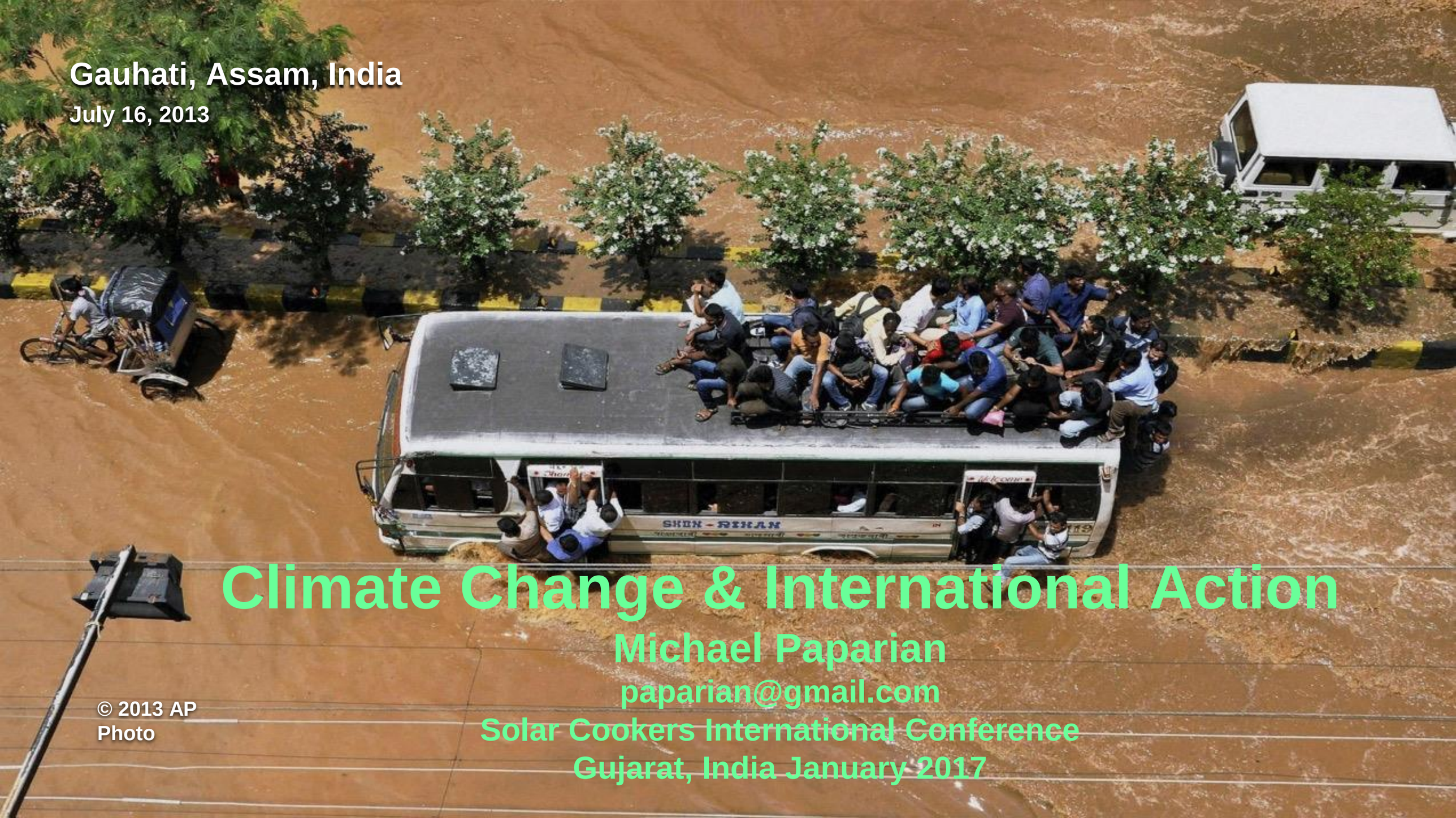

Climate Change & International Action

Michael Paparian
paparian@gmail.com

Solar Cookers International Conference
Gujarat, India January 2017

Where Do Greenhouse Gases Come From?

