

# Ecological Threat Report 2022

Overview & Key Findings

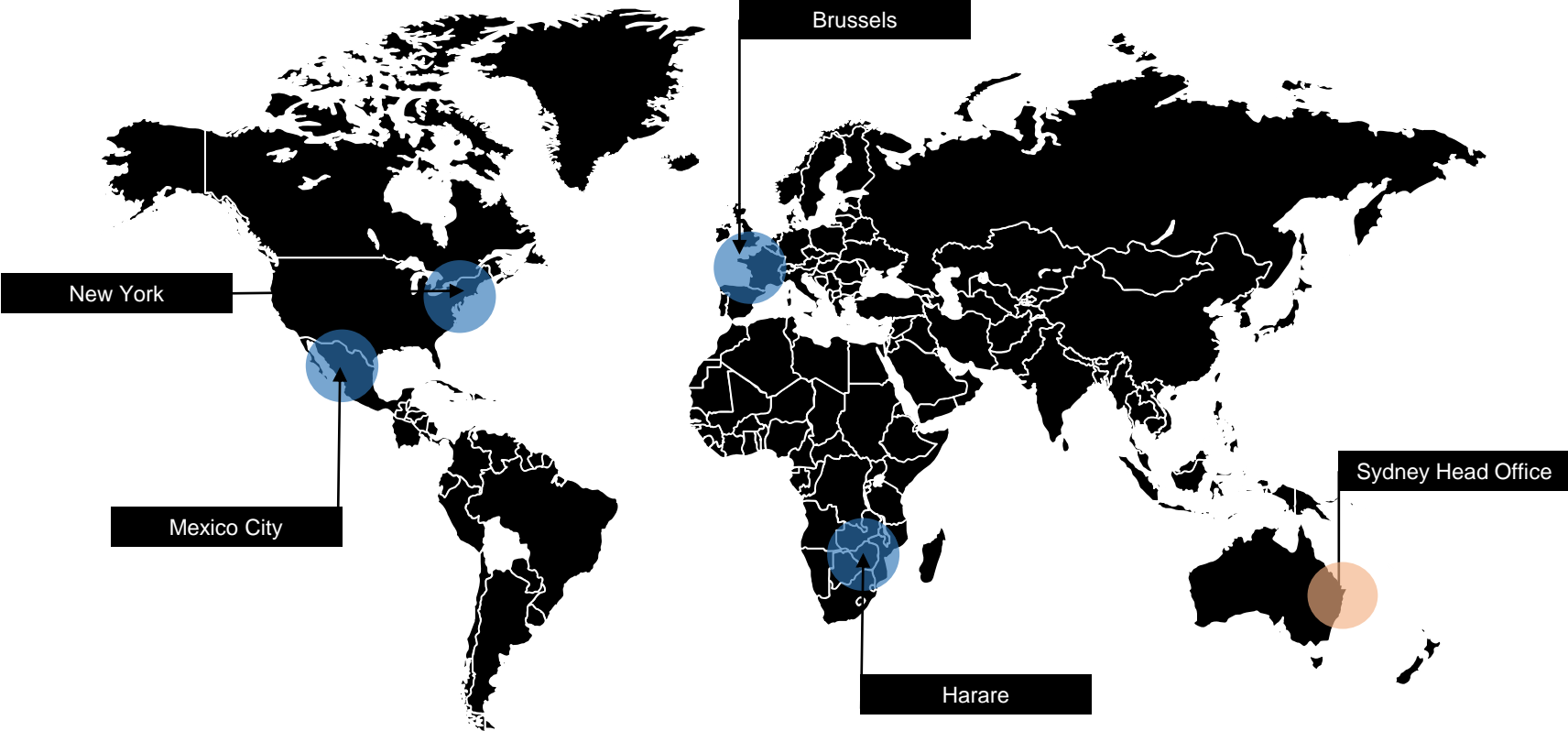
Serge Stroobants  
Global Director for Security, Defence , Intelligence



**The Institute for Economics and Peace** is an independent, not-for-profit think tank dedicated to understanding the intersection between business, peace and economics. It places a special emphasis on metrics to measure peace, operational programs to improve peace, and the economic benefits of peace.



