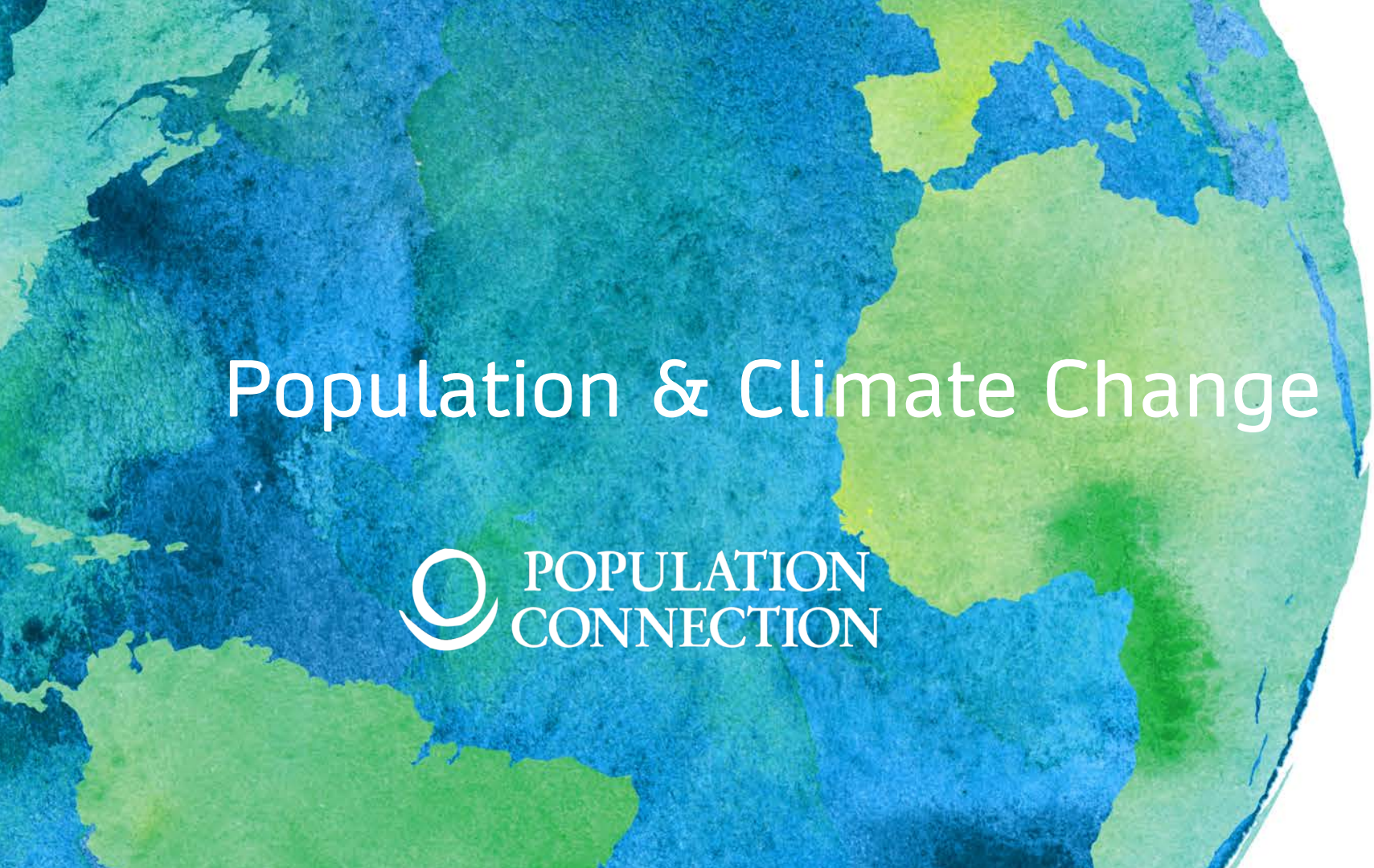

Population & Climate Change
POPULATION
CONNECTION


POPULATION
HEALTH
ENVIRONMENT

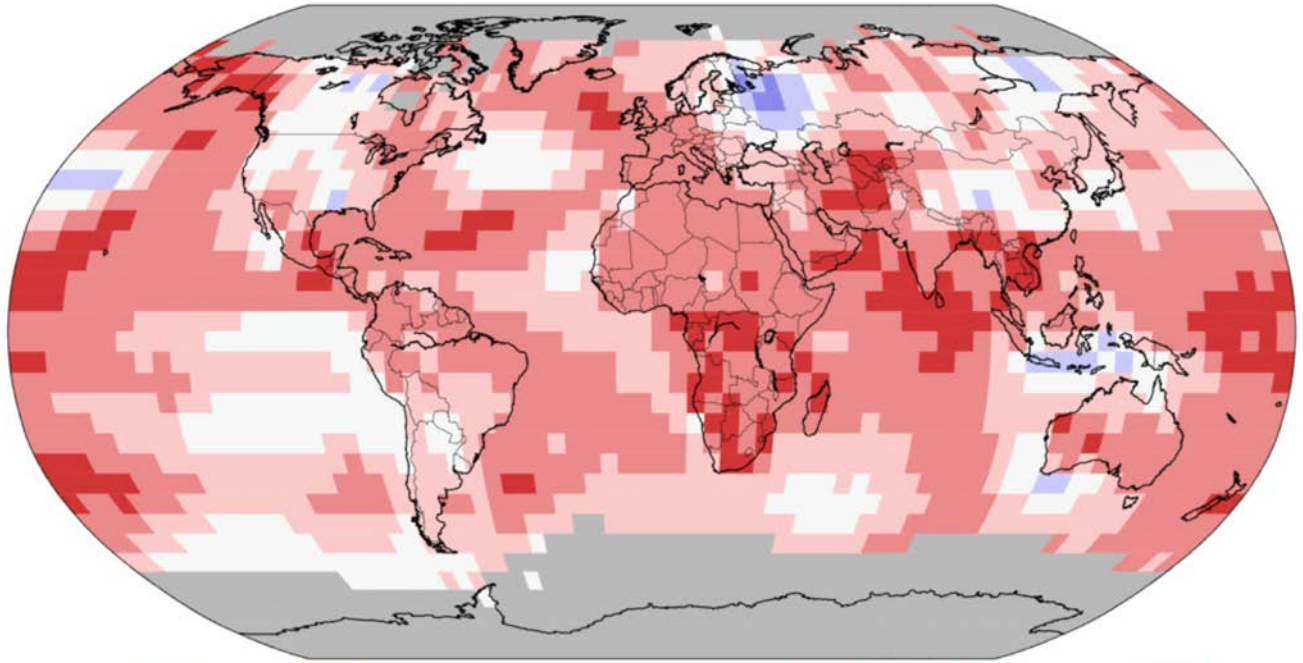
Climate change is the single most pressing environmental issue for the earth's natural systems, and poses threats to food security, freshwater supply, and human health.

- Driven by a buildup of greenhouse gases like carbon dioxide, nitrous oxide, and methane, in the atmosphere.
- The growth of greenhouse gases is linked to various factors, including economic growth, technological change, and human population trends.