NASA Provided Data

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As CO2 & GHG Rise, Temperatures Increase, Ice Melts, Sea Level Rises

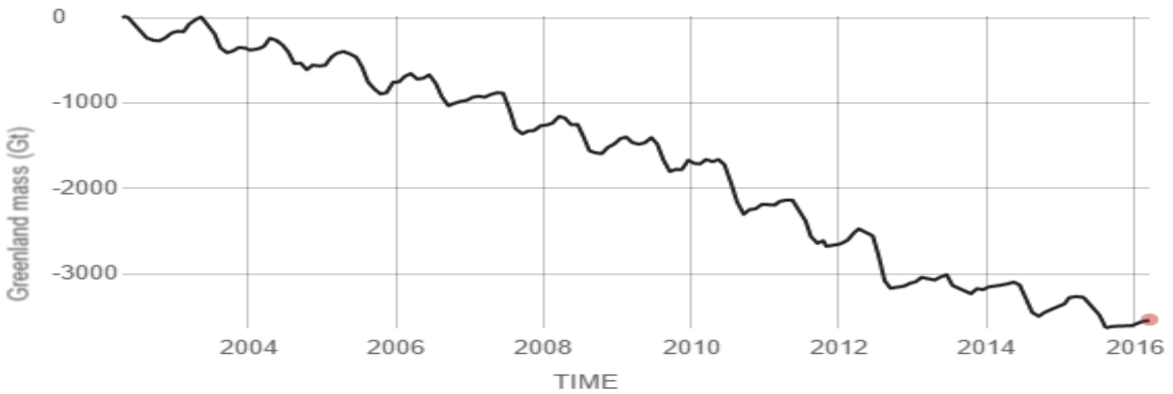
Data source: Reconstruction from ice cores.
Credit: NOAA

CO2

GREENLAND MASS VARIATION SINCE 2002

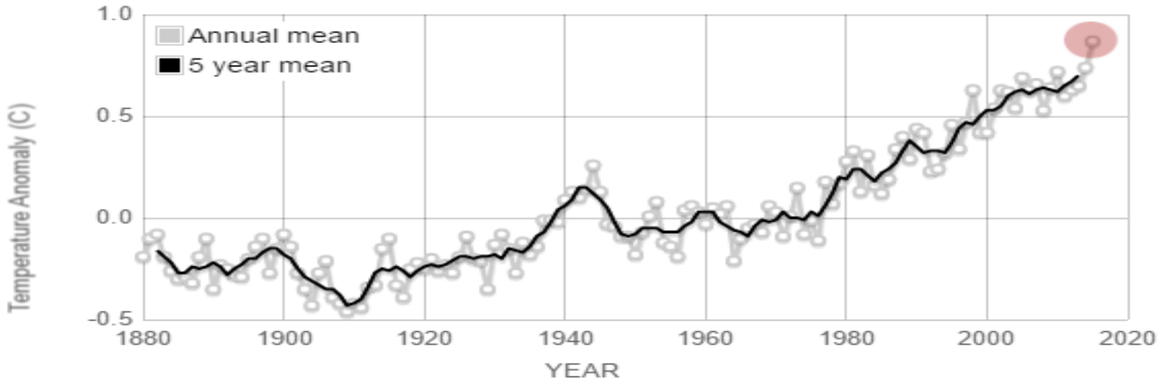
Data source: Ice mass measurement by NASA's GRACE satellites.
Credit: NASA

RATE OF CHANGE
↓ 281.0
Gigatonnes per year
margin: ±29



GLOBAL LAND-OCEAN TEMPERATURE INDEX

Data source: NASA's Goddard Institute for Space Studies (GISS).
Credit: NASA/GISS