# Our international offices



# The Ecological Threat Report

Ranks

**228**

Countries and  
Independent  
States

Ranks

**3638**

Local  
Administrative  
Areas

Analyses

**250**

Cities

**99.99%**

of world's population  
covered

Using

**9**

Indicators on a  
1-5 scale

Sources thousands  
of datasets to  
assess ecological  
vulnerability,  
resilience and risk

**ECOLOGICAL  
THREAT  
REPORT  
2022**

Analysing Ecological Threats,  
Resilience & Peace

IEP



# The Ecological Threat Report

**4**

**domains**

*Food Security  
Water Stress  
Population Growth  
Natural Disasters*

**2**

**measures of  
ecological  
threat**

*The ETR score  
The Catastrophic  
Score*

**27**

**hotspot  
countries**

*Countries with the  
highest ecological  
threats and lowest  
resilience*

01.  
**Key  
Findings**

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# 2022 key highlights

In 2022, 127 countries home to

# 2.05bn

people face catastrophic ecological threats.

By 2050, same 127 countries will have

# 3.4 bn

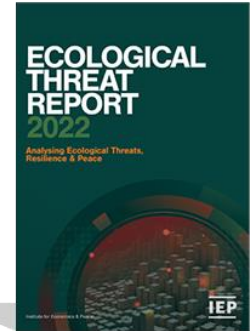
# 66% ↗

From today



## 2022 highlights

- **Ecological threats, violence and conflict are closely associated, forming vicious cycles of violence**
  - As ETR scores worsen peacefulness deteriorates – without societal resilience.
  - The world's 40 least peaceful countries will increase their population by 1.3 billion by 2050, representing 49% of the world's population.
  - They also have the worst ecological threats.
  - 760 million suffering from undernourishment and will only get worse.
  - Since 2019, the world's concern over climate change has decreased by 1.5%. Citizens in three of the four biggest emitters have a low level of concern – China, India, and Russia.
  - The world's fastest growing megacities are the least capable of managing growth.
  - Countries with high societal resilience are likely to meet their ecological challenges.

