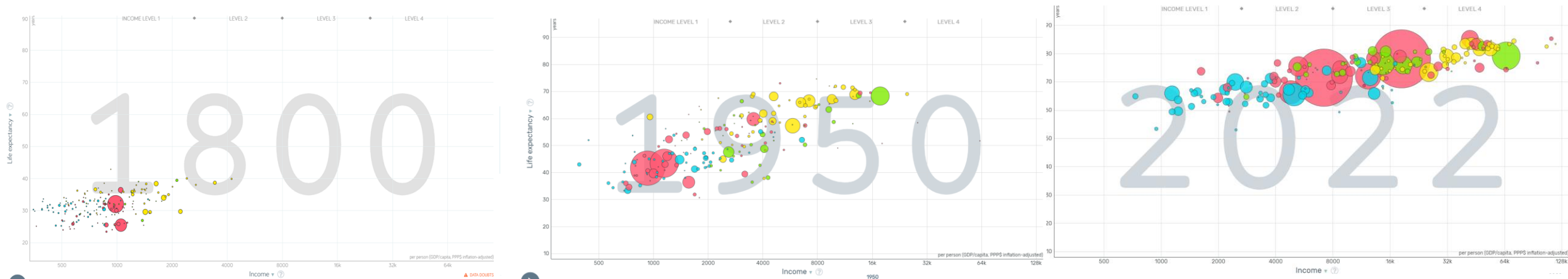

Paolo Vineis
Imperial College London

Crisi climatica e salute

Fondazione Onda settembre 2023

Gross Domestic Product (GDP) per capita and life-expectancy 1800, 1950 and 2022



Africa

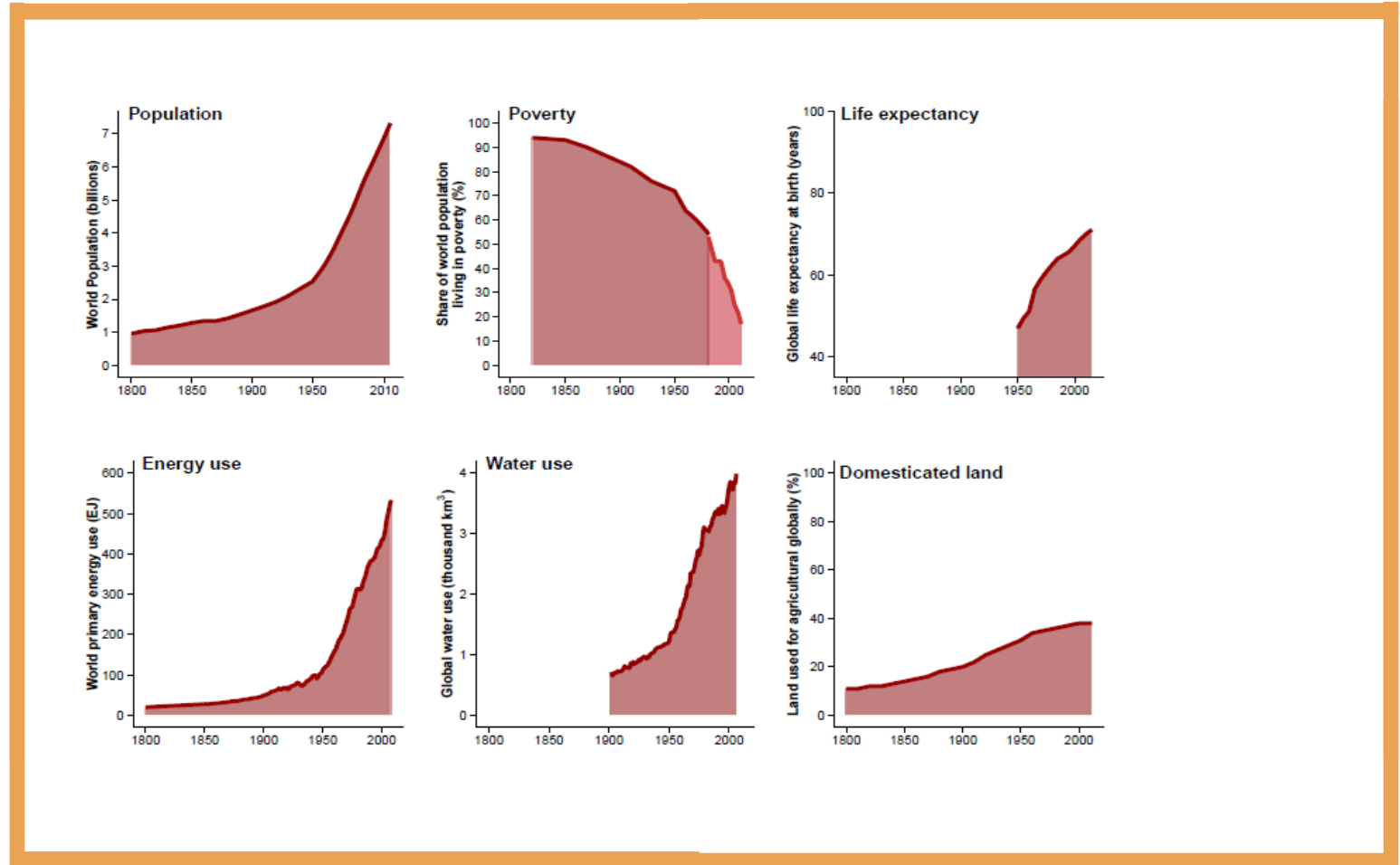
Americas

Europe

Asia/Oceania

- In 1800 per capita GDP was low and life expectancy was very low in all countries
