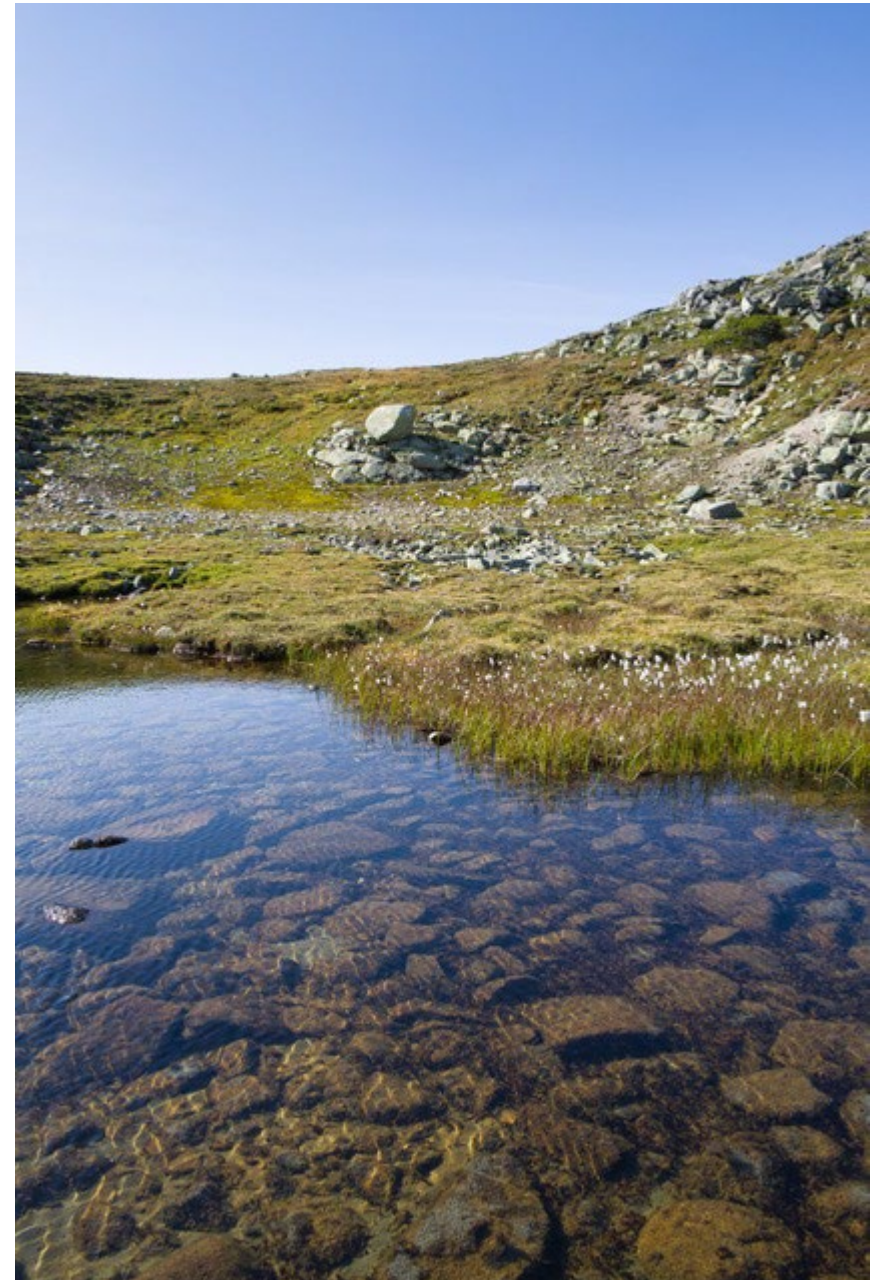


Planetary Health

Ernst Kristian Rødland, MD PhD
Norwegian Institute of Public Health
ernstkristian.rodland@fhi.no



Human exploitation of natural resources has undisputably lead to tremendous advancements in wealth, increased life expectancy, reduced child mortality and improved global health over the last 150 years. Paradoxically, the use of these resources has become the biggest threath humanity is facing.