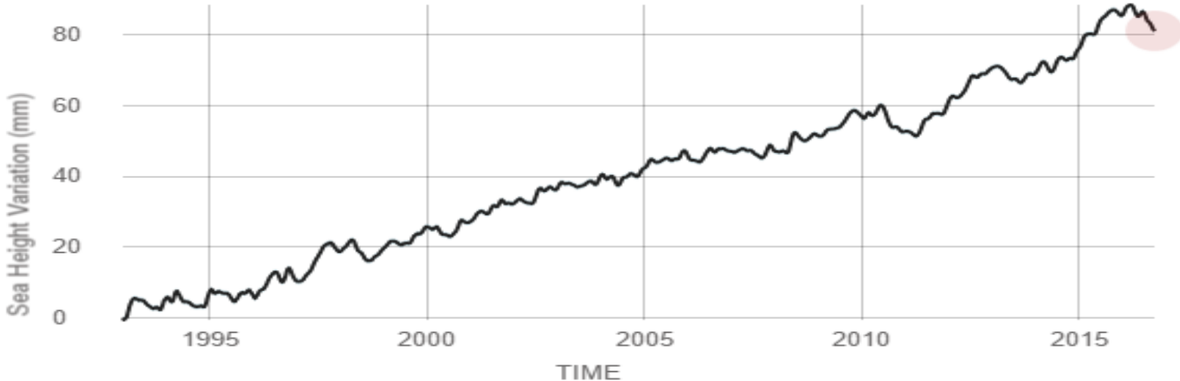


SATELLITE DATA: 1993-PRESENT

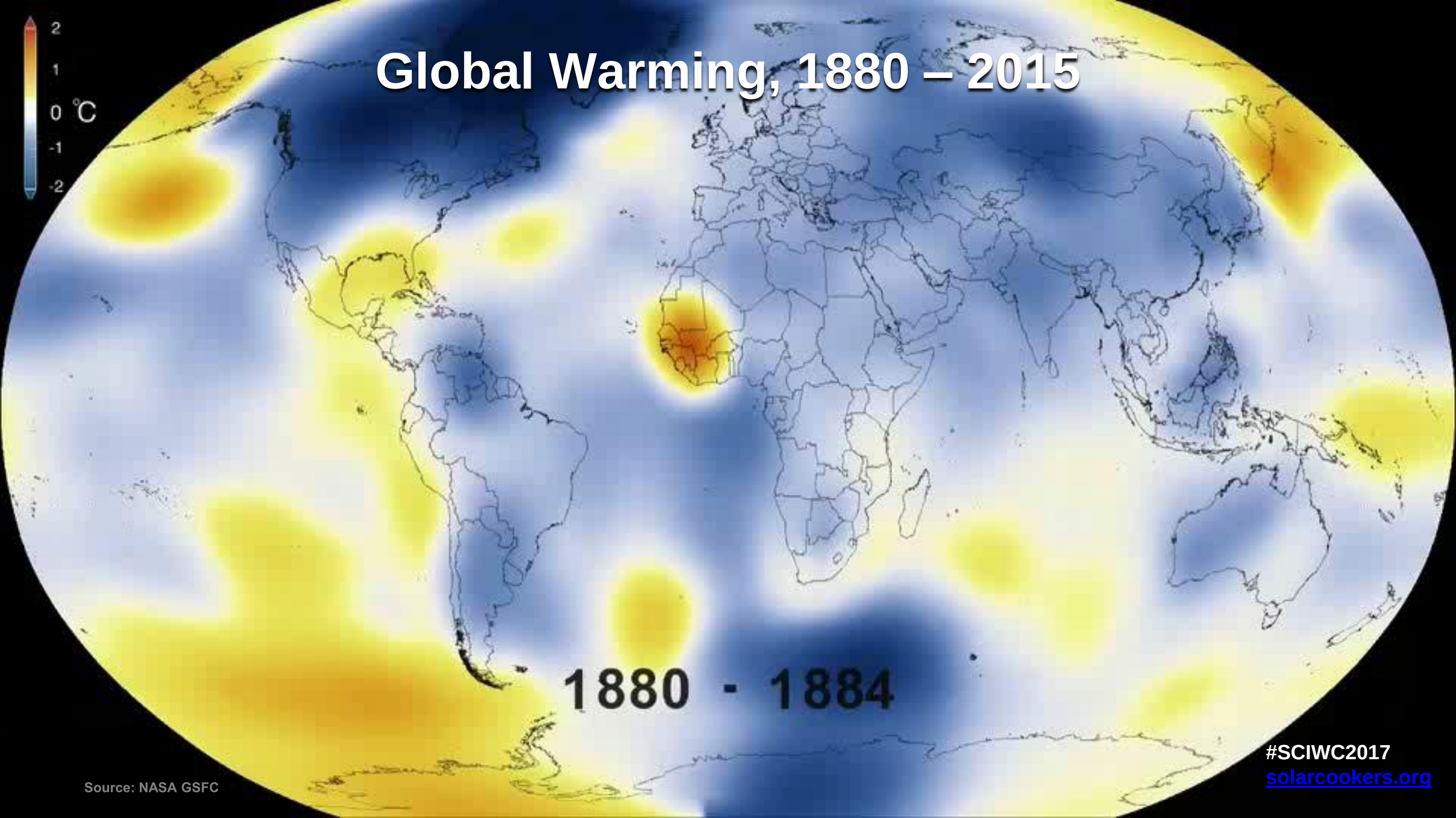
Sea Level Rise

Data source: Satellite sea level observations.
Credit: NASA Goddard Space Flight Center

RATE OF CHANGE
↑ 3.4
millimeters per year
margin: ±0.4



Global Warming, 1880 – 2015



Source: NASA GSFC

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Jammu, India
June 7, 2014
© 2014 AP Photo/Channi Anand


Rishikesh, Uttarakhand State, India
June 18, 2013
© 2013 AP Photo


Ahmedabad, India
May 21, 2015
At least 2,300 people died in the 2015 India heat wave
© 2015 AP Photo/Ajit Solanki