- Health has improved everywhere, even in the poorest countries
- The GDP per capita is much higher (in most countries) today
- Global differences in economy and health are greater today
- Today, most people live in "middle-income" countries

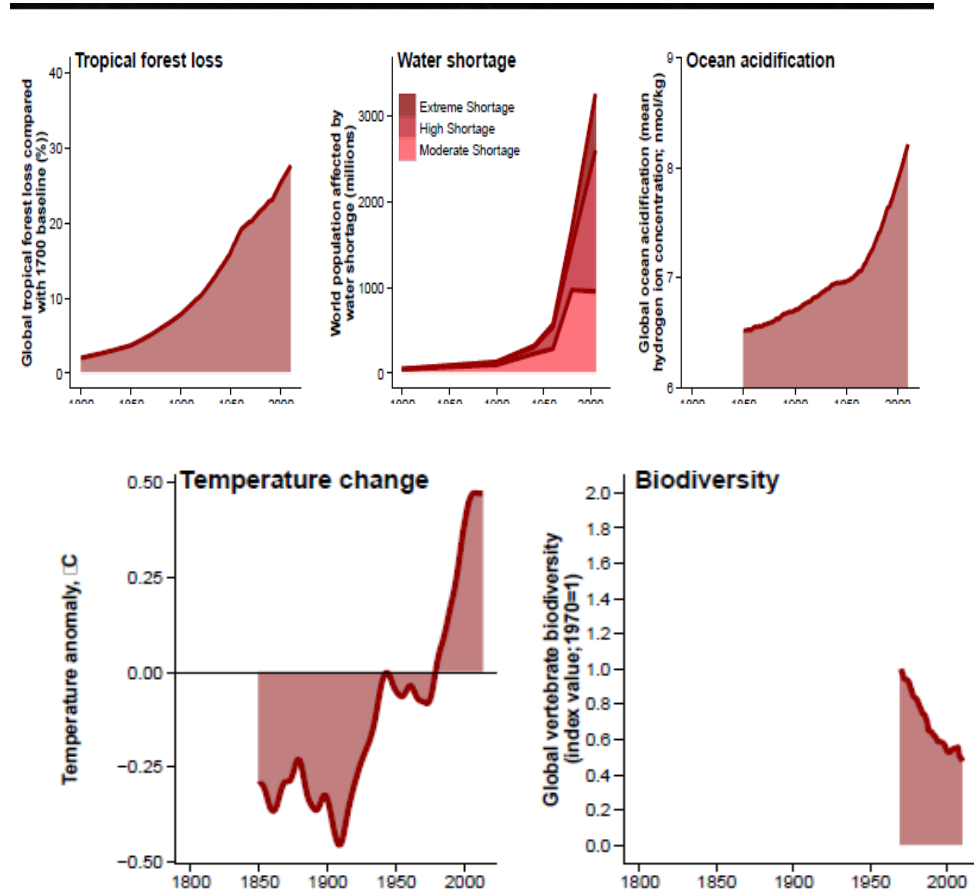
Safeguarding human health in
the Anthropocene epoch:
report of The Rockefeller
Foundation-Lancet
Commission on planetary
health
Whitmee et al. The Lancet
2015



