

# The Climate Adaptation Landscape

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**The New York Times**

***Climate Change Is Harming the Planet  
Faster Than We Can Adapt, U.N.  
Warns***

Countries aren't doing nearly enough to protect against the disasters to come as the planet keeps heating up, a major new scientific report concludes.

# What is adaptation?





Collective action is necessary



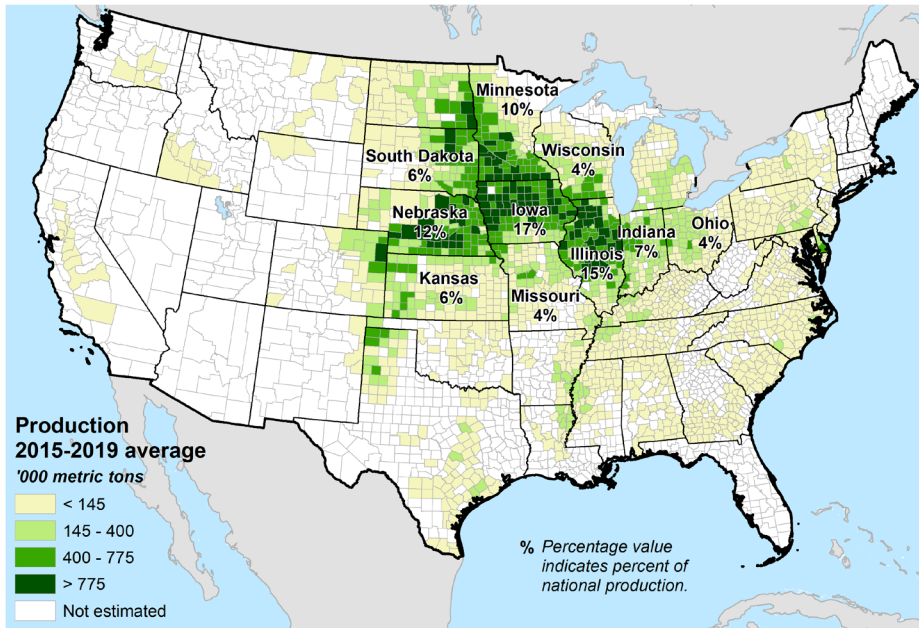


Adapting to the  
climate and  
geography is  
nothing new

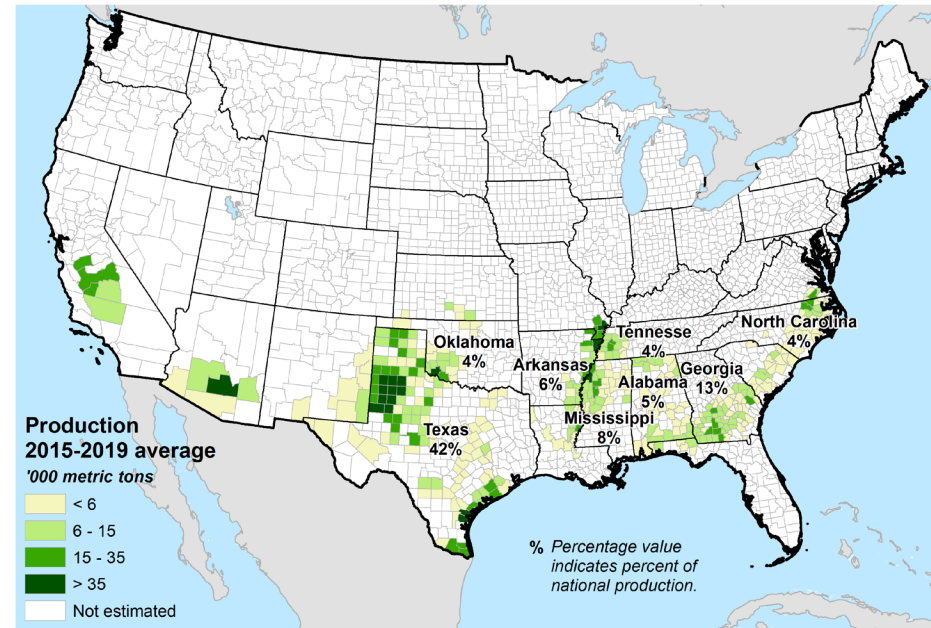


# Individual actions depend on and collectively influence larger systems

United States: Corn Production



United States: Cotton Production



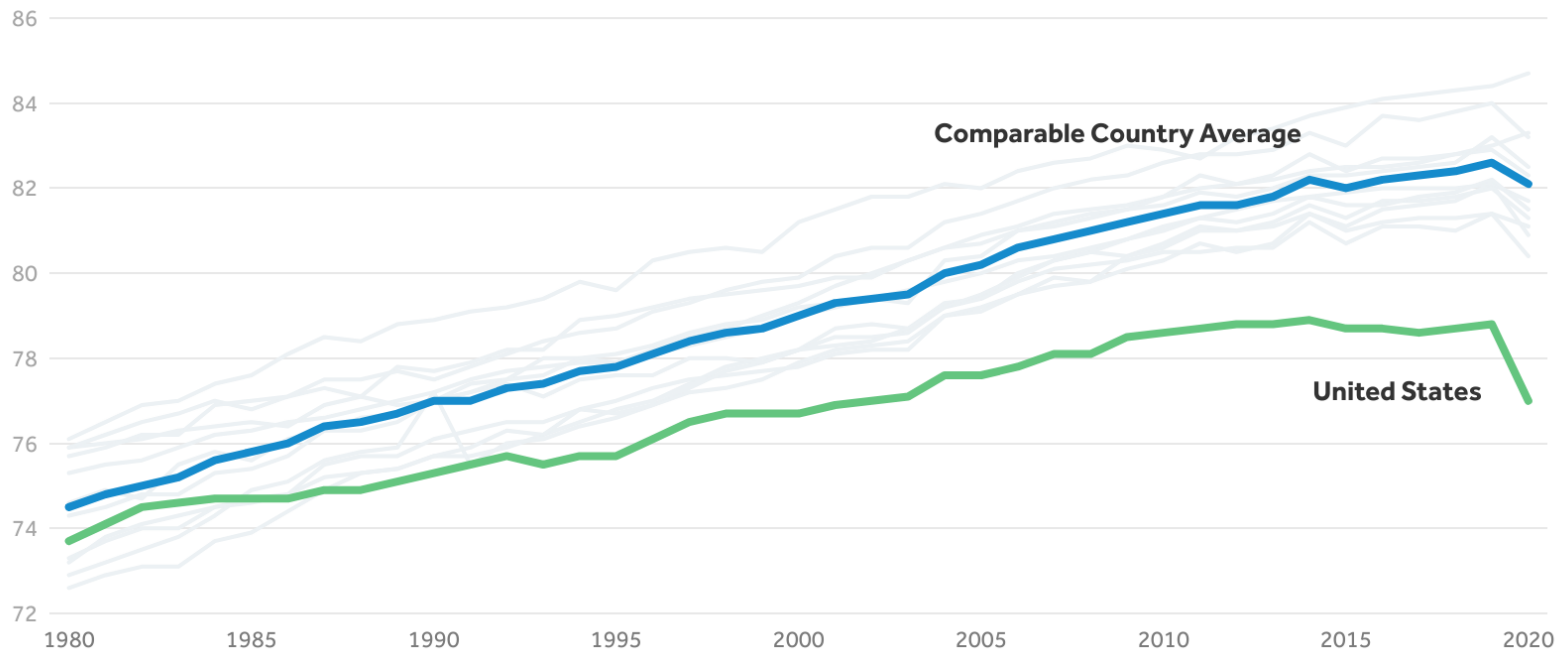
It's preferable not to adapt the hard way