Land & Ocean Temperature Percentiles Jul 2019

NOAA's National Centers for Environmental Information

Data Source: NOAAGlobalTemp v5.0.0–20190808



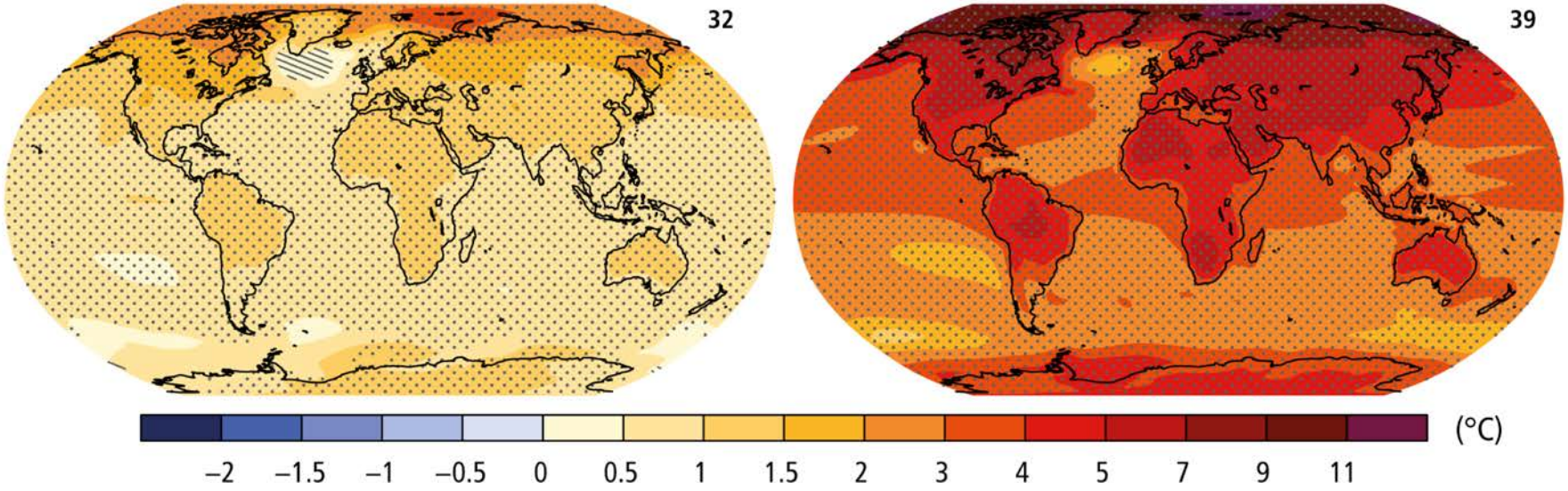
Record Coldest | Much Cooler than Average | Cooler than Average | Near Average | Warmer than Average | Much Warmer than Average | Record Warmest

GHCNM v4.0.1.20190806.qfe

The choices we make can create different outcomes

With substantial mitigation

Without substantial mitigation



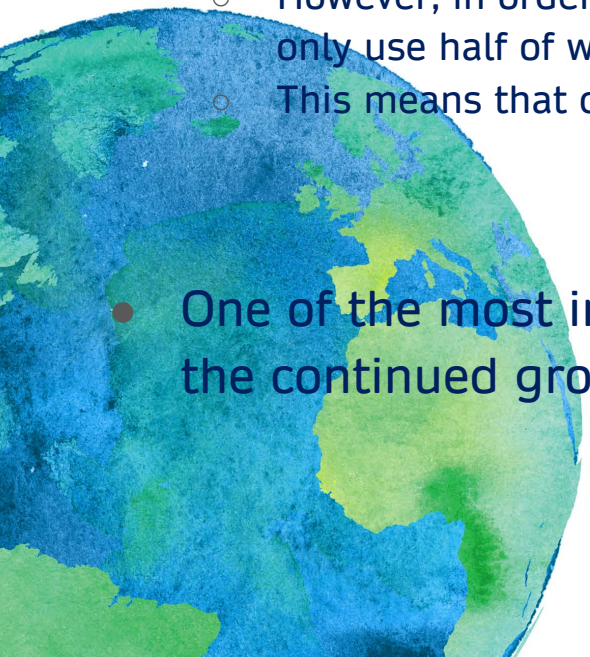
Change in average surface temperature (1986–2005 to 2081–2100)

ipcc
INTERGOVERNMENTAL PANEL ON climate change


HABITAT DESTRUCTION
OCEAN ACIDIFICATION
AIR/WATER POLLUTION
RESOURCE EXPLOITATION
CLIMATE CHANGE

Population and the Environment

- The Global Footprint Network estimates that “humanity now demands 60% of our planet than its ecosystems can renew.”
  - However, in order to maintain 85% of the world’s biodiversity, human demand should only use half of what the planet can provide.
  - This means that current demand exceeds the goal by at least a factor of 3.



- One of the most important factors behind this growing imbalance is the continued growth of the human population.

Pitting population against consumption

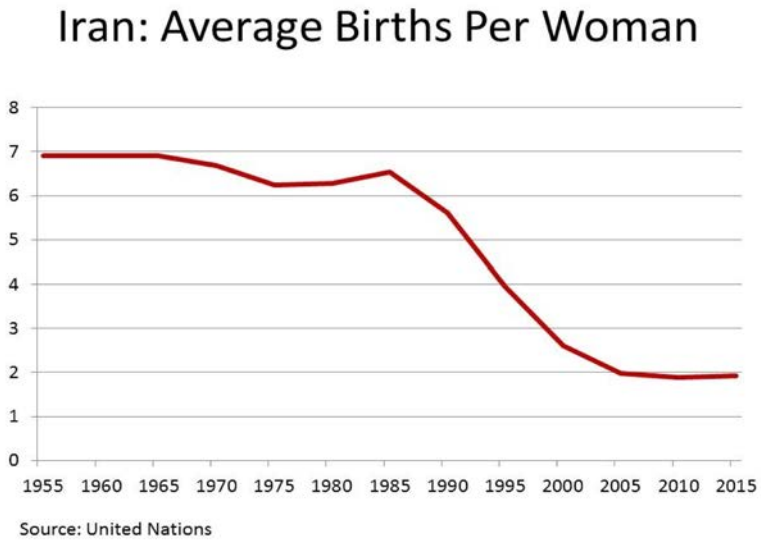
Investing in smaller families creates a more equitable future

