

2027 BeOH event

Ecosystem health and NCD prevention in support of One Health policy and research

26 & 27 January 2027
INBO, Thurn & Taxis, Brussels

Concept note

Context

Non-communicable diseases (NCD), like cardiovascular diseases, cancers, chronic respiratory diseases and diabetes, are the leading causes of death and disability in the human population worldwide. NCD also significantly impact animal health and welfare. Environmental factors linked with NCD include pollution, climate change, biodiversity loss and the transformation of the food system. Pollution by endocrine disruptors, for instance, may cause cancer, thyroid disease, or reproductive dysfunction. Lead contamination contributes to neurologic disorders, cardiovascular and renal disease. Hot weather is a risk factor for cardiovascular, renal and respiratory disease. Public and animal health, moreover, depend on biodiversity, e.g. for the availability of clean air and water, the provision of diverse and nutrient-rich foods, and the discovery of new medicines. Biodiversity loss, for instance through pollinator loss or fish declines, will result in a reduced availability and diversity of essential nutritional elements, increasing the risk of deficiencies, with impacts on public and animal health. Contacts with a biodiverse nature from early on in life will also have protective effects on e.g. allergies, diabetes and mental health.



The organisers

The Belgian One Health network ([BeOH](#)) promotes collaboration and knowledge exchange in support of sustainable health across sectors. Through expert engagement and thematic events, BeOH enhances the integration of One Health principles into research, policy and practice, the One Health approach providing governance and a scientific framework.

The event's focus

Environmental and ecosystem health, and indeed Planetary Health play an important part in One Health, but their integration with public and animal health needs to be improved.

As NCD are increasingly shaped by environmental and systemic drivers, BeOH is organising a two-day event focusing on the role of the environment and ecosystems, including biodiversity, in the emergence of NCD and NCD prevention in public and animal health. The event moreover aims to move from knowledge to actionable leverage points.

The overarching topics will be the impacts on NCD of the exposome, food systems and nutrition, urban health (climate change, heat stress, pollution, etc.) and nature-based solutions (access to low-stimulus zones, green spaces, etc.), highlighting opportunities for ecosystem health co-benefits in both mitigation (e.g. emission reductions, carbon sequestration) and adaptation (e.g. resilience to heat and extreme events) measures.

The event's presentations and posters may focus on implementation-oriented, inter- and transdisciplinary approaches of:

- the protective role of healthy ecosystems and biodiversity in NCD, e.g. through
 - o the impact of biodiverse macroscopic life, e.g. through their skin particles, excreta, pollen
 - o exposure to beneficial environmental microbes supporting the immune system
 - o micro-nutrient availability for sustenance
 - o plant species contributing to the reduction of heat, noise and air pollution



- contacts with nature leading to faster healing after surgery/trauma, positive influence on diabetes, positive impact on mental disorders,...
- the power of exposome in unravelling how ecosystems shape health across the life course. By linking external environments with internal biological responses, the exposome can capture their combined influence on disease risk and disease development
- leverage points within food systems and environments for ecosystem and NCD co-benefits, including:
 - the impact of agricultural practices on NCDs in food-producing animals, biodiversity, soil health, and nutrient density of foods;
 - dietary patterns
 - in the human population (e.g., high consumption of ultra-processed foods, ratio of animal-plant based protein intake), their contribution to obesity, diabetes, cardiovascular disease and cancer, as well as their impacts on the environment, and the role of sustainable diets in reducing both environmental degradation and NCD burden;
 - in farm and companion animal settings, both in terms of metabolic disease impacts, and environmental impacts of diets (e.g. land use change due to soy production for farm animal feed, pet food must be fit for human consumption and very low plant-based, canine dietary ecological footprints etc.)
 - economic, financial and legal systems underpinning society
- innovative and/or nature-based solutions for key climate change risks (heat and other extreme weather events) and improved urban health, and for ecosystem and NCD co-benefits such as
 - nature-based solutions to urban heating (e.g. green and blue spaces)
 - water/flooding management (e.g. “sponge cities”)
 - improving mental health and well-being (e.g. green and blue spaces/nature access)



Target audience

The event is aimed at experts and stakeholders interested in intersectoral cooperation, but also reaches out to administrators and policy makers, e.g. working on health, environment, agriculture, urban planning, research funding, ...

Event set-up

Keynote presentations by invited speakers will be followed by discussions in break-out groups, allowing for exchanges between experts and policy makers from different backgrounds. The conclusions of these discussions will feed into a position paper that the organisers will prepare and publish, taking into account policy and health system realities.

The event's discussions and outputs may furthermore offer guidance for

- administrators and policy makers, to
 - reinforce cross-sectoral, multidisciplinary collaboration
 - strengthen prevention and preparedness strategies, and
 - inspire them to help steer the research agenda ;
- researchers, by giving them the opportunity to
 - get acquainted with each other's work across disciplines, and
 - get inspired and embark on collaborations.

Out of scope

With this NCD- and implementation-oriented, high-level and inter-/transdisciplinary approach in mind, oral and poster presentations at the workshop should not focus on:

- infectious diseases, even if the relation with environmental risk factors has been proven,
- detailed (molecular) descriptions of e.g. allergens, physiological pathways, or technologies for their detection or characterisation,
- detailed methodologies for database construction and data sharing, and risk assessment methodologies.