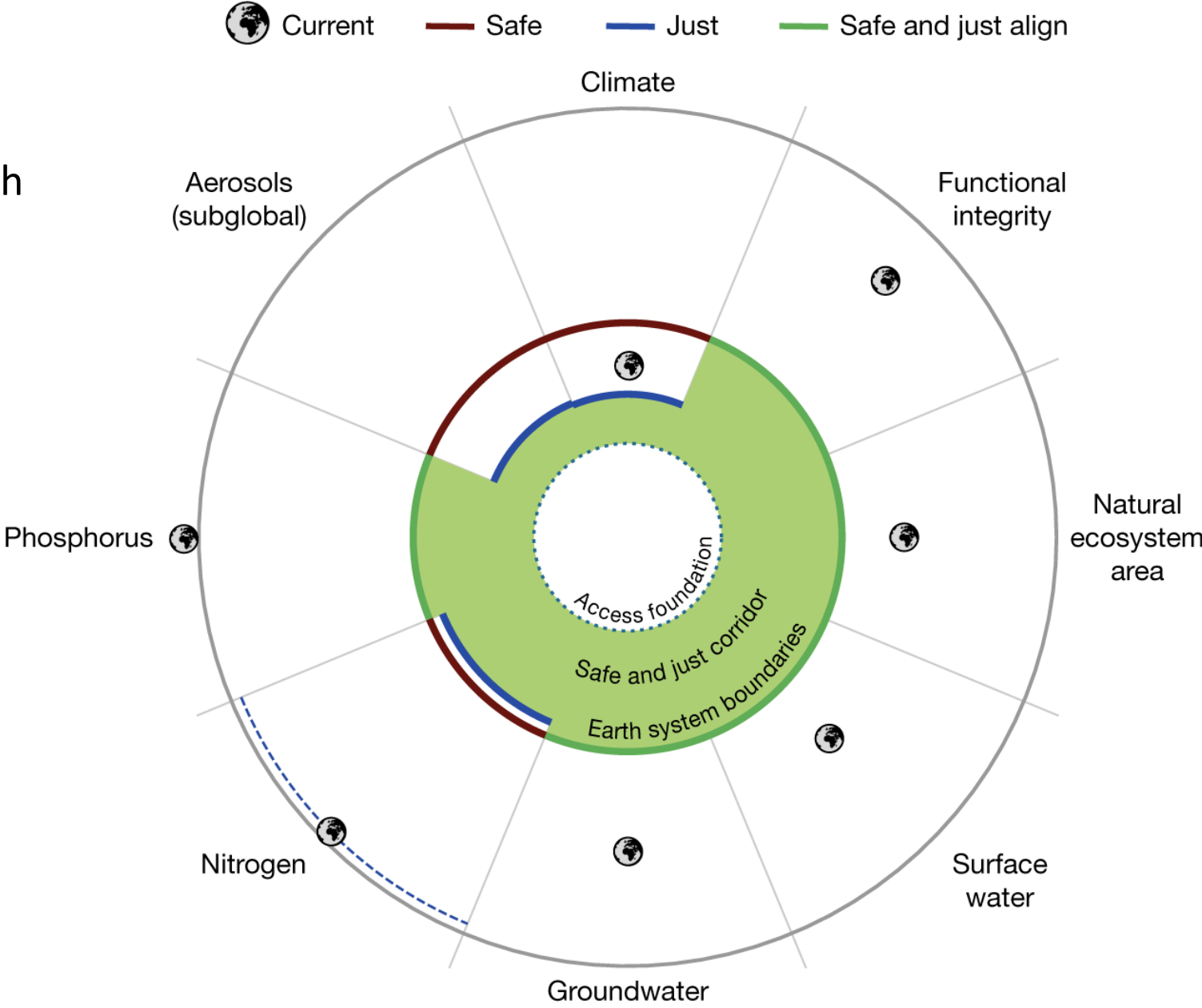
The bad news

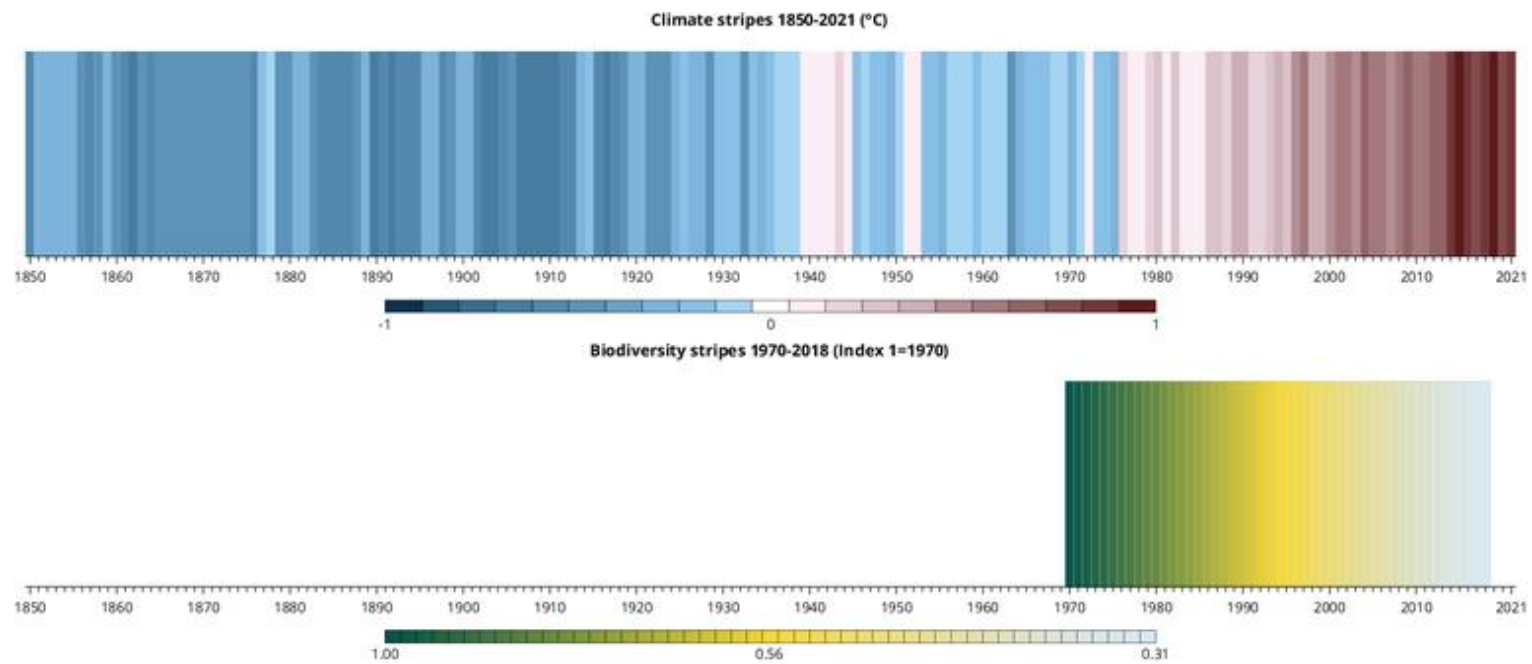
Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation-Lancet Commission on planetary health.