Viewing population issues as racist, classist, misogynistic, and/or xenophobic

Access to comprehensive reproductive health care is a human right

The use of trigger words

Empowerment and respect for people and the environment

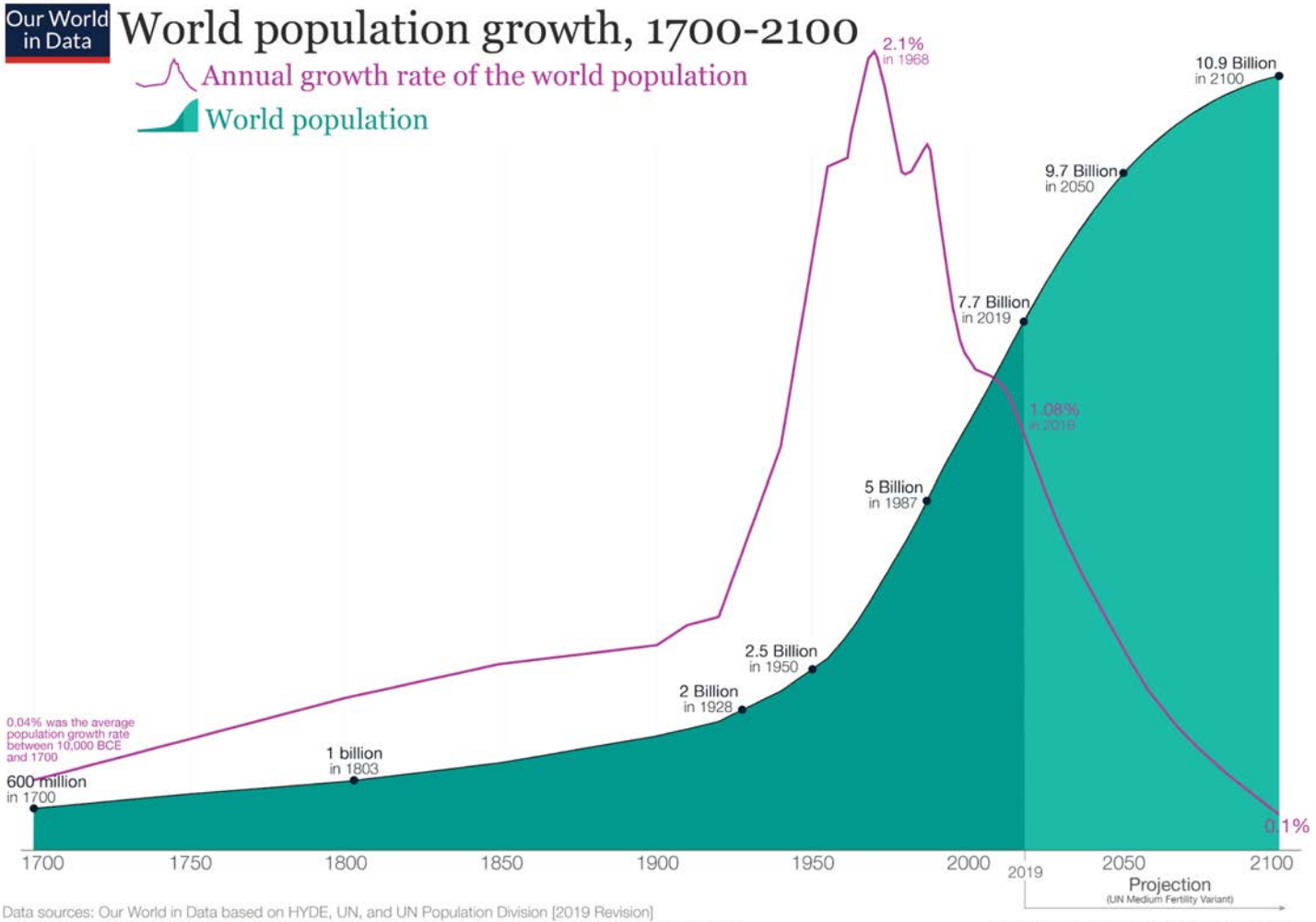


Perceived religious barriers

Stick to the facts about population and development

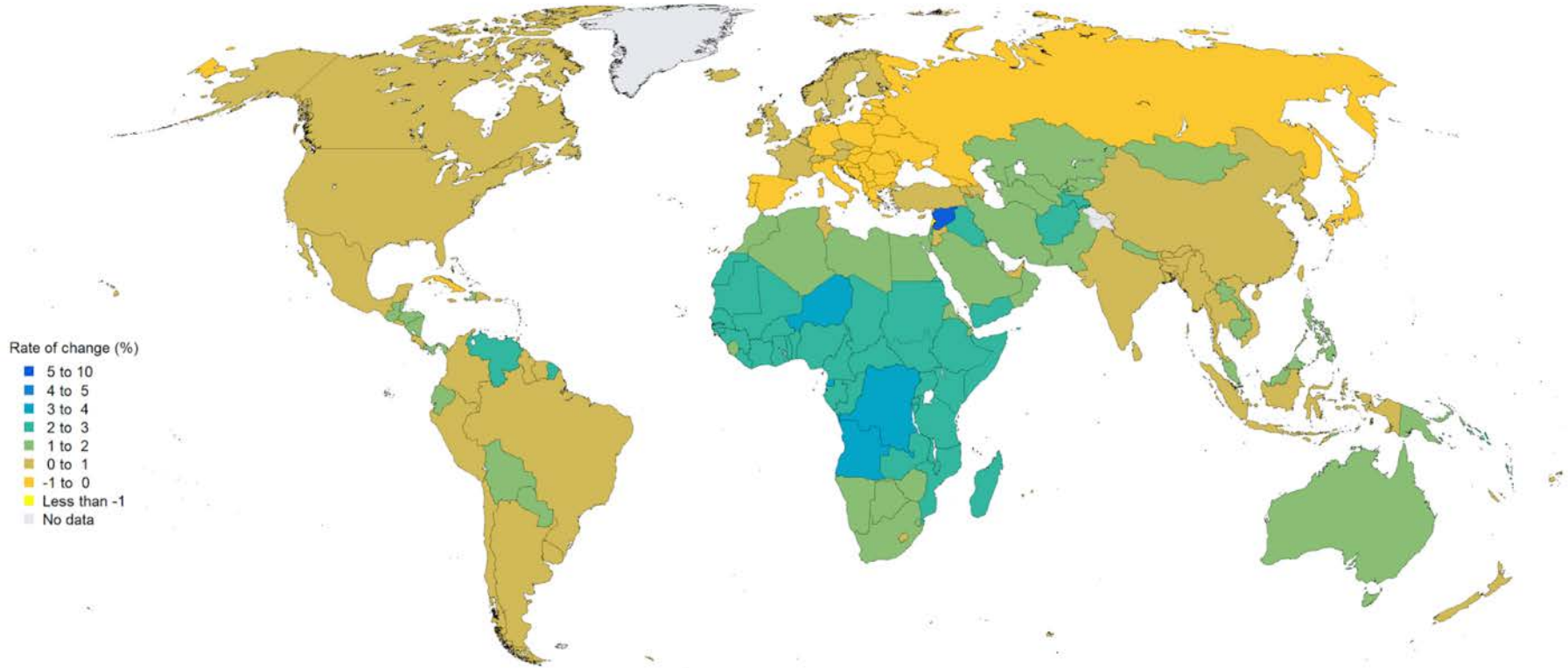
The use of false or absolute statements

Integrated solutions that address social, economic, and environmental inequities



Data sources: Our World in Data based on HYDE, UN, and UN Population Division [2019 Revision]
This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing.

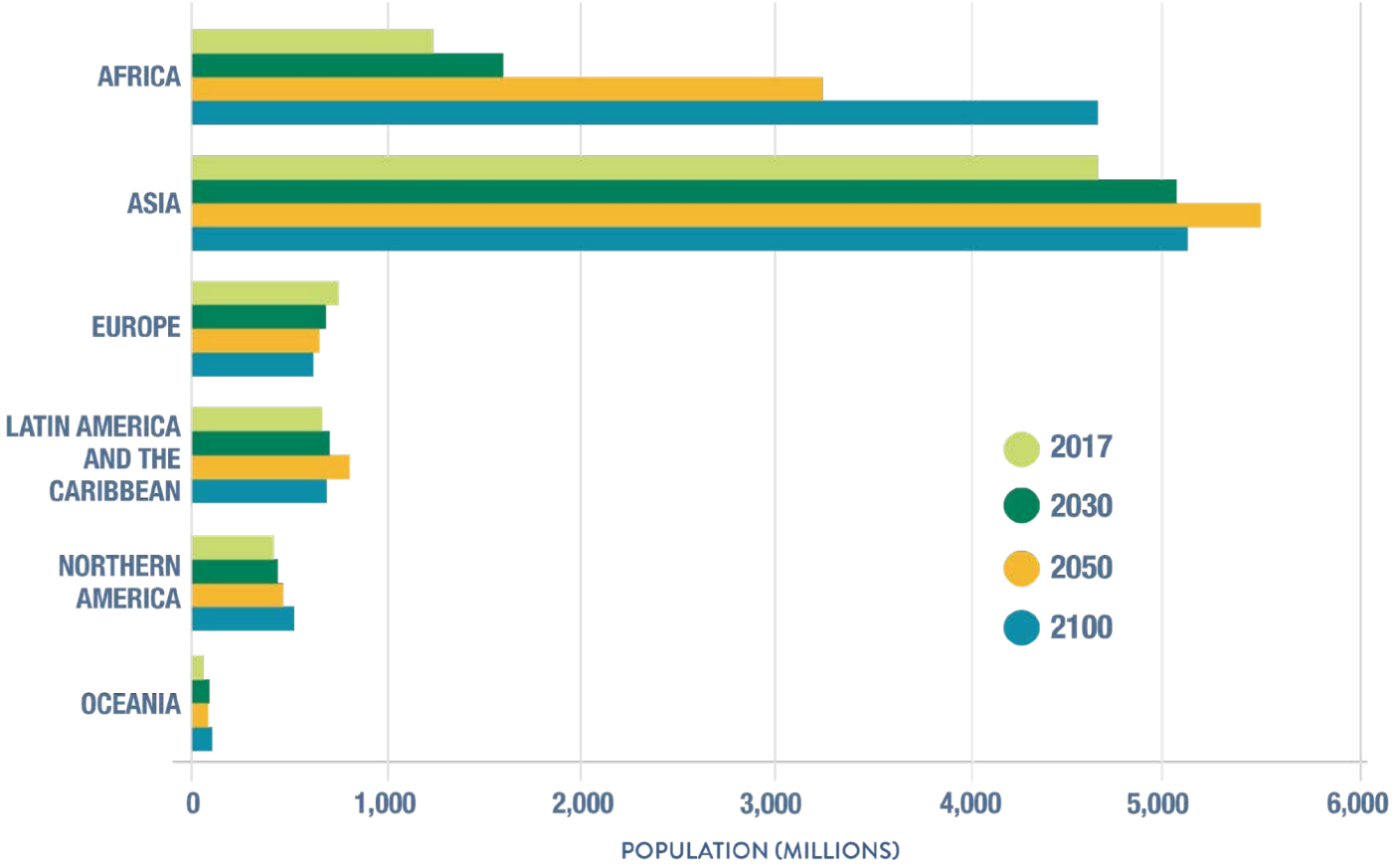
Average annual rate of population change (%), 2020-2025 (medium-variant projection)



Data source: United Nations, DESA, Population Division. *World Population Prospects 2019*. http://population.un.org/wpp/

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Population Growth by Continent, 2017-2100



Source: Population Matters


WORLD POPULATION (billion)
by four income levels
L1
Low
Income
(Extreme poverty)
L2
L3
Middle
Income
L4
High
Income
Level 1
Less Than $2/day
Level 2
$2-$8/day
Level 3
$8-$32/day
Level 4
More Than $32/day

