

IPBES Scoping for the Nexus Assessment: Health & Linkages

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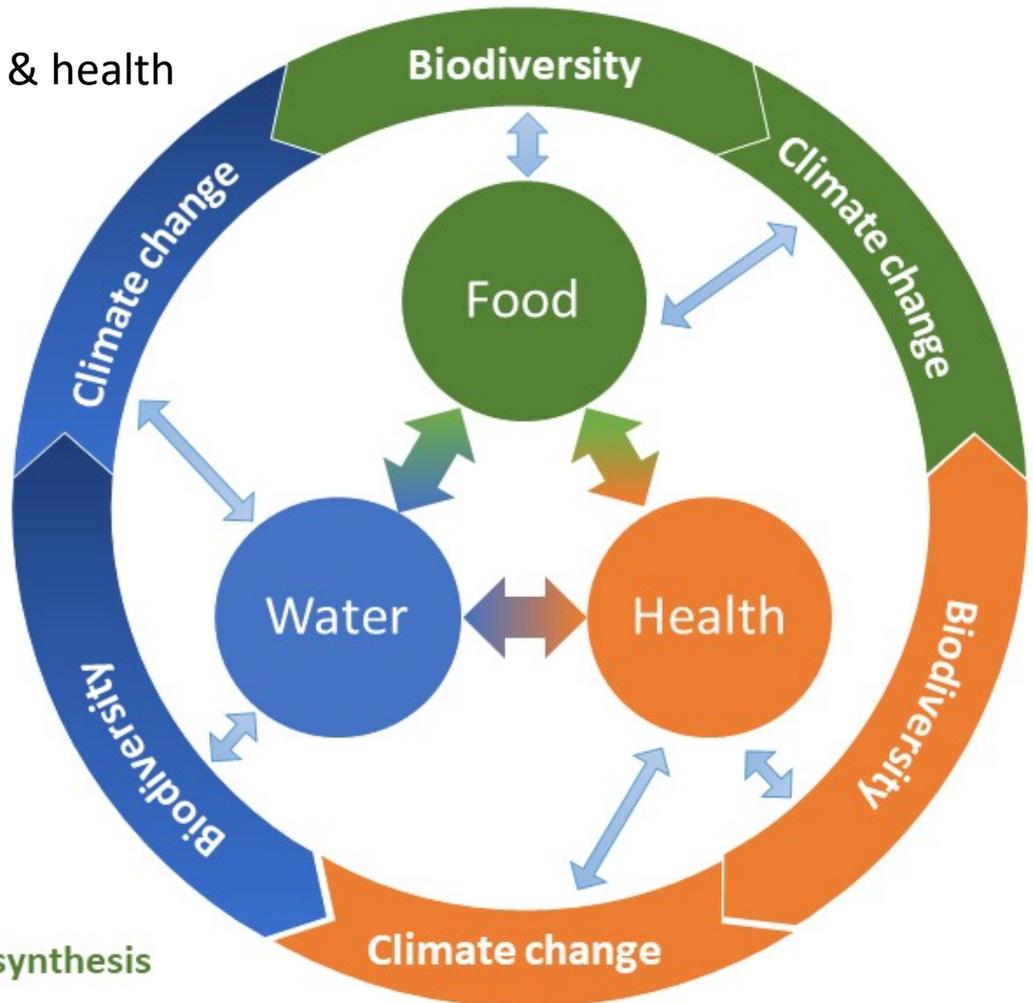
The focus for this session

Three thematic areas:

1. Biodiversity & health
2. Global environmental change & health
3. Food, water & health

Your suggestions on:

