

Breaking Barriers: Advancing the One Health Agenda with a Focus on the Environment



Federal Ministry
for Economic Cooperation
and Development



Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection



Food and Agriculture
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Wildlife
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Deutsche Gesellschaft
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International
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Health Risks in
Wildlife Trade

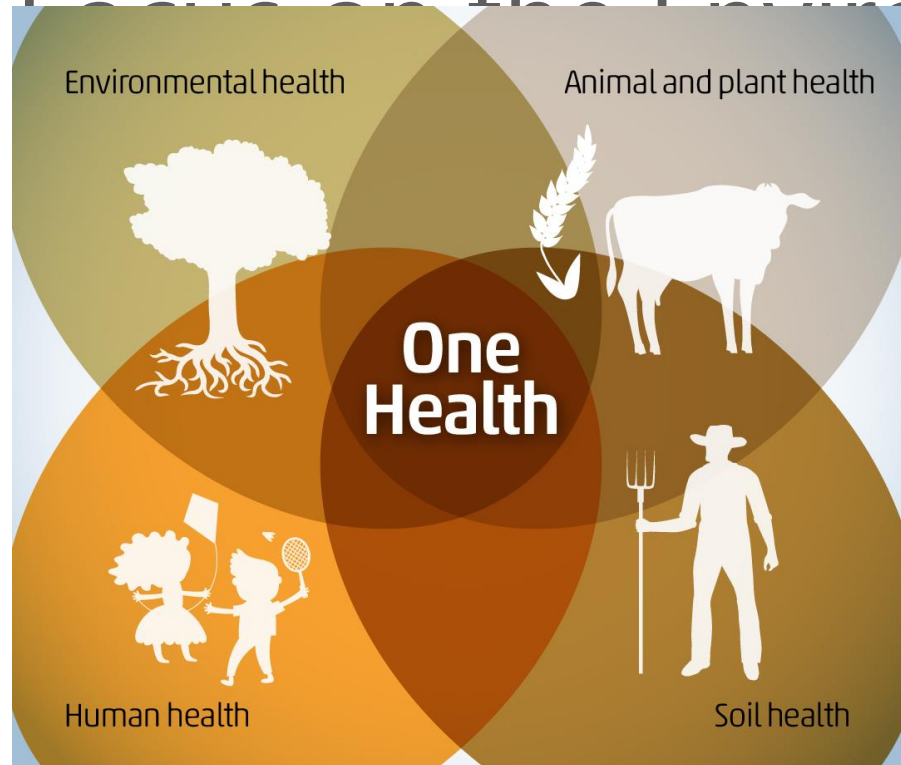


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Deep dive into up-to-now neglected/less-emphasized topics: Soil Health