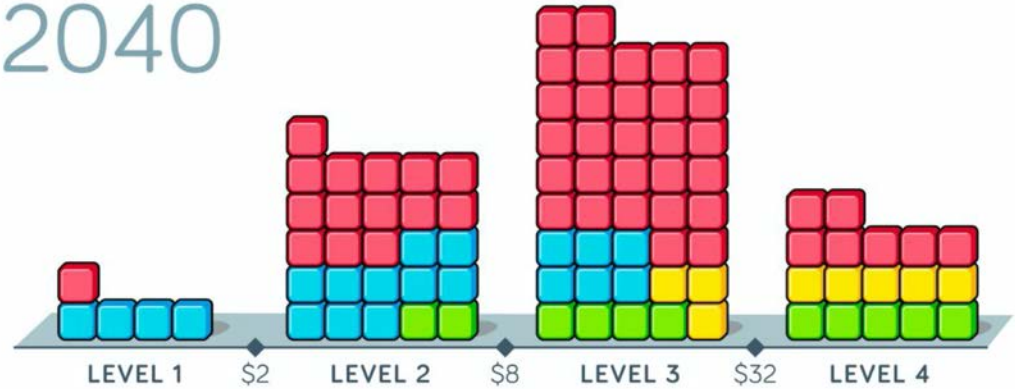
NUMBER OF PEOPLE BY INCOME AND REGION

Each cube is 100 million people, colored by region.

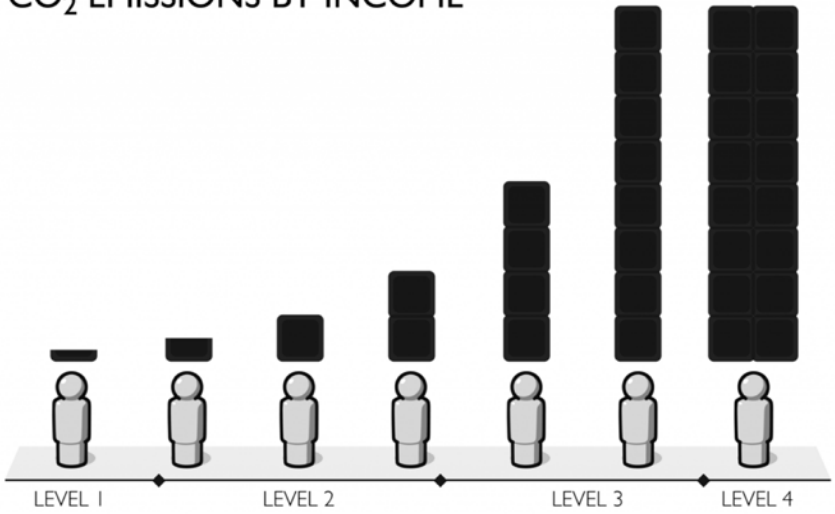
2017

Assuming that current trends continue, this is what the world might look like in 2040.

