

The climate emergency and animal farming: what can we learn from the COVID-19 crisis?

Dr. Reyes Tirado

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Climate emergency

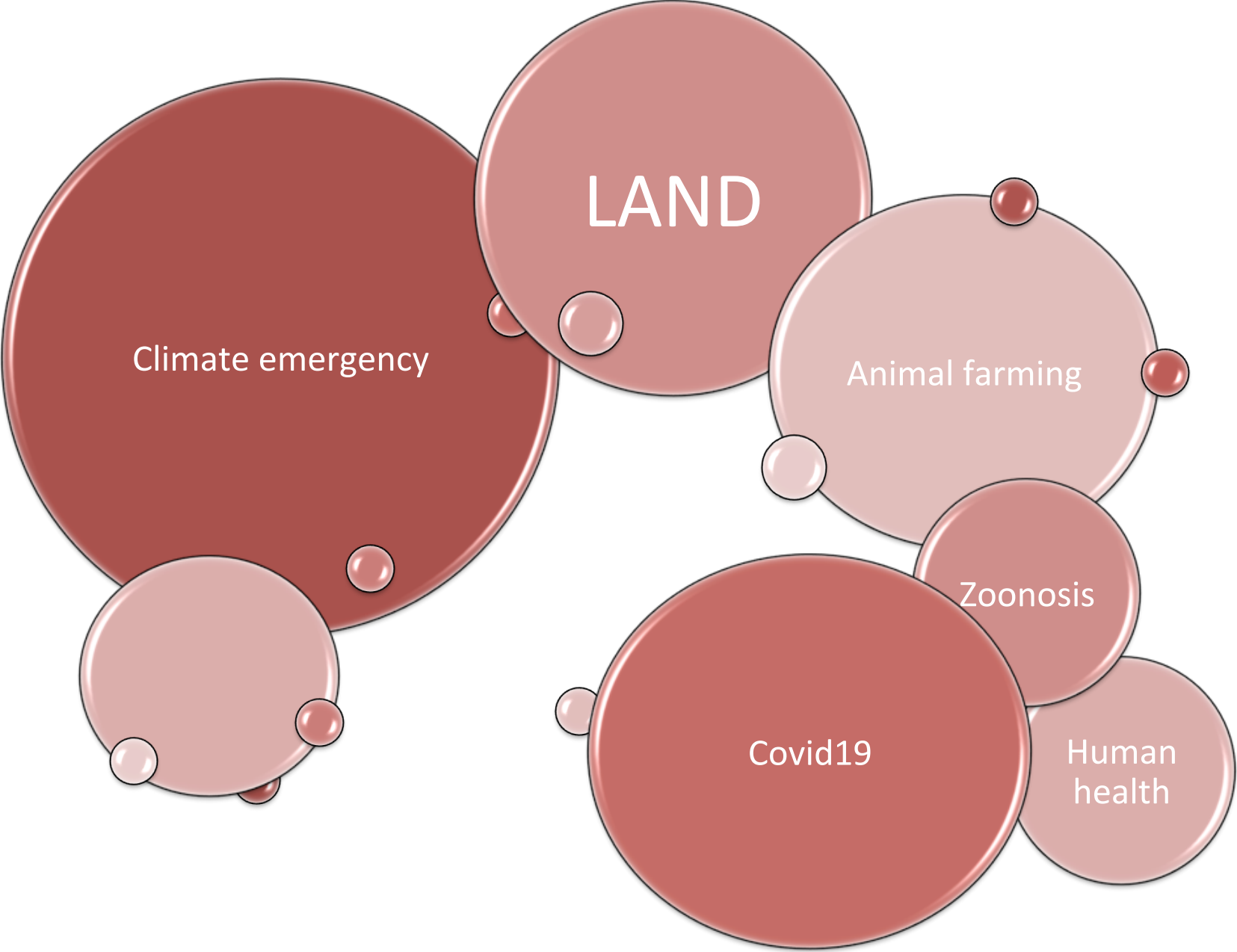
LAND

Animal farming

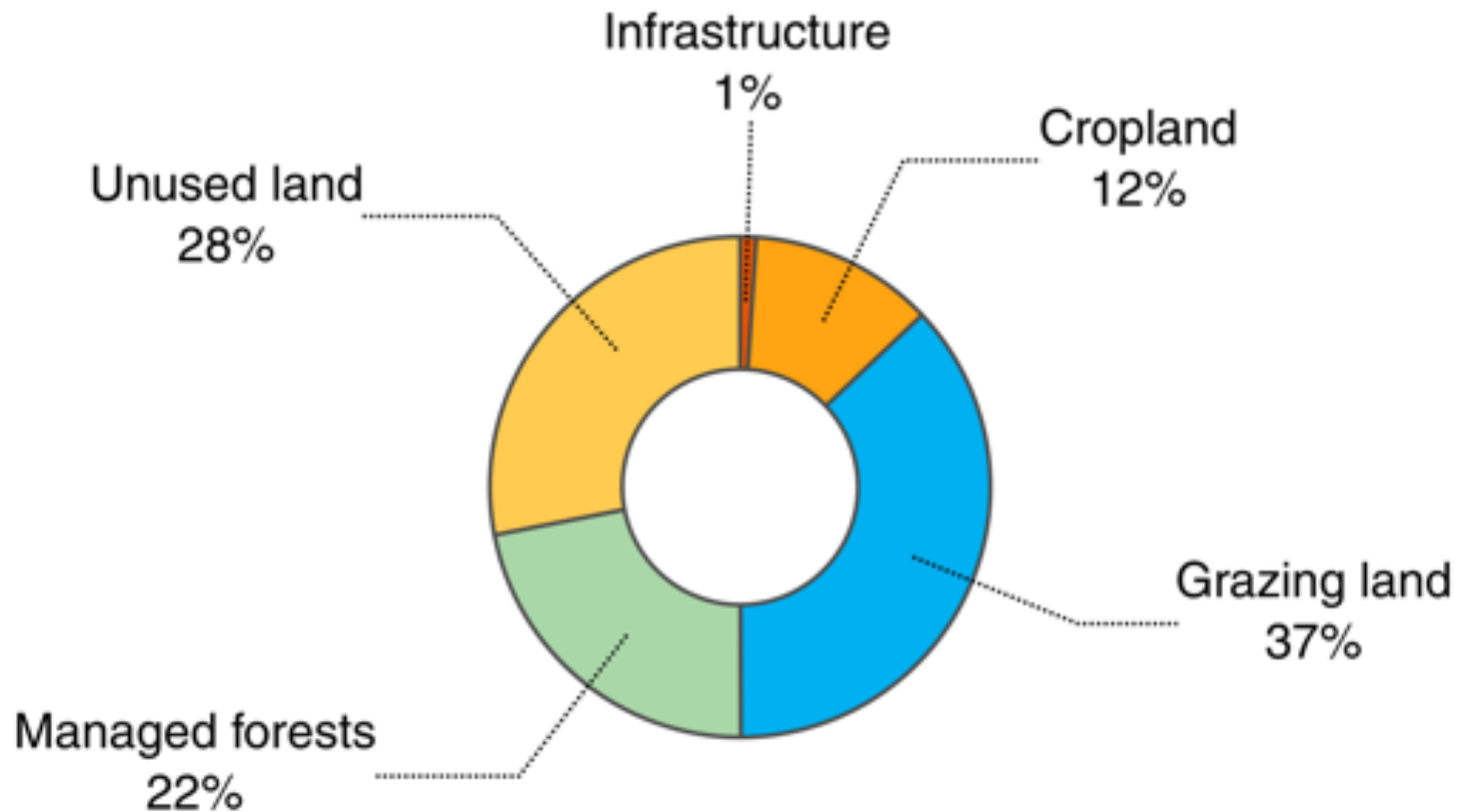
Covid19

Zoonosis

Human health



GLOBAL LAND USE IN 2015 (IPCC 2019)