Ahmedabad, India
September 8, 2015
© 2015 Reuters/Amit Dave

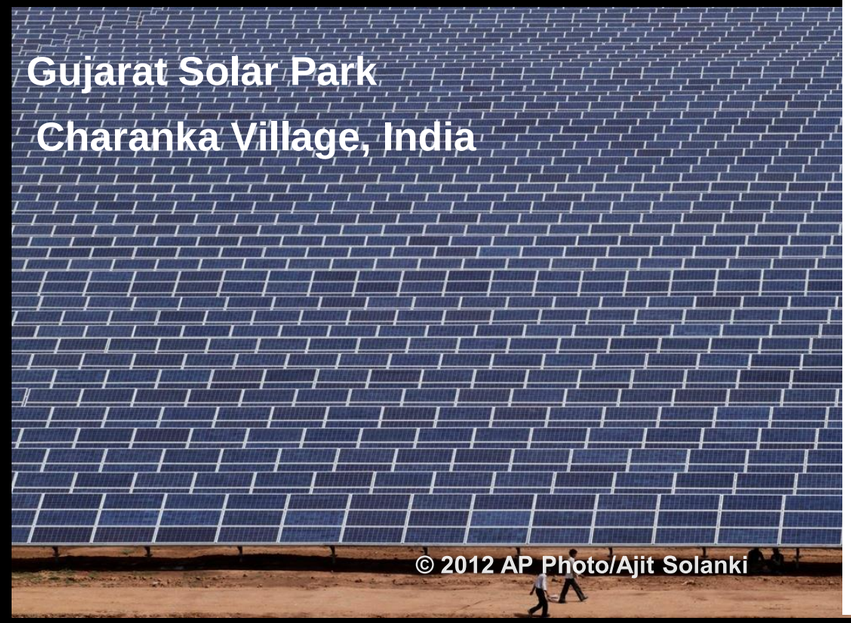
The Cost of Carbon

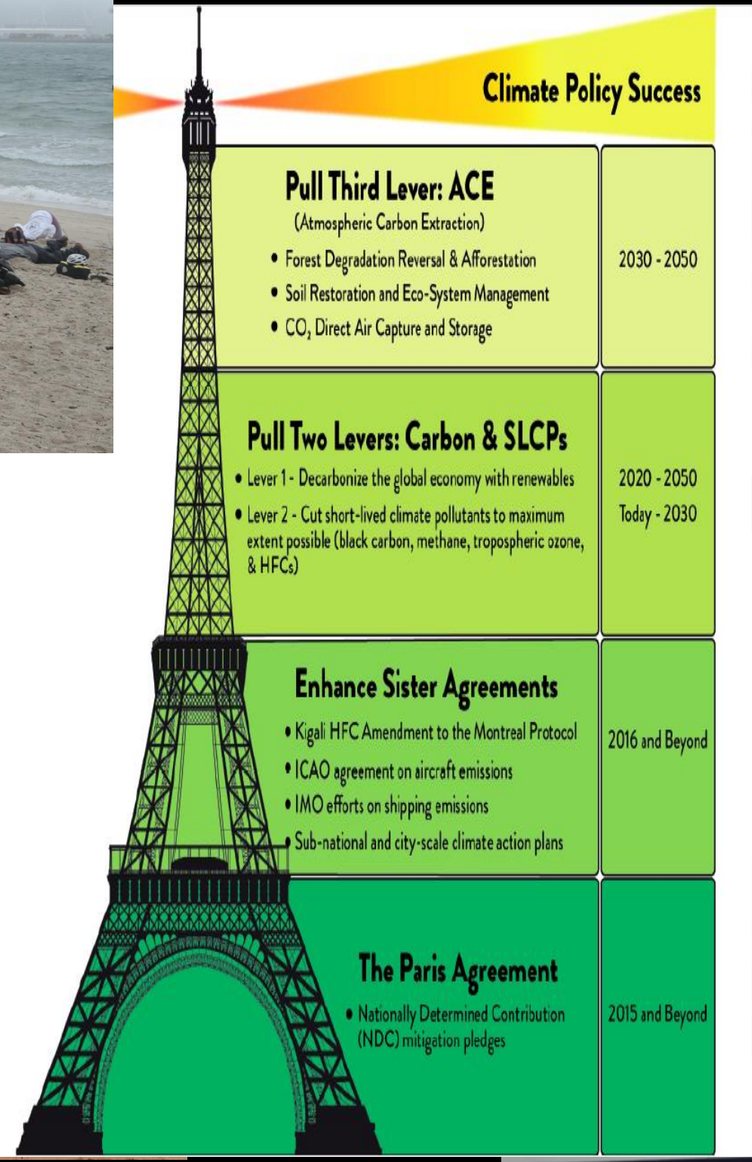
- $ *Political Instability*
- $ *Drought*
- $ *Famine*
- $ *Sea Level Rise*
- $ *Water Scarcity*
- $ *Climate Refugees*
- $ *Storm Damage*
- $ *Floods & Mudslides*

- $ *Infectious Diseases*
- $ *Wildfires*
- $ *Melting Glaciers*
- $ *Dying Coral*