Whitmee et al. The Lancet 2015



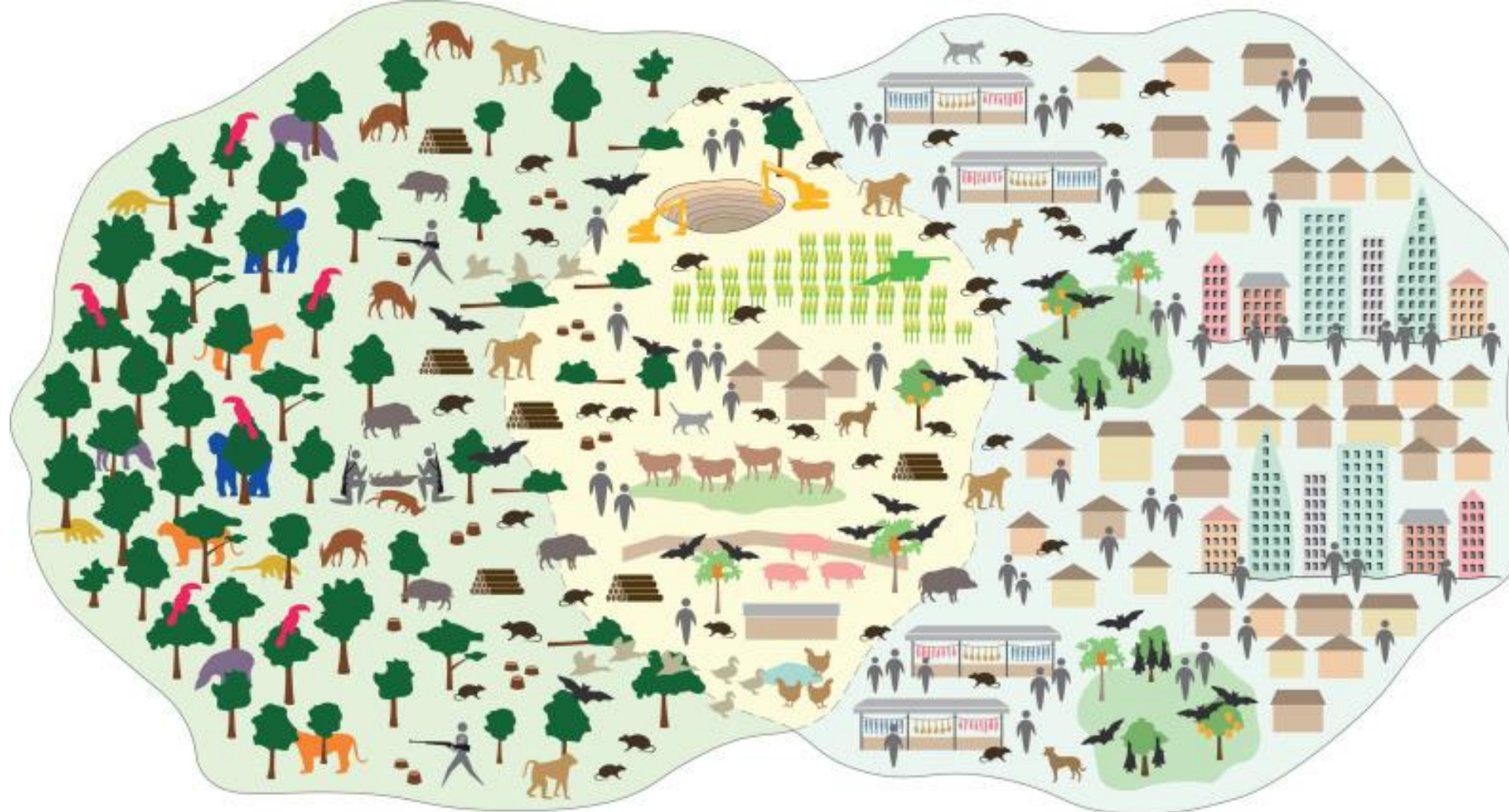
Rockstrom et al Safe and just Earth System Boundaries.
Nature, 2023