2 Mar, 2018
Report: Less Is More



2 Mar, 2018
Report: Less Is More
(Longer Version with
Scientific Background)

www.greenpeace.org/livestock_vision



Land system change

Livestock production is thought to be the single most powerful driver of land system change.¹ The expansion of grazing and cultivation of land on which to grow feed is often at the expense of native forest, grasslands or savannas.² During the 50-year period from 1960 to 2011, the production of animal products was responsible for 65% of global land-use change and the expansion of cultivated land.³ Removing natural forest, savanna and grasslands can irreversibly change entire ecosystems (including changes in species compositions)

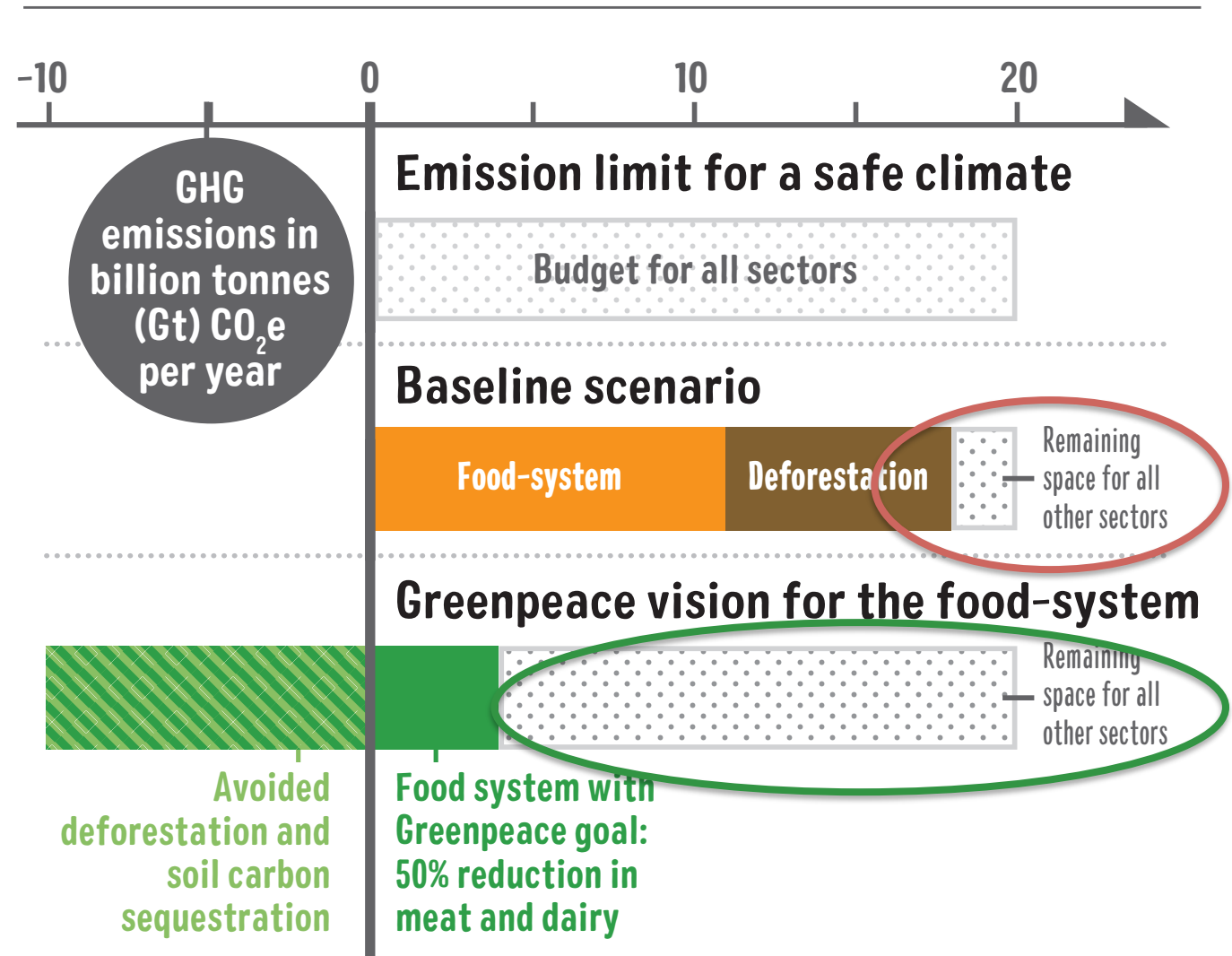


65% of land use change and agriculture expansion linked to animal farming

75-80% of all agriculture land is required for animal farming (cropland + pastureland)

Climate: Budget for Paris Agreement

Food-system GHG emissions in 2050 relative to limits for avoiding dangerous climate change



CLIMATE CHANGE

Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets

Michael A. Clark^{1*}, Nina G. G. Domingo², Kimberly Colgan², Sumil K. Thakrar², David Tilman^{3,4}, John Lynch⁵, Inês L. Azevedo^{6,7}, Jason D. Hill²

The Paris Agreement's goal of limiting the increase in global temperature to 1.5° or 2°C above preindustrial levels requires rapid reductions in greenhouse gas emissions. Although reducing emissions from fossil fuels is essential for meeting this goal, other sources of emissions may also preclude its attainment. We show that even if fossil fuel emissions were immediately halted, current trends in global food systems would prevent the achievement of the 1.5°C target and, by the end of the century, threaten the achievement of the 2°C target. Meeting the 1.5°C target requires rapid and ambitious changes to food systems as well as to all nonfood sectors. The 2°C target could be achieved with less-ambitious changes to food systems, but only if fossil fuel and other nonfood emissions are eliminated soon.