2040



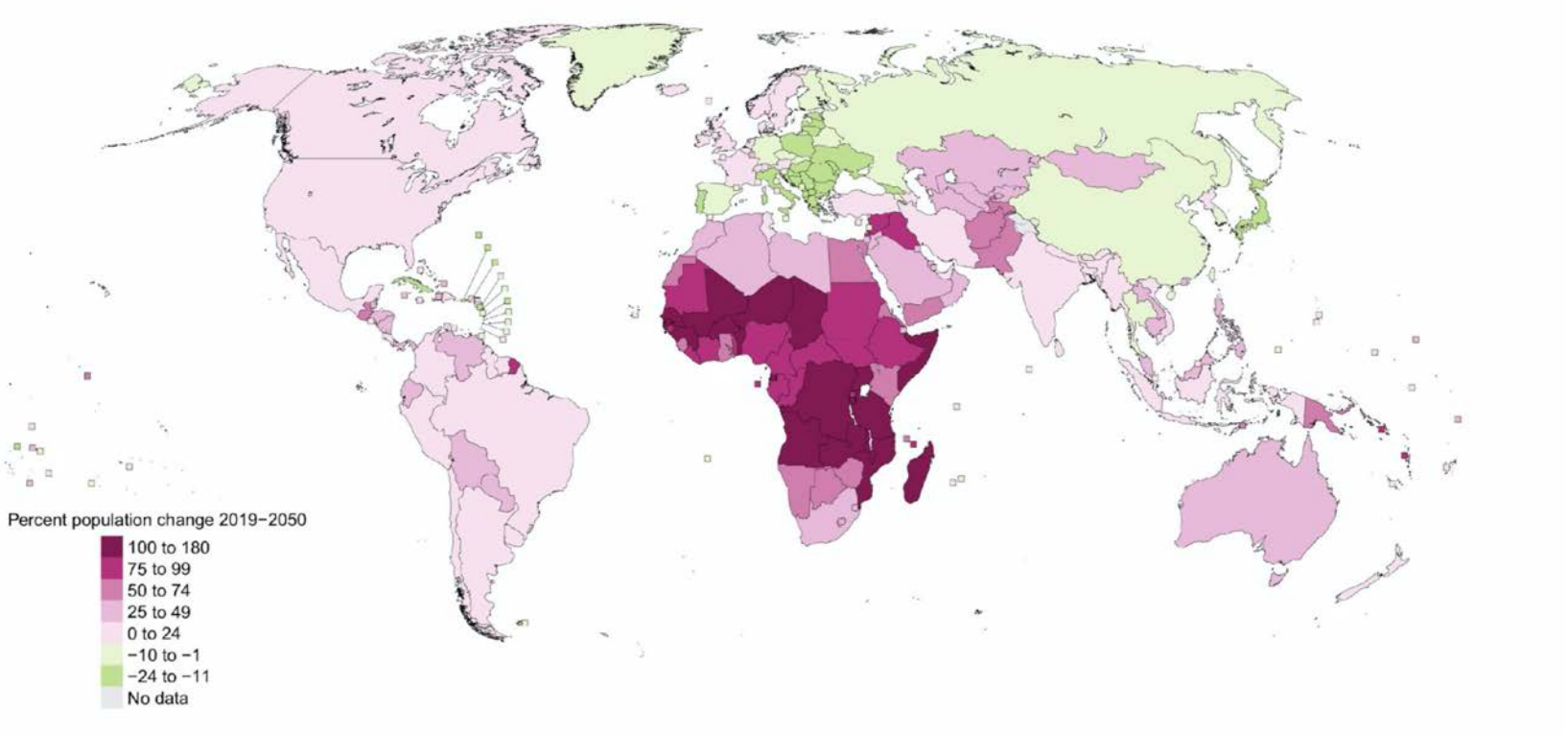
CO_2 EMISSIONS BY INCOME



Source: Gapminder[51] based on CDIAC

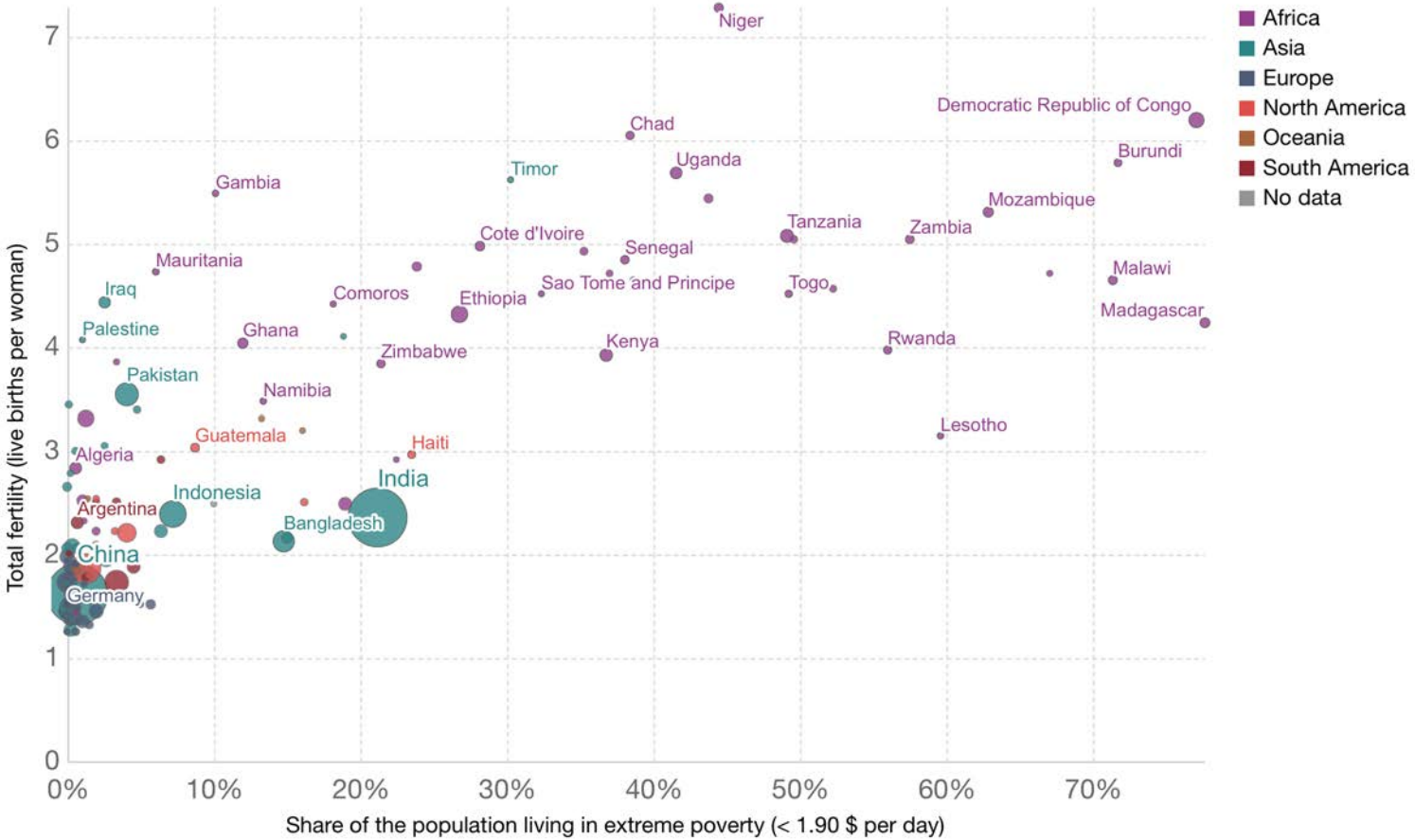
Dollars are adjusted for price differences and inflation. Sources: Gapminder based on PovcalNet, World Bank and IMF. See: gapm.io/incm

Many least developed countries will continue to experience rapid population growth between 2019 and 2050



Source: UN WPP Data booklet 2019

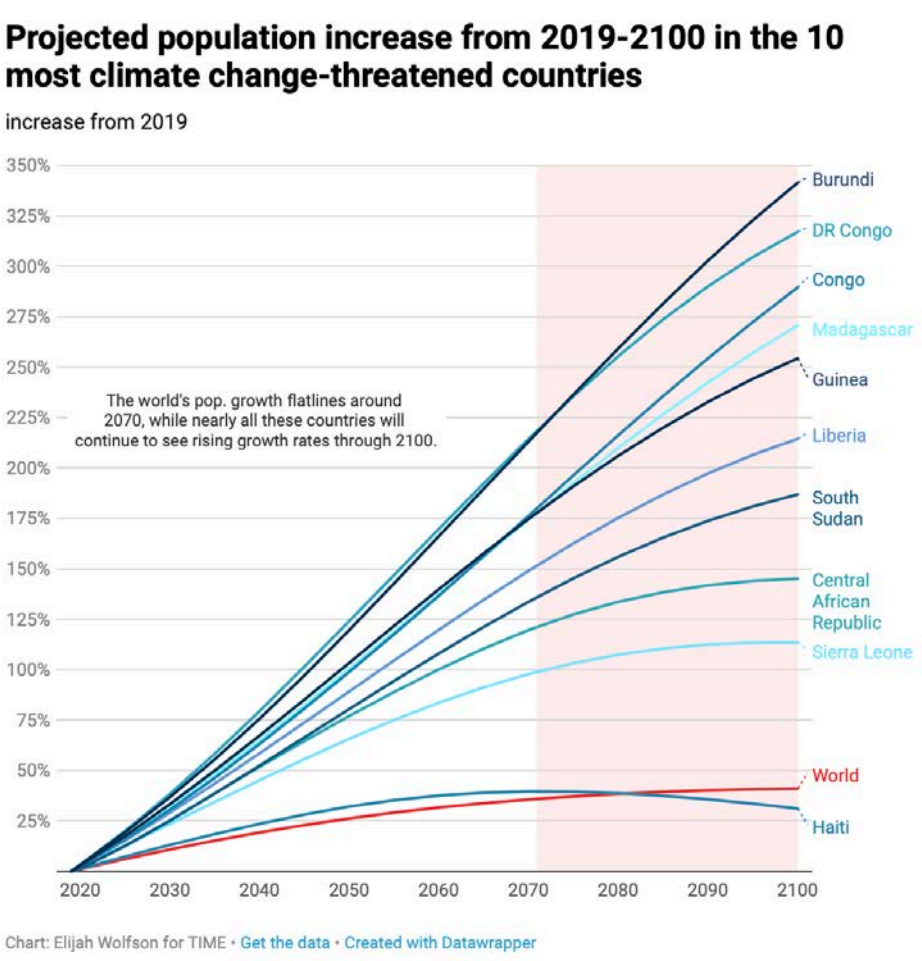
Fertility rate vs the share living in extreme poverty, 2015



Source: UN Population Division (2017 Revision), World Bank

Population and Climate Vulnerability

- Rapid population growth slows global sustainable development.
  - The 47 least developed countries are the fastest growing. Many are projected to double in population between 2020 and 2050 – increasing strain on already scarce resources and challenging improvements in health and economic growth.



Source: UN Population Prospects 2019
Time 2019

Population and Climate Vulnerability

- Due to geography (e.g. tropical, high altitude, land-locked), many of the world's least developed countries are already prone to:
  - drought
  - flooding
  - natural disasters
- Climate change will increase the frequency and intensity of these adverse weather events.