- (a) Riscaldamento del pianeta**
- (b) Sparizione delle specie**

Source: EEA 2022



PRISTINE FOREST

- Penetration by illegal loggers and hunters leads to habitat degradation, the reduction of large fauna and the proliferation of rodent, bat, bird and primate species which can act as disease reservoirs

ECOTONE

- Human activities, especially livestock farming and feedstock cultivation, cause deforestation and bring wild animals in contact with humans and domestic animals
- Sylvatic pathogens are no longer controlled by environmental stochasticity

URBAN / PERI-URBAN

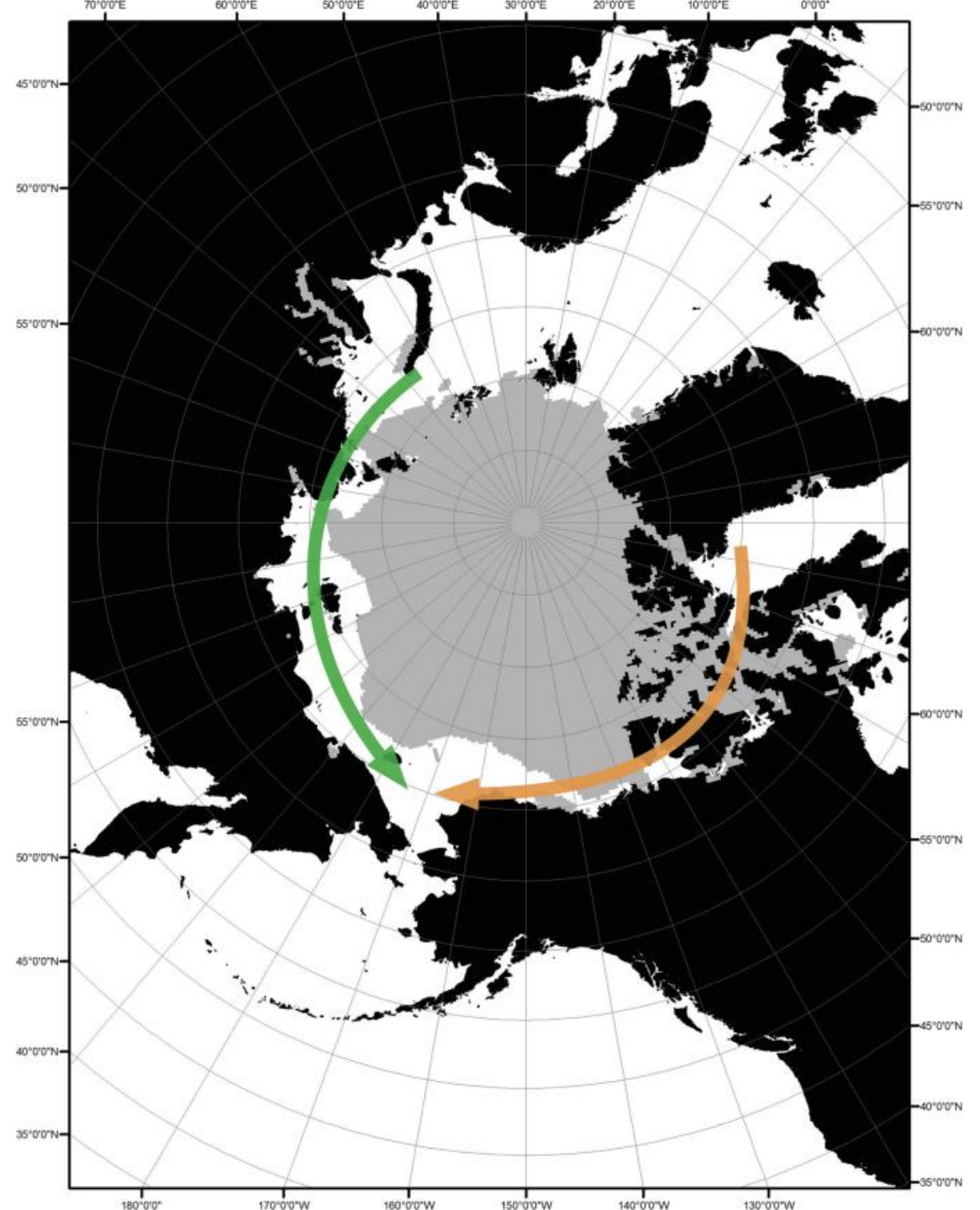
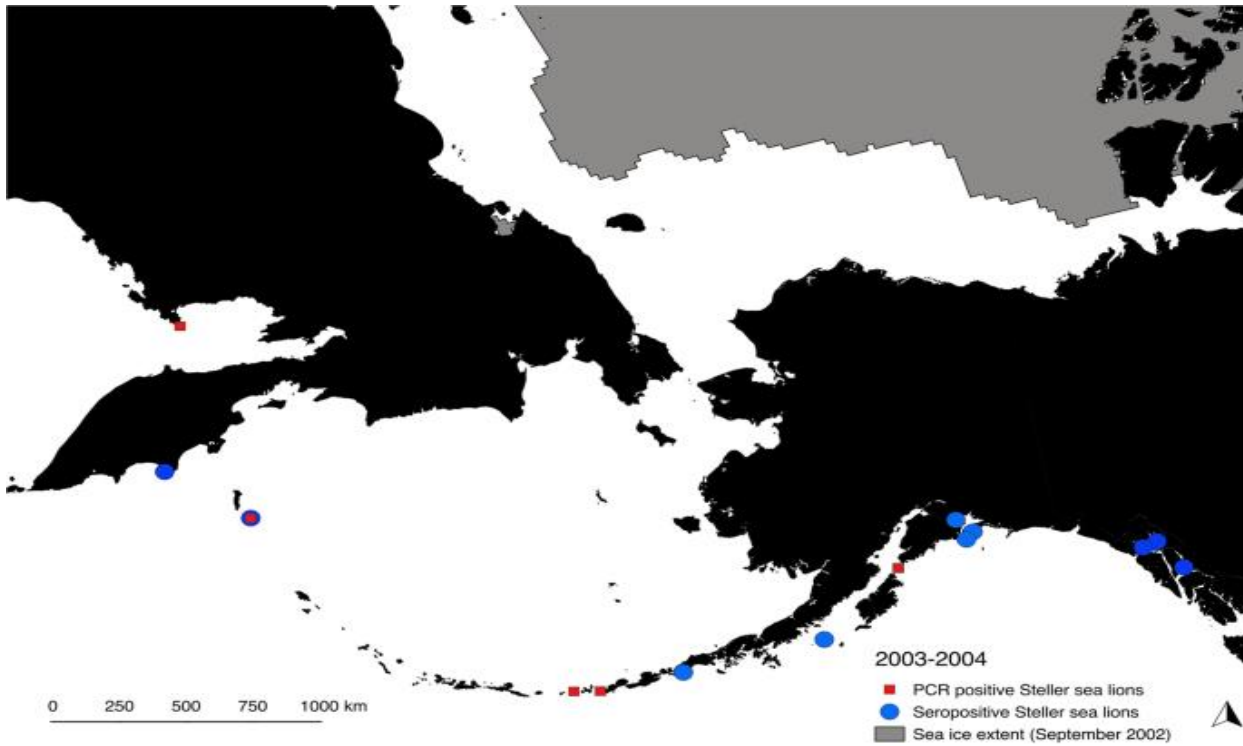
- As wild habitats are degraded, wild animals enter urban areas in search of food
- Crowding and food deprivation may increase wildlife susceptibility to pathogen infection and shedding

