



**Climate change and other environmental challenges are creating a health crisis of planetary dimension, with impacts falling disproportionately on vulnerable and historically marginalized populations.** Those challenges are growing as current models of industrialization and consumption erode biodiversity, degrade the environment, and impact the ability of ecosystems to support human communities.

**Stanford's Center for Human and Planetary Health tackles these interconnected threats through research, education and solutions designed to sustain nature while supporting human health.** By bringing together perspectives from environmental sciences, medicine, public health, systems thinking, policy, law, and other disciplines, the Center works across disciplines at Stanford and beyond campus to achieve breakthroughs and find solutions for our rapidly changing planet.

### We Are

A collaborative, interdisciplinary team of faculty, staff, and students dedicated to generating new knowledge and creating innovative solutions in human and planetary health.

A multidisciplinary effort based at the Woods Institute for the Environment in close partnership with the Stanford School of Medicine's Center for Innovation in Global Health.

### Vision

Thriving ecosystems and healthy communities worldwide.

### Mission

To create knowledge, prepare leaders, and drive impact in human and planetary health.

### Values

The Center is guided by our core values of: global equity, scientific credibility and integrity, interdisciplinary approaches, diversity and inclusivity, collaboration, and impactful solutions.

### Approach

The Center for Human and Planetary Health aims to achieve our vision by:

- 1 Driving solutions-oriented research
- 2 Developing future leaders
- 3 Accelerating impact by proactively engaging with stakeholders
- 4 Building the human and planetary health community at Stanford



# Human and Planetary Health Initiative's Four Focus Areas

## Climate and Health



We work to promote the health of vulnerable populations by investigating opportunities for climate change mitigation and adaptation—including extreme weather, wildfires, resource scarcity, displacement, new disease patterns, and other impacts.

### EXAMPLE

Climate change and other aspects of ecological degradation are fueling an unprecedented spike in mental health concerns — particularly in youth facing eco-anxiety and lower-resourced communities contending with climate disasters. Stanford researchers are working to understand the scope of the problem — and identify opportunities to support mental health and build resilience.

## Pollution and Health



We seek to understand and reduce the impacts of ocean, land, and air pollution on health — and build solutions that will redesign industrial practices to mitigate environmental impact, support health,

and build more resilient and equitable economies.

### EXAMPLE

Emissions from brick manufacturing across South Asia have the equivalent climate impact of the US passenger car fleet and are estimated to result in 40,000 excess deaths each year. Stanford researchers are collaborating with colleagues in Bangladesh and India to develop low-cost interventions that improve kiln efficiency and reduce coal consumption — simultaneously protecting health, reducing emissions and brick manufacturers' operating costs.

## Disease Ecology in a Changing World



We investigate the ecological, environmental, and socioeconomic determinants of diseases transmitted through the environment, including vector-borne, parasitic, zoonotic, and wildlife diseases. We project their future distributions under scenarios of climate change and develop ecological solutions to control disease transmission, improve human health, and protect the health of the environment that underpins it.

### EXAMPLE

Managing water for agriculture — including through dams and irrigation systems — may affect the dynamics of parasitic diseases. Stanford researchers are integrating field

studies with epidemiological models and drone and satellite imagery to identify schistosomiasis transmission hotspots, to explore opportunities for complementing medical treatment with biological control of disease vectors, and to design decision support systems to integrate health risk assessment into agricultural policies.

## Food Systems, Health and the Environment



Food systems globally are responsible for approximately 25-30% of total greenhouse gas (GHG) emissions. Reducing GHGs from food systems while improving food security and healthy diets can be achieved through action on multiple fronts — including developing lower-emission production technologies, recommending new policies and practices that reduce emissions, and supporting lower-carbon diets.

### EXAMPLE

Globally, more than 1 billion people rely on seafood, yet this source of vital nutrition is often neglected by discussions on food systems. The Human and Planetary Health Initiative partnered with the Stanford Center for Oceans Solutions to launch a new course called the Blue Foods Action Lab, where students had the opportunity to partner with the Indonesian Ministry of National Development Planning to build blue foods into Indonesia's national development strategy.