Source: UN Population Prospects 2019

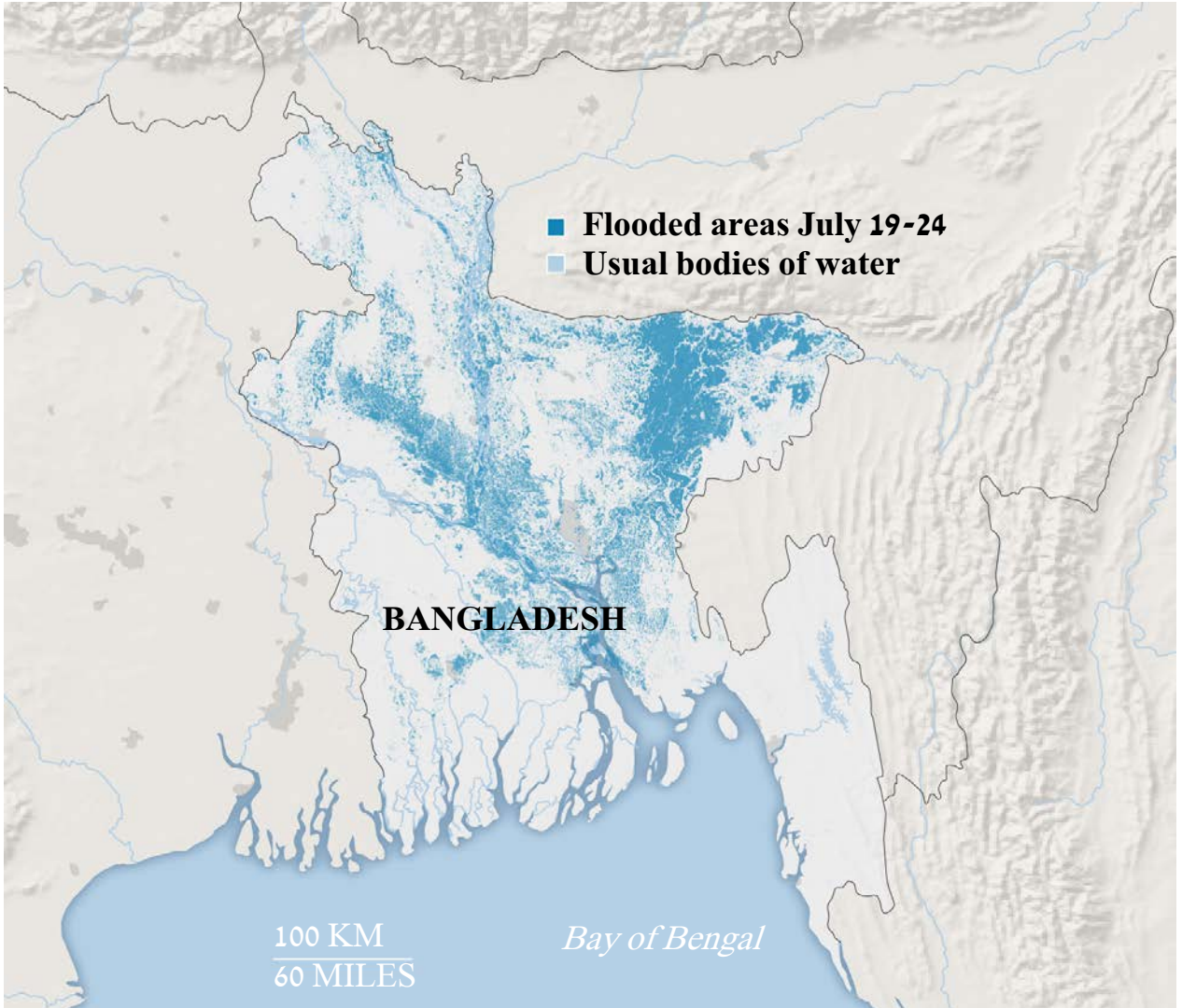
New York

Bangladesh

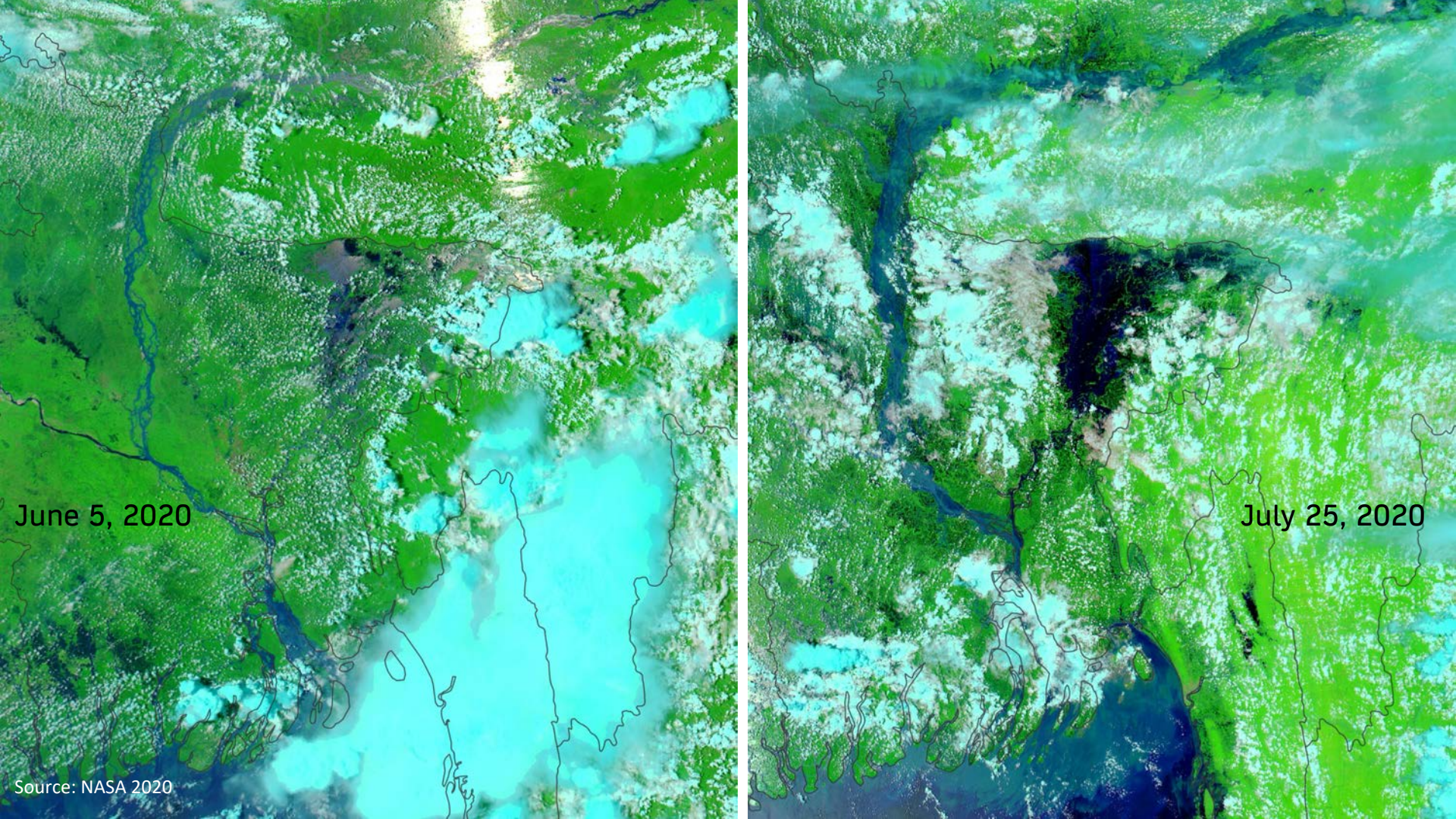
Climate Vulnerability in Bangladesh

- Bangladesh's population has doubled over the last 35 years, but its CO_2 emissions still represent only 0.19% of the global total.
  - Yet, climate change poses the biggest threat to the country, as increasing temperatures and resulting rainfalls impact rice and wheat production.

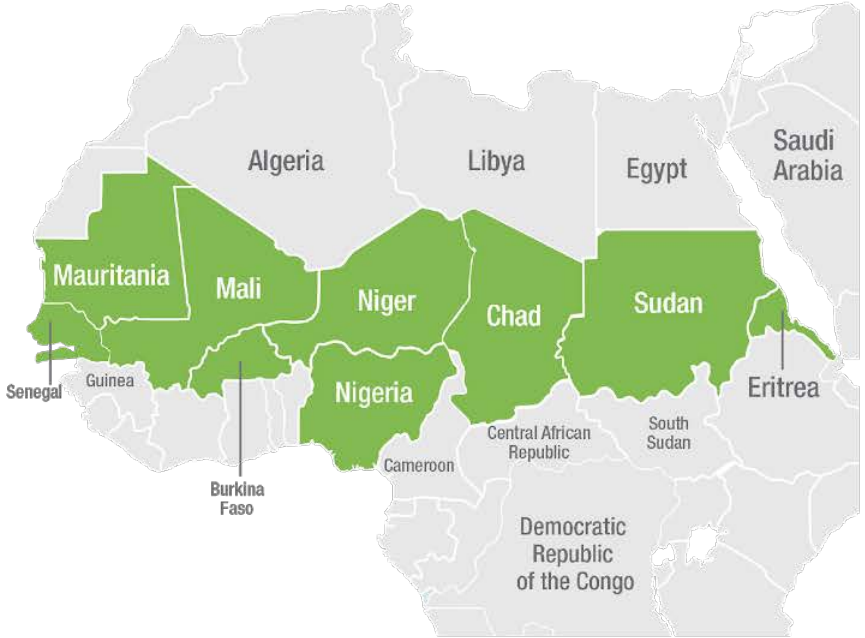
Source: Mondal, S. 2018
Dhaka, Bangladesh. Photo by Niloy Biswas on Unsplash

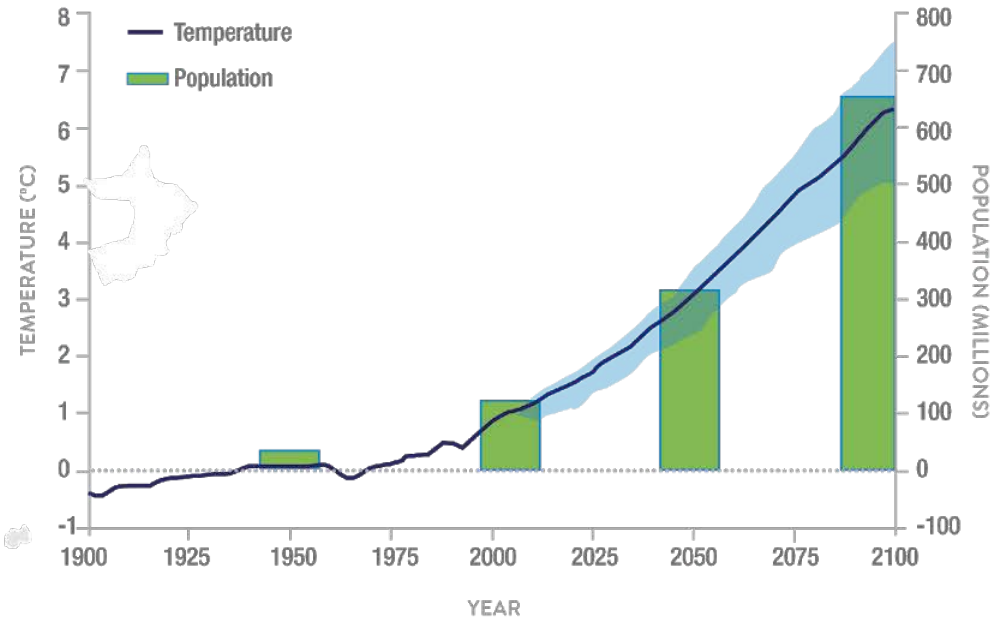


Source: NY Times 2020; Institute of Water and Flood Management, Bangladesh University of Engineering and Technology