- $ *Ecosystem Loss*
- $ *Species Extinction*
- $ *Infrastructure Loss*
- $ *Our Way of Life*

… And much, much more

Options





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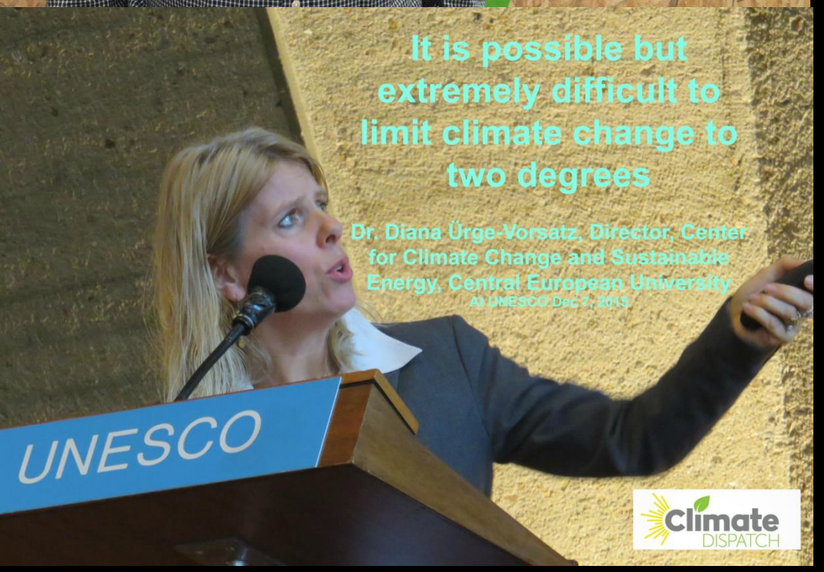
Paris COP21



Recognition of Urgency

Country Pledges – INDC/NDC

Future Reviews

Legal Enforcement

Financing & funding for action

Integration with other international schemes: Trade/WTO, aviation, etc.