- Scope of the assessment
- Questions to address



Day 1: **Water and linkages**

Day 2: **Health and linkages**

Day 3: **Food and linkages, and synthesis**

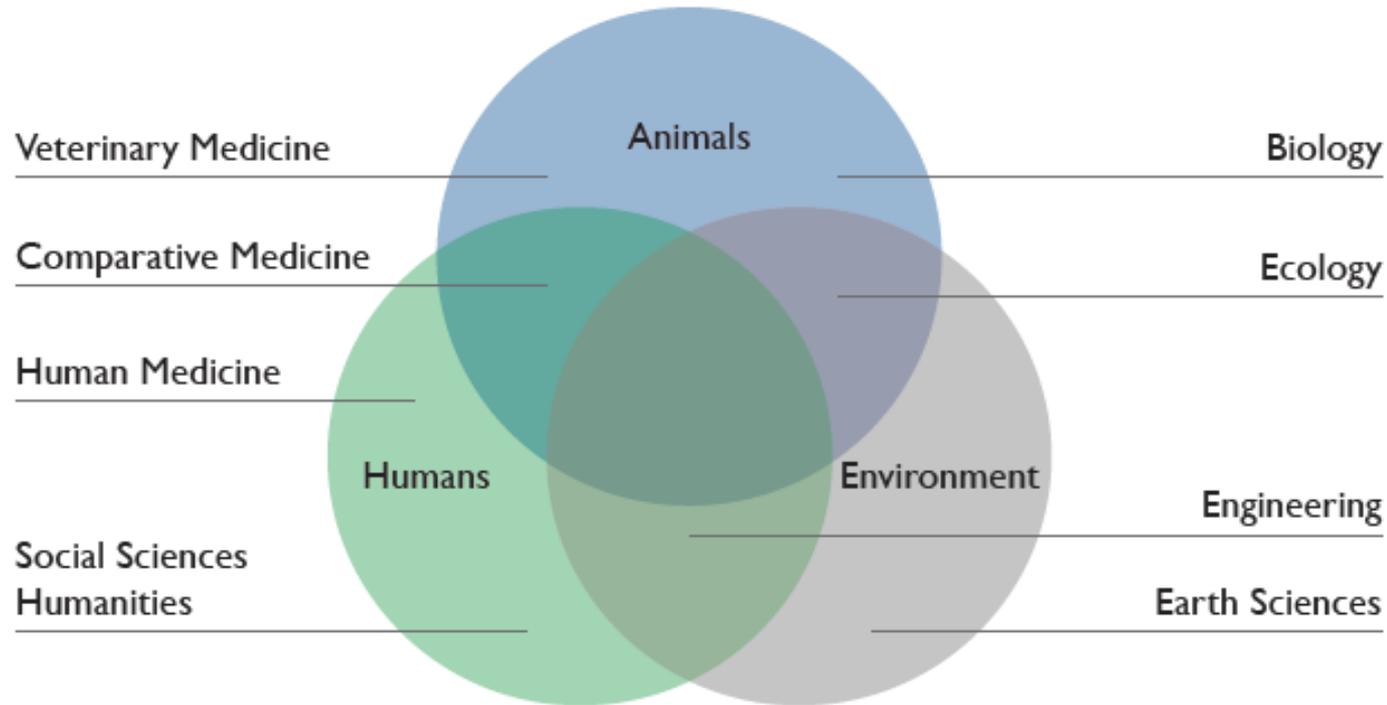
Post-2020 Biodiversity Framework and Global Goals

- Aichi Biodiversity Targets, particularly:
 - Target 14. Biodiversity and Ecosystem Services
- Sustainable Development Goals, e.g.:
 - 3. Health;
 - 6. Clean Water and Sanitation;
 - 13. Climate Action;
 - 14. Aquatic Ecosystems;
 - 15. Terrestrial Ecosystems;
 - 17. Partnerships
- Global Health Security Agenda (Prevent, Detect, Respond)
- Sendai Framework for Disaster Risk Reduction 2015-2030
 - Bangkok Principles for implementation of health aspects



7 GLOBAL TARGETS	
Reduce	Increase
Mortality/ global population 2020-2030 Average <= 2005-2015 Average	Countries with national & local DRR strategies 2020 value >> 2015 Value
Affected people/ global population 2020-2030 Average <= 2005-2015 Average	International cooperation to developing countries 2030 Value >> 2015 Value
Economic loss/ global GDP 2030 Ratio <= 2015 Ratio	Availability and access to multi-hazard early warning systems & disaster risk information and assessments 2030 Values >> 2015 Values
Damage to critical infrastructure & disruption of basic services 2030 Values <= 2015 Values	

One Health approach



- Health of people, wildlife, livestock, environment
- Impact of human-mediated global environmental change on health across all sectors

Biodiversity's Health Services

Pharmaceuticals

- Penicillin (fungus); Digitalis (foxglove plant); Quinine and quinidine (Peruvian Cinchona tree); Morphine and codeine (poppies); Taxol (Pacific Yew tree)