BIODIVERSITA'

[Wegner et al, EClinicalMedicine. 2022 May; 47: 101386](#)

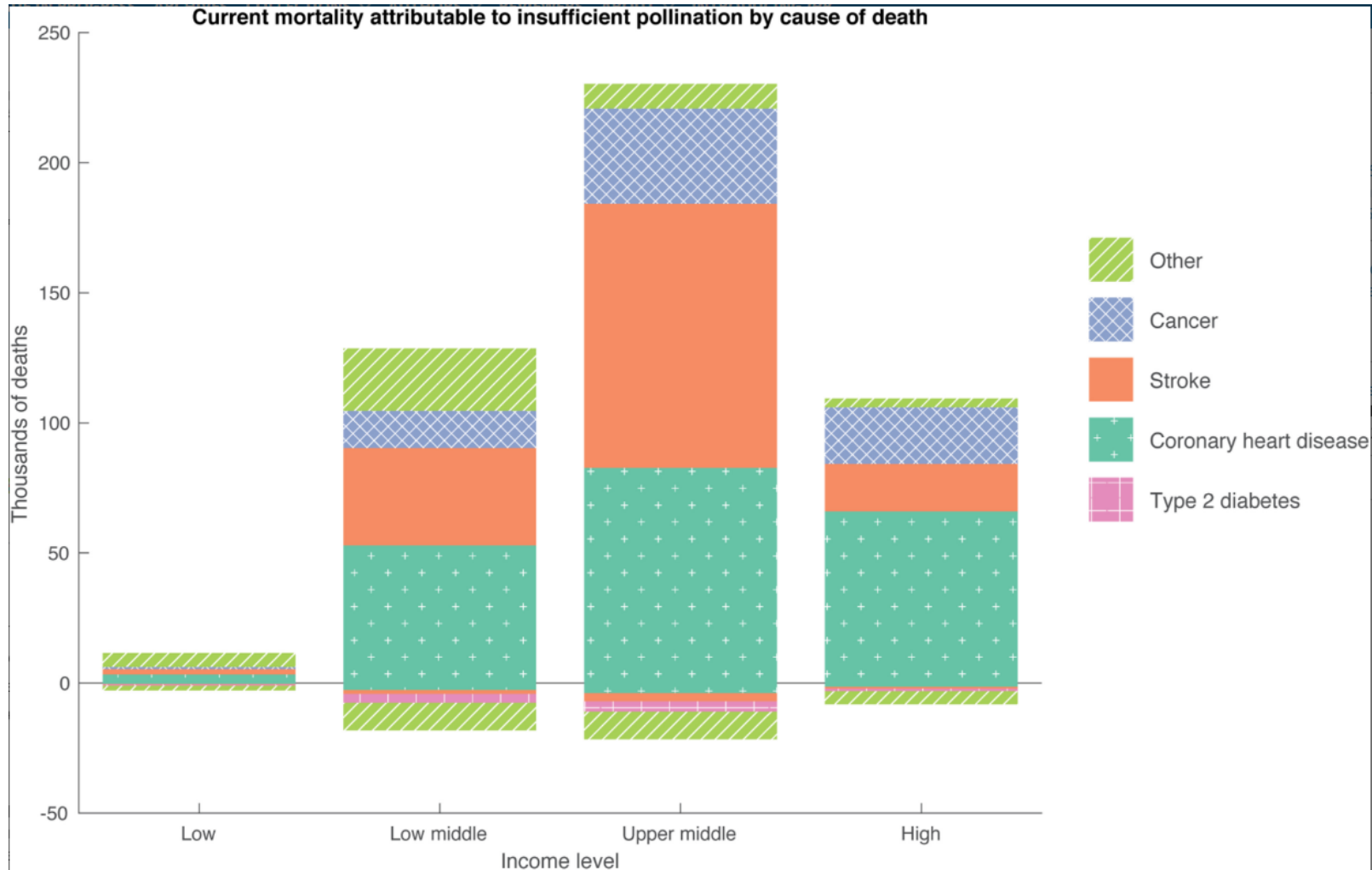
La trasmissione del cimurro delle foche alle lontre e altri mammiferi marini

Potential routes for movement of seals infected with PDV through the Arctic Ocean opened by reductions in sea ice extent. Routes along northern Russia (green) and northern Canada (orange) are shown with August 2002 sea ice extent. (VanWormer et al. 2019 <https://doi.org/10.1038/s41598-019-51699-4>).