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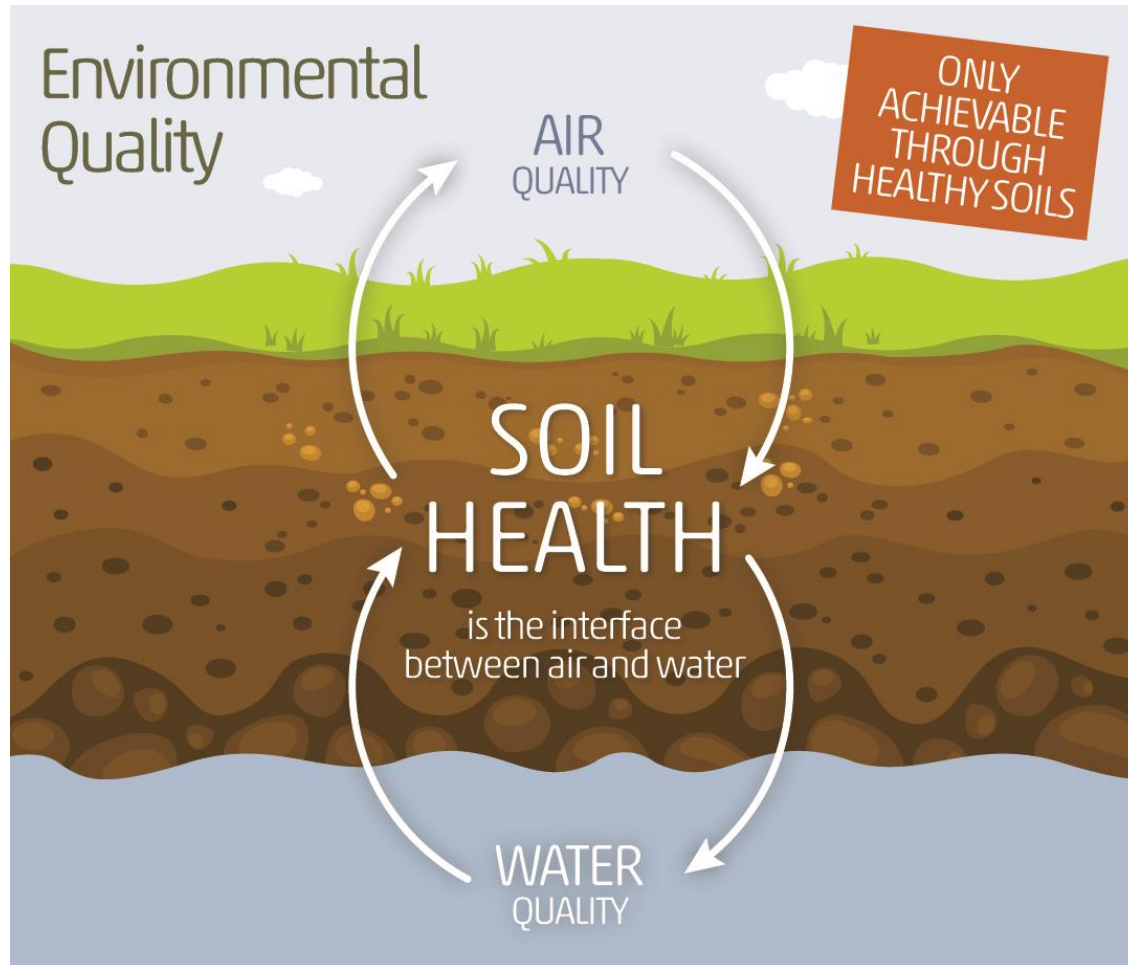


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Breaking Barriers: Including soil health in OH



The food we eat, the water we drink and the air we breathe depend on the health status of soils, as they provide the interface between environmental compartments, regulate gas flows, and act as a filter for contaminants.



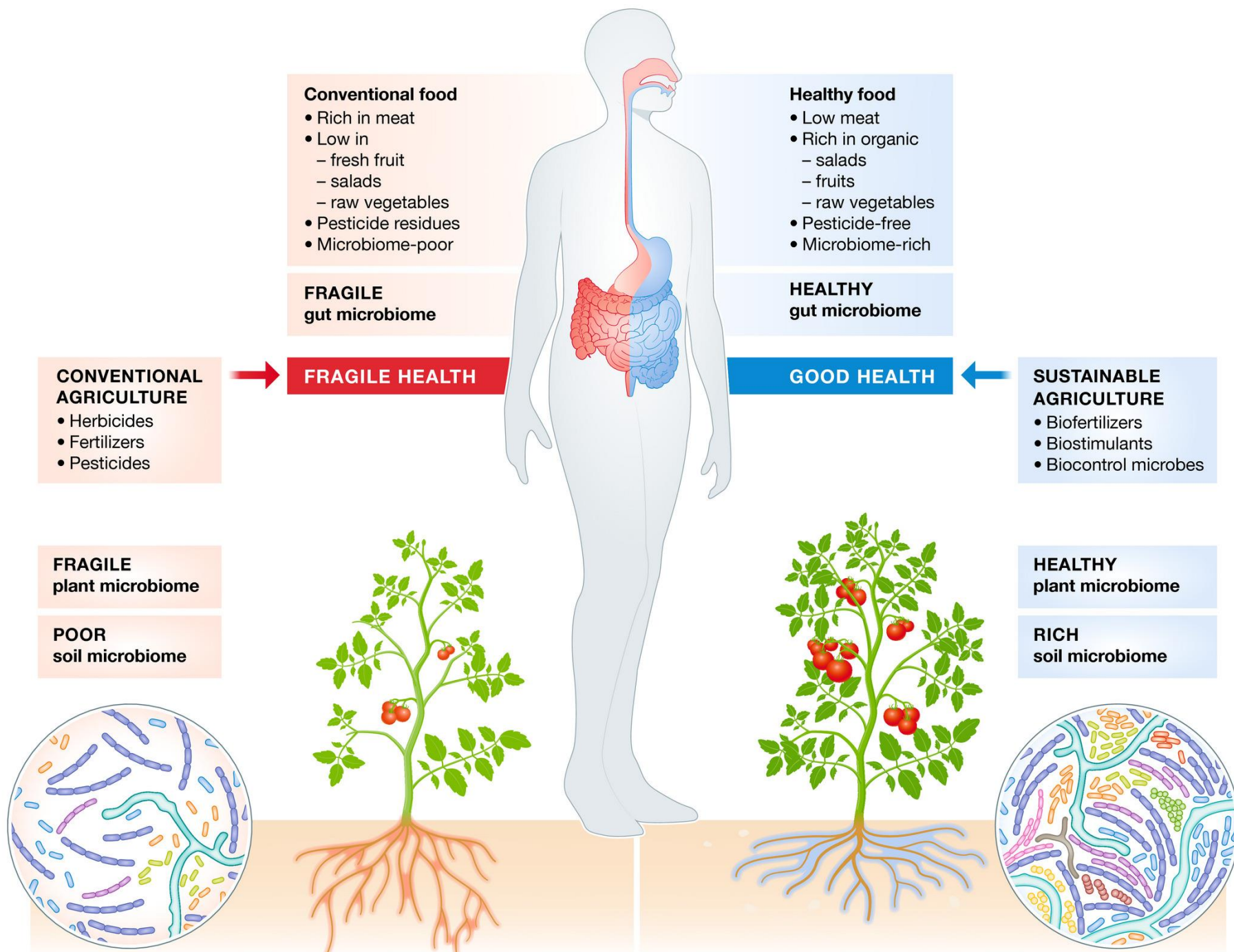
More than 95% of the food we eat comes directly or indirectly from the soil. Its quality (safety), quantity and nutritional value will depend on how healthy and fertile that soil is.