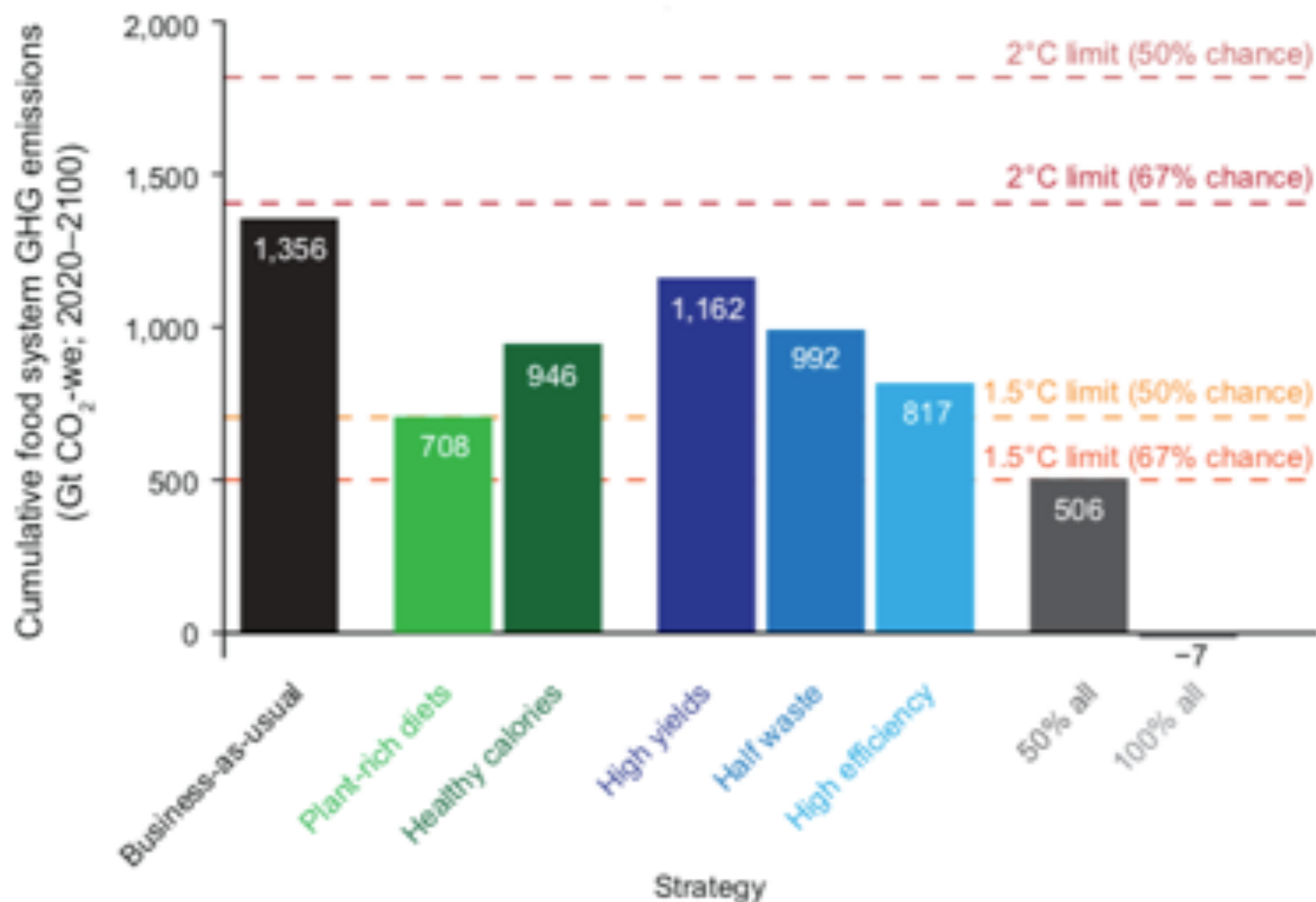


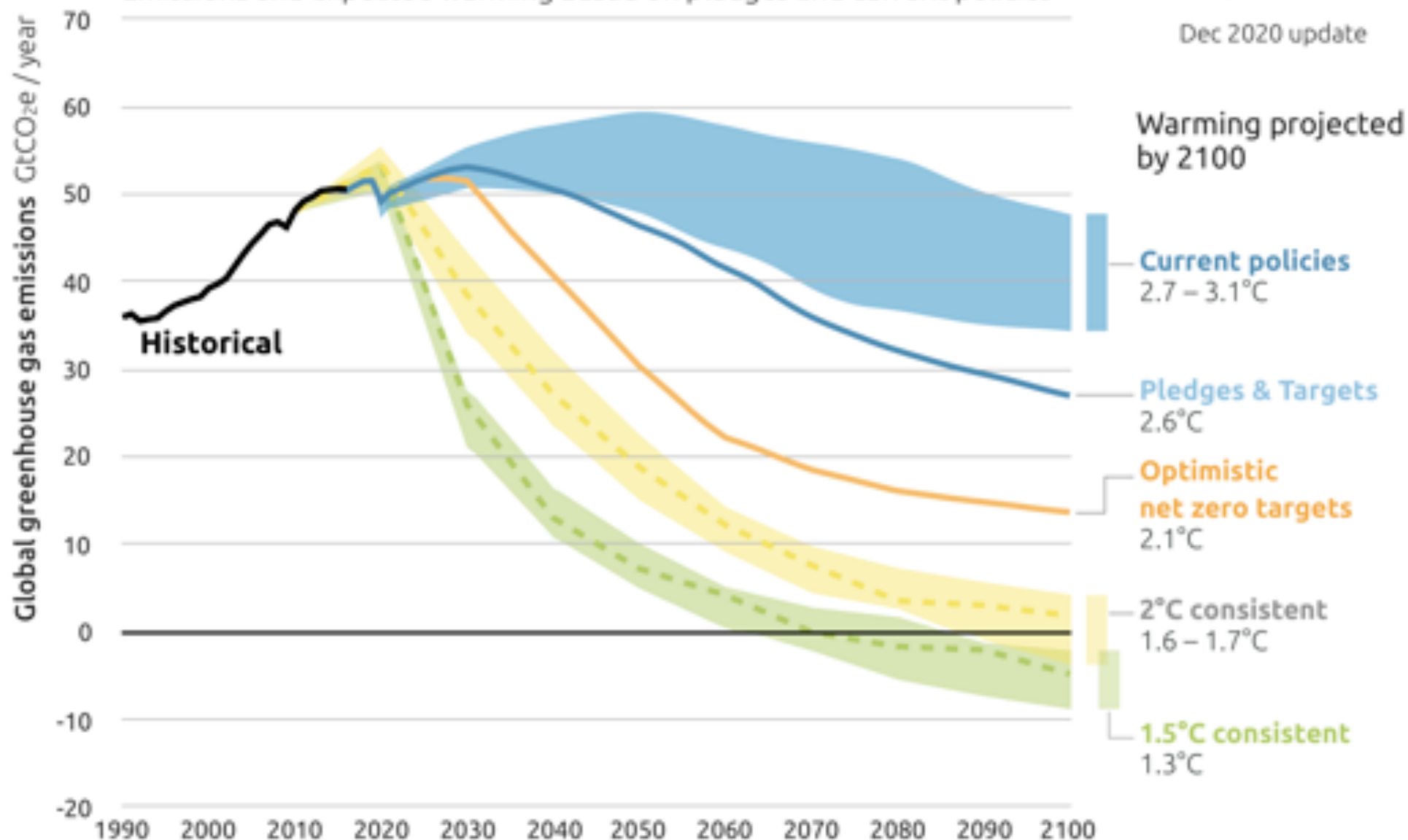
Fig. 1. Projected cumulative 2020 to 2100 GHG emissions solely from the global food system for business-as-usual emissions and for various food system changes that lead to emission reductions

2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies



Dec 2020 update



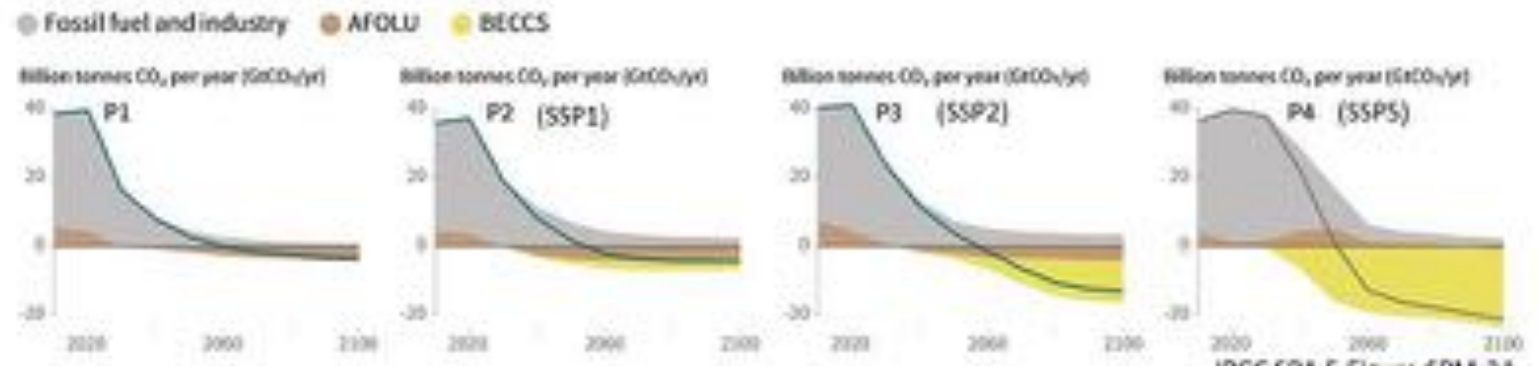
An IPCC Special Report on climate change, degradation, sustainable land management, greenhouse gas fluxes in terrestrial ecosystems