Welfare

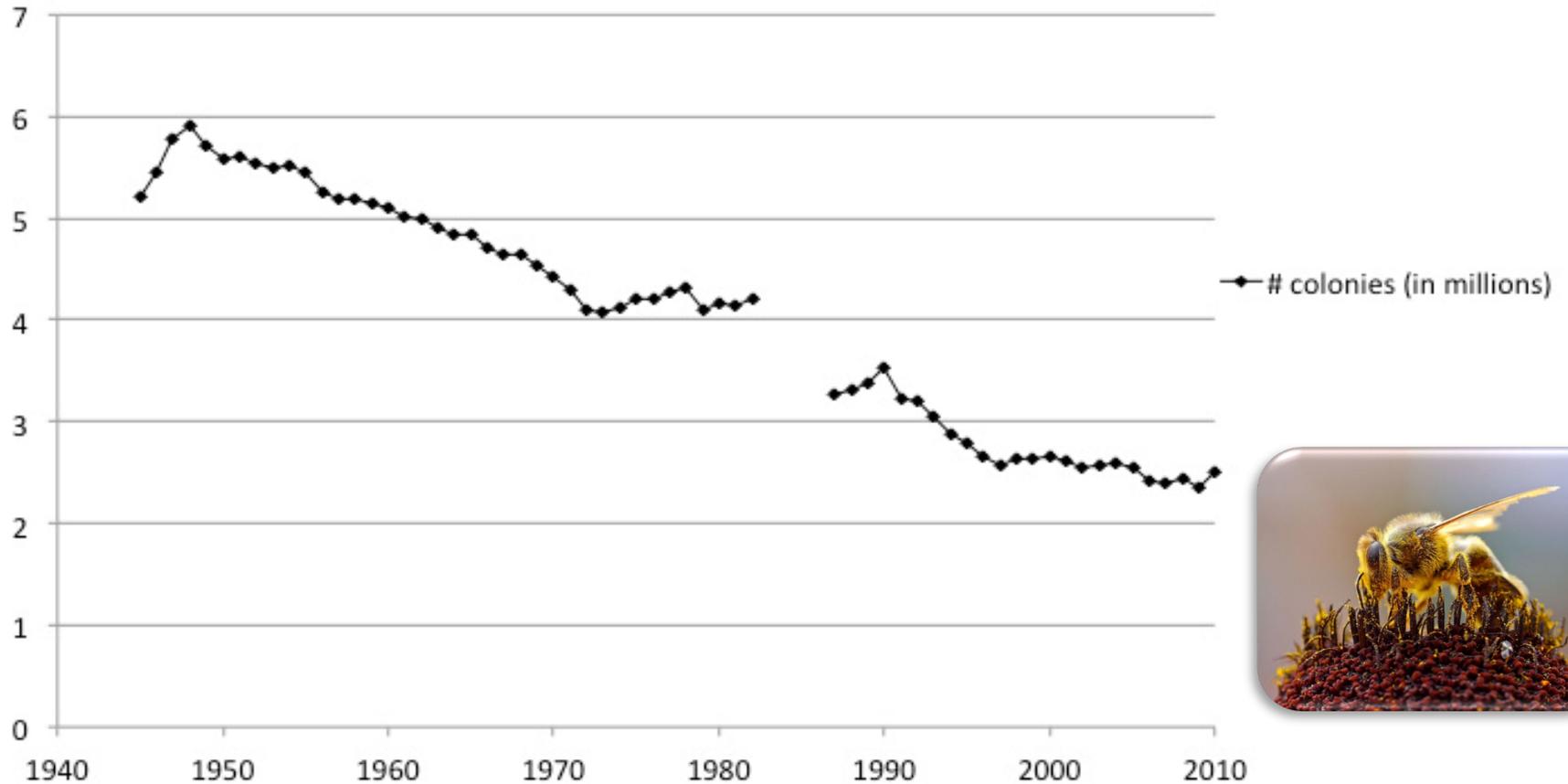
- Link between good mental health and open spaces, biodiversity, forests/parks
- Outdoor activity linked to overall fitness and lack of disease
- Dietary diversity and nutritional health

Protection against disease

- Lower risk emerging diseases from undisturbed intact forest

Honey Bee Declines in U.S.A.

