Solutions Through Reproductive Health: Why Health and Education Matter to Climate Change
POPULATION
HEALTH
ENVIRONMENT
Land & Ocean Temperature Percentiles Jul 2019
NOAA's National Centers for Environmental Information
Data Source: NOAAGlobalTemp v5.0.0–20190808
The choices we make can create different outcomes

With substantial mitigation

Without substantial mitigation

Change in average surface temperature (1986–2005 to 2081–2100)
“Covid-19 is climate on warp speed. Everything in climate is decades; with Covid it’s days. Climate it’s centuries; Covid it’s weeks.”

- Gerot Wagner, NYU Climate Economist
Can We Flatten the Climate Curve?

- Business as Usual
- Climate Action
- Paris Agreement
The interconnected challenges facing the world today

| Population growth | Demand for food and energy  
| Pressure on scarce resources  
| Negative environmental impact  
| Source: United Nations, 2020 |
| --- | --- |
| **7.8bn** people today expect  
**9.8bn** by 2050  
| **7.8bn** people today expect  
**9.8bn** by 2050  
| Source: Forbes 2020 |

| Climate change | CO₂ rising 10 times faster than any sustained rise in  
**800,000** years  
| Pushes planetary boundaries  
| Accelerated biodiversity loss  
| Source: NASA, NOAA, IPCC, 2020* |
| --- | --- |
| Linked to fossil fuels and tropical deforestation  
| **15,000** sq miles tropical land destroyed each year  
| Human intrusion biodiversity hotspots  
| Disruption and disturbance  
| Ecosystem degradation  
| Source: NASA, NOAA, IPCC, 2020* |

| Deforestation | Unsustainable production and consumption  
| Reduce food waste, increase plant-based  
| Tackle overuse and misuse of antibiotics  
| Source: World Economic Forum 2020 |
| --- | --- |
| **Four commodities:**  
Soy, palm oil, beef, lumber  
| More than **50bn** animals consumed  
| Source: Forbes 2020 |

| Consumption and production | Emergence of infectious disease  
| Underprepared health systems  
| Dislodged viruses  
| Source: Forbes 2020 |
| --- | --- |
| Increasing demand for animal protein  
| More than **50bn** animals consumed  
| Source: Forbes 2020 |

<table>
<thead>
<tr>
<th>Health and wellbeing</th>
<th>Source: Forbes 2020</th>
</tr>
</thead>
</table>
| Ensure healthy lives  
Combat communicable disease  
| Emergence of infectious disease  
Underprepared health systems  
Dislodged viruses  
| Source: Forbes 2020 |
Covid-19 is a zoonotic disease, which means that it was transferred to humans from an animal host. Viral animal-to-human spillovers are increasing because of habitat destruction and damage to ecosystems.

Source: World Health Organization 2020
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% more 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

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Iran: Average Births Per Woman

Source: United Nations
Population Growth by Continent, 2017-2100

- AFRICA
- ASIA
- EUROPE
- LATIN AMERICA AND THE CARIBBEAN
- NORTHERN AMERICA
- OCEANIA

Source: Population Matters
WORLD POPULATION (billion) by four income levels

- **L1**: Low Income (Extreme poverty)
- **L2**: Middle Income
- **L3**: 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

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2</td>
<td>$8</td>
<td>$32</td>
<td></td>
</tr>
</tbody>
</table>

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

2040

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
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<tr>
<td>$2</td>
<td>$8</td>
<td>$32</td>
<td></td>
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</table>

CO₂ EMISSIONS BY INCOME

Source: Gapminder[51] based on CDIAC
Many least developed countries will continue to experience rapid population growth between 2019 and 2050

Source: UN WPP Data booklet 2019
According to the UN, the world’s 47 least developed countries are also the fastest growing. Many are projected to double in population between 2020 and 2050 – increasing strain on already scarce resources and slowing progress in health and economic growth.
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
“Plausible” internal climate migration scenarios by 2050 across Sub-Saharan Africa, South Asia, and Latin America under three scenarios: the “pessimistic (Reference)” scenario (yellow), the “more inclusive development” scenario (blue) and the “more climate-friendly” scenario (green). Vertical lines represent the 95th percentile confidence interval. Source: World Bank 2018.
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.
Flooded areas July 19-24
Usual bodies of water

Source: NY Times 2020; Institute of Water and Flood Management, Bangladesh University of Engineering and Technology
Temperature Rises Alongside Population In the Sahel Region

