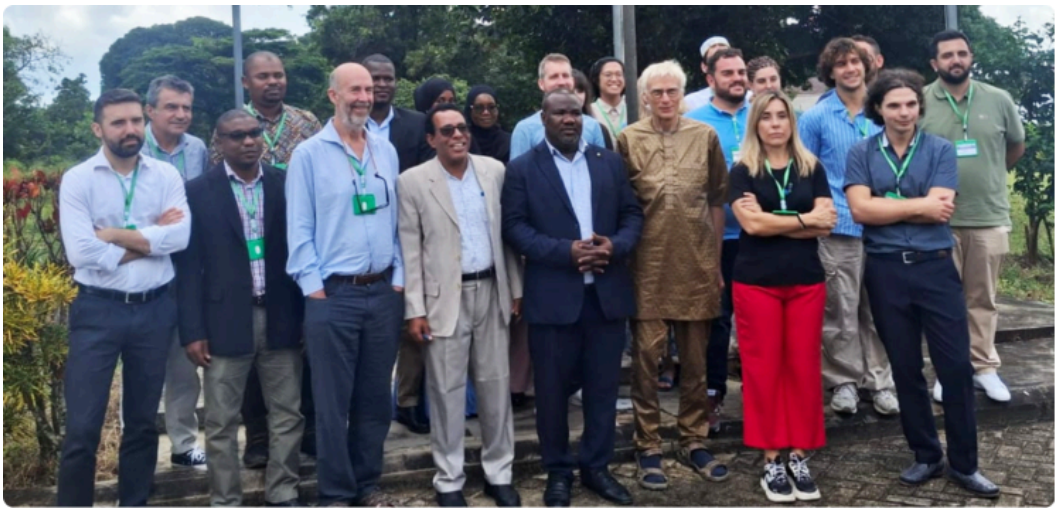
Community engagement and public outreach. Several local initiatives helped bring the topic of waterborne diseases closer to communities. Università degli Studi di Napoli Federico II (UniNa) / University of Naples Federico II organised multiple activities, including Caffè Scientifico, an informal scientific conversations with researchers, and contributed an article to Un Mondo di Bufale, an online newsletter dedicated to countering misinformation. Public-facing events played an important role as well. Partners hosted an open discussion following the theatrical performance C'era una volta un fiume, and participated in the fourth edition of the Neapolitan Days of Health, Prevention and Wellbeing with a dedicated booth to raise awareness of the project's aims.



Sharing SPRINGS research internationally: SPRINGS partners presented the project's approaches and preliminary findings at major scientific events, including the Awaji International Forum in Japan and the ASTMH Annual Meeting in Toronto. These occasions offered valuable

opportunities to connect with global experts working at the intersection of climate, infectious diseases, and public health.

Training and capacity building: The project has also been promoted through national and international training courses. UNINA hosted the “Theoretical and Practical Course on Laboratory Diagnosis of Intestinal and Systemic Parasitic Infections” in Naples, while project partners contributed to the “Summer School in Biostatistics for Infectious Diseases” in Tanzania, strengthening local competencies and supporting knowledge transfer across regions.



Stay connected, stay informed

- Explore Plan-EO Dashboard: https://mine-dd.github.io/dashboard/?st=light&c=-25%2C16&z=2
- Preprint paper: Mapping the Prevalence of Household-Scale Livestock Ownership by Animal Taxon in Low- and Middle-Income Countries: An INLA Prediction Model Josh Colston Bin Fang, Vazira Ahmedjonova, Nasif Hossain, Prakrut Kansara, Francesca Schiaffino, Malena Nong, Adhvikaa Ambikapathi Revathi, Benjamin F. Zaitchik, Pavel Chernyavskiy, Venkataraman Lakshmi, Margaret N. Kosek
- Emergent poverty traps at multiple levels impede social mobility Charles Dupont Debraj Roy
- Interventions to negate aggravated diarrhoeal disease due to climate change - A scoping review protocol. Andres Madriz-Montero, Frederike Kooiman, Francis Ruiz, Fiammetta M. Bozzani