Planetary health

The Lancet Commissions

- The term established in 2015
- *«The health of humanity is intrinsically linked to the health of the environment, but by its actions humanity now threatens to destabilise the Earth's key life-support systems»*



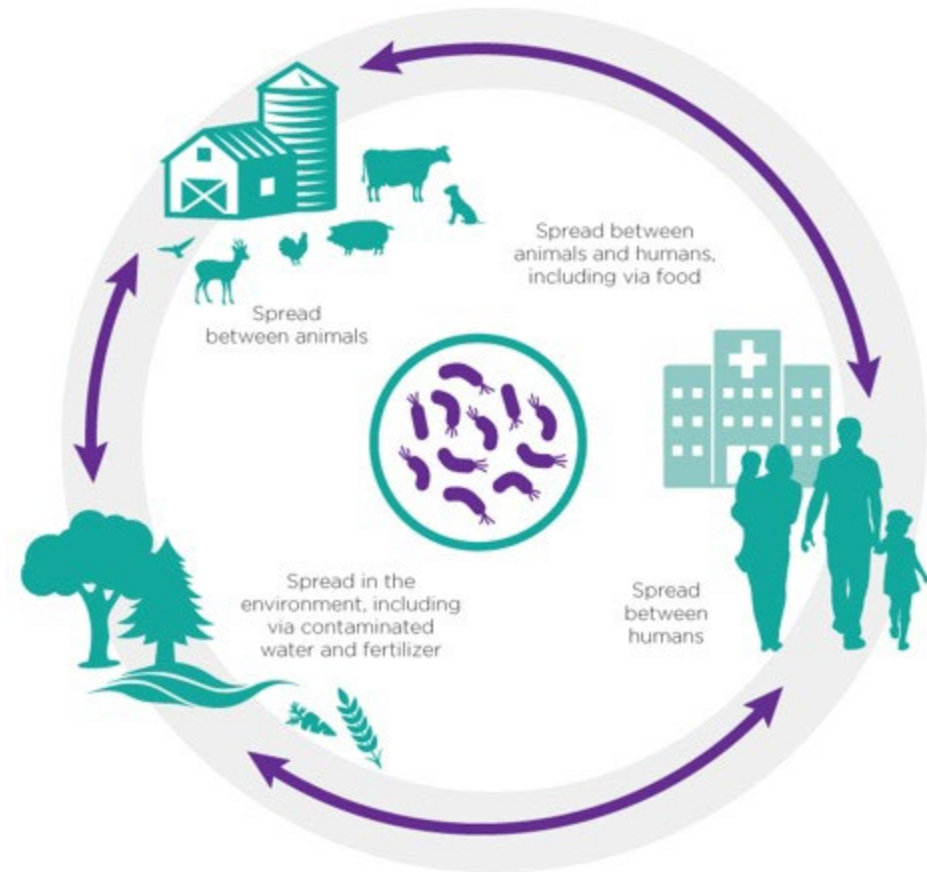
The Rockefeller Foundation–Lancet Commission on planetary health

**Safeguarding human health in the Anthropocene epoch:
report of The Rockefeller Foundation–Lancet Commission on
planetary health**

Sarah Whitmee, Andy Haines, Chris Beyrer, Frederick Boltz, Anthony G Capon, Braulio Ferreira de Souza Dias, Alex Ezeh, Howard Frumkin, Peng Gong, Peter Head, Richard Horton, Georgina M Mace, Robert Marten, Samuel S Myers, Sania Nishtar, Steven A Osofsky, Subhrendu K Pattanayak, Montira J Pongsiri, Cristina Romanelli, Agnes Soucat, Jeanette Vega, Derek Yach

One Health

- *Initiative to forge collaboration between physicians, veterinarians and other scientific-health and environmentally related disciplines*
- *One Health recognizes that the health of people is connected to the health of animals and the environment*





