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I. SESSION DESCRIPTION

ID: T12


Understanding the linkages between global change, environmental degradation, biodiversity loss and human health and well-being

Hosts:

	Name	Organisation	E-mail
Host:	Nadja Kabisch	Leibniz University Hannover, Physical Geography and Landscape Ecology	nadja.kabisch@phygeo.uni-hannover.de
Co-host(s):	Jan Felix Drexler Tadhg Macintyre	Charité Universitätsmedizin Berlin National University of Ireland Maynooth	felix.drexler@charite.de Tadhg.Macintyre@mu.ie

Abstract:

The ongoing trend of environmental degradation and global climate and environmental change has increased pressure on human health. Climate change, biodiversity loss, landuse and landcover changes, urbanisation, and ecosystem degradation can result in the decline and loss of ecosystem services and the increased exposure to factors causing infectious and non-communicable diseases. This session, will, be based on invited contributions from highly interdisciplinary Horizon Europe Projects (e.g. Go Green Next and ZOE) exploring the links between climate change and urbanisation and health (e.g. impact of extreme weather events such as heat waves on health outcomes) and between ecosystem degradation and biodiversity loss and the emergence of zoonoses. We will jointly discuss how the approaches from the different projects and case studies may results in comprehensive evidence-based policy recommendations, modelling and risk mapping frameworks and how they could feed into monitoring schemes, early warning systems and publicly available knowledge platforms.



Invited contributions will represent projects, amongst others, funded under the topics:

- HORIZON-HLTH-2023-ENVHLTH-02-01 – Planetary health: understanding the links between environmental degradation and health impacts
- HORIZON-CL6-2023-BIODIV-01-17 – Interlinkages between biodiversity loss and degradation of ecosystems and the emergence of zoonotic diseases

Goals and objectives of the session:

Discuss global change, biodiversity loss, human health relationships and potential solutions.

Planned output / Deliverables:

Joint perspectives paper

II. SESSION PROGRAM

Room: Expert Street 9

Date of session: 19th of November 2024

Time of session: 14:00–15:30

Timetable speakers

Time	First name	Surname	Organization	Title of presentation
14:00–14:10	Nadja	Kabisch	Leibniz-Universität Hannover, Germany	Session introduction
14:10–14:30	Felix	Drexler	Charité Universitätsmedizin Berlin, Germany	Contribution of ecosystem degradation and biodiversity loss to the spread of zoonotic diseases – Introducing the Horizon Europe project ZOE
14:30–14:50	Lucinda	Kirkpatrick	SENS Bangor University University of Antwerp	Restoration in the Anthropocene – time for a One Health Perspective?
14:50–15:10	Tadhg	Macintyre	Maynooth University	GoGreenNext Horizon Europe Project: Future-Proofing Urban Health
15:10–15:30		All		Discussion – follow up projects and joint policy brief



III.ABSTRACTS

The first author is the presenting author unless indicated otherwise.

1. Contribution of ecosystem degradation and biodiversity loss to the spread of zoonotic diseases – Introducing the Horizon Europe project ZOE

First author(s): Nadja Kabisch


Other author(s): Prof. Dr. Felix Drexler

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Human induced ecosystem degradation and biodiversity loss has been discussed to contribute to the emergence and spread of zoonotic diseases. The extent how ecosystem degradation and biodiversity loss contributes to the risk of zoonosis is, however, not entirely clear. In tropical biodiversity hotspots in Guatemala, Costa Rica and Mexico and in temperate regions in Slovenia and Slovakia impacted by deforestation, related land use changes but also forest restoration measures, the EU-funded ZOE project, researches the connections between forest ecosystem degradation and restoration, biodiversity loss, human behaviour and the emergence of zoonotic diseases. The talk at the ESP in Wageningen will present the ZOE framework and will show how the interdisciplinary research team with expertise in geography, geobotany, disease ecology, virology, immunology, epidemiology, sociology, psychology, and anthropology will use cutting-edge technologies and community engagement to inform understandings of these connections and propose means of mitigating the escalating risks to environmental health and human well-being.

Keywords: Zoonosis, forest degradation, human behaviour, restoration



2. Restoration in the Anthropocene – time for a One Health Perspective?

First author(s): Lucinda Kirkpatrick

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Restoration is being touted as the solution to a myriad of problems created as a consequence of human activity. However, restoration is a challenging process; often biodiversity recovery is incomplete or only occurs at certain trophic levels, and restoring areas always requires local community buy in and involvement. Most restoration does not consider the One Health implications of both changes in biodiversity and also changes in human interaction with the environment, with the result that there is a tension between biodiversity as a protective influence against zoonotic disease spillover (dilution effect) and biodiversity as a source of zoonotic disease (amplification). We are currently in the UN's decade of restoration, so it is highly timely that we further understand the mechanisms that underpin the relationship between biodiversity change and spillover risk. Furthermore, restoration is an anthropogenic activity, which requires community involvement and buy in for success, therefore understanding the socio-economic drivers behind how people interact with restored areas from the local to the national level is imperative when trying to ensure that restoration efforts are successful. In this talk, I will present the newly funded Horizon EU project, RESTOREID, which will investigate the complex relationships between biodiversity, mechanisms of spillover risk and human interactions with the environment in ecosystems undergoing restoration activities.

Keywords: Restoration, Disease spillover, zoonotic disease, biodiversity, species assemblages



3. GoGreenNext Horizon Europe Project: Future-Proofing Urban Health

First author(s): Tadhg Eoghan Macintyre

Other author(s): Annalisa Setti, Mario Balzan, Andrew Coogan

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GoGreen Next, a €6 million Horizon Europe project led by Maynooth University, will deliver a comprehensive evidence-based policy oriented approach model to convey how ecosystem health and human health are connected. Using a multi-dimensional health approach based on planetary health, the research and innovation action addresses the challenge of climate change by focusing on the benefits to environmental and human health of nature-based solutions and other climate mitigation initiatives. Attempts to assess climate anxiety (e.g. Yale global survey methodology) can support citizens understanding of their own climate views (e.g. concerned, cautious, alarmed etc.) but don't connect to pathways for action. This survey approach which was designed to explore polarisation in attitudes about a narrow set of climate related topics, overlooks the psychological barriers to change and how recent research on psychological processes can support our thinking about future scenarios. Our goal is to assess using a novel interactive survey on the challenges of biodiversity loss, climate anxiety and use of green space across both attitudinal and behavioural dimensions, the readiness of individuals to engage in behaviour change and engage in sustainable activities. What will the impact be on society? In GoGreen Next we aim to support cities will be more aware of citizens needs, values and preferences for future initiatives and interventions. We will empower citizens to create their own route to change and be aware of the potential benefits for them in the short, medium and long term. We will promote future health ambassadors who have the potential to model behaviours for citizens across the generations to follow. And finally, we will develop a new suite of evidence-based policy instruments to support high level policy changes and help cities realise their ambitions for 2030 and beyond.

Keywords: Nature-Based Solutions, Well-Being, Biodiversity, Planetary Health, Future thinking