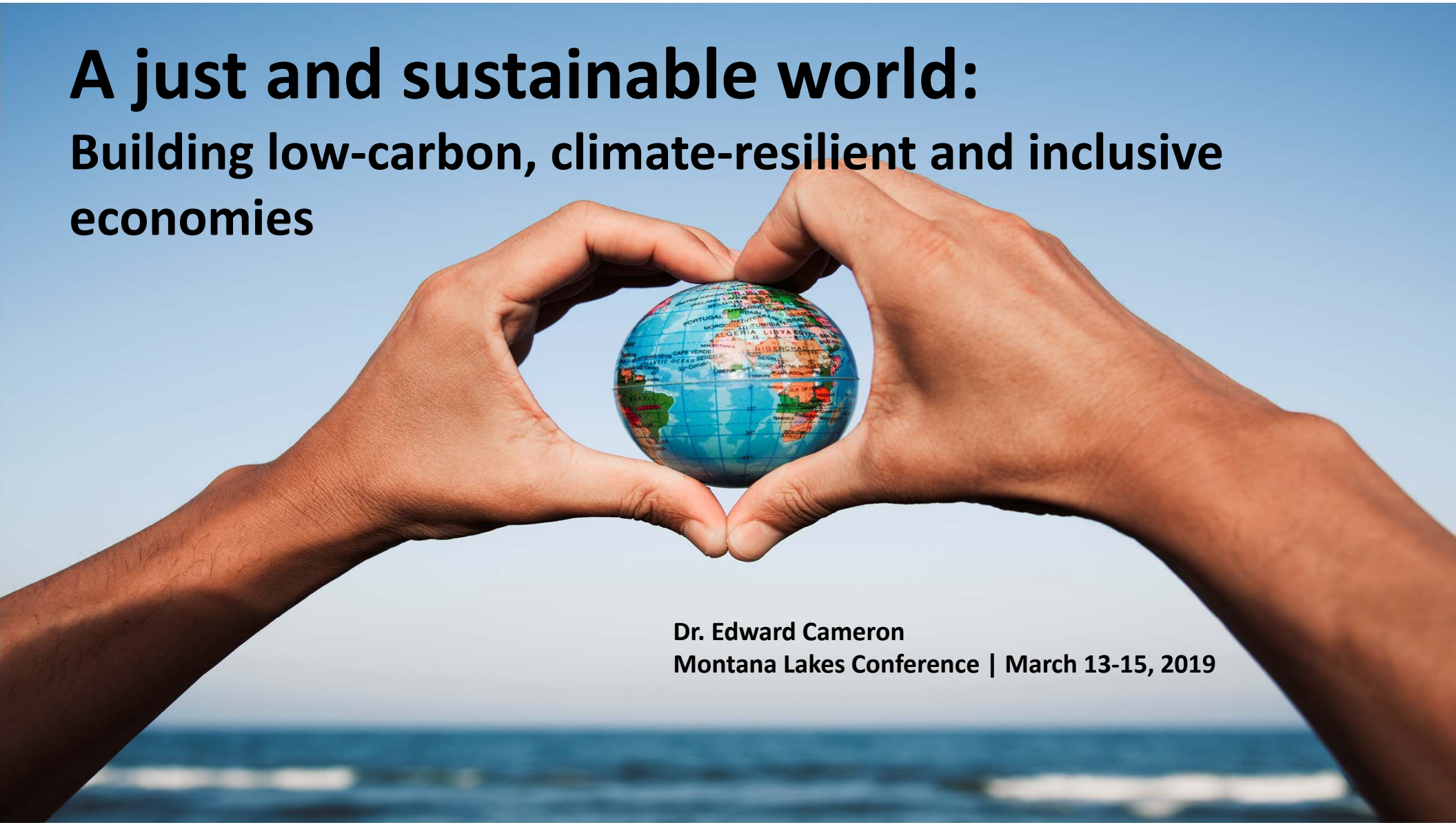
# A just and sustainable world:

## Building low-carbon, climate-resilient and inclusive economies

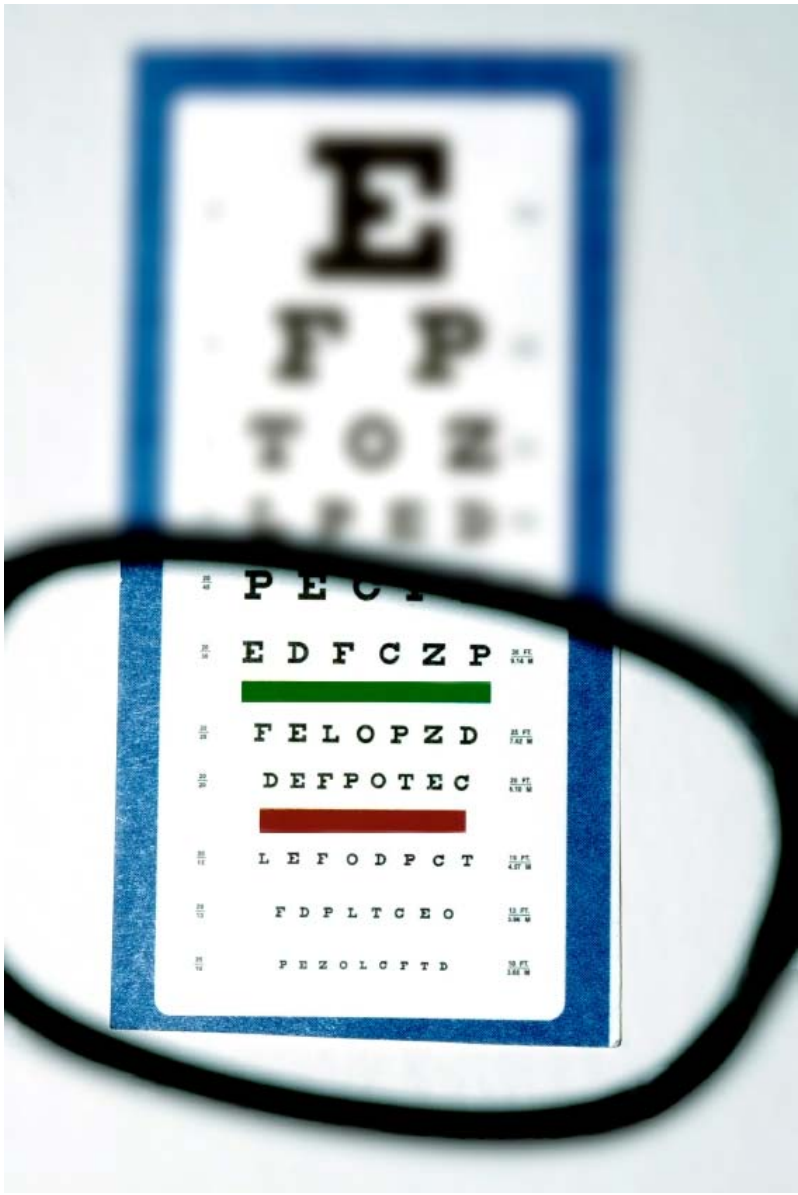


**Dr. Edward Cameron**

**Montana Lakes Conference | March 13-15, 2019**

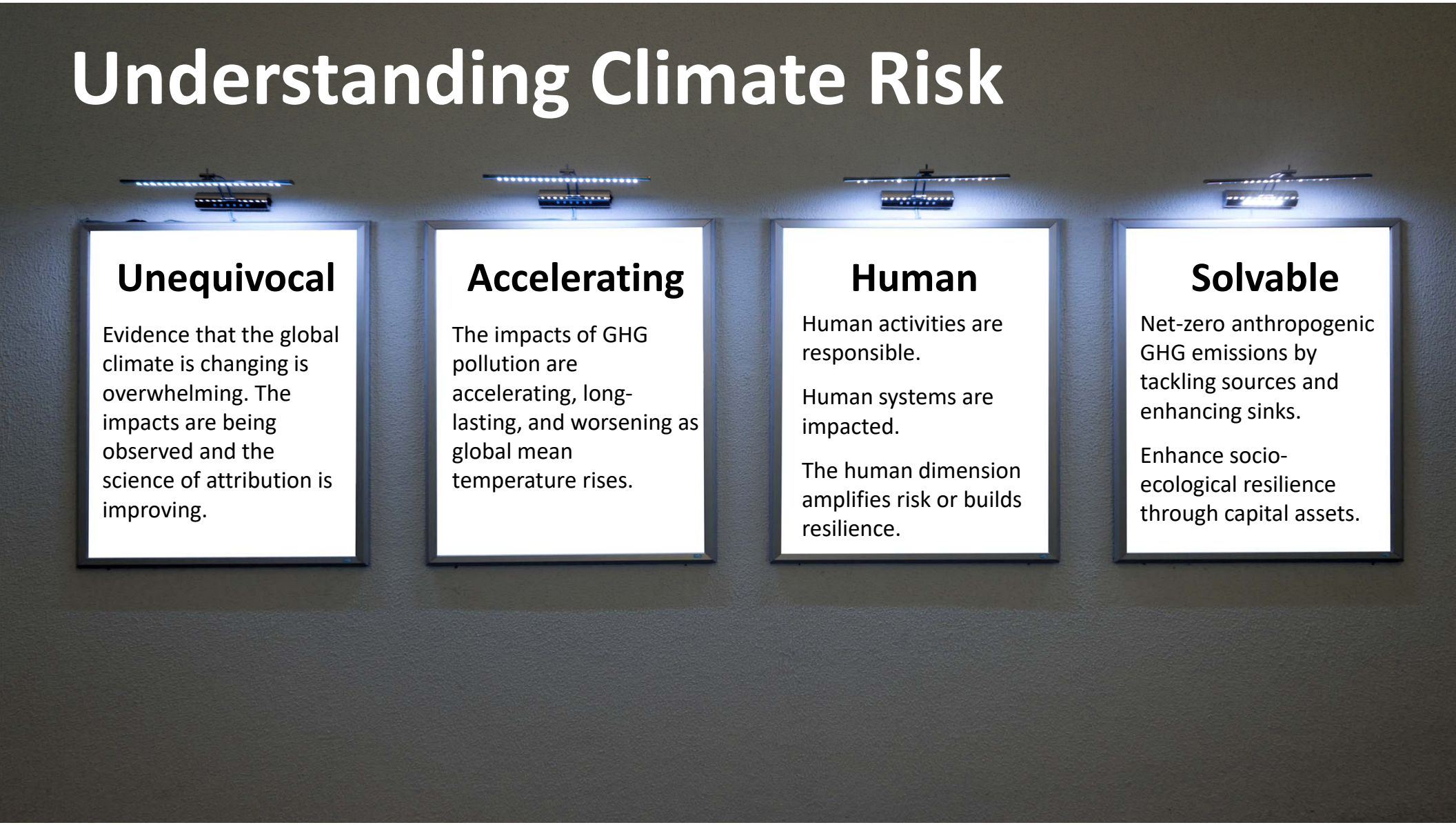
# Our Focus

1. Understanding **climate risk**
2. The **Transition** has begun
3. The **New Climate Leadership**



# Understanding Climate Risk

# Understanding Climate Risk



## Unequivocal

Evidence that the global climate is changing is overwhelming. The impacts are being observed and the science of attribution is improving.

## Accelerating

The impacts of GHG pollution are accelerating, long-lasting, and worsening as global mean temperature rises.

## Human

Human activities are responsible.

Human systems are impacted.

The human dimension amplifies risk or builds resilience.

## Solvable

Net-zero anthropogenic GHG emissions by tackling sources and enhancing sinks.