Source: Bixby Center for Global Health 2015
Population and Climate Vulnerability

- Population growth hinders development by increasing hunger, resource use, localized environmental degradation, 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
Voluntary Family Planning and Reproductive Health care

HEALTH BENEFITS
- Reduces maternal mortality & morbidity
- Reduces infant and child mortality
- Reduces rates of unintended pregnancy
- Reduces unsafe abortion rates
- Increases health overall

SOCIAL, ECONOMIC & ENVIRONMENTAL BENEFITS
- Increases education rates for women and girls
- Improves livelihoods and wellbeing
- Reduces poverty
- Relieves population pressure on: Natural resources, Economic growth, Food production, Infrastructure development, State stability
- Slower population growth reduces greenhouse gas emissions, Lessens climate vulnerability

Informed choice: enable women and couples to freely and responsibly determine the number, timing and spacing of their births.

Photo by Theodore Goutas on Unsplash
Solutions Through Health and Education

When education levels rise for women and girls, they gain social, political and economic power.

- Higher levels of education afford more options for sustained employment and help increase livelihoods.
  - 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.

Photo by Taylor Wilcox on Unsplash
Family planning is not only a matter of human rights; it is also central to women’s empowerment, reducing poverty, building climate resilience and achieving sustainable development.

Source: UNFPA 2018
Family Planning Needs in Population and Climate Change Hotspots

- High Population Growth Rates and High Declines in Agricultural Production
- High Population Growth Rates and Low Resilience to Climate Change
- Countries Experiencing All Three Variables
- High Percentage of Women with Unmet Need for Family Planning
- Plus Current Water Stress or Scarcity
- Plus Current Water Stress or Scarcity
- Plus Current Water Stress or Scarcity
- No Data for One or More Variables

Source: Population Action International 2013
### UNFCCC’s National Adaptation Programs of Action (NAPAs)

**Table 1. Extent and frequency of reference to rapid population growth among the 40 National Adaptation Programmes of Action reports**

<table>
<thead>
<tr>
<th>Rapid population growth</th>
<th>Number of countries (n = 40)</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not mentioned</td>
<td>3</td>
<td>Eritrea, Liberia, Sao Tome and Principe</td>
</tr>
<tr>
<td>Identified as pertinent to at least one specific consequence of climate change</td>
<td>37</td>
<td>Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cape Verde, Central African Republic, Comoros, Democratic Republic of the Congo, Djibouti, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Lesotho, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Niger, Rwanda, Sao Tome, Senegal, Sierra Leone, Solomon Islands, Sudan, Tuvalu, Uganda, United Republic of Tanzania, Vanuatu, Yemen, Zambia</td>
</tr>
<tr>
<td>Identified as a main priority</td>
<td>6</td>
<td>Ethiopia, Gambia, Kiribati, Malawi, Samoa, Uganda</td>
</tr>
</tbody>
</table>

**Table 2. Ten most-cited issues identified as linked to population growth by 37 National Adaptation Programmes of Action reports**

<table>
<thead>
<tr>
<th>Population/adaptation issue</th>
<th>National Adaptation Programmes of Action Reports (n = 37)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil degradation/ecosystem</td>
<td>21</td>
</tr>
<tr>
<td>Fresh water scarcity</td>
<td>18</td>
</tr>
<tr>
<td>Migration</td>
<td>18</td>
</tr>
<tr>
<td>Deforestation</td>
<td>17</td>
</tr>
<tr>
<td>Inadequate farm land per capita</td>
<td>14</td>
</tr>
<tr>
<td>Loss of biodiversity</td>
<td>11</td>
</tr>
<tr>
<td>Disease and health system constraints</td>
<td>8</td>
</tr>
<tr>
<td>Loss of natural habitat</td>
<td>8</td>
</tr>
<tr>
<td>Diminishing fish stocks</td>
<td>7</td>
</tr>
<tr>
<td>Desertification</td>
<td>5</td>
</tr>
</tbody>
</table>

Women and children are healthier
a fundamental aspect of building climate resilience

Women become more empowered
increasing possibilities for engaging in climate adaptation efforts

Rates of unintended pregnancies drop
resulting in smaller families and a reduced demand for climate-sensitive resources like food and water

Meeting women’s needs for FP/RH benefits climate adaptation

Slower population growth
lessens pressure on local natural resources and exposes fewer people to climate impacts