Honey Producing Colonies in the United States



Biodiversity loss & health

Intact Forest

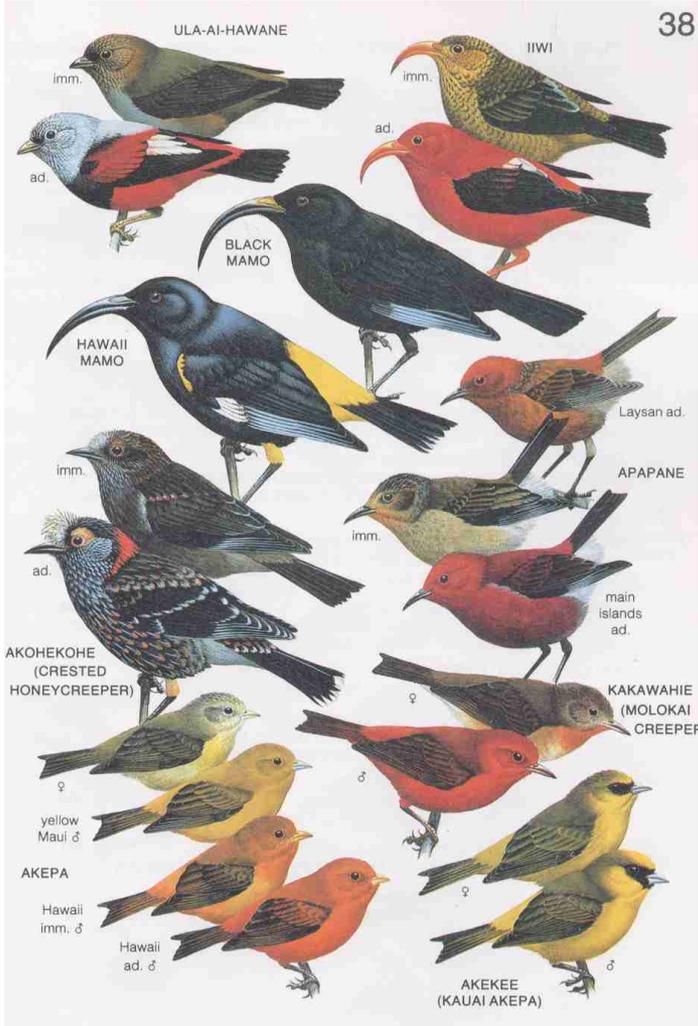
Residential

Urban



Culex mosquitoes prefer organically rich water

Disease-mediated extinction events



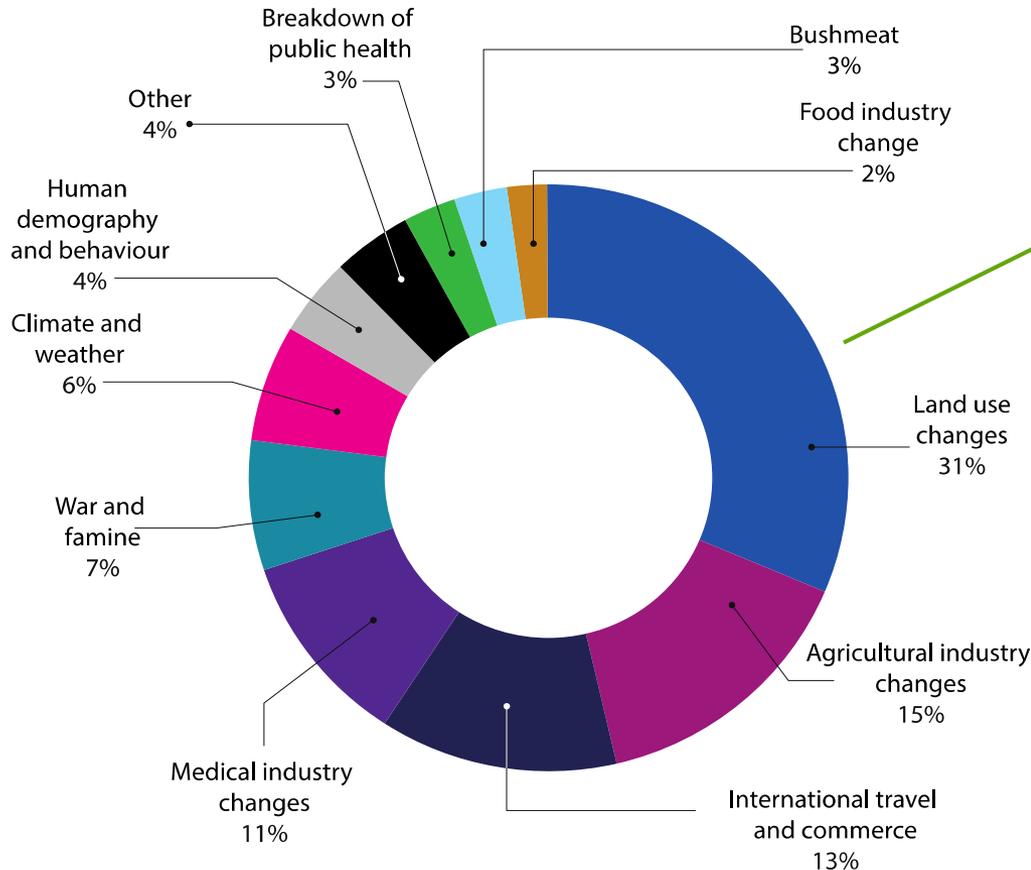
- Hawaiian birds & avian malaria
- White nose syndrome in bats
- Amphibian chytridiomycosis