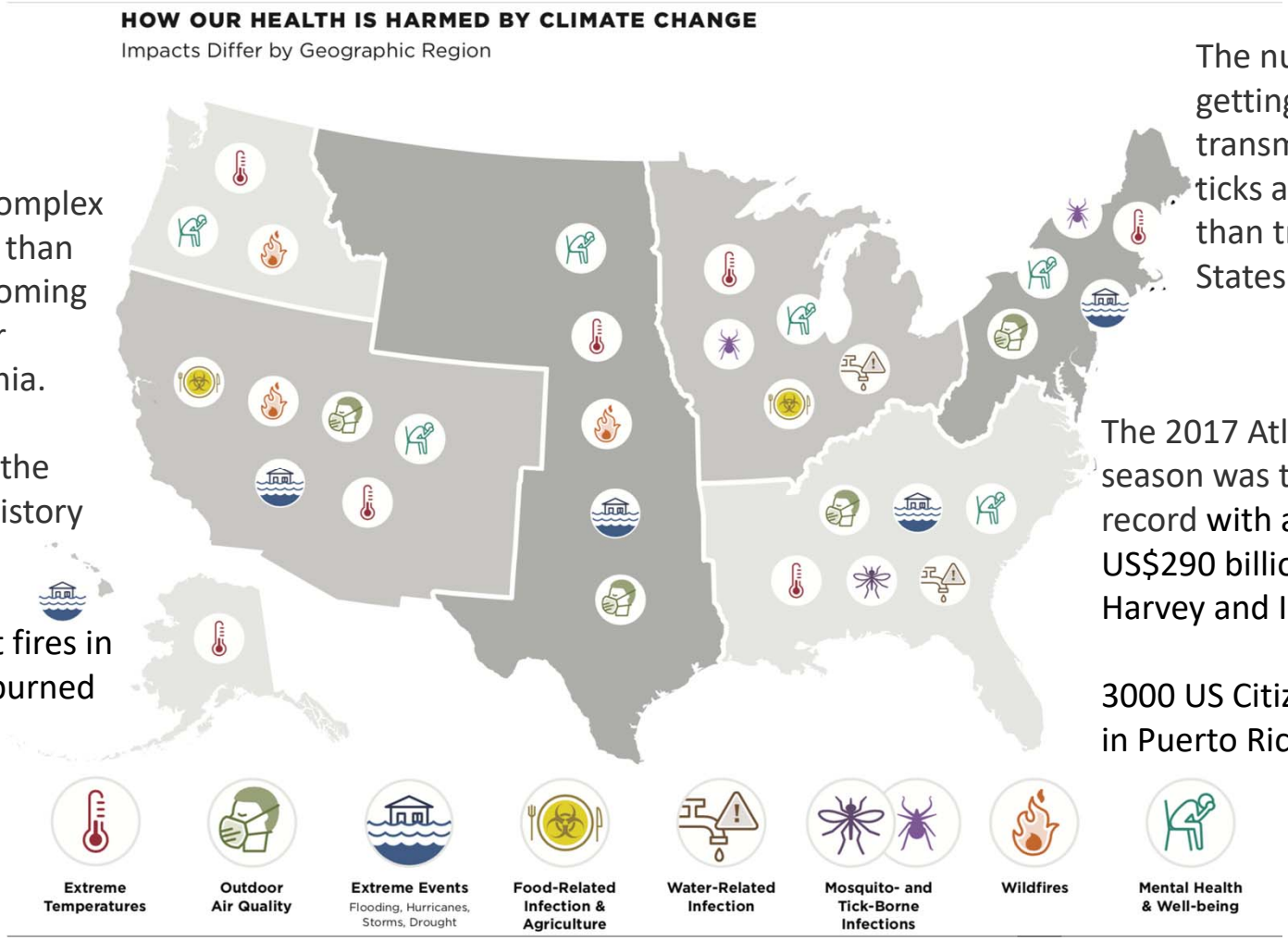
Enhance socio-ecological resilience through capital assets.

# Understanding Climate Risk

The “Mendocino Complex Fire” grew to more than 300,000 acres, becoming the largest fire ever recorded in California.

The “Camp Fire” is the deadliest in State history with 100 deaths.

15 of the 20 largest fires in state history have burned since 2000.




The number of people getting diseases transmitted by mosquitos, ticks and fleas has more than tripled in the United States since 2004.

The 2017 Atlantic hurricane season was the costliest on record with a total of over US$290 billion in damages from Harvey and Irma alone.

3000 US Citizens lost their lives in Puerto Rico.

# Understanding Climate Risk

The global cost of climate change is estimated to reach between **$2 trillion and $4 trillion** by 2030 and could be as high as **$24 trillion**.

There have been 200 weather and climate disasters in the US since 1980 where the overall damages exceeded US$1 billion. **The total cost exceeds US$ 1.1 trillion**.

**70% of global catastrophe losses are uncovered** leaving individuals, firms and governments to carry the losses.

# Understanding Climate Risk

Changes in precipitation patterns

"Meteorological", "Agricultural" and "Hydrological drought"

Freshwater supply from spring snow melt

Habitat fragmentation and biodiversity loss

Salt-water intrusion

Invasive species

# Understanding Climate Risk

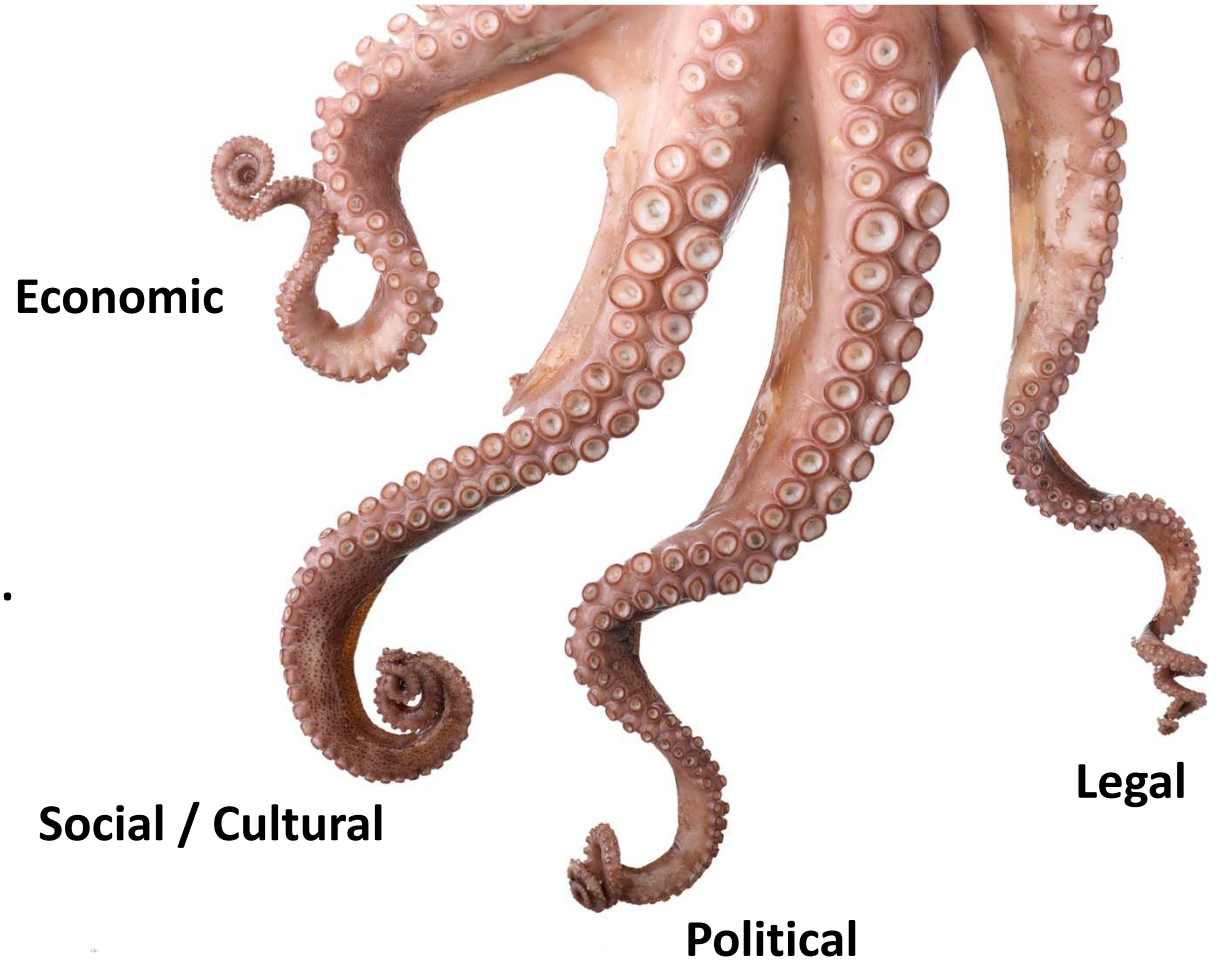
**Hazard.** Climate change hazards include extreme weather events such as hurricanes.