Summary for Policymakers

WG I WG II WG III



Breakdown of contributions to global net CO₂ emissions in four illustrative model pathways

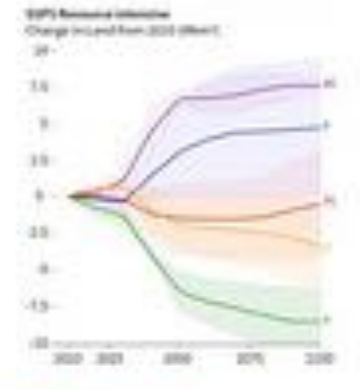
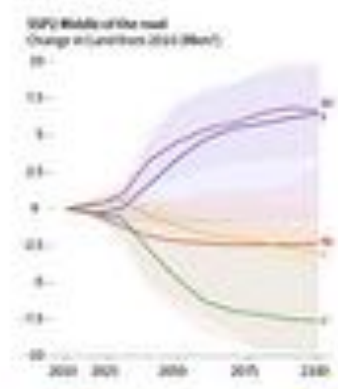
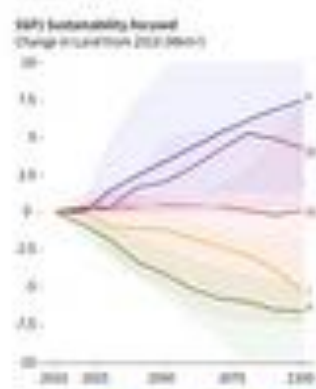


A. Pathways linking socioeconomic development, mitigation responses and land

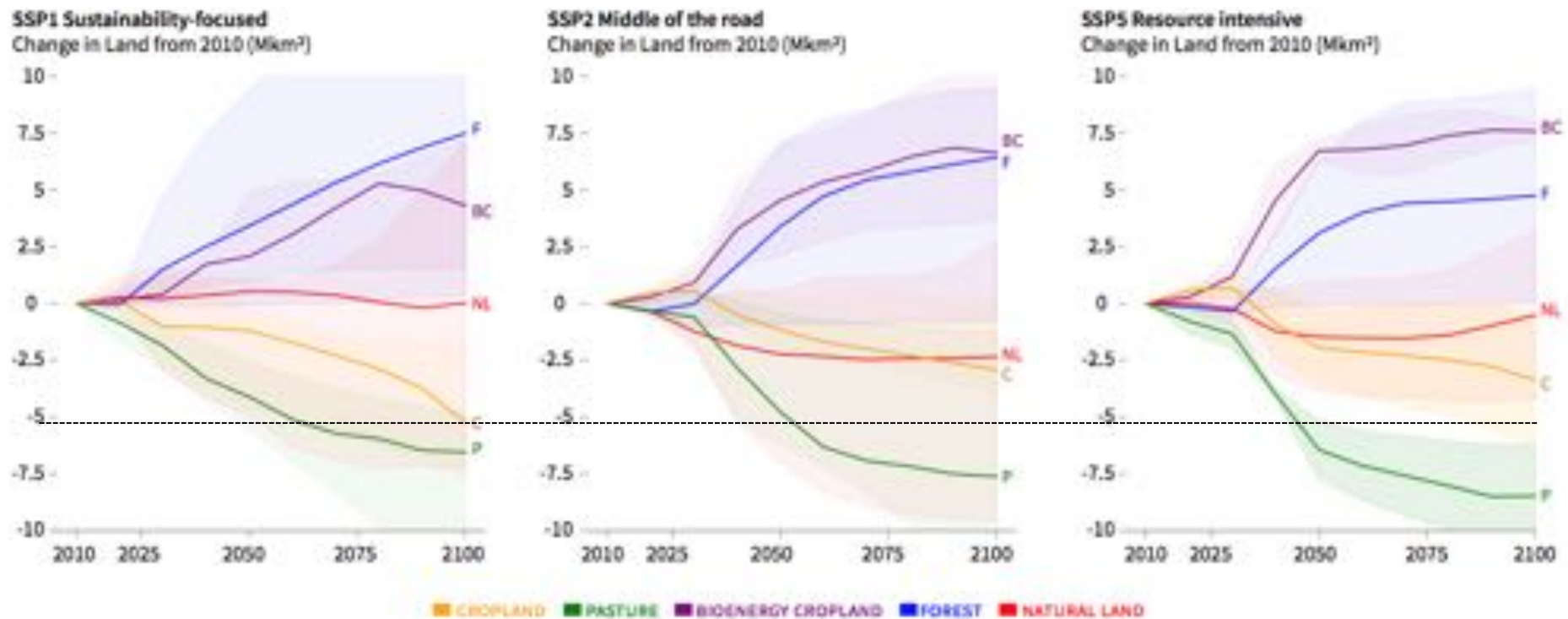
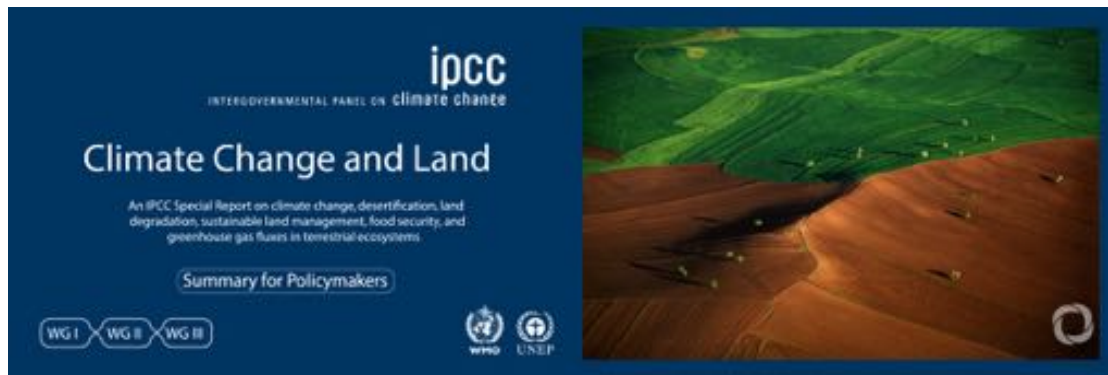
A. Sustainability-focused (SSP1)
Sustainability in land management, agricultural intensification, production and consumption patterns result in reduced need for agricultural land, despite increases in per capita food consumption. This land can instead be used for reforestation, afforestation, and bioenergy.

B. Middle of the road (SSP2)
Societal as well as technological development follows historical patterns. Increased demand for land mitigation options such as bioenergy, reduced deforestation or afforestation decreases availability of agricultural land for food, feed and fibre.