Environmental Change & Health: Land use change

- Haze events lead to respiratory illness and death
- Increased malaria cases in palm oil plantations
- Increased bushmeat hunting leads to zoonotic diseases
- But agricultural development **raises income and increases health and wellbeing**



Land Use Change Drives Disease Emergence



Deforestation
Agricultural intensification
Habitat degradation
Habitat fragmentation

- Ebola
- Marburg
- Zoonotic malaria
- Leptospirosis
- SARS
- Rabies
- Hendra, Nipah virus

nature

CLIMATE CHANGE

Regional health impacts
from North America to Africa

PLASMON OPTICS
Towards the perfect lens

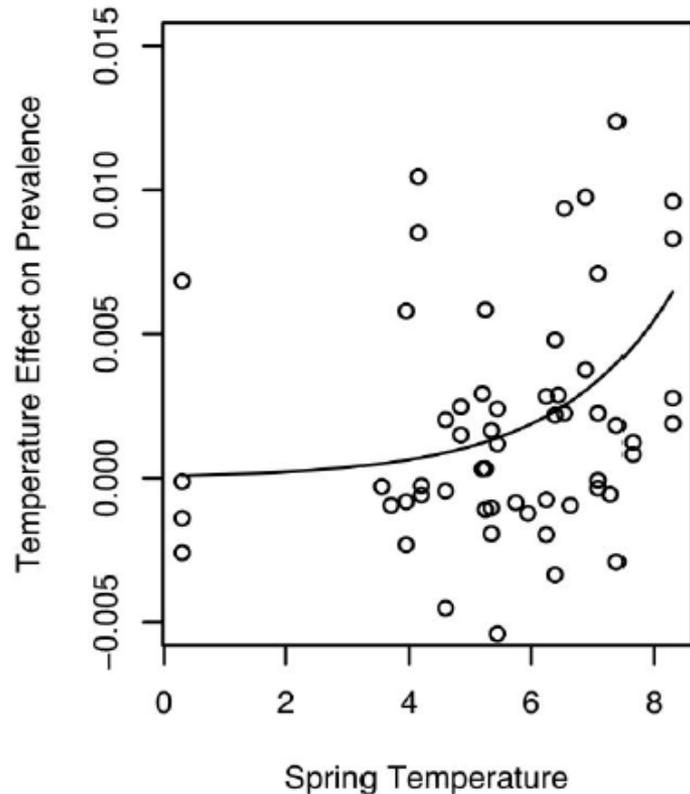
EMERGING DISEASES
The Typhoid Mary factor