June 5, 2020
July 25, 2020
Source: NASA 2020

Temperature Rises Alongside Population In the Sahel Region





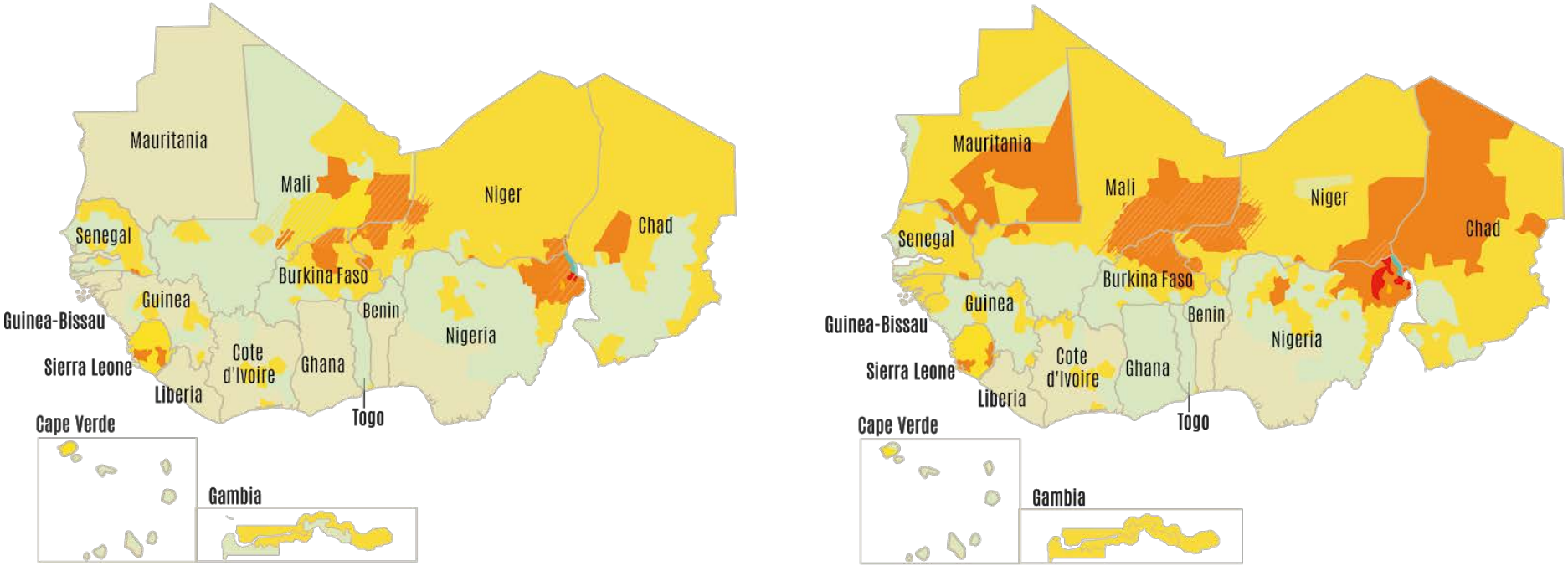
Source: Bixby Center for Global Reproductive Health

Population and Climate Vulnerability in the Sahel

- In the Sahel region of sub-Saharan Africa, 100–200 million people will likely lack reliable food supplies in the next 30–40 years.
- The Sahel region has grown from 31 million people in 1950 to 100 million in 2013, and will likely reach over 300 million by 2050 and 600 million by 2100.
- Temperatures here are rising 1.5 times faster than the global average, and future projections show an increase of 3°C to 5°C above 2013 levels by 2050.
    - Further warming could reach 8°C above the same levels by 2100.

Source: Bixby Center for Global Reproductive Health

Food Security in the Sahel

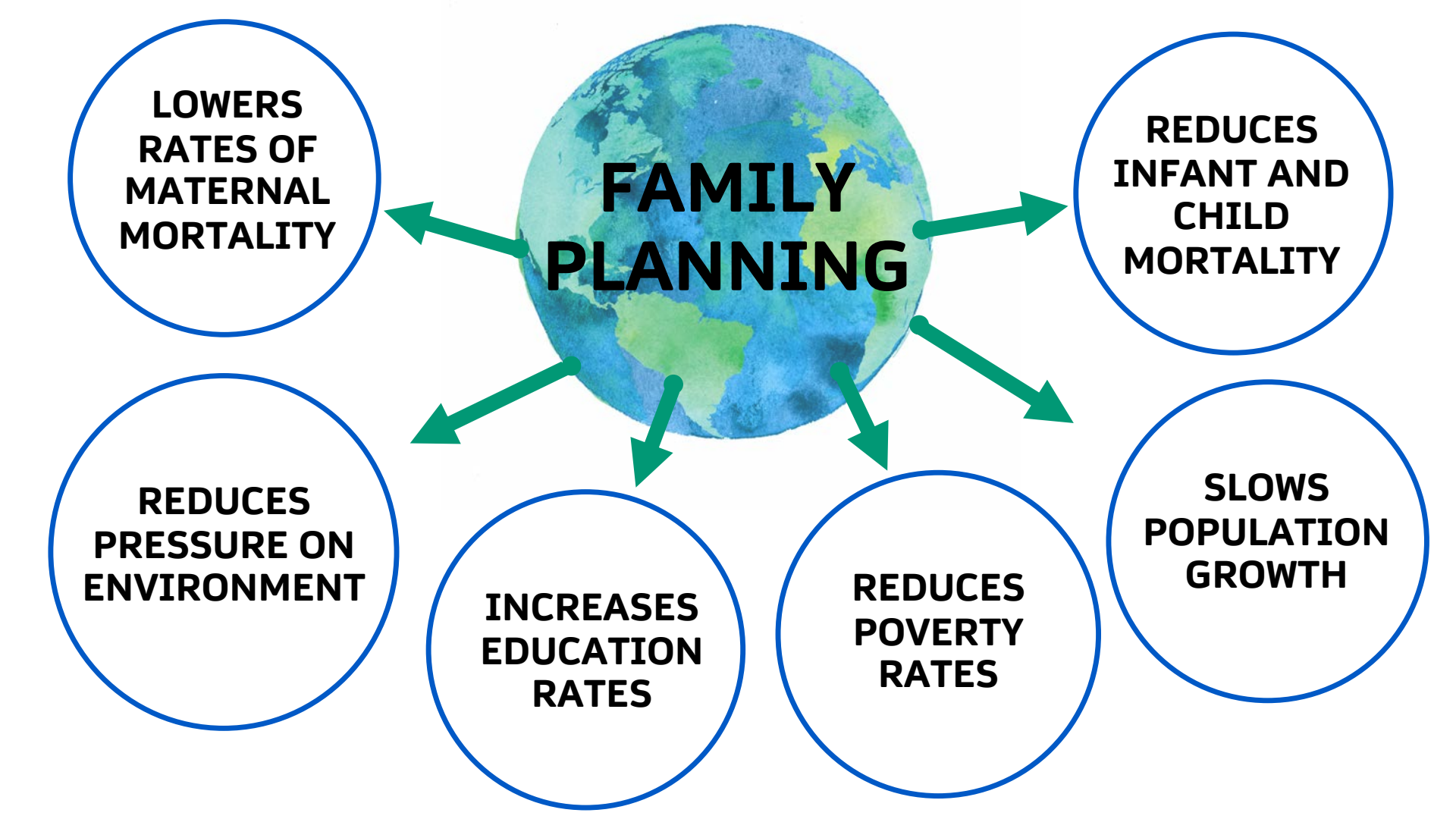


Source: World Economic Forum 2019. USAID West Africa, OCHA W&C Africa, Delegation UE Niger and 6 others

Population and Climate Vulnerability in the Sahel

- Population growth hinders development by increasing hunger, resource use, greenhouse gas emissions, and habitat destruction.
- Investments in sustainable development—including education, health care, and women's empowerment—will help build resilience and adaptive capacity for all populations.
- Increasing access to comprehensive reproductive health care is one important
solution to, and adaptation strategy for, climate change.