Current annual mortality estimated to be attributable to inadequate pollination and its dietary effects, by cause of death and country income.

Inadequate pollination is defined as a combination of too-little flower visitation and scant pollinator diversity to achieve optimal yields (Smith MR, EHP 2023)



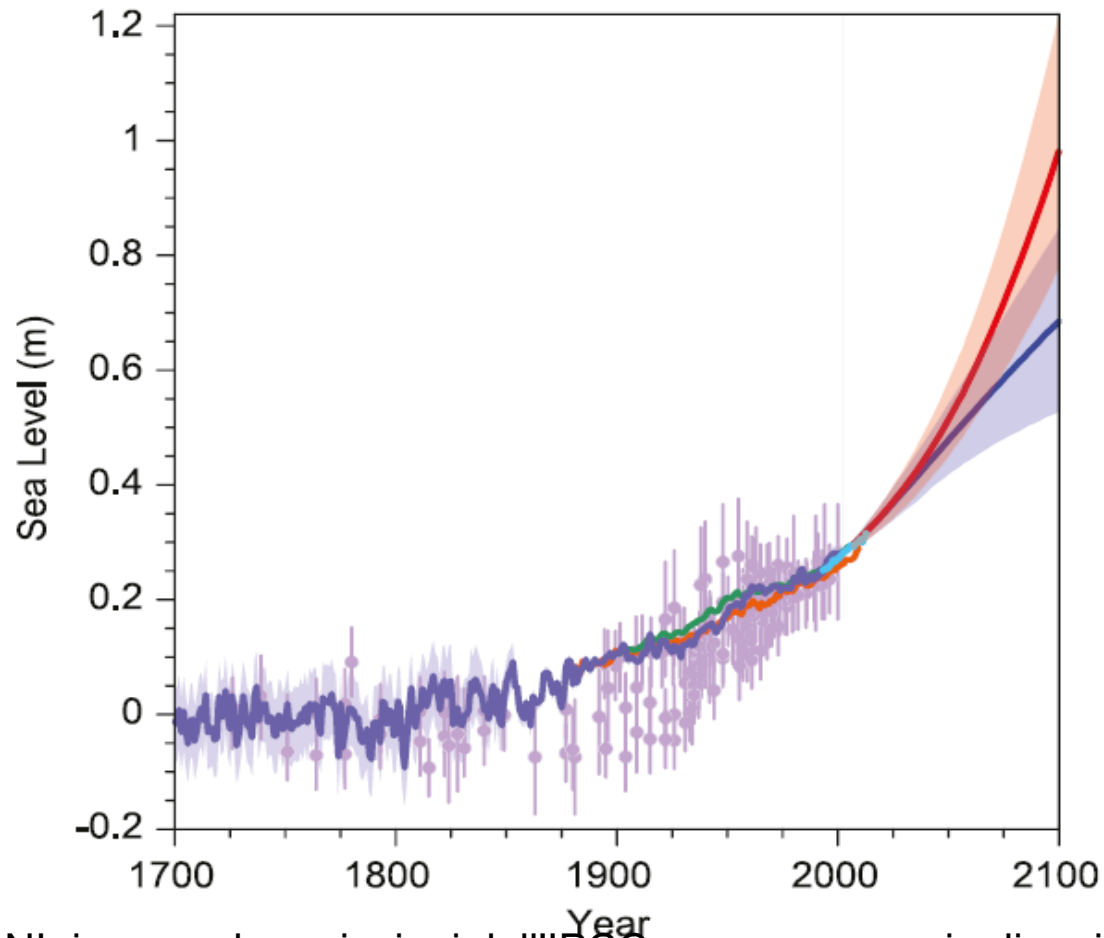
Heat-related mortality in Europe during the summer of 2022