C. Resource intensive (SSP3)
Resource-intensive production and consumption patterns, results in high baseline emissions. Mitigation focuses on technological solutions including substantial bioenergy and BECCS. Intensification and competing land uses contribute to declines in agricultural land.



■ CROPLAND ■ PASTURE ■ BIOENERGY CROPLAND ■ FOREST ■ NATURAL LAND



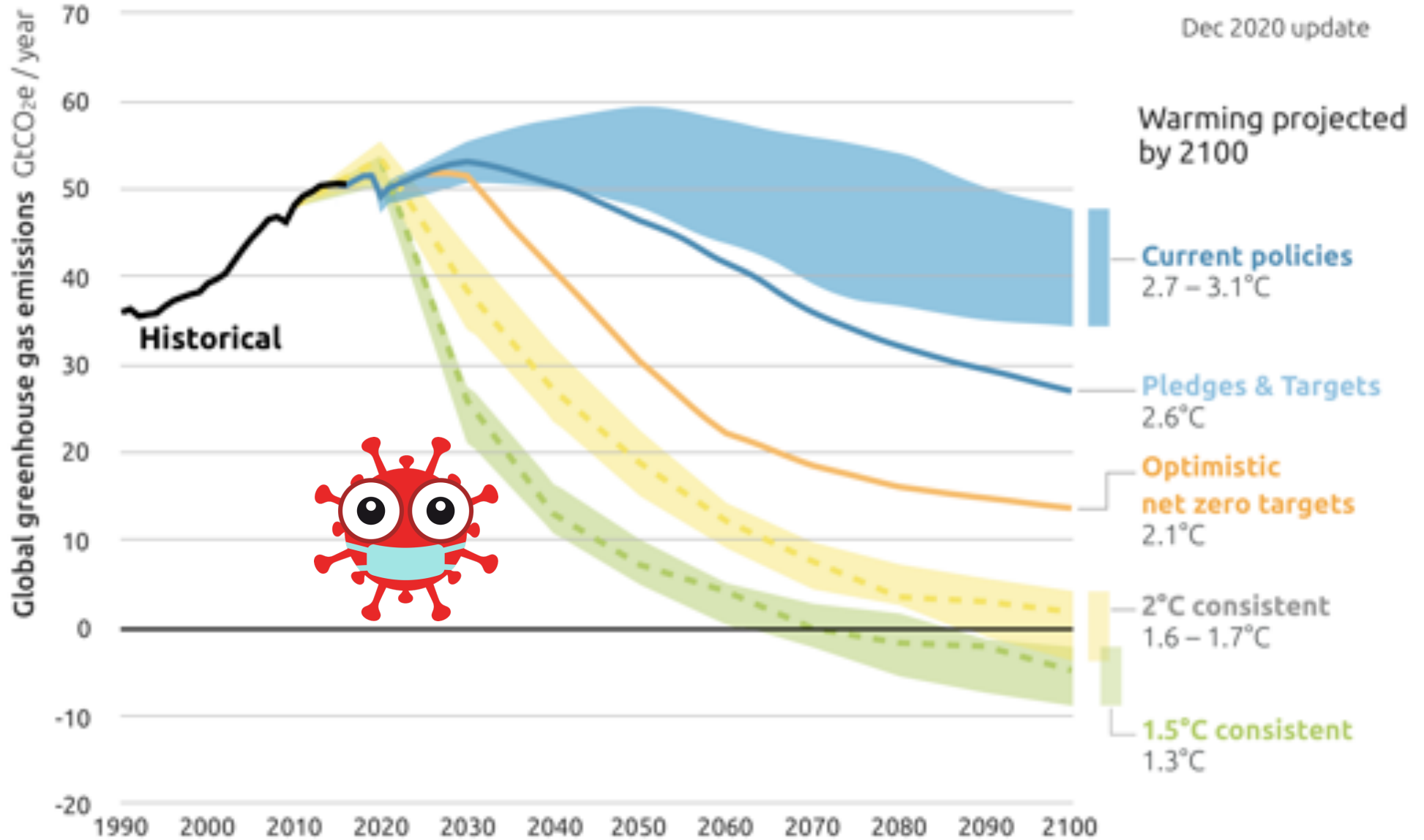
For comparison: since 1956, 5.3 Mkm² of natural land were brought into agriculture use.

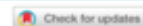
2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies



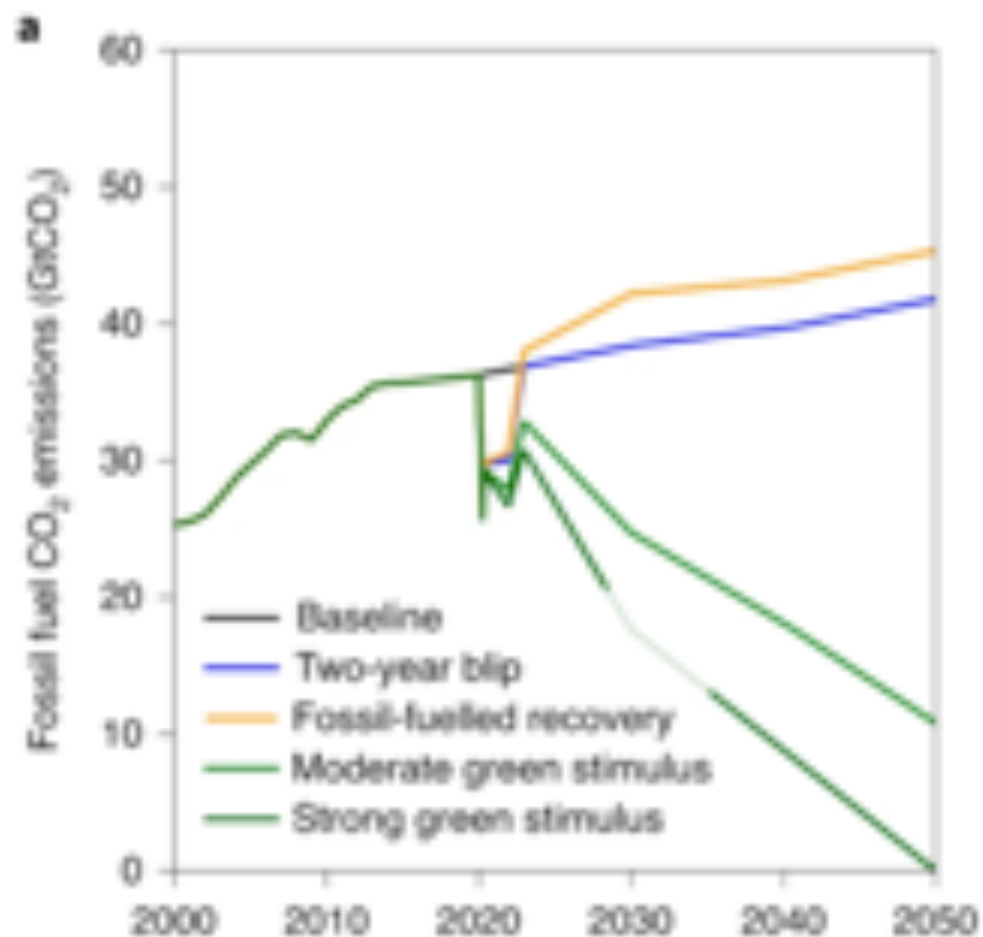
Dec 2020 update





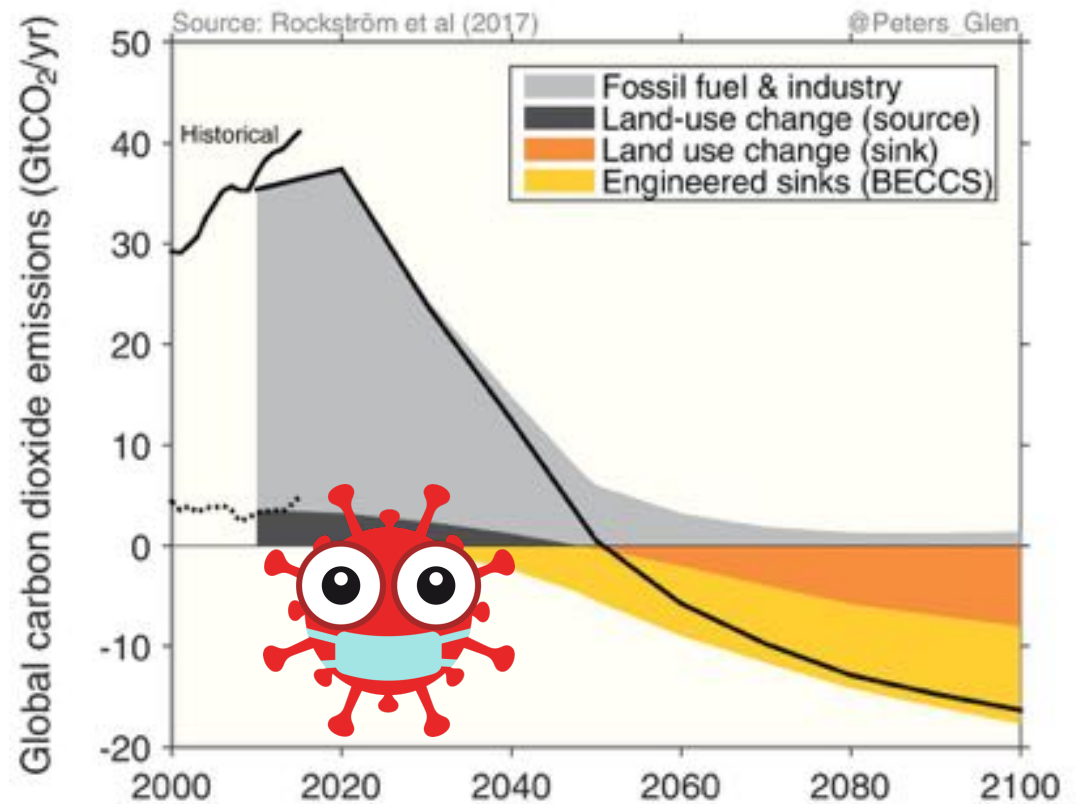
Current and future global climate impacts resulting from COVID-19

Piers M. Forster^{1,2,3}, Harriet I. Forster², Mat J. Evans^{3,4}, Matthew J. Gidden^{5,6}, Chris D. Jones⁷, Christoph A. Keller^{8,9}, Robin D. Lamboll¹⁰, Corinne Le Quéré^{11,12}, Joeri Rogelj^{6,10}, Deborah Rosen¹, Carl-Friedrich Schleussner^{5,13}, Thomas B. Richardson¹, Christopher J. Smith^{1,4} and Steven T. Turnock^{1,7}

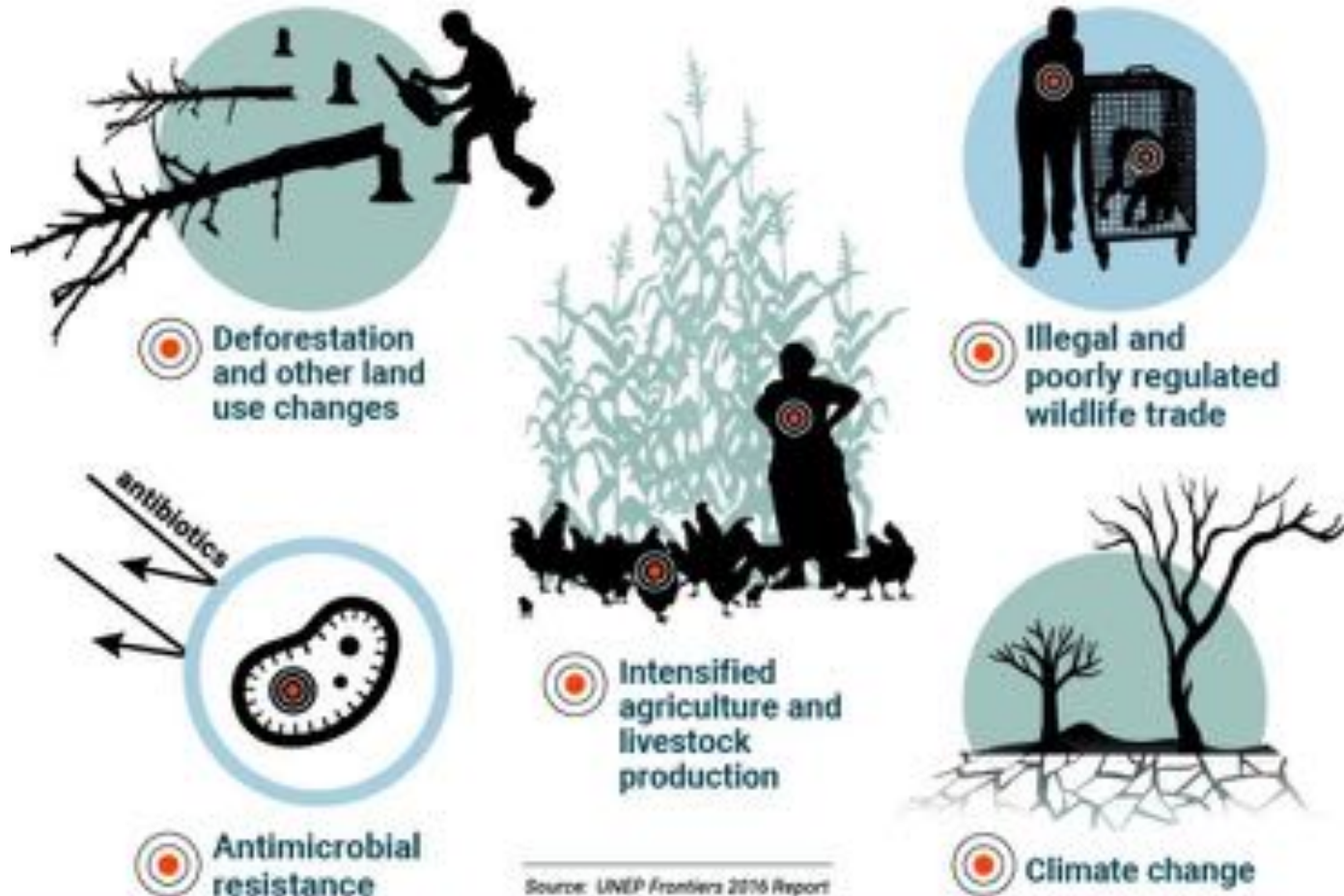




¿Is there enough land?