# We could do better even with a stable climate

Life expectancy at birth in years, 1980-2020



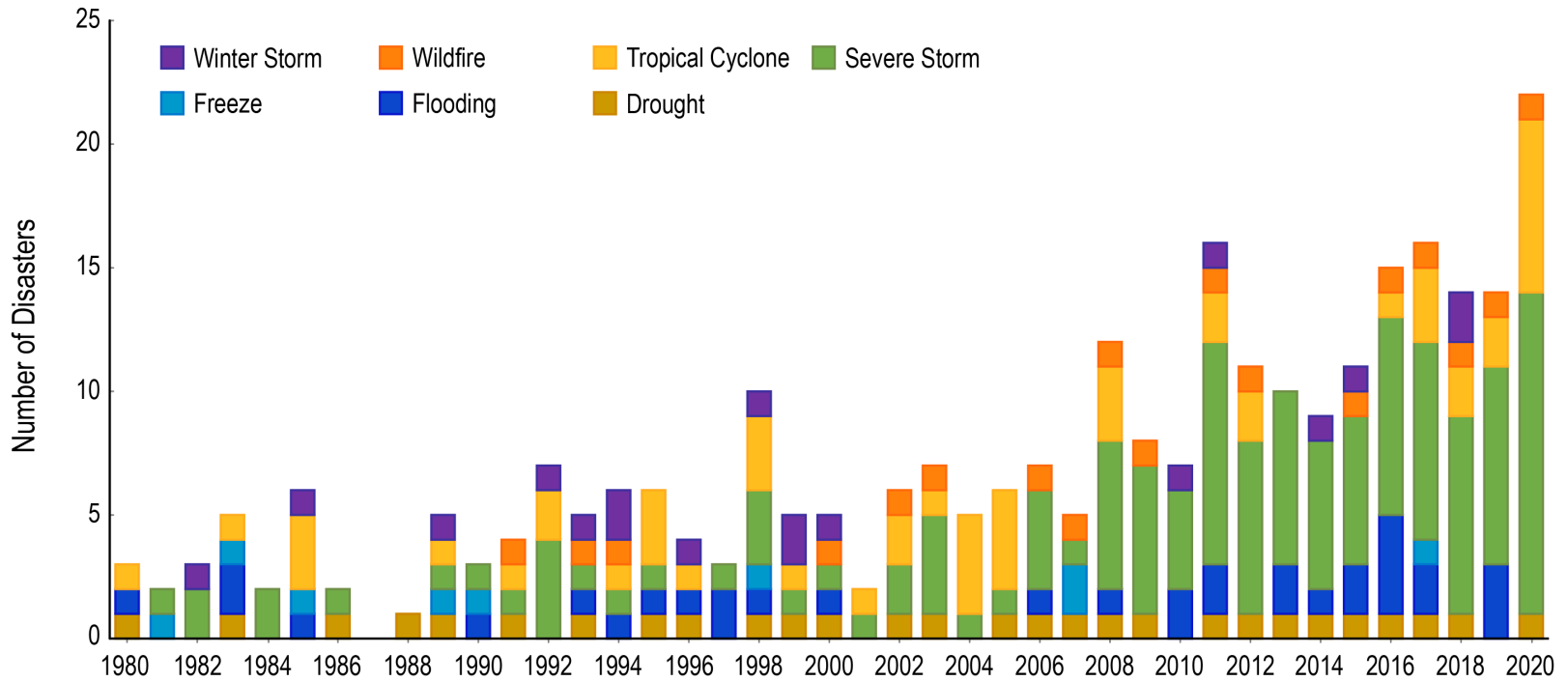
Notes: 2019 & 2020 data for the United States is from CDC. 2020 life expectancy value for Australia is the unweighted average of male and female life expectancy from the Australian Bureau of Statistics. Break in series for Canada in 1982, Germany in 1991, Switzerland and Belgium in 2011, and France in 2013. 2020 values for Germany and United Kingdom are provisional.