We estimated 61,672 (95% confidence interval (CI) = 37,643–86,807) heat-related deaths in Europe between 30 May and 4 September 2022. Italy (18,010 deaths), Spain (11,324) and Germany (8,173) had the highest summer heat-related mortality numbers, while Italy (295 deaths per million), Greece (280), Spain (237) and Portugal (211) had the highest heat-related mortality rates. Relative to population, we estimated 56% more heat-related deaths in women than men, with higher rates in men.

Ballester et al. [Nat Med](#). 2023; 29(7): 1857–1866.

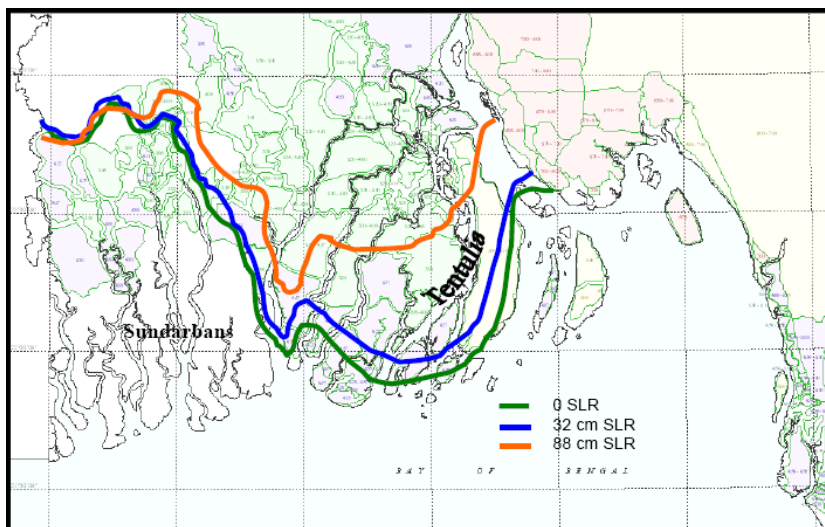
CAMBIAMENTO CLIMATICO

IL LIVELLO DEL MARE



PROIEZIONI: in *rosso* le proiezioni dell'IPCC per uno scenario di emissioni molto elevate (scenario RCP8.5) e in *blu* per uno scenario di emissioni molto basse (scenario RCP2.6).
Fonte: IPCC AR5 Fig. 13.27.

SALINIZZAZIONE DELLE ACQUE IL CASO DEL BANGLADESH



Diversi scenari di
innalzamento del livello del
mare nel Golfo del Bengala



Women and children from Sultansadi village are bringing safe water from far places. Photo - Salahuddin Azizee

Attualmente già salinizzati 2,8 milioni di ettari (+45% negli ultimi 50 anni)

Steps for a 1.5°C world

**MOST IMPORTANT
SHORT TERM**

Renovate 3–5% of buildings per year

New buildings zero emissions from 2020

Best practice in agriculture

Zero deforestation by 2020s



Sustain renewables growth

No new coal power plants

Last fossil fuel car sold before 2035

Develop 1.5°C vision for aviation & shipping

New industrial installations low carbon after 2020

STEPS FOR A
1.5°C
WORLD