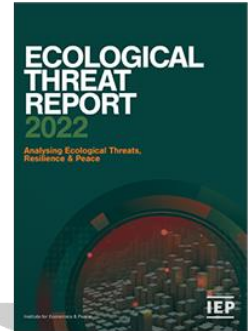




# 2022 highlights...cont'd

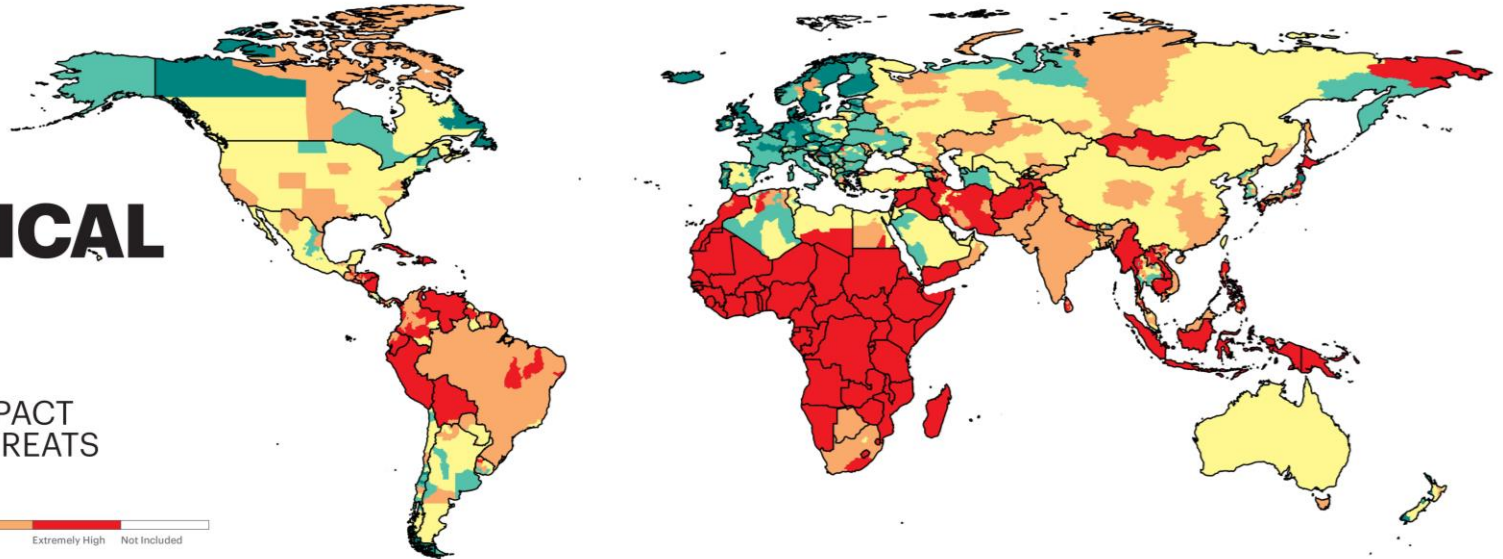
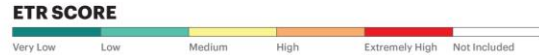
## ➤ Sub Saharan Africa facing the biggest challenges

- All but one country are facing severe water stress.
- 89% of all people facing food insecurity are in sub-Saharan Africa.
- The population of sub-Saharan Africa is projected to increase by 95% by 2050. 15 countries will more than double.