Planetary health



One health

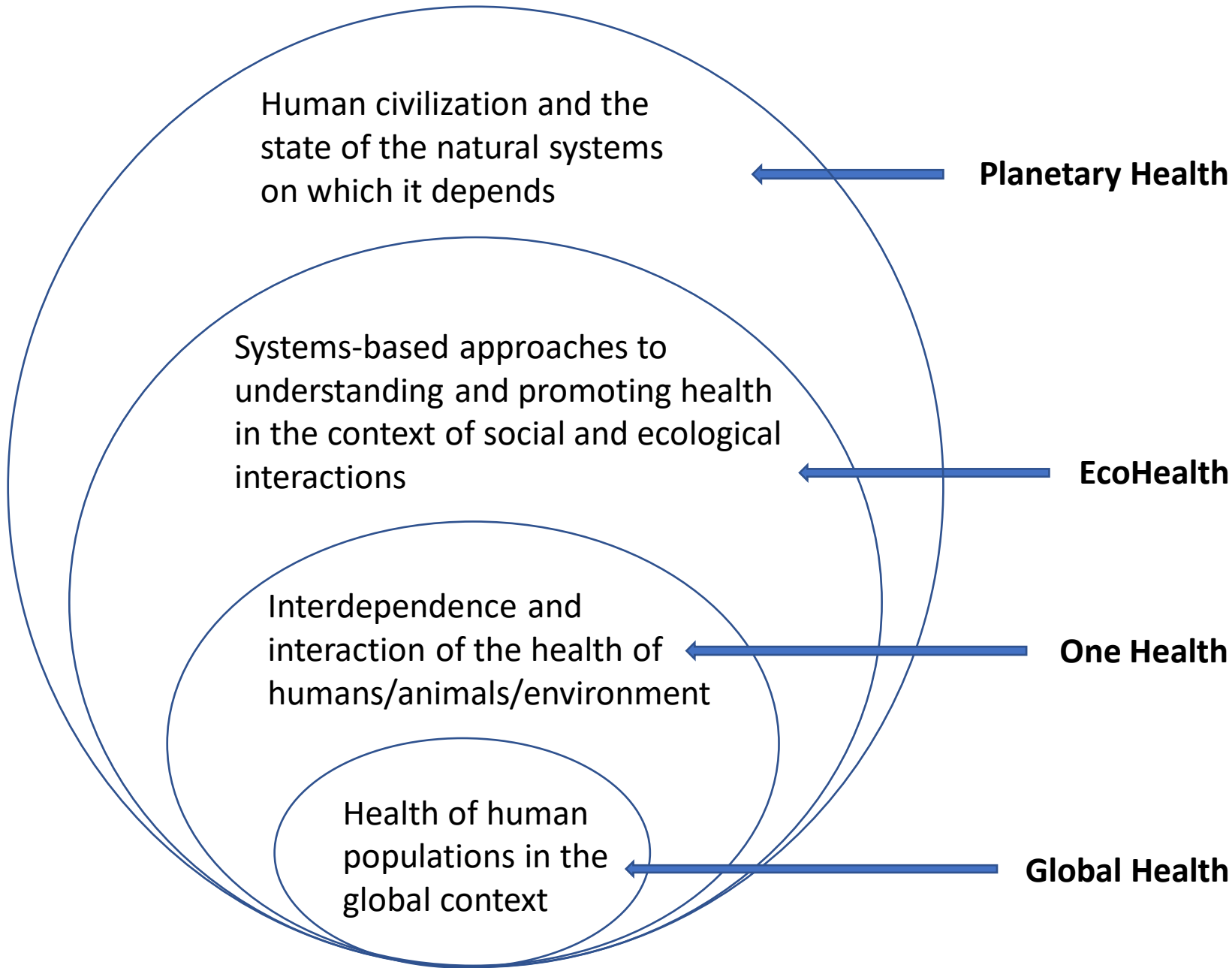


Global health



Public health

Integrated Health Approaches



Focus moves from species scale focused dynamic to system focused dynamics

Top Risks

by likelihood

- 1 Extreme weather
- 2 Climate action failure
- 3 Human environmental damage
- 4 Infectious diseases
- 5 Biodiversity loss
- 6 Digital power concentration
- 7 Digital inequality
- 8 Interstate relations fracture
- 9 Cybersecurity failure
- 10 Livelihood crises

Top Risks

by impact

- 1 Infectious diseases
- 2 Climate action failure
- 3 Weapons of mass destruction
- 4 Biodiversity loss
- 5 Natural resource crises
- 6 Human environmental damage
- 7 Livelihood crises
- 8 Extreme weather
- 9 Debt crises
- 10 IT infrastructure breakdown

The challenges

Complex and interconnected

- Climate change
- Declining biodiversity
- Shortage of arable land
- Pollution (air, freshwater and in general)
- Changing biogeochemical flows



Impacts of climate change on health



Sky News World News

Tropical disease spreading fast in Europe as heatwave triggers parasitic WORM epidemic

A TROPICAL disease is spreading in Europe, as warmer weather pushes a breed of parasite further and further north.