Source: UN Commission on Population and Development , Bixby Center for Global Reproductive Health


FAMILY PLANNING
LOWERS RATES OF MATERNAL MORTALITY
REDUCES INFANT AND CHILD MORTALITY
REDUCES PRESSURE ON ENVIRONMENT
INCREASES EDUCATION RATES
REDUCES POVERTY RATES
SLOWS POPULATION GROWTH

Solutions Through Reproductive Health

- When education levels rise for women and girls, they gain political and economic power.
  - Higher levels of education afford more options for formal sector employment.
  - More resources become available to help women and girls choose when and how to start a family.
  - Women who are educated tend statistically to have fewer, healthier children.
- Low-income populations face the biggest barriers to getting an education and using family planning.
  - This is largely because of limitations from cost, stigma, or policies.

Photo by Taylor Wilcox on Unsplash

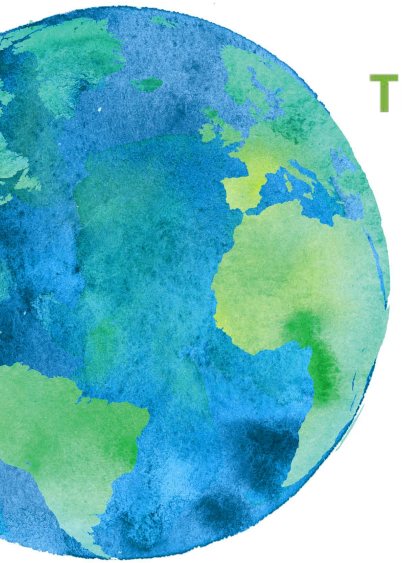
Solutions Through Reproductive Health

- Meeting the global unmet need for family planning services through investments in reproductive health can help slow climate change.
- Greater investments in family planning and girls' education could result in emissions reductions of up to 85 gigatons of carbon dioxide between 2020 and 2050.
  - That's equivalent to removing around 22,000 coal-fired power plants!

Source: Drawdown 2020

Selection of reproductive health supplies. Photo by Reproductive Health Supplies Coalition on Unsplash

Top 5 solutions to climate change



54.4
Tropical Forest Restoration

85.4*
Health and Education
(FAMILY PLANNING & EDUCATING GIRLS)

87.4
Reduced Food Waste

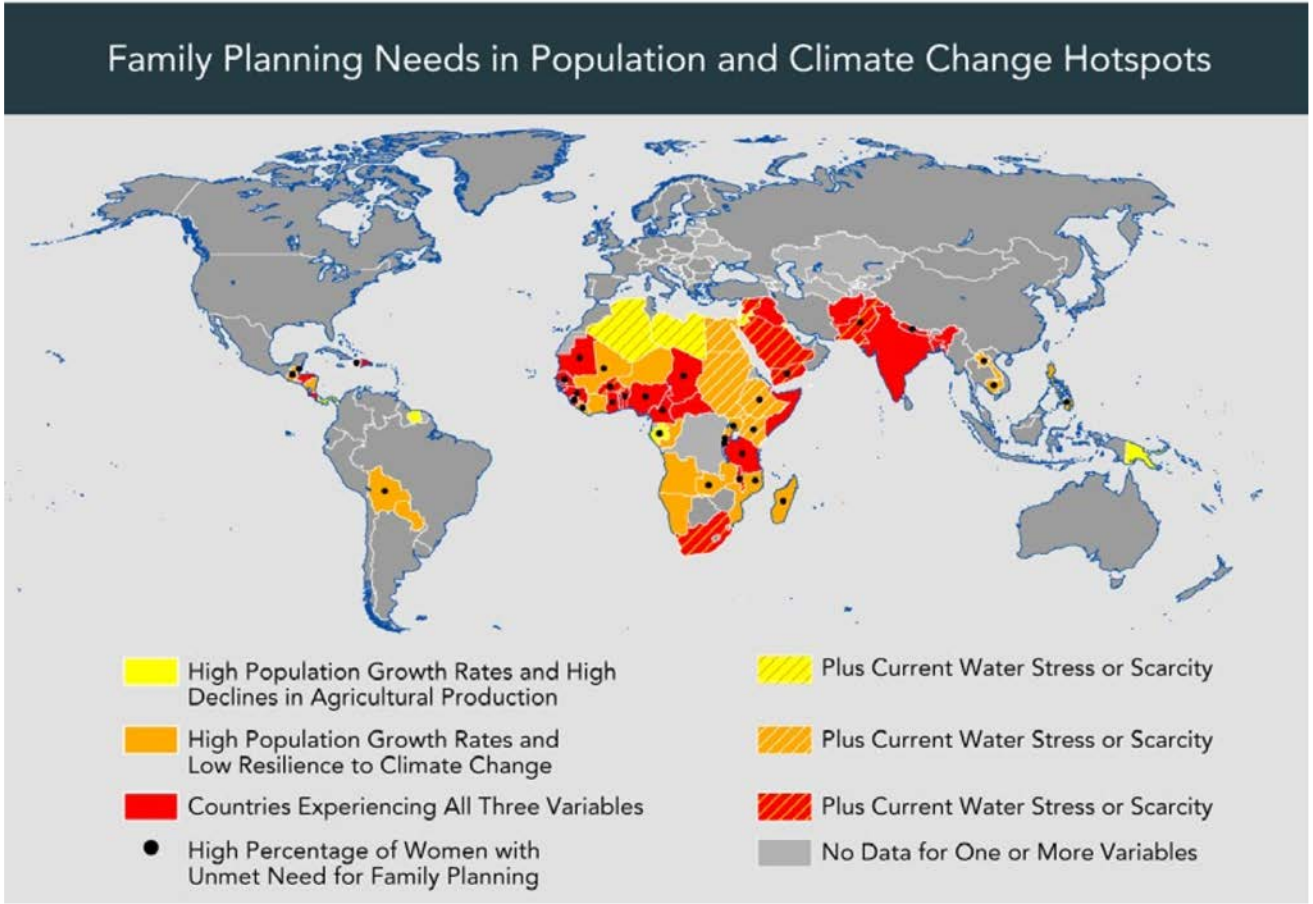
57.7
Refrigerant Management

65.0
Plant-rich Diets

*CO_2-equivalent reduction by 2050 (GT)

Source: The Drawdown Review 2020

Worldwide, the same regions that experience high fertility, low economic status, and high climate vulnerability also have a high unmet need for contraceptives and reproductive health services.



Source: PAI 2013

Reproductive Health in the Sahel

- In much of the Sahel, the use of contraceptives is below 10%.
  - Recent studies indicate that only 5% of Niger's married women between the ages of 15-49 use modern contraceptives, and that 20% have expressed an unmet need for family planning.
- While several countries, including Burkina Faso and Niger, have adopted policies to reduce fertility, lack of political will remains a challenge.
- Social and cultural norms, gender inequities, and some religious interpretations negatively impact access to and use of family planning services.

Source: Bixby Center for Global Reproductive Health

Family Planning Innovations in Bangladesh

- Contraceptive use in Bangladesh increased sevenfold in less than 40 years, from 8% in 1975 to 62% in 2014.
- The unmet need for family planning dropped from 21.6% in 1993-94 to 12% in 2014.
- The total fertility rate (TFR) was 6.8 children per woman in 1975 and decreased to 2.2 children per woman in 2014. Today, the TFR is about 2.05 births per woman.

Source: Mondal, S. 2018
Photo by Adrien Taylor on Unsplash

CONCLUSIONS

- Population growth contributes to climate vulnerability around the world.

- Slowing population growth through voluntary family planning will positively affect global efforts to mitigate the effects of climate change, and will increase resilience for populations most at-risk.

- Investments in comprehensive reproductive healthcare foster sustainable development and reduce climate impacts globally.

"Honoring the dignity of women and children through family planning is not about centralized governments forcing the birth rate down—or up, through natalist policies. Nor is it about agencies or activists in rich countries, where emissions are highest, telling people elsewhere to stop having children. It is most essentially about freedom and opportunity for women and the recognition of basic human rights."

-Paul Hawken, **Drawdown (2017)**

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