What factors are increasing zoonosis emergence? (Diseases transmitted from animals to humans)



75% of new and emerging human infectious diseases have, like Covid-19, come from animals

The leading driver of emerging diseases is land use change

#COVID19

Targeting Transmission Pathways for Emerging Zoonotic Disease Surveillance and Control

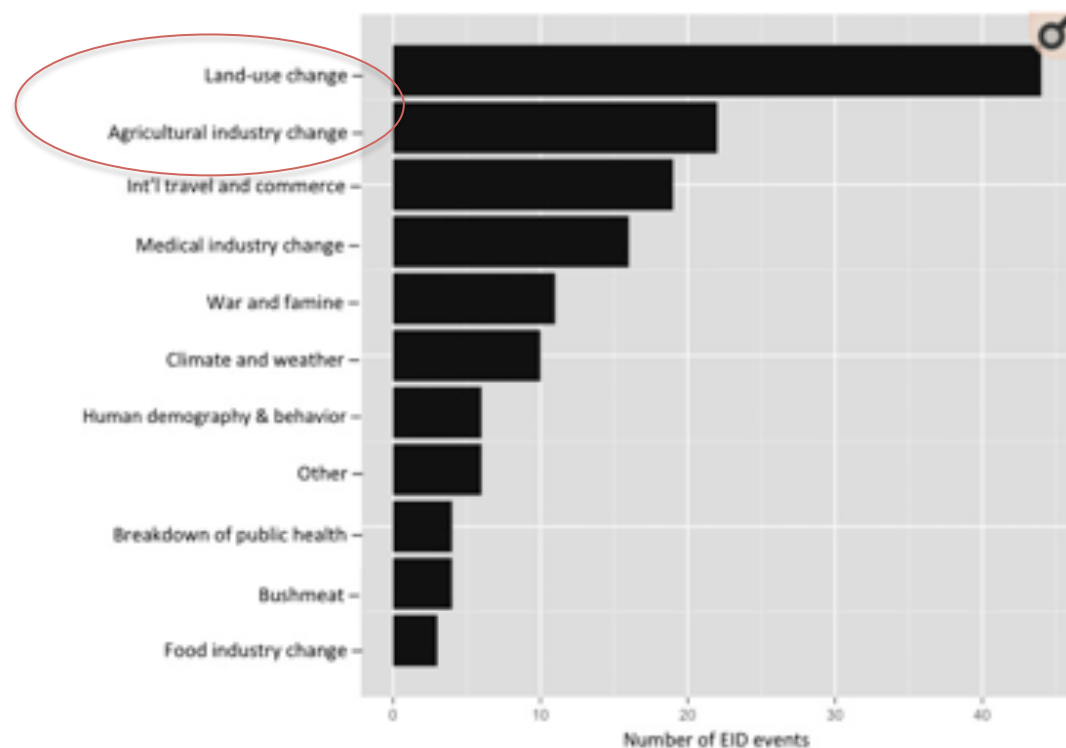
Elizabeth H. Loh, Carlos Zambrana-Torrel, Kevin J. Olival, Tiffany L. Bogich, Christine K. Johnson, Jonna A. K. Mazet, William Karesh, and Peter Daszak

PMC full text: [Vector Borne Zoonotic Dis. 2015 Jul 1; 15\(7\): 432-437.](#)

doi: [10.1089/vbz.2013.1563](https://doi.org/10.1089/vbz.2013.1563)

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FIG. 1.



Number of previous emergence events by primary drivers of disease as defined by Jones et al. (2008).

FIG. 1.

Information
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Read this article:
Elizabeth H. Loh, Carlos Zambrana-Torrel, Kevin J. Olival, Tiffany L. Bogich, Christine K. Johnson, Jonna A. K. Mazet, William Karesh, and Peter Daszak.
Vector-Borne and Zoonotic Diseases. Jul 2015. 432-437.
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Keywords
Surveillance Transmission routes Pathway
Direct contact Vector-borne Virus
Zoonosis

Global hotspots and correlates of emerging zoonotic diseases

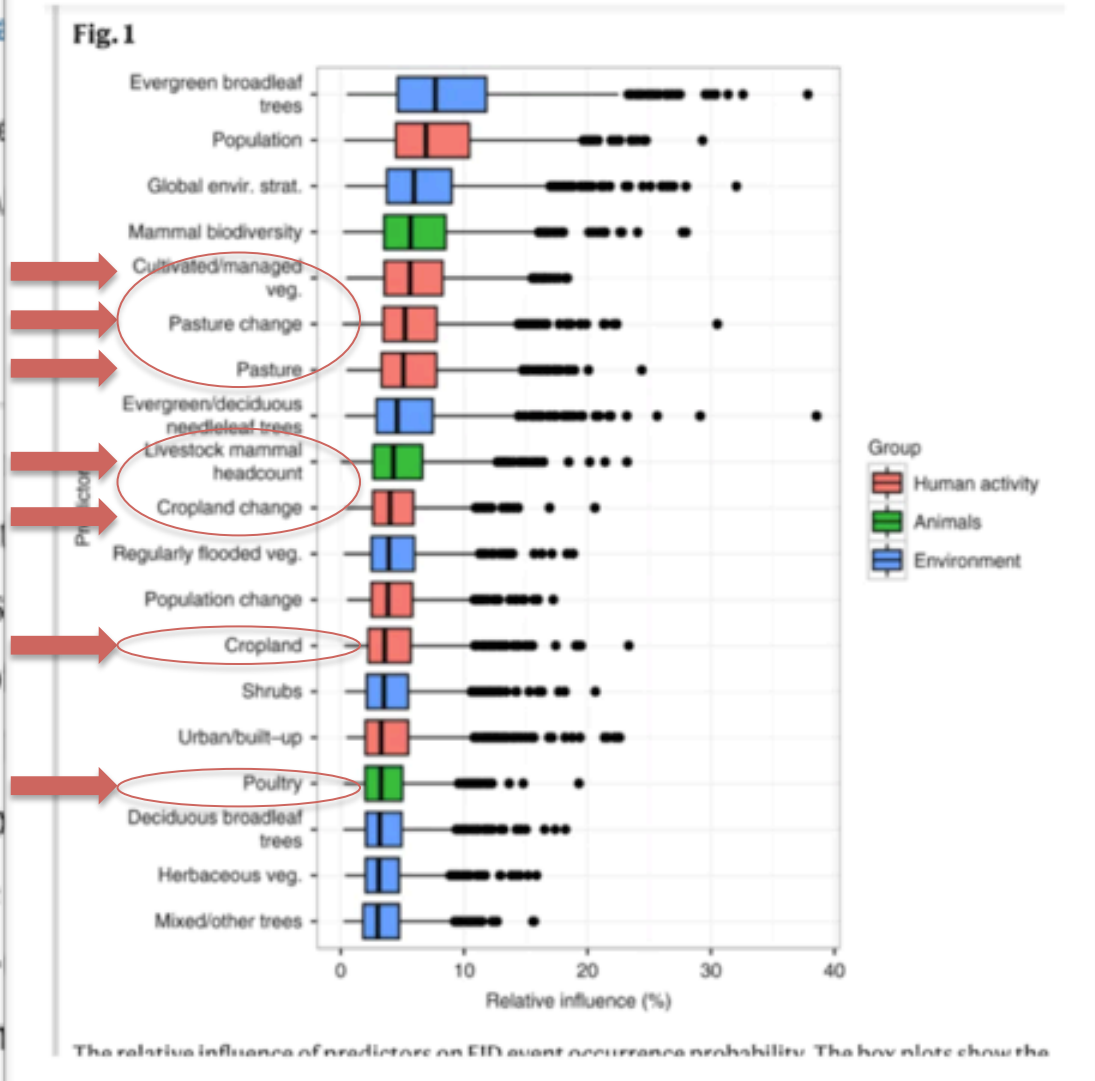
Toph Allen, Kris A. Murray, Carlos Zambrano
Nathan Breit, Kevin J. Olival & Peter Daszak