- The five megacities with the largest population growth are in sub-Saharan Africa.
- Six of the 10 least peaceful countries in the world are in sub-Saharan Africa.
- 2 out of 3 hotspot countries are in sub-Saharan Africa.
- 7 of 8 countries with worst risk score are in sub-Saharan Africa.



# 2022 ECOLOGICAL THREAT REPORT

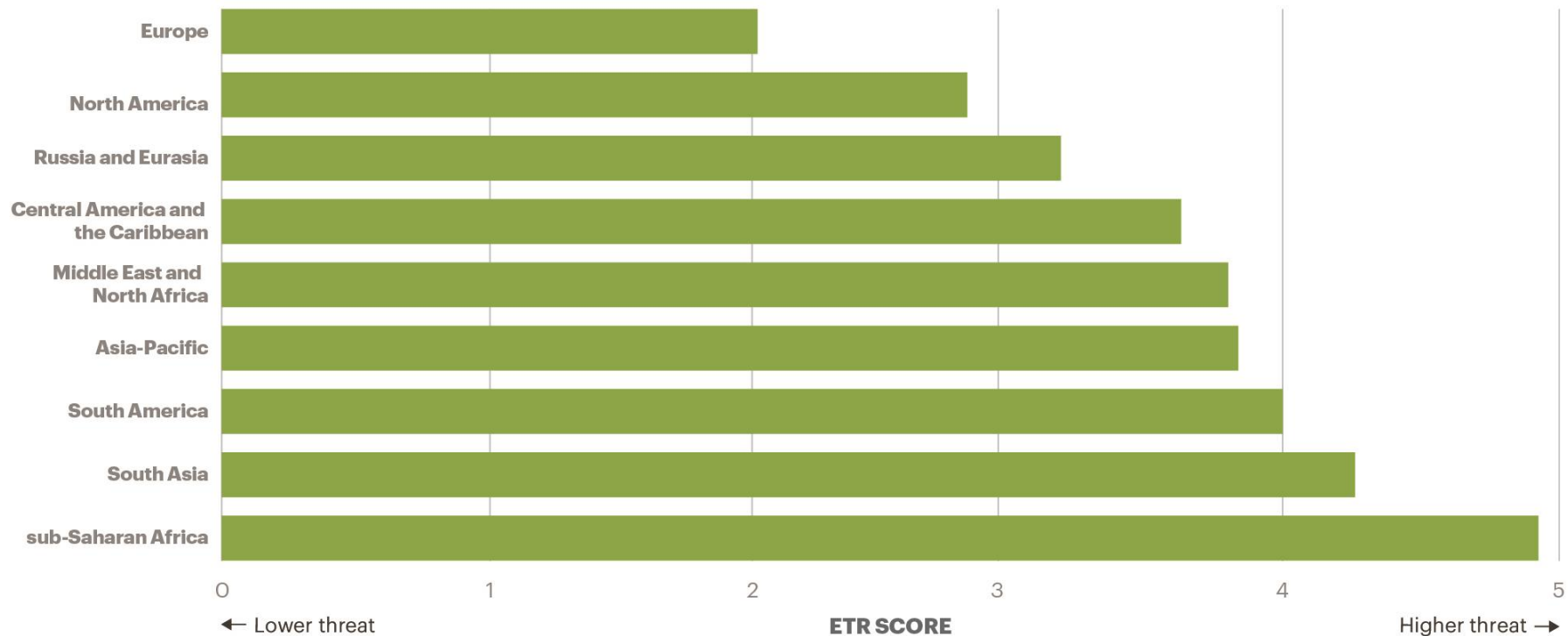
MEASURING THE IMPACT  
OF ECOLOGICAL THREATS



Source: IEP



# ETR SCORE – Average by region



Source: IEP Calculations



02.

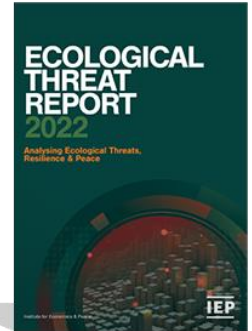
# Country Hotspots

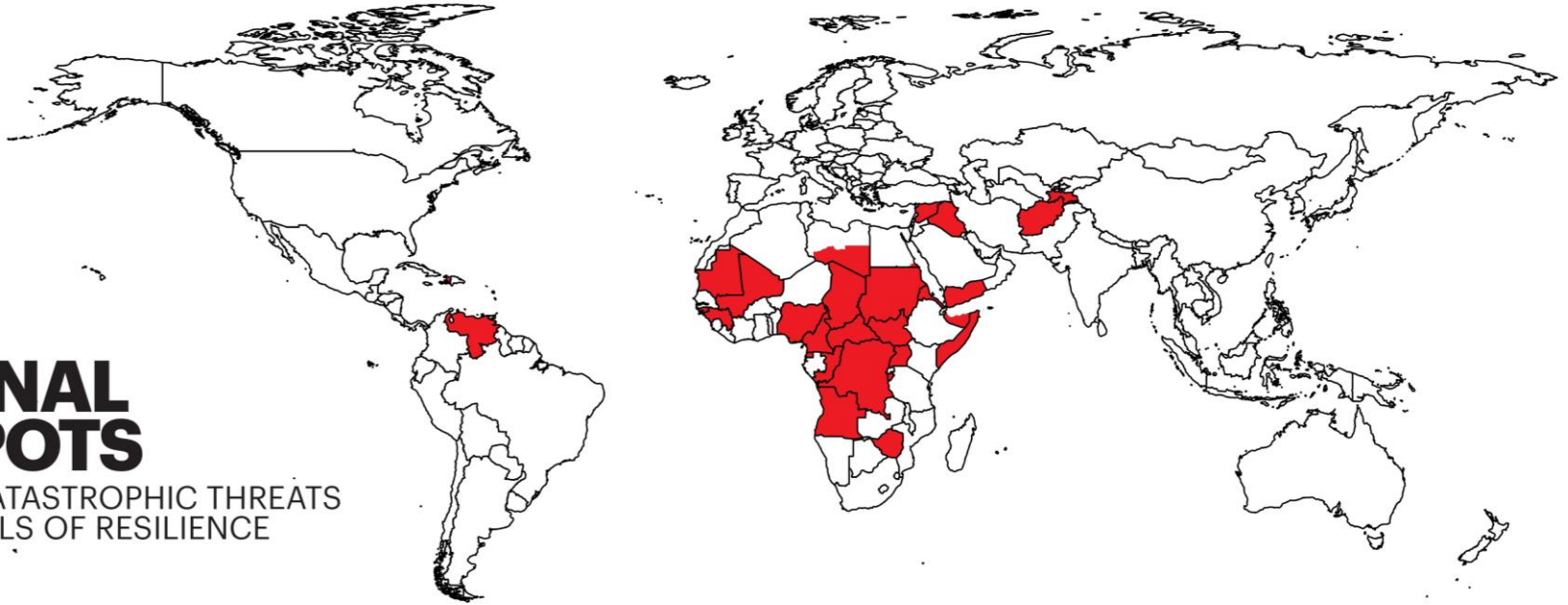
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# Resilience and Hotspot Countries

- **The 30 countries with the lowest Positive Peace and worst ecological threats are home to 768 million people**
  - Positive Peace shows high statistical associations with improved levels of food security, water security and the ability to manage natural disasters.
  - The ETR uses Positive Peace and the worst ETR scores to identify countries where resilience is unlikely to be strong enough to adapt to shocks – hotspot countries.
  - **27 hotspot countries** face extreme ecological threats and low societal resilience – home to **738 million people**.





# NATIONAL HOTSPOTS

COMBINING CATASTROPHIC THREATS AND LOW LEVELS OF RESILIENCE

 Hotspots

Source: IEP



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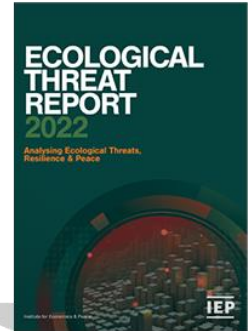
# Ecological Threats

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# Food Security – Key Findings

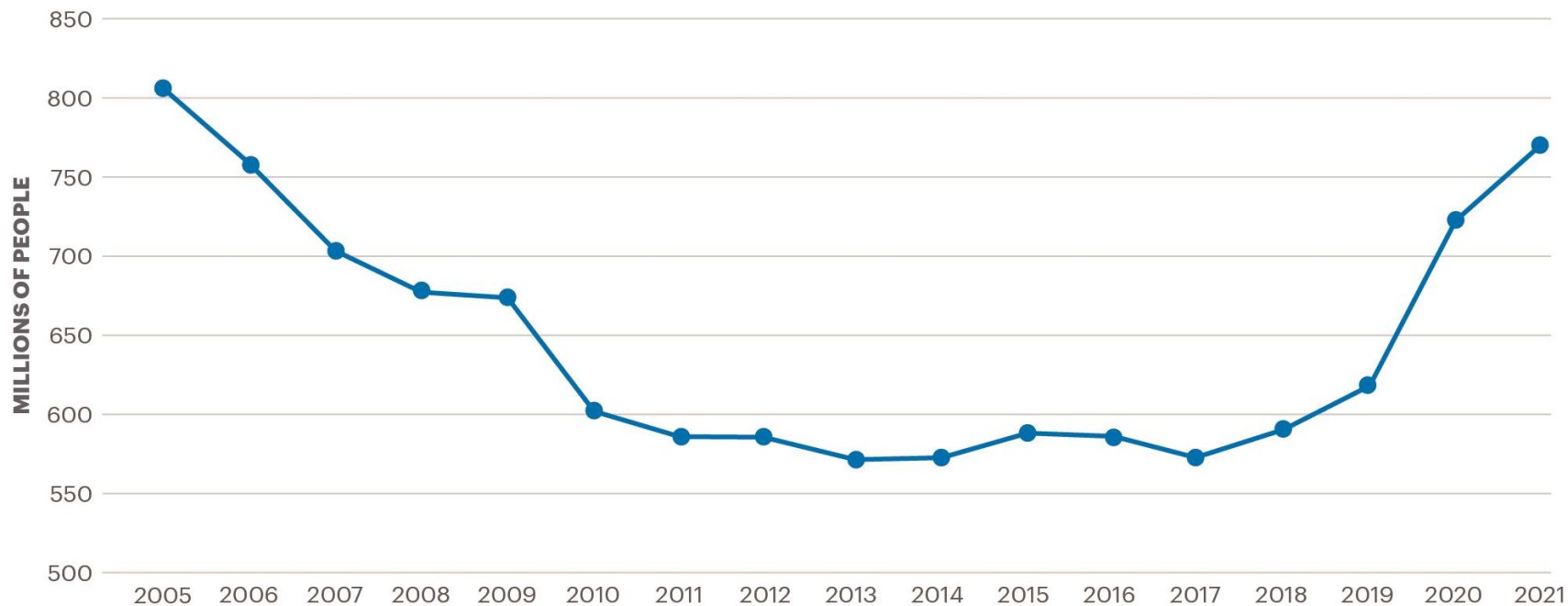
- **Forty-one countries face extreme food insecurity**
  - **830M** live in countries with severe food insecurity – more than 65% of the population were unable to afford food at least once last year.
  - **Sub-Saharan Africa** has the largest proportion of its population living with catastrophic food insecurity, **14 times higher than the next region MENA.**
  - 92% of food insecure people low peace countries.
  - The largest deteriorations since 2019 occurred in Colombia, Syria, Ethiopia and Mozambique.





# Number of undernourished globally, 2005-2021

In 2021, the number of undernourished people rose by an estimated 46 million to **760 million**.

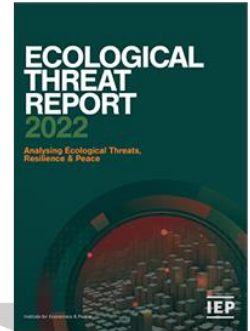


Source: FAO; IEP Calculations



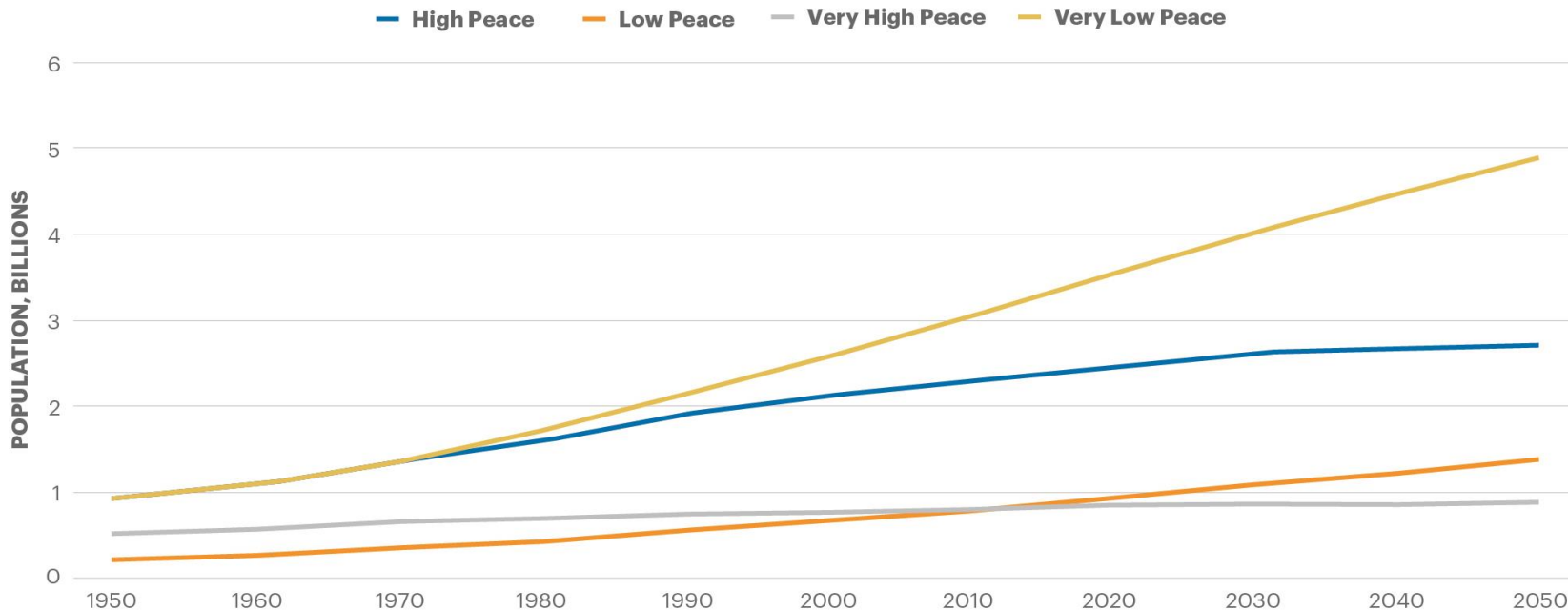
# Water Security

- **Water and food are intrinsically related. Lack of water leads to lack of food**
  - More than **1.4 billion people** globally are exposed to extreme levels of water stress in 83 countries.
  - Sub-Saharan Africa, South Asia and Latin America suffer from the worst water stress.
  - Without planning many European countries will suffer water stress – Greece, Italy, Portugal, Netherlands
  - Conflict with water as a trigger has tripled since 2000. Iraq, Somalia and Yemen have had the most water-related conflicts in the last 20 years.
  - Damming is a major issue for downstream countries – 300M dependent on Mekong, 200M dependent on the Nile.



# Projection of global population, by peace level, 1960–2050

The population is projected to increase by 37 per cent by 2050 in very low peace countries compared to an increase of less than one per cent in very high peace countries.



Source: IHME



# The fifteen countries predicted to double their population by 2050

All fifteen countries predicted to double their population by 2050 are located in sub-Saharan Africa.

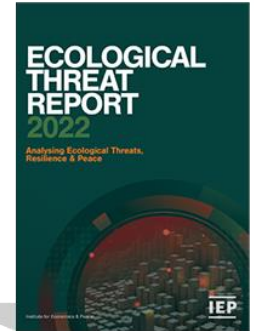
Country	2020 Population (millions)	2050 Population (millions)	Percentage Increase
Niger	24.1	68.5	184%
Angola	32.8	76.0	132%
Uganda	47.2	105.7	124%
Somalia	16.1	35.9	123%
Democratic Republic of the Congo	89.5	197.4	121%
Tanzania	62.8	138.1	120%
Zambia	18.7	41.0	120%
Mali	20.3	44.0	117%
Burundi	11.9	25.8	116%
Mozambique	32.3	67.8	110%
Burkina Faso	20.9	43.2	107%
Chad	16.3	33.6	107%
Malawi	20.3	41.7	106%
Republic of the Congo	5.7	11.5	102%
Equatorial Guinea	1.4	2.8	102%

Source: UNDESA



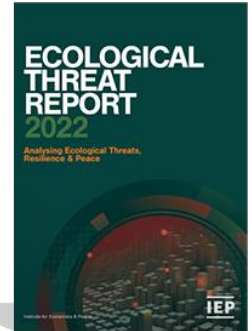
# Natural Disasters

- Asia-Pacific is the most impacted region by natural disasters, followed by sub-Saharan Africa and Central America and the Caribbean.
- The cost of natural disasters has also risen from \$50 billion per year in the 1980s to \$200 billion per year in the last decade.
- Flooding is the most common natural disaster since 1981 with 5,079 incidents recorded over the period.
- Of the 27 ETR hotspot countries Afghanistan, Haiti, Tajikistan, Nigeria and Mali were the countries with the biggest increases in natural disasters since 1981.



# Disaster and Conflict Displacement

- **The number of people displaced by conflict keeps increasing**
  - 89 million currently displaced because of conflict - up 3.5% from last and doesn't include Ukraine.
  - Displacements from natural disasters are usually short term.
  - The five countries with the largest conflict displacements in 2021 - Syria, Ethiopia, DRC, Afghanistan and South Sudan.
  - In 2021, the countries that received the most refugees included Lebanon, Jordan, Turkey, and Uganda – over 6.5 million in 2021.
  - In Europe, the countries that received the most included Sweden, Austria, Greece and Germany – over 1 million in 2021.



04.

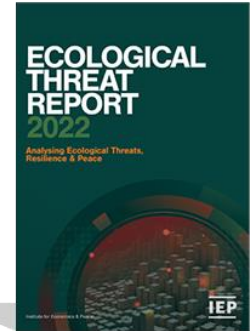
# Climate Survey

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# Global concern over climate change

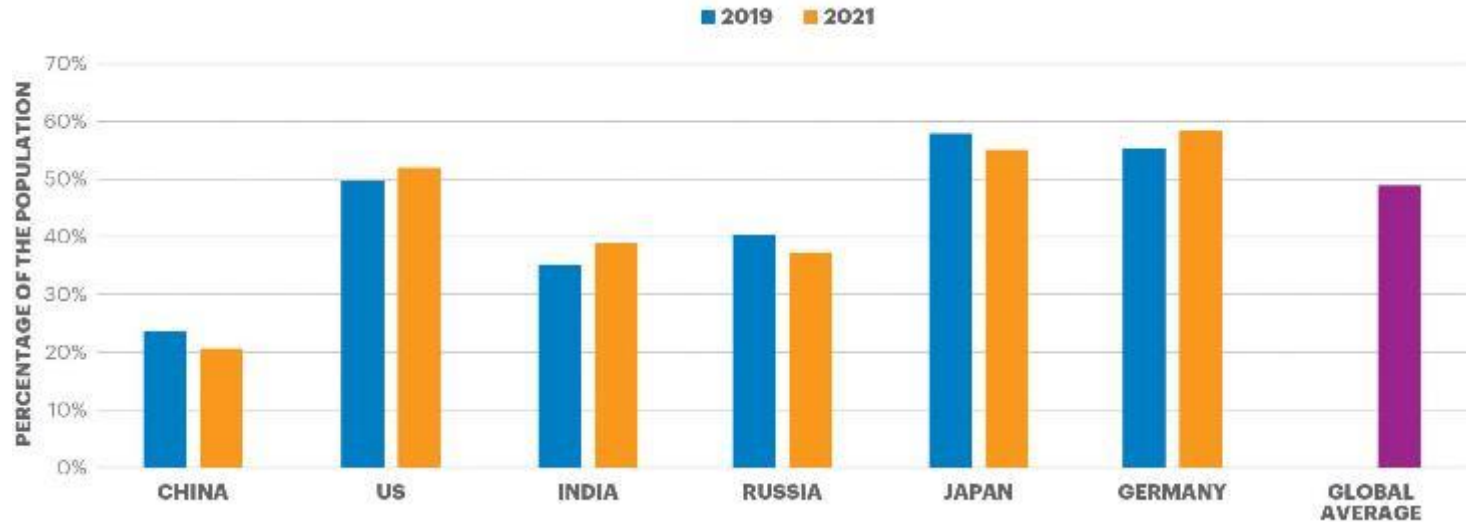
- IEP analysed Lloyd's Register risk data for public perceptions on serious concerns for climate change in next 20 years.
  - Concern has declined globally by 1.5 per cent to 48 per cent since 2019.
  - South Americans had the highest score at 65%.
  - MENA had the lowest score at 27%.
  - Sub-Saharan Africa and South Asia ranked war, terrorism, crime and violence as greater concerns than climate change.





## Percentage of population of largest CO2 emitters that believes climate change will be a serious threat over the next 20 years,

Three of the four countries who are largest emitter have low levels of concern with concern falling substantially in two.



Source: Gallup; IEP Calculations



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