SHARE   

By [Anthony Blair](#) Assistant News Editor
03:49, 29 AUG 2018

NEWS

Declining biodiversity

- Number of wild animals globally reduced by 50% over the last 40 years
- Biomasse of mammals:
 - Humans 36%
 - Domestic animals 60%
 - Wild animals 4%

'Insect apocalypse' poses risk to food production

By Oliver Morrison [↗](#)

13-Nov-2019 - Last updated on 13-Nov-2019 at 15:51 GMT



RELATED TAGS: [Insect](#), [Bees](#), [Pesticide](#), [Butterfly](#), [pesticides](#)

A report highlights the risk to food production presented by a drastic decline in the world's insect population.

Pollution

- Delhi, Nov. 18 2019
- 25 million people
- Approx. 30% live “on the street”
- 8am on a “sunny day” →
- Millions of premature deaths/yr globally



Ambient (outdoor) air pollution

2 May 2018

Key facts

- Air pollution is a major environmental risk to health. By reducing air pollution levels, countries can reduce the burden of disease from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma.
- The lower the levels of air pollution, the better the cardiovascular and respiratory health of the population will be, both long- and short-term.
- The WHO Air Quality Guidelines: Global Update 2005 provide an assessment of health effects of air pollution and thresholds for health-harmful pollution levels.
- In 2016, 91% of the world population was living in places where the WHO air quality guidelines levels were not met.
- Ambient (outdoor air pollution) in both cities and rural areas was estimated to cause 4.2 million premature deaths worldwide in 2016.
- Some 91% of those premature deaths occurred in low- and middle-income countries, and the greatest number in the WHO South-East Asia and Western Pacific regions.
- Policies and investments supporting cleaner transport, energy-efficient homes, power generation, industry and better municipal waste management would reduce key sources of outdoor air pollution.
- In addition to outdoor air pollution, indoor smoke is a serious health risk for some 3 billion people who cook and heat their homes with biomass, kerosene fuels and coal.

Drinking-water

14 June 2019

Key facts

- In 2017, 71% of the global population (5.3 billion people) used a safely managed drinking-water service – that is, one located on premises, available when needed, and free from contamination.
- 90% of the global population (6.8 billion people) used at least a basic service. A basic service is an improved drinking-water source within a round trip of 30 minutes to collect water.
- 785 million people lack even a basic drinking-water service, including 144 million people who are dependent on surface water.
- Globally, at least 2 billion people use a drinking water source contaminated with faeces.
- Contaminated water can transmit diseases such as diarrhoea, cholera, dysentery, typhoid, and polio. Contaminated drinking water is estimated to cause 485 000 diarrhoeal deaths each year.
- By 2025, half of the world's population will be living in water-stressed areas.
- In least developed countries, 22% of health care facilities have no water service, 21% no sanitation service, and 22% no waste management service.

Climate change 'will create world's biggest refugee crisis'

Experts warn refugees could number tens of millions in the next decade, and call for a new legal framework to protect the most vulnerable

Matthew Taylor

Thu 2 Nov 2017
06.01 GMT



24k **249**

This article is over 1 year old



▲ Successive droughts, like those seen in sub-Saharan Africa, could cause millions to migrate to Europe.

Photograph: Peter Caton/Tearfund

Tens of millions of people will be forced from their homes by climate change in the next decade, creating the biggest refugee crisis the world has ever seen, according to a new report.

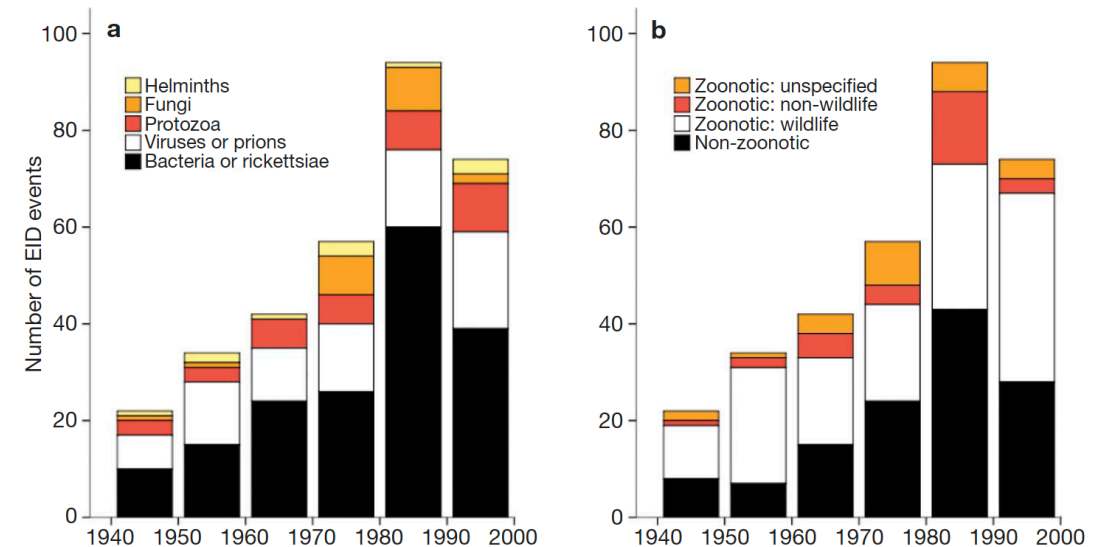
Planetary health

Pandemics, the case of SARS-CoV-2



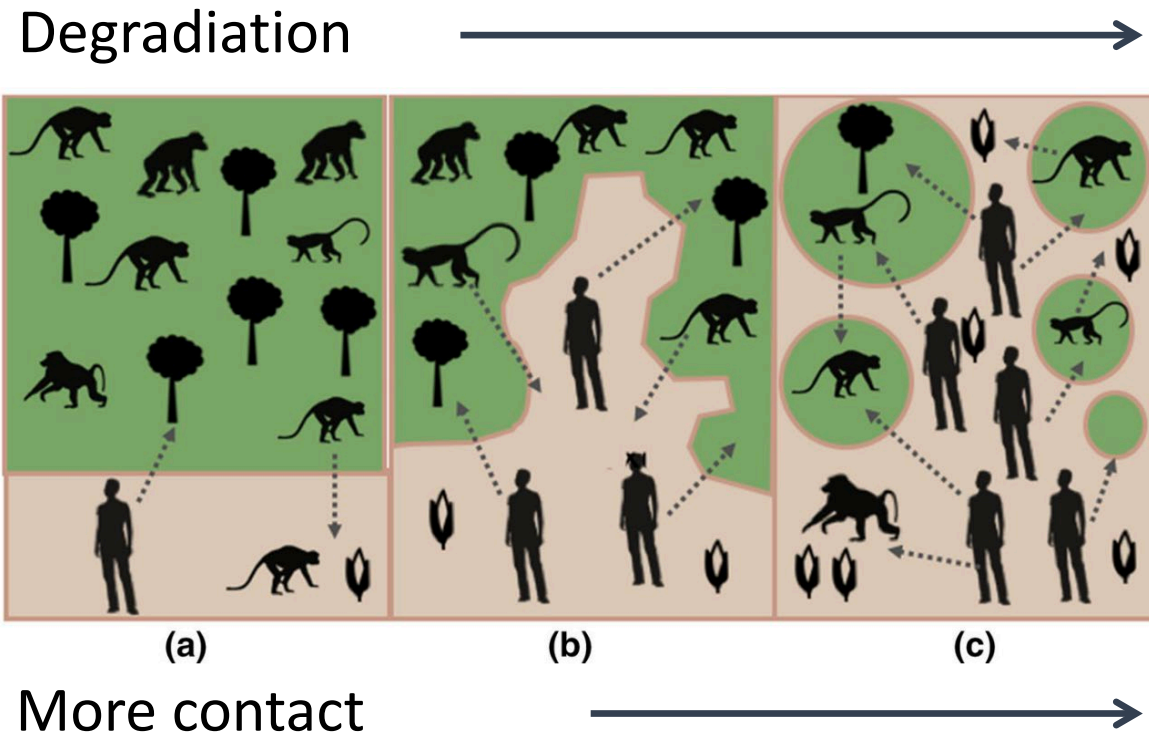
Zoonoses and Emerging Infectious Diseases

- Zoonoses are diseases that move between animals and humans
- Emerging Infectious Diseases [EID] are dominated by zoonoses
- Majority of zoonotic EIDs originate in wildlife, frequency is increasing
 - HIV, Ebola, H1N1, SARS, Nipah, Hendra, H7N9
- ~700.000 unknown viruses in wildlife have the potential to jump to humans!
(Carroll et al 2018)



Jones et al. 2008, Nature

Ecosystem degradation and pathogen spillover from wildlife



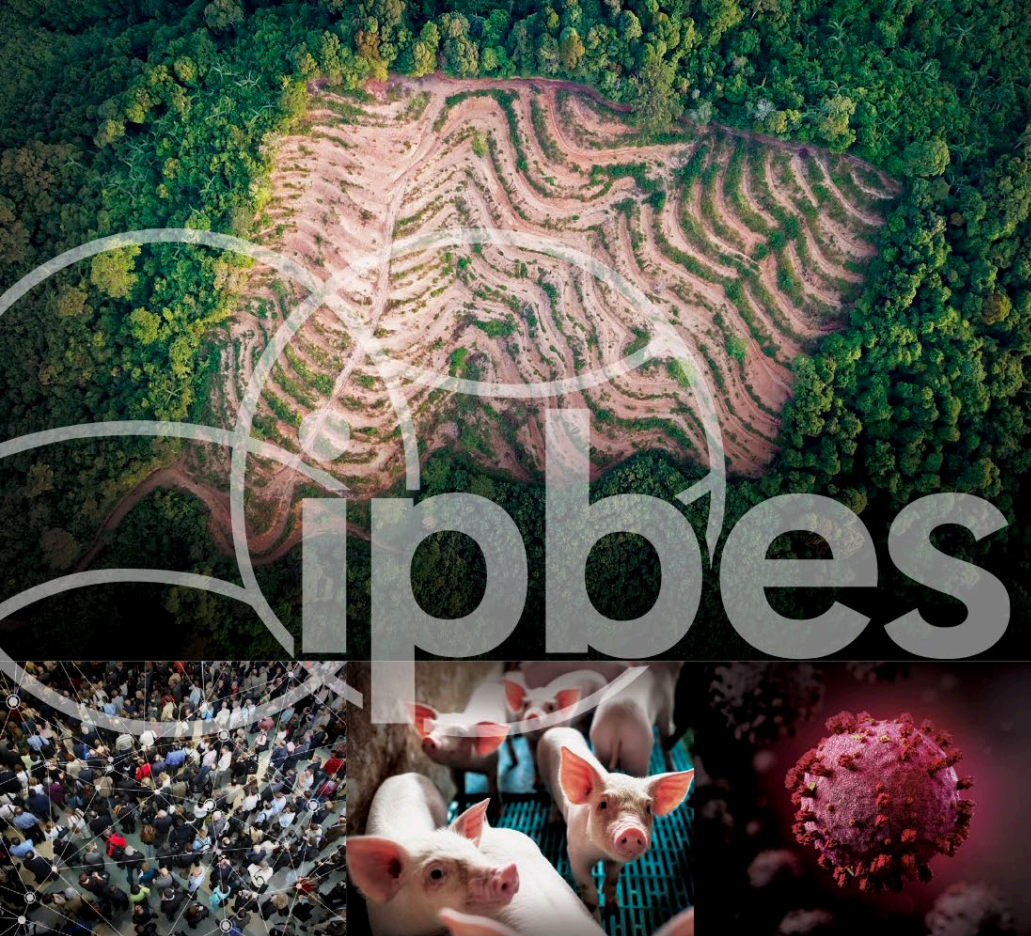
Degradation multipliers:

- Roadbuilding
- Mining
- Logging camps
- Urban/settlement expansion
- Migration
- War
- Monocultures (crop/livestock)



The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

- Founded 2012
- > 130 member governments
- IPBES global assessment report 2019
 - 150 selected experts
 - Supported by 350 authors
 - Analysis of >15,000 scientific publications and indigenous knowledge



IPBES WORKSHOP ON BIODIVERSITY AND PANDEMICS

EXECUTIVE SUMMARY

Intergovernmental Platform on
Biodiversity and Ecosystem Services



Key messages include...

- ▶ Pandemics emerge from the microbial diversity found in nature
- ▶ Human ecological disruption and unsustainable consumption drive pandemic risk
- ▶ Land-use change, agricultural expansion and urbanization cause more than 30% of emerging disease events

Thank you!