STAR FORMATION
Boost for a collapsing theory

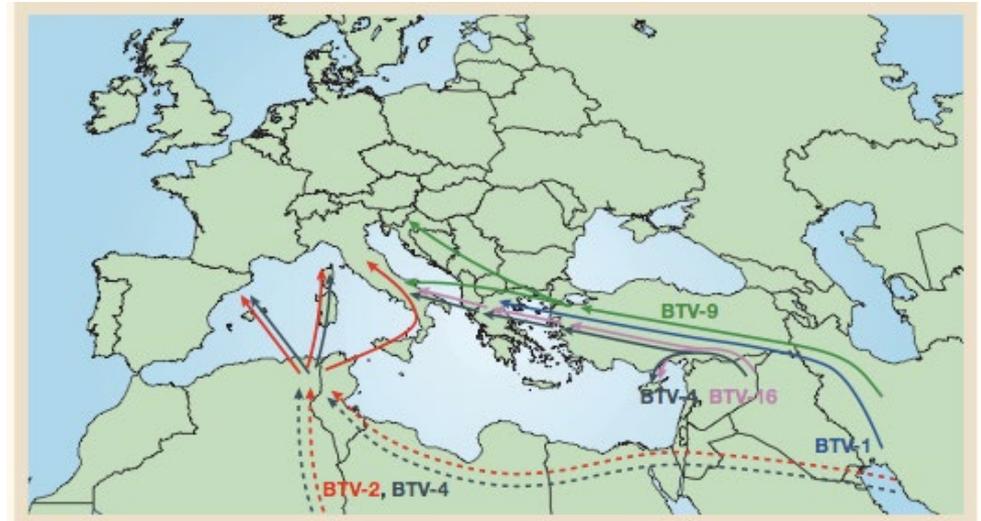
- “The severity and duration of summertime regional air pollution episodes are projected to increase in the Northeast and Midwest US by 2045-2052 due to climate-change-induced decreases in the frequency of surface cyclones.” (IPCC, 2007)
- By 2050, warming alone may increase by 68% the number of Red Ozone Alert days across the Eastern US. (IPCC, 2007 -Bell et al, 2006)

Climate change has already increased infectious disease burden

Plague in Central Asia



Bluetongue in Europe



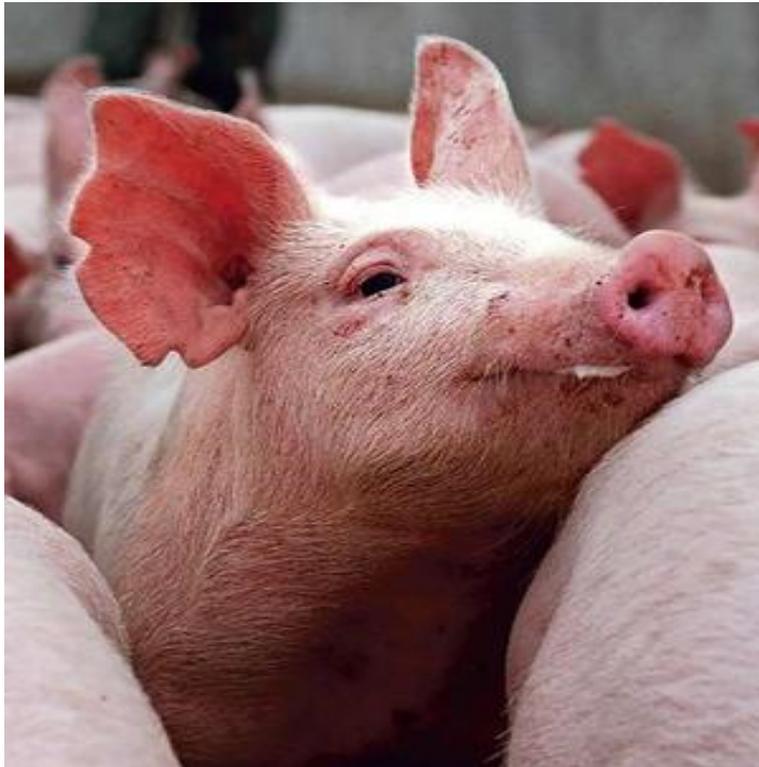
Food & Health

- Nutritional diversity and health
- Agricultural intensification, industrial food production, health
- Health of globalized livestock production linked to people



Global influenza pandemics

- Viral genes circulate among wild birds, poultry and pigs
- Evolution of strains able to infect people
- Driven by intensification of livestock production, trade, travel



Water & Health

- Pollution, drinking water and health
- Ocean life, microplastics, pollution, climate change and health
- Water-borne, vector-borne diseases and climate change



Some Policy-relevant Questions

Benefits of biodiversity to health

- How severe will projected biodiversity losses affect potential pharmaceutical benefits?
- How are health benefits of biodiversity linked to global conservation strategies and IP?

GEC & Health

- How will climate change mitigation strategies affect health of people, livestock, environment – can this be built into scenarios?
- How can national policies on land use better mediate their private sector benefits (agricultural profits) and public sector health impacts (air pollution, disease)?
- Do global frameworks for pandemic prevention link to IGOs involved in their underlying environmental drivers – e.g. the Global Health Security Agenda, WHO R&D framework

Water, Food & Health

- Do policies adequately include health ecosystem services in freshwater and marine environments?
- What is the role of the private vs. public sector in protecting against the negative health impacts of intensified livestock production and global food trade?