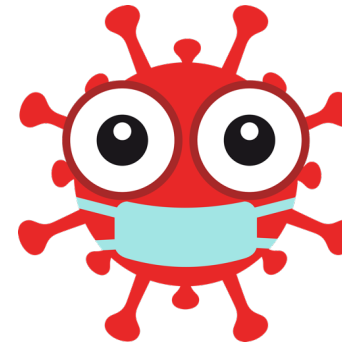
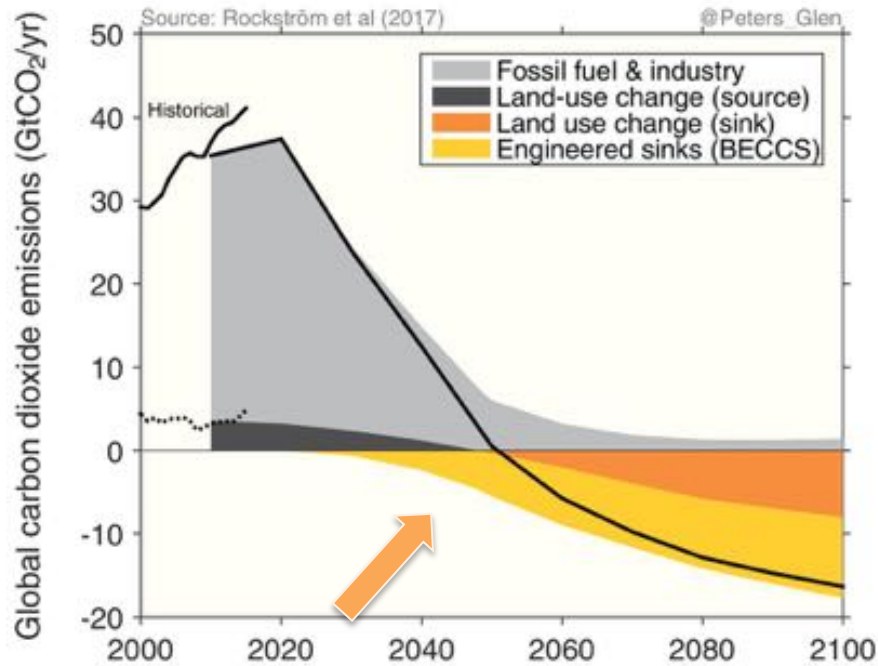
Nature Communications 8, Article number
31k Accesses | 125 Citations | 581 A

Abstract

Zoonoses originating from wildlife and economic growth, and combat our understanding of the mechanisms. Here we update a global database of measure of reporting effort, and fit demographic, environmental and b accounting for reporting effort, we tropical regions experiencing land-species richness) is high. We present

Global hotspots and correlates of emerging zoonotic diseases





Joint crisis of Climate and Covid-19

need to free up agriculture land to:

- mitigate climate and net zero targets
- reduce the risks of future pandemics

How much land??

Potential interventions for multiple benefits and hard choices:

- Less meat diets
- Less animal factory farms
- More protection of natural ecosystems
- More resilience and safety for a **One Health** approach

COVID19 learnings: Climate emergency, land and animal farming

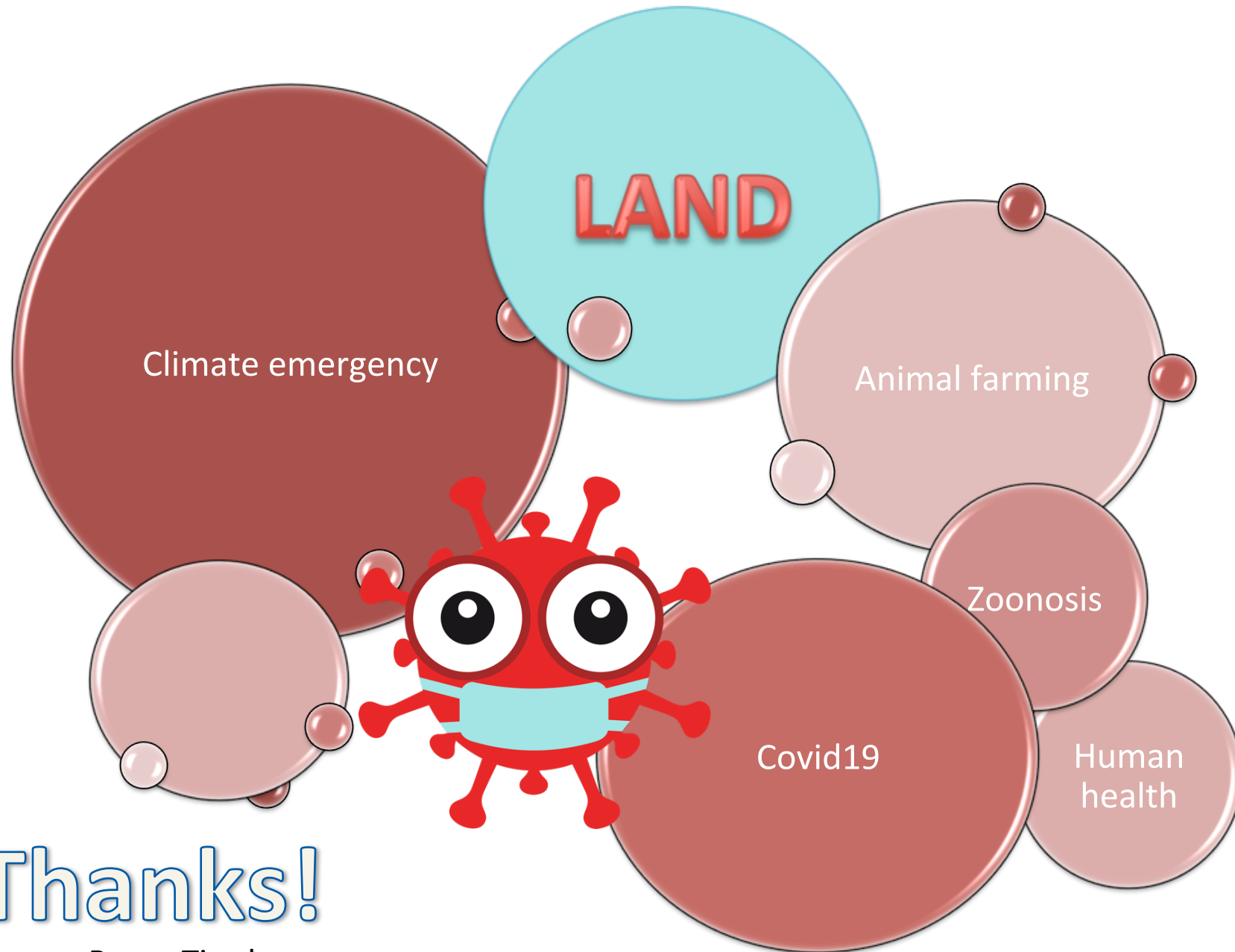
Learning from the risks:

1. Public health as priority
2. Animal farming monocultures and intensification increases risks of zoonotic diseases with pandemic potential
4. Biodiversity as the vaccine
5. Humanity is able to do a fast transition and implement disruptive policies

Opportunities:

1. Align public health interventions with multiple benefits: use of land, diets, climate, diseases, zoonosis, equality and justice.
2. Animal farming: less is more, less and better
4. Protect, restore and fund nature
5. **Paris Agreement under reach. Need drastic action in all sectors and hard choices NOW!**

Redirect recovery funding to green and just solutions.
Need of advanced analysis of what it means for **land**



Thanks!

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