Source: Population Reference Bureau 2018
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

*CO₂-equivalent reduction by 2050 (GT)

Source: The Drawdown Review 2020
<table>
<thead>
<tr>
<th>Overall Ranking</th>
<th>Solution</th>
<th>TOTAL CO₂-eq (GT) Reduced/Sequestered (2020-2050)</th>
<th>Net First Cost To implement solution (Billion $US)</th>
<th>Net Lifetime Cost To operate solution (Billion $US)</th>
<th>Net Lifetime Profit from other implementation &amp; operation (Billion $US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reduced Food Waste</td>
<td>87.4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Health and Education</td>
<td>85.4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Plant-Rich Diets</td>
<td>65.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Refrigerant Management</td>
<td>57.7</td>
<td>-</td>
<td>600</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Tropical Forest Restoration</td>
<td>55.4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Onshore Wind Turbines</td>
<td>47.2</td>
<td>800</td>
<td>-3,800</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Alternative Refrigerants</td>
<td>43.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Utility-Scale Solar Photovoltaics</td>
<td>42.3</td>
<td>-200</td>
<td>-12,900</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>Improved Clean Cookstoves</td>
<td>31.3</td>
<td>100</td>
<td>1,900</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>Distributed Solar Photovoltaics</td>
<td>27.9</td>
<td>400</td>
<td>-7,800</td>
<td>-</td>
</tr>
</tbody>
</table>

*Based on the minimum impact scenario of solution implementation, Drawdown 2020*
In LMICs, 218 million women are considered to have an unmet need for modern contraception because they want to avoid a pregnancy but are not using a modern method.

1,640 million women of reproductive age, 2019

<table>
<thead>
<tr>
<th>Have unmet need*</th>
<th>Have met need</th>
<th>Do not need contraception</th>
</tr>
</thead>
<tbody>
<tr>
<td>218</td>
<td>705</td>
<td>718</td>
</tr>
</tbody>
</table>

923 million want to avoid a pregnancy

*148 million using no method plus 70 million using a traditional method. Notes: Numbers may not add to totals because of rounding. LMICs=low- and middle-income countries (see Figure 1.1). Source: reference 45.
Investing in sexual and reproductive health care would dramatically reduce unintended pregnancies, unsafe abortions and maternal deaths

<table>
<thead>
<tr>
<th></th>
<th>Annual number</th>
<th>% change if all needs are met</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>At current levels of care</td>
<td>If all needs are met</td>
</tr>
<tr>
<td>Unintended pregnancies</td>
<td>111M</td>
<td>35M</td>
</tr>
<tr>
<td>Unsafe abortions</td>
<td>35M</td>
<td>10M</td>
</tr>
<tr>
<td>Maternal deaths</td>
<td>299K</td>
<td>113K</td>
</tr>
</tbody>
</table>

Unmet needs for services are greatest in the poorest countries
This is apparent when examining the proportion of women who deliver their babies in a health facility

Source: Guttmacher Institute 2020
2/3 of 103 countries surveyed over the past several months have experienced disruptions in family planning services.

- World Health Organization

Across 37 countries, nearly 2 million fewer women received services between January and June than in the same period last year --- 1.3 million in India alone.

- Marie Stropes International

- Up to 7 million unintended pregnancies could occur worldwide due to limited health care services brought about by Covid-19.

- UNFPA
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
Unmet Need for Family Planning

- There is currently an estimated $5.5 billion funding gap for meeting family planning needs globally.

- U.S. international aid for family planning programs represents less than .15% of the annual budget.
  
  • Funding for family planning programs is under threat.
  
  • The U.S. has denied contributions to the UNFPA since 2017 because of the Kemp-Kasten amendment.
  
  • The Trump Administration has also reinstated and expanded the Global Gag Rule, which limits global health programs.

Source: Kaiser Family Foundation
Photo by Scott Webb 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.
CONCLUSIONS

- Expanding access to FP/RH is critical to women’s empowerment and can play an impactful role in climate adaptation efforts.

- Slowing population growth through rights-based innovations like voluntary planning services and girls’ education can mitigate climate change by offsetting emissions in the long-term.

- Family planning is a building block of resilience to climate change impacts.

- Family planning programs receive 1% of all overseas development assistance, and yet are some of the most cost-efficient and effective investments a country can make.
“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)