Source: KFF Analysis of CDC, Australian Bureau of Statistics and OECD data



# Climate change is increasing the challenge

## U.S. Billion-Dollar Disaster Event Types by Year



Things built  
now will exist  
in a changed  
climate










Adaptation  
occurs at all  
geographic  
scales

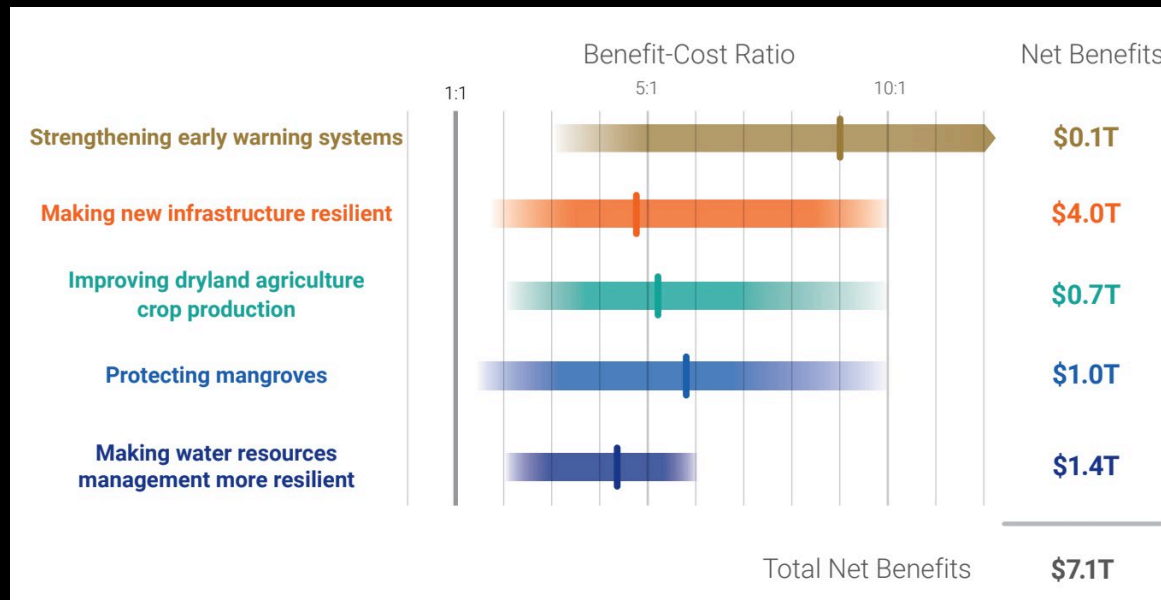




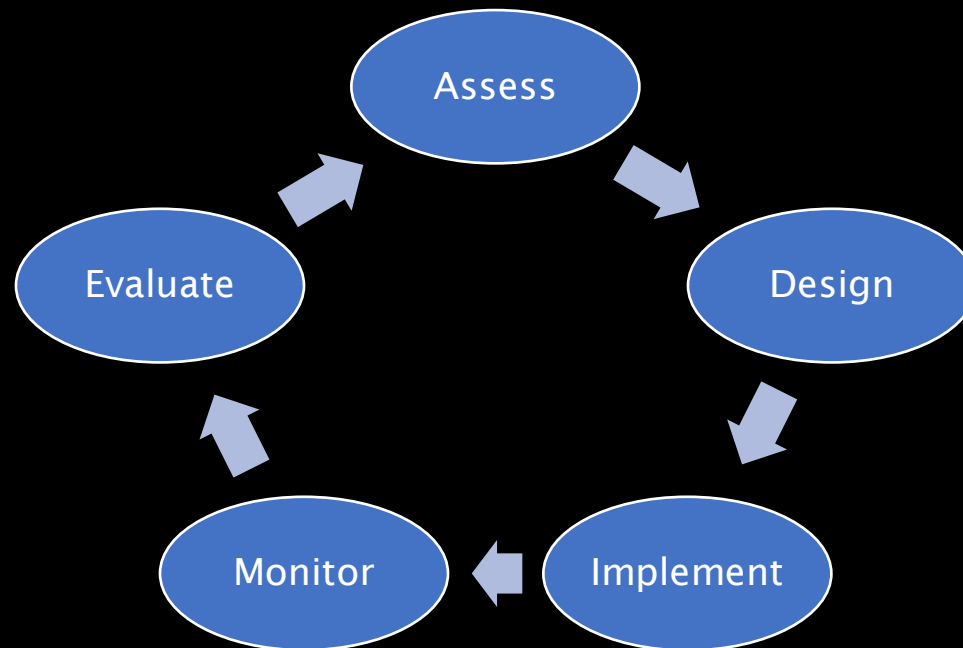
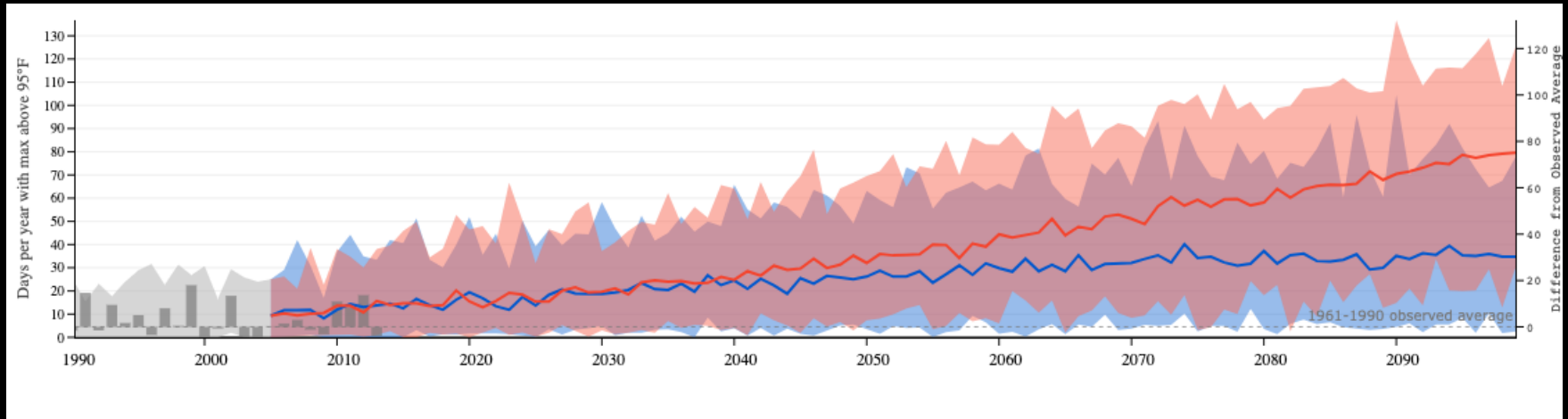
# Adaptation is a worthwhile investment

National Institute of BUILDING SCIENCES™		ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
<b>Overall Benefit-Cost Ratio</b>		<b>11:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>6:1</b>
<b>Cost (\$ billion)</b>		<b>\$1/year</b>	<b>\$4/year</b>	<b>\$520</b>	<b>\$0.6</b>	<b>\$27</b>
<b>Benefit (\$ billion)</b>		<b>\$13/year</b>	<b>\$16/year</b>	<b>\$2200</b>	<b>\$2.5</b>	<b>\$160</b>
 <b>Riverine Flood</b>		<b>6:1</b>	<b>5:1</b>	<b>6:1</b>	<b>8:1</b>	<b>7:1</b>
 <b>Hurricane Surge</b>		not applicable	<b>7:1</b>	not applicable	not applicable	not applicable
 <b>Wind</b>		<b>10:1</b>	<b>5:1</b>	<b>6:1</b>	<b>7:1</b>	<b>5:1</b>
 <b>Earthquake</b>		<b>12:1</b>	<b>4:1</b>	<b>13:1</b>	<b>3:1</b>	<b>3:1</b>
 <b>Wildland-Urban Interface Fire</b>		not applicable	<b>4:1</b>	<b>2:1</b>	not applicable	<b>3:1</b>

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# How much adaptation is required?



# Attention and action is accelerating

**The Washington Post**

Capital Weather Gang

## White House launches climate initiatives to arm communities against floods, extreme weather

FEMA is seeking public input on revising federal flood standards, which have not been meaningfully changed in 45 years

**The New York Times**

## *Infrastructure Bill Makes First Major U.S. Investment in Climate Resilience*

The measure includes \$47 billion to help communities prepare for the new age of extreme fires, floods, storms and droughts that scientists say are worsened by human-caused climate change.



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Chart on Billion Dollar Disasters: U.S. Global Change Research Program

Chart on Benefit-Cost Ratio: Global Commission on Adaptation