A nutrient depleted soil cannot produce food that contains those macro and micronutrients necessary for human health

Recommended nutrient intake



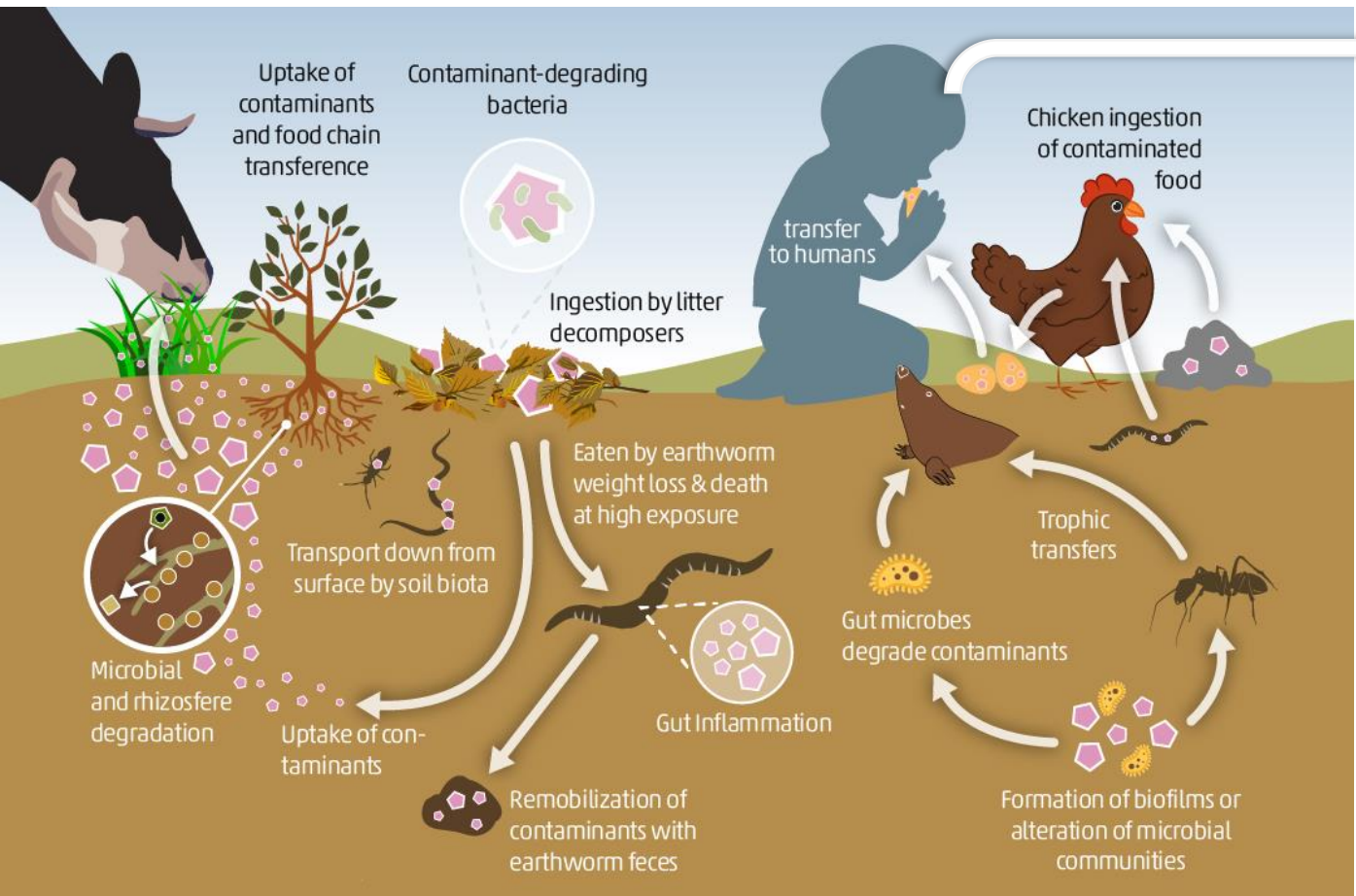
NUTRIENT-DEPLETED SOIL



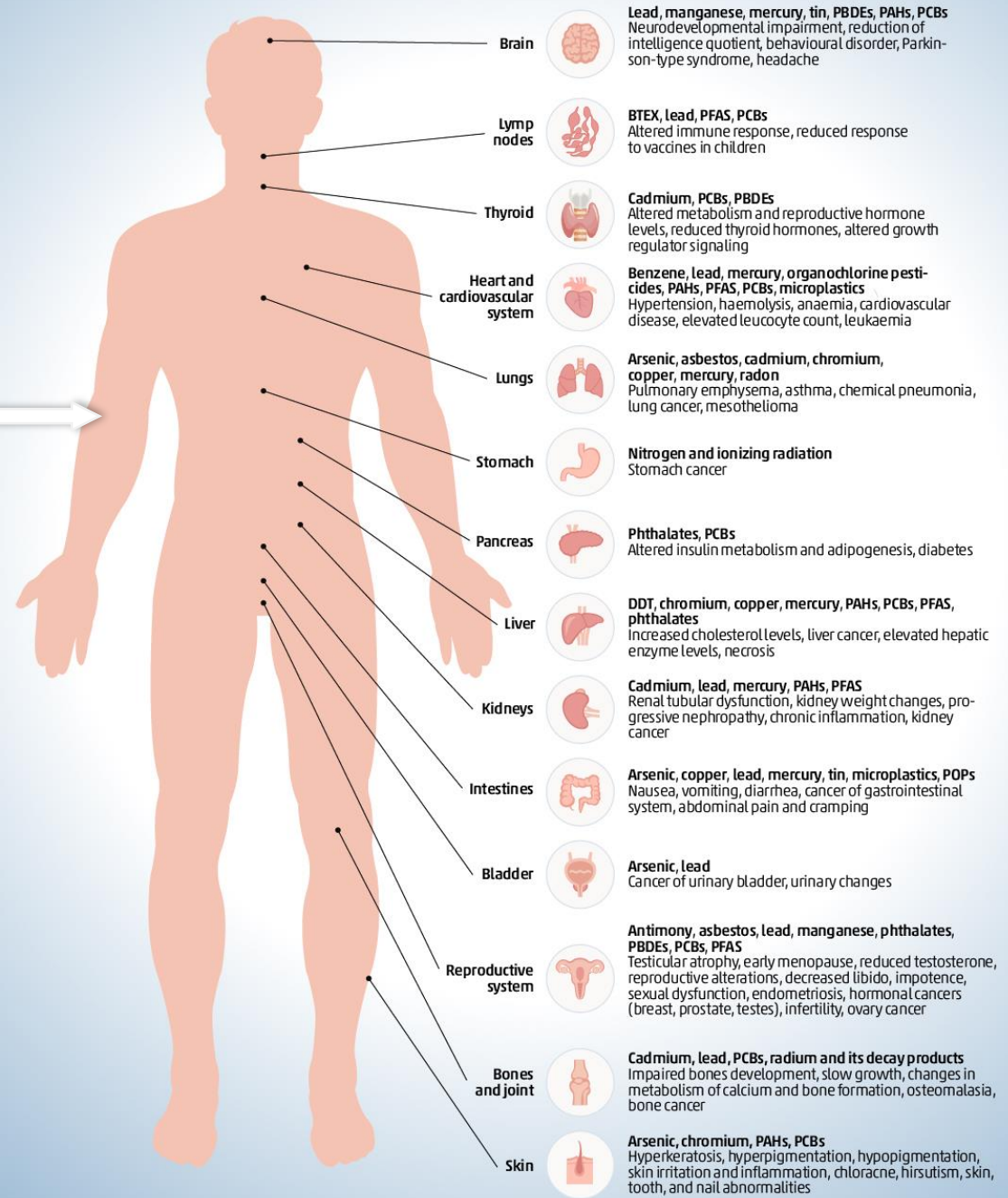
Soil, plant, animal and human microbiomes are in constant exchange. Our health depends on their diversity and functionality.

Heribert Hirt. 2020. Healthy soils for healthy plants for healthy humans. EMBO Reports, Volume: 21, Issue: 8, First published: 31 July 2020, DOI:10.15252/embr.202051069

The food chain is interconnected. Like nutrients, contaminants move from soil to grasses and crops, from earthworms to birds and poultry. Humans are the last receptor in the chain, where bioaccumulation peaks.



Main effects of soil contaminants on human health



Session Title: From theory to practice, how to include soil health in One Health

Speakers:

- **Dr Bettina Hitzfeld**, Head of Division of the Soil and Biotechnology Division at the Federal Office for the Environment, Switzerland (panellist)
- **Dr Marco Martuzzi**, Director, Environment and Health Department, Italian National Institute of Health, Italy (panellist)
- **Prof Ravi Naidu**, CEO and Managing Director of CRC CARE and Founding Director of the Global Centre for Environmental Remediation at the University of Newcastle, Australia (panellist)
- **Dr Natalia Rodriguez Eugenio**, Land and Water Officer, Food and Agriculture Organization of the United Nations (moderator)

Dr Bettina Hitzfeld

Dr Hitzfeld obtained a B.Sc. in Zoology / Psychology from Reading University (UK) and a diploma in Biology from the University of Marburg (D). She performed her PhD thesis on the toxicology of lead at the KIT (D). She held an assistant professorship at the University of Konstanz (D) in environmental toxicology. Since 2002 she works for the Federal Office for the Environment in Switzerland, where, since 2014, she heads the Soil and Biotechnology Division. In this function she is responsible for biosafety and biotechnology issues, the remediation of contaminated sites, soil protection and One Health.



A close-up portrait of Dr. Marco Martuzzi, a middle-aged man with short, dark hair, looking directly at the camera with a neutral expression. He is wearing a dark suit jacket over a light-colored shirt. The background is a plain, light color.

Dr Marco Martuzzi

Dr Martuzzi is Director of the Environment and Health Department at the Italian National Institute of Health, where he focuses on the role and impacts of environmental risk factors and determinants on health and health equity, to develop primary prevention strategies to address urgent global challenges, such as climate and ecosystems breakdown. He is an epidemiologist with expertise in environmental and occupational studies. He holds a PhD in community medicine from the University of London. He previously worked as Head of the Asia-Pacific Centre for Environment and Health of the World Health Organization (WHO) Regional Office for the Western Pacific, at the London School of Hygiene and Tropical Medicine, at the Imperial College School of Medicine (UK), at the WHO International Agency for Research on Cancer (France), and at the WHO European Centre for Environment and Health.

A portrait of Professor Ravi Naidu, a middle-aged man with grey hair and a mustache, wearing a dark blue sweater over a light blue collared shirt. He is looking slightly to the right with a gentle smile. The background is a blurred outdoor setting with trees and a grey wall.

Professor Ravi Naidu

Professor Ravendra Naidu from Fiji is CEO and Managing Director of CRC CARE (formerly the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment) and Founding Director of the Global Centre for Environmental Remediation at the University of Newcastle, Australia. Ravi's work focuses on the remediation of contaminated soil, water and air, and the potential impacts of contaminants upon environmental and human health at local, national and global levels. Ravi received his PhD and DSc in environmental science from Massey University, New Zealand.

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Driving questions:

- What are the main gaps and obstacles to integrating soil health and other environmental compartments (water, biodiversity) into national and international "One Health" actions?
- What are the specific opportunities and innovations on land and soil management that help achieve One Health?

Wrap-up: What recommendations would you propose to better reflect the environmental dimensions of the One Health approach and enhance its effectiveness in addressing complex health challenges?