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Marrakech COP22

Implementation – Agreement takes effect earlier than expected

"Momentum is Irreversible"

SubNationals (cities, states) Part of Solution

Mitigation, Adaptation Elaborated

Finance Mechanisms Key

47 Vulnerable Countries Declare 100% Renewable Commitment

More Work: Transparency, Implementation, Enforcement, 2050 Pathways

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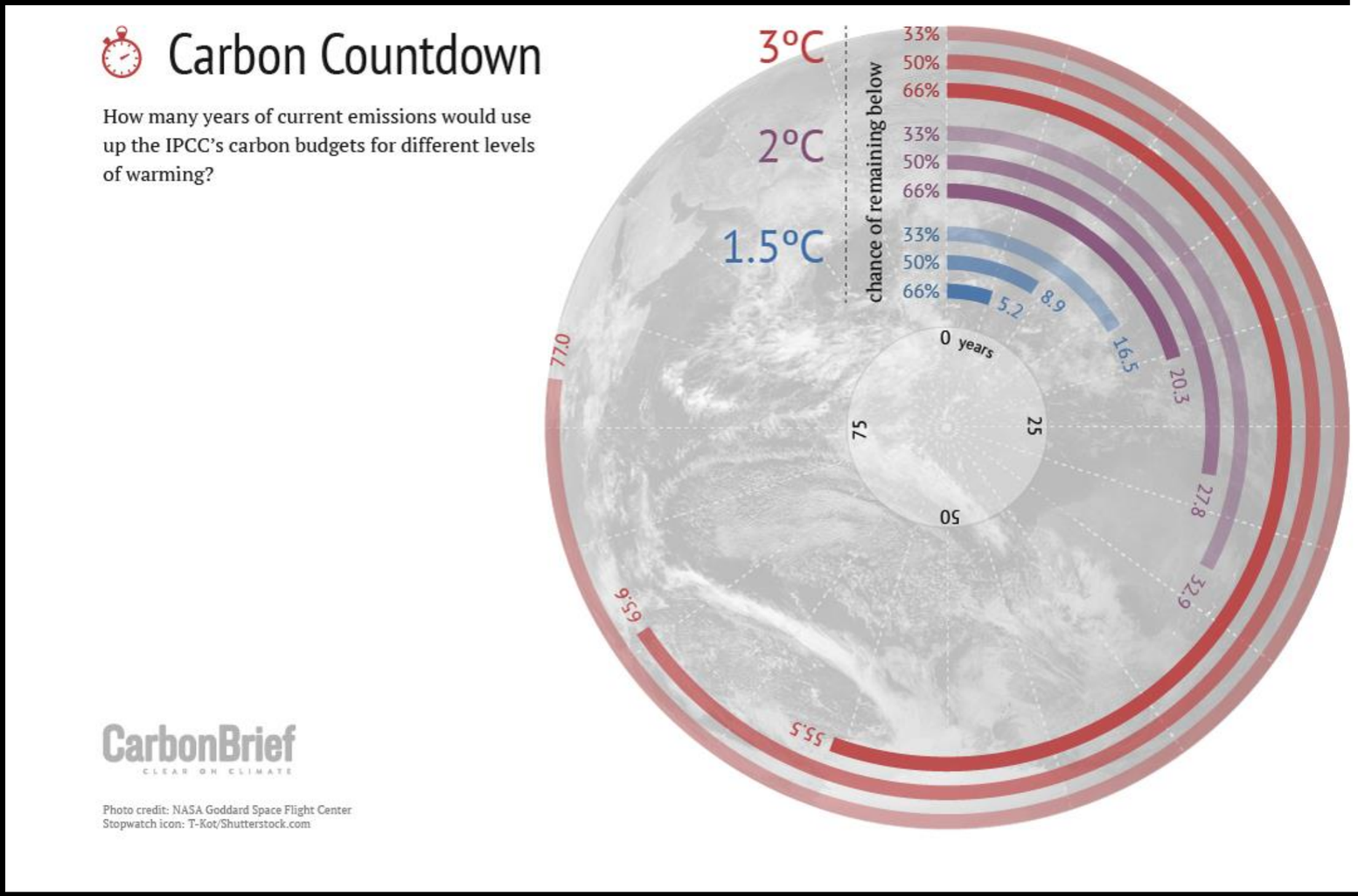
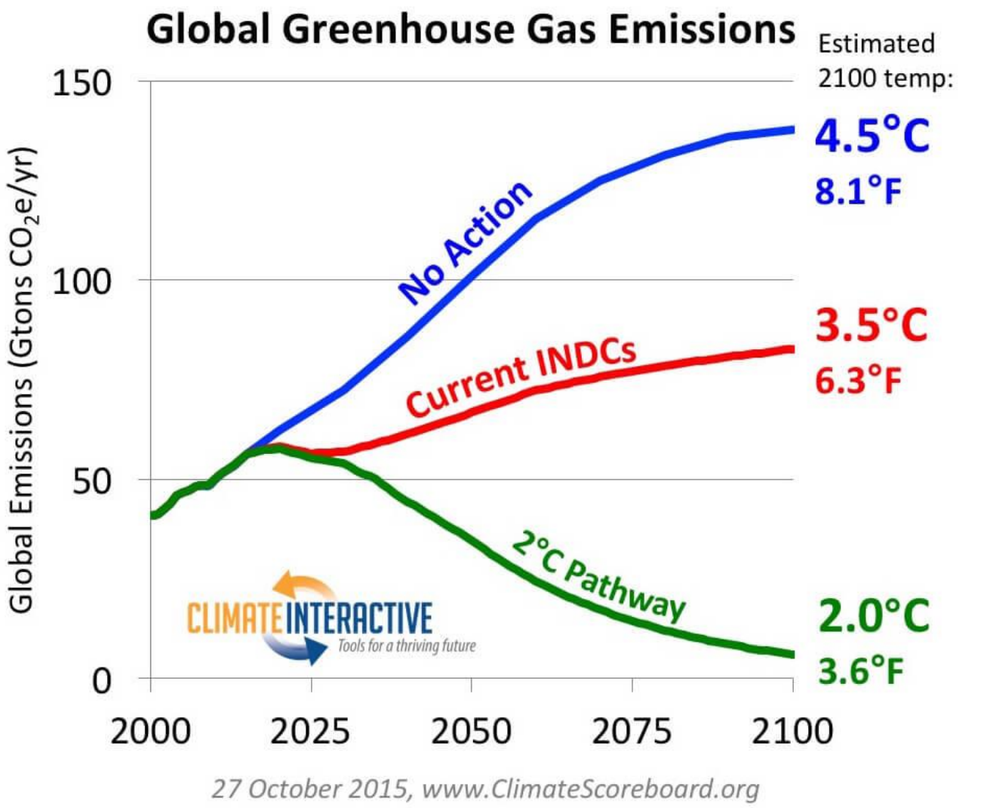
Progress, But Much More Needed





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Climate Commitments & Cooking

Suchetgarh, India

117 NDCs Submitted to U.N.

- Cooking mentioned: 31
- Cooking goals: 14
- LPG Encouraged: 6
- Solar Cookers mentioned: 3

As of 9 January 2016

Around 3 billion people worldwide cook and heat their homes using open fires or simple stoves burning biomass (wood, animal dung, and crop waste) and coal.

Solar radiation
in the form of lightwaves
passes through the
atmosphere

Most of this radiation is absorbed by the Earth and warms it

Some energy is radiated back into space by the earth in the form of infrared waves

Some of this outgoing infrared radiation is trapped by the earth's atmosphere and warms it