**Exposure.** Are homes, businesses, infrastructure and people in the path of the storm?

**Vulnerability.** Are there *underlying weaknesses* that increase susceptibility to harm?

# Understanding Climate Risk

The role of structural discrimination and intersecting inequalities.



# Understanding Climate Risk

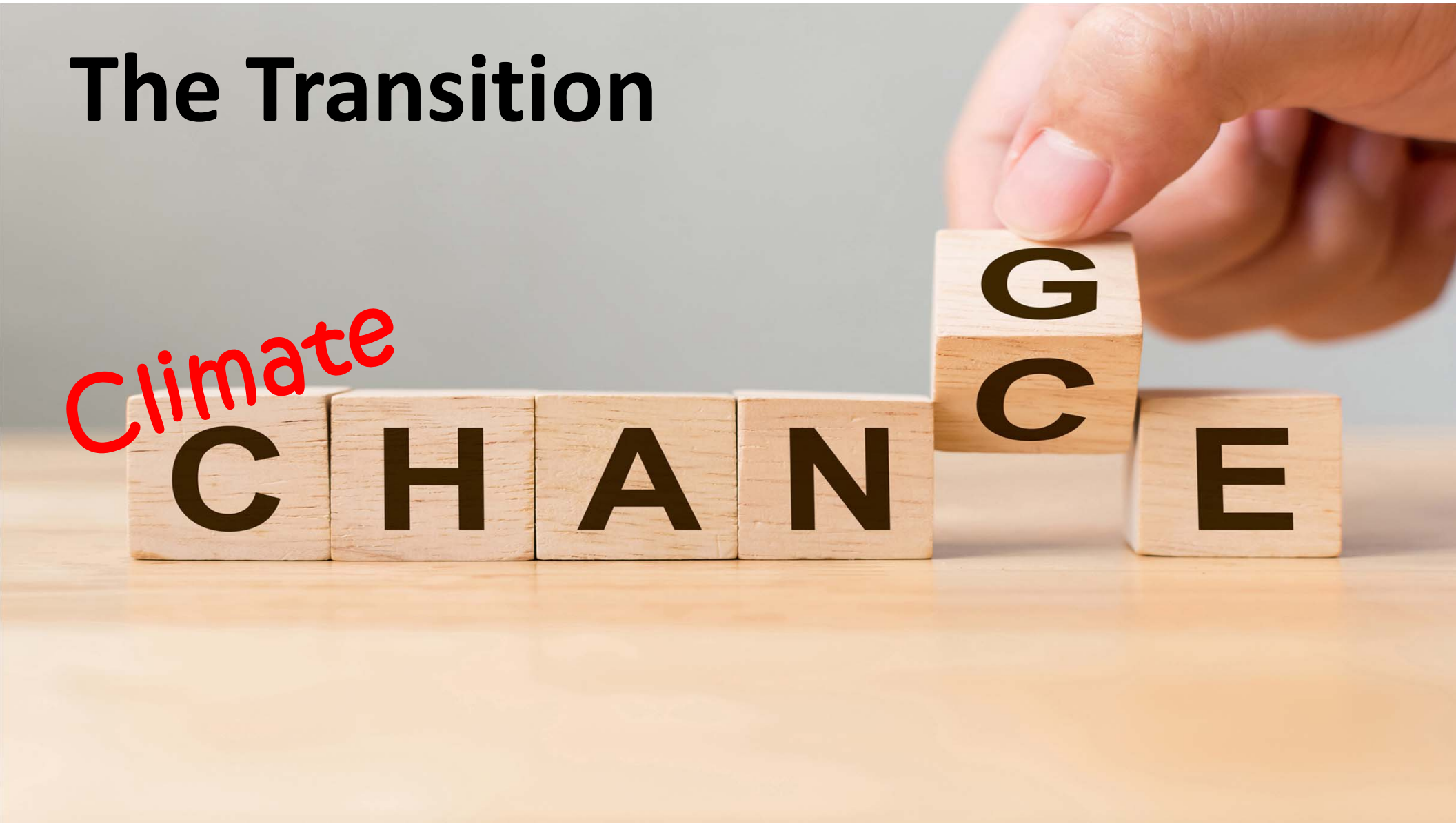
**A study of 141 natural disasters between 1981 and 2002 found that natural disasters on average kill more women than men or kill women at a younger age than men.**

**More than 90%** of the estimated 140,000 fatalities in the 1991 cyclone “Gorky” in Bangladesh were women.

**70% of all fatalities** from the 2004 Indian Ocean tsunami were women.

While women make up 54% of the population of New Orleans, **80% of the people left behind** after the storm were women.

# The Transition



# The Paris Agreement

**UNPRECEDENTED** in ambition and participation.

**DEFINING** in its impact on the global economy.

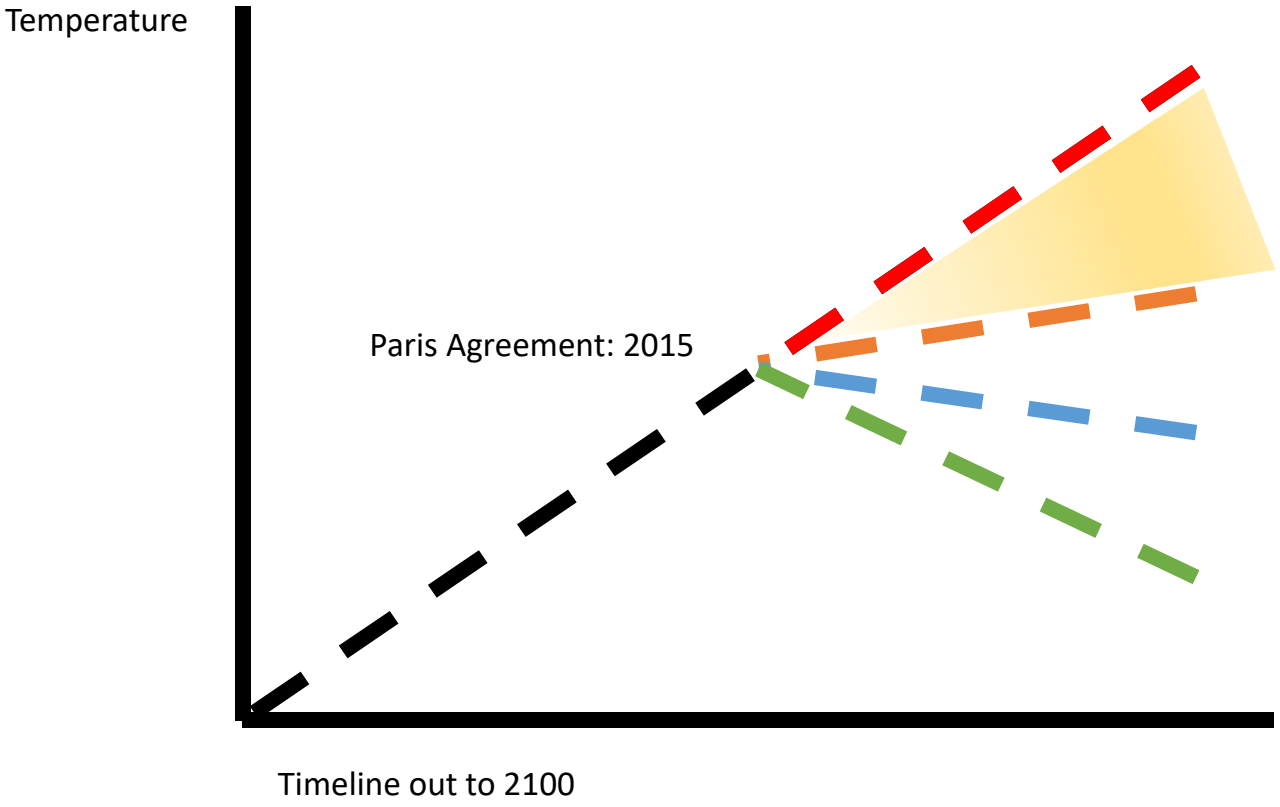
**IMMEDIATE** in market signal and policy translation.

**ELASTIC** with the potential for forward progress and /or backsliding.

**INCOMPLETE** and only the first step in a longer journey.

# The Paris Agreement

The volume of emissions reductions is substantial but only a first step.



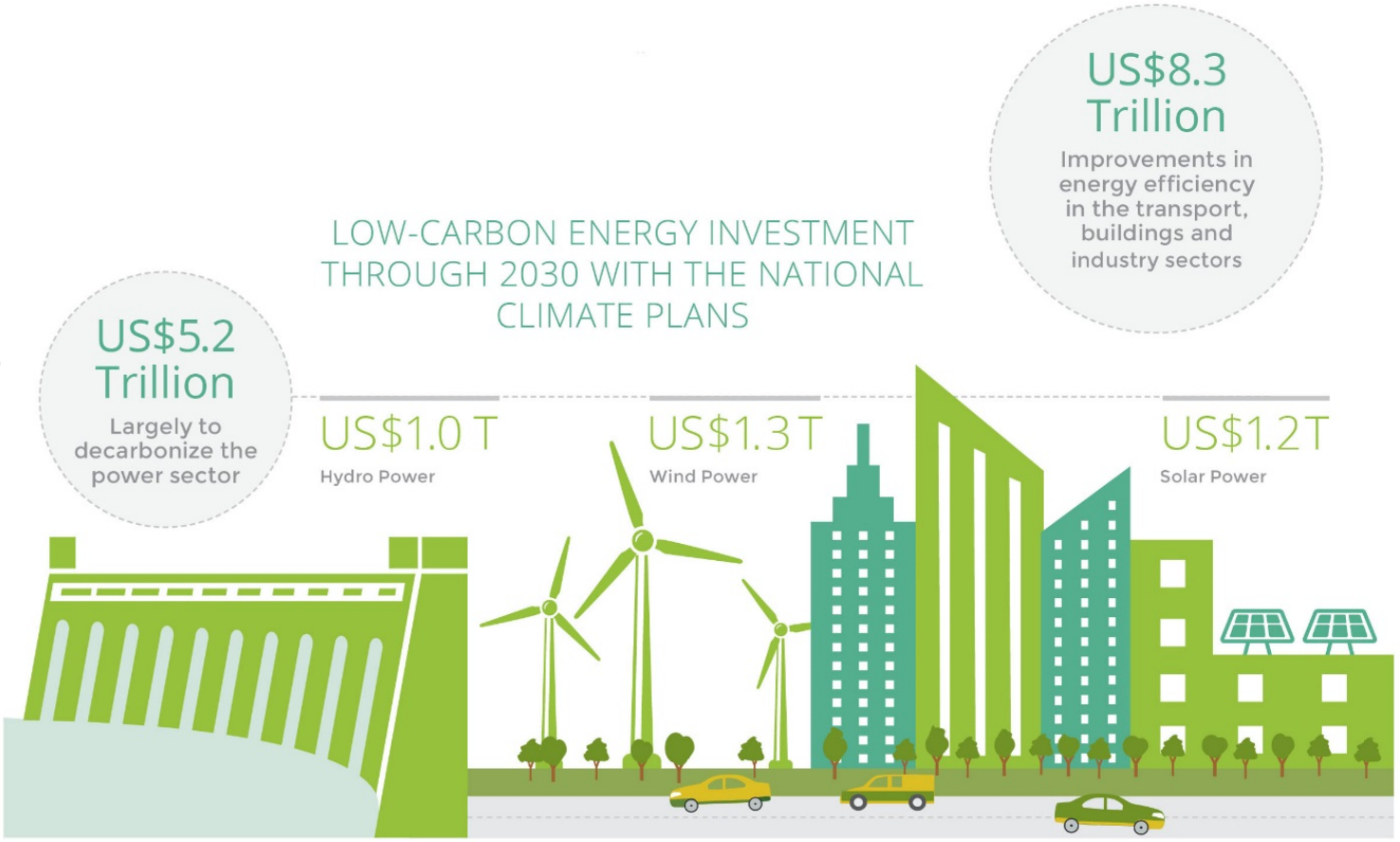

- **Baseline:** Without the Paris Agreement the world was on course for **4.8C temperature rises** by the end of the century.
- The current national climate action plans are estimated to **limit warming to between 2.8C and 3.2C** by the end of the century.
- The Paris Agreement identifies 2C as the upper limit for avoiding dangerous climate change.
- An **aspirational target of 1.5C** is considered critical for the most vulnerable ecosystems and populations.

# The Paris Agreement

The Paris Agreement is an economic stimulus for the global economy.

All major economies are committing to restructuring their energy systems, changing transport patterns, and transforming infrastructure, buildings and land use.

Collectively, the national climate plans under the Paris Agreement **represent at least a US$13.5 trillion market for the energy sector alone**.



# The view from China

China is building a new economy and reaping the rewards

China agreed to **peak carbon-dioxide emissions around 2030** and **increase its non-fossil-fuel share of energy to around 20% by 2030.**

**China is already the world's #1 investor in renewable energy.** China invested US$102bn in renewable energy in 2015 and will invest US$360bn more. The US invested US$44bn in 2015.

China aims to **create 13 million new jobs by 2020 in the clean energy sector**. Between 2012 and 2015 China added 1.8m jobs in renewables. The US added only 157k. China is home to the world's largest wind company and five of the top six solar firms.

# The private sector is charging ahead

**Over six thousand companies and investors, representing US$36 trillion in revenue**, have committed to climate action.

In 2016 **the four largest companies in the world submitted briefs to the Supreme Court** to support the Clean Power Plan.

**41 of the 90 fossil fuel & cement companies** responsible for 2/3 of historic GHGs have made climate commitments.

# The private sector is charging ahead

## ADOPT A SCIENCE-BASED EMISSIONS REDUCTION TARGET

SONY
GENERAL MILLS
Coca-Cola
PEPSICO
Walmart
KERING
Unilever
Kellogg's
hp
DELL
Pfizer
DIAGEO
McDonald's
COLGATE-PALMOLIVE

**300+**

companies have committed to take **science-based climate action**

Their combined emissions are comparable to **158 million cars** being driven for one year

*this represents data for 92% of the companies

Their **combined market value** is estimated at **$6,595 trillion**

which is roughly equal to the value of the **NASDAQ Stock Exchange**

*this represents data for 87% of the companies

# The private sector is charging ahead

## COMMIT TO 100% RENEWABLE POWER

**2/3** of FORTUNE 100 companies have set a renewable energy goal.

**122** companies have committed to **100%** renewable energy procurement through RE100.

These companies have a collective revenue of over **US$2.75tn.** Together they represent the equivalent demand for energy of New York State or Poland.

# The American Experience

**US National Climate Action Plan**

GHG Reductions of 26% to 28% below 2005 levels by 2025.

68%-76% reductions on 2005 levels by 2050.

The Clean Power Plan (CPP), issued under the Clean Air Act, aimed to reduce emissions from the power sector by 32% below 2005 levels by 2030.

# The American Experience

**Personnel**

*(Myron Ebbel, Bill Wehrum, Andrew Wheeler, Scott Pruitt, Ryan Zinke)*

**Policy**

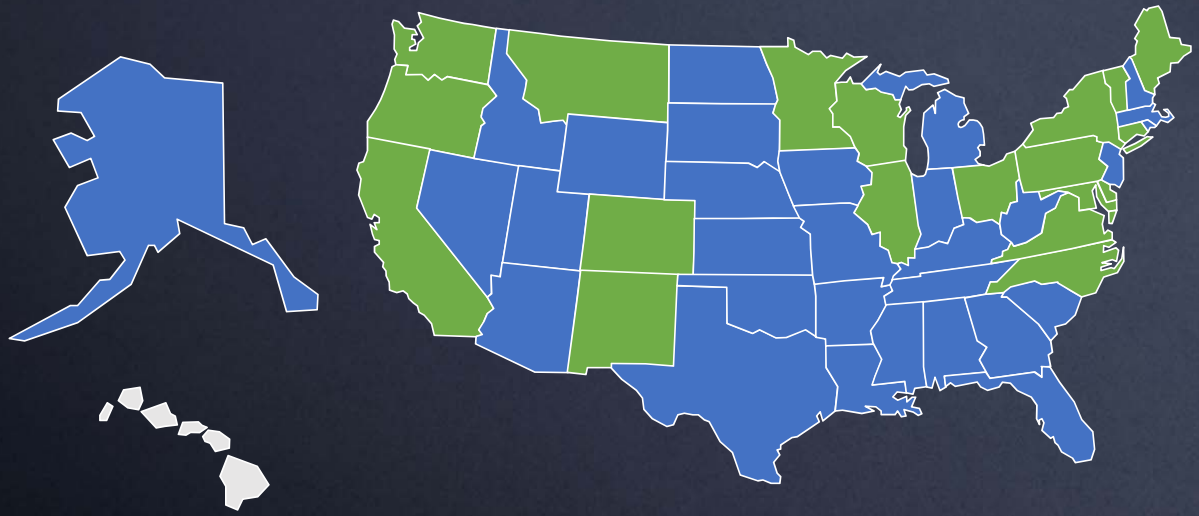
**The terms of the debate & public reasoning**

**Damage to diplomacy**

**The Courts**

# The American Experience

23 States are committed to implementing / supporting the Paris Agreement and implementing ambitious climate policies.



The American Experience
1. Uninformed
2. Misinformed
3. Squeezed Out
4. Misleading

# The New Climate Leadership

# Let’s be agents of change

**Act**. Take steps to reduce your own GHG emissions. Think about your energy use and mix; your diet; your transportation.

**Enable.** Educate and support others to act within your household, workplace and community. Build a vocabulary of arguments to appeal to others who may be new to climate change.

**Influence.** The greatest assets you have are your vote and your power as a consumer. Insist that your elected officials stand-up for climate ambition. Demand action on climate change from the companies you buy from and invest in.

# Understand the problems to find the solutions

# Reduce emissions

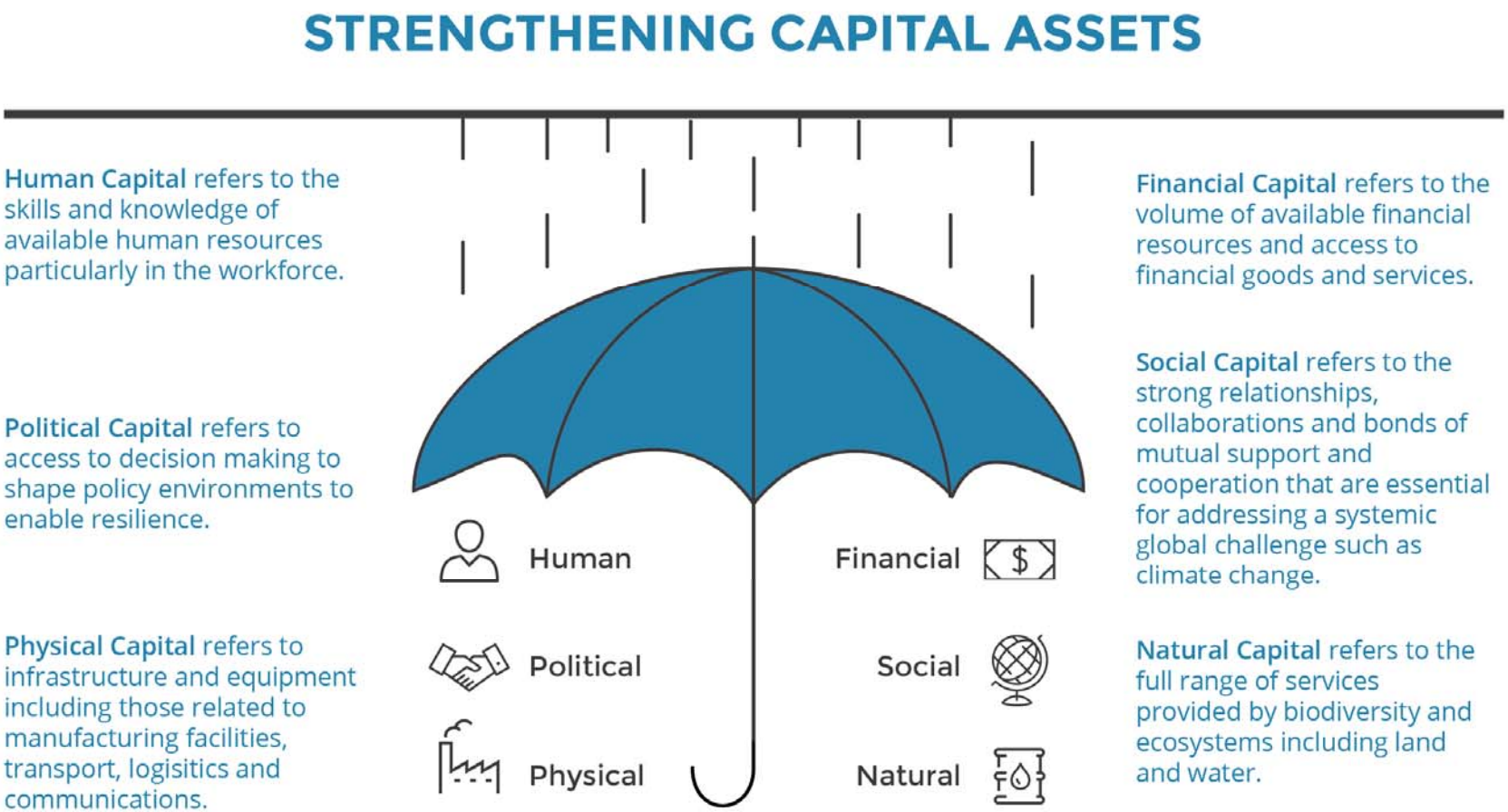
**Energy**: Reduce your energy use and change your energy mix.

**Transportation**: Think about your transport options and pay close attention to MPGs when purchasing your next vehicle. Monitor what you buy and where you buy it from.

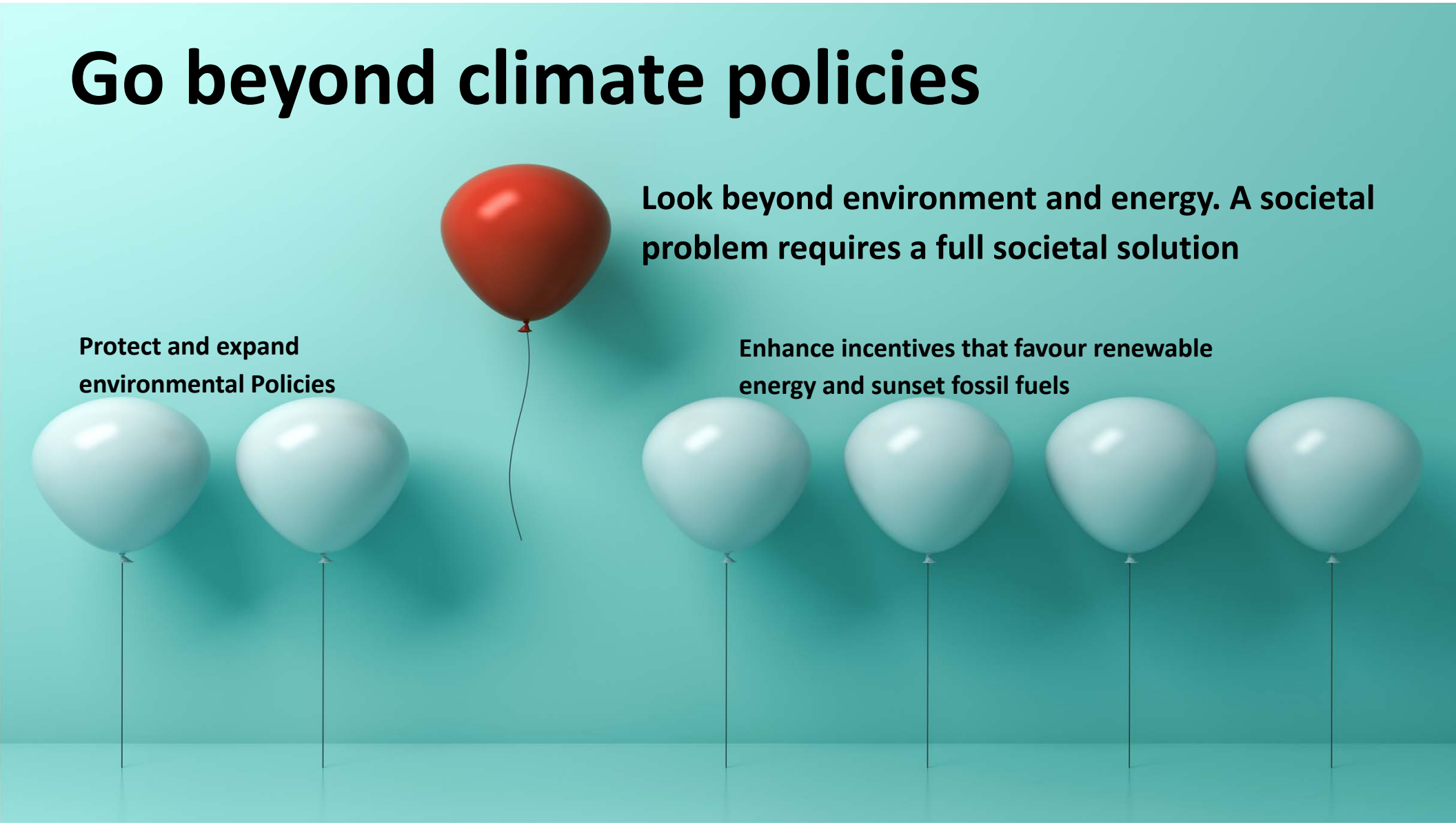
**Food**: Changing your diet and minimizing waste can have a huge impact.

**Consumption**: Think about what you buy and where you buy it.

# Enhance resilience



# Go beyond climate policies



**Look beyond environment and energy. A societal problem requires a full societal solution**

**Protect and expand environmental Policies**

**Enhance incentives that favour renewable energy and sunset fossil fuels**

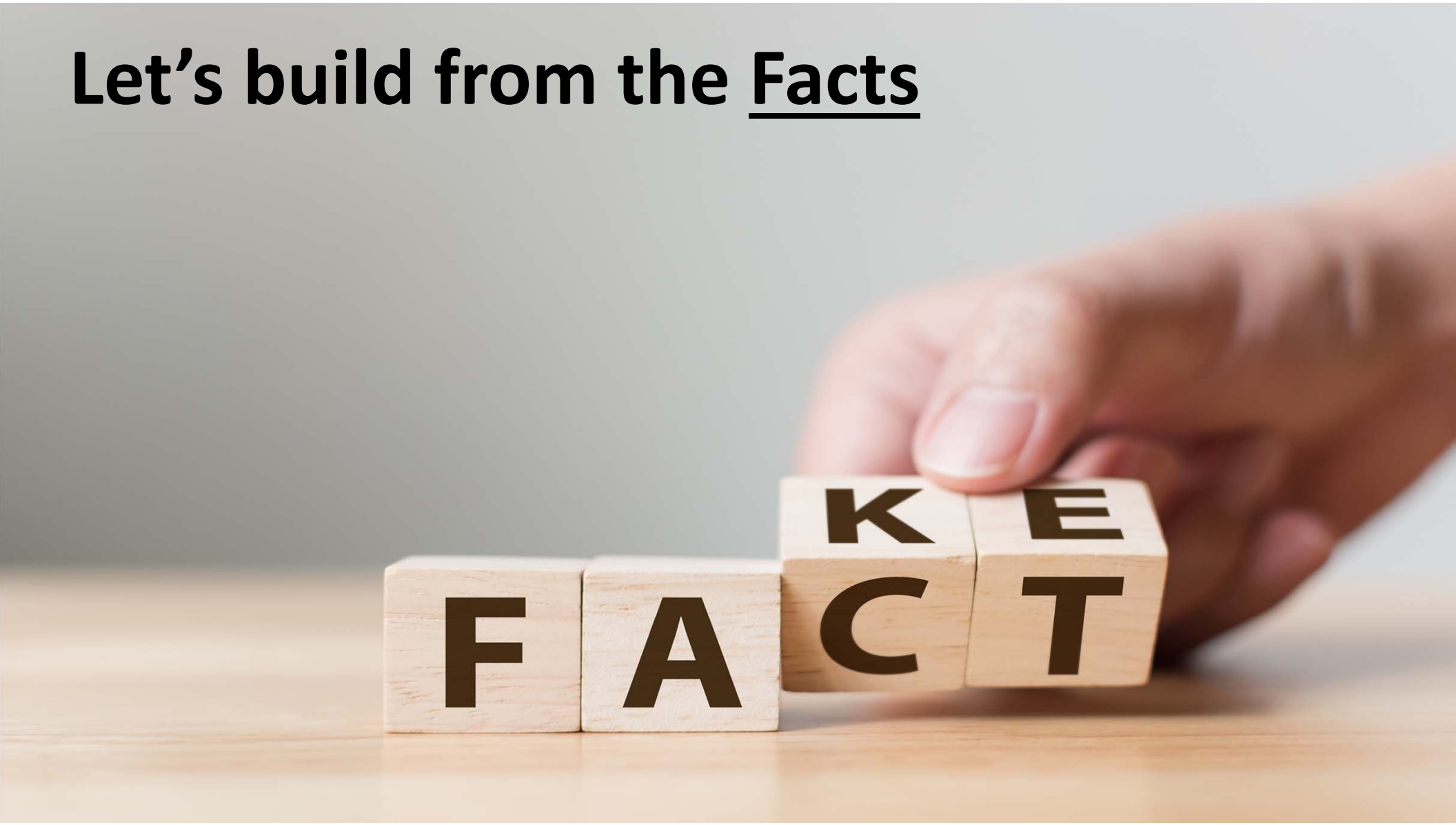
# Strengthen human rights

# Address your captive audience

“Its not enough to be active, its not enough to be proactive, we need to be activist”.

# Become an educator

# Let’s build from the Facts



# Employ the power of narratives

An **expanded vocabulary of arguments** can help us reach new constituencies of action by broadening the terms of the climate change debate.

# Use the power of the purse

# Improve our democracy

**“It’s very hard to see us fixing the climate, until we fix our democracy.”**

***Dr. James Hansen.***

# Collaborate with others

# Offer an optimistic vision

**“We have to pursue this topic not with a threat but with an invitation, with an expectation that we can get to some place better.”**

**Bryan Stevenson**

# What future will we choose?

# Thank you!

**Dr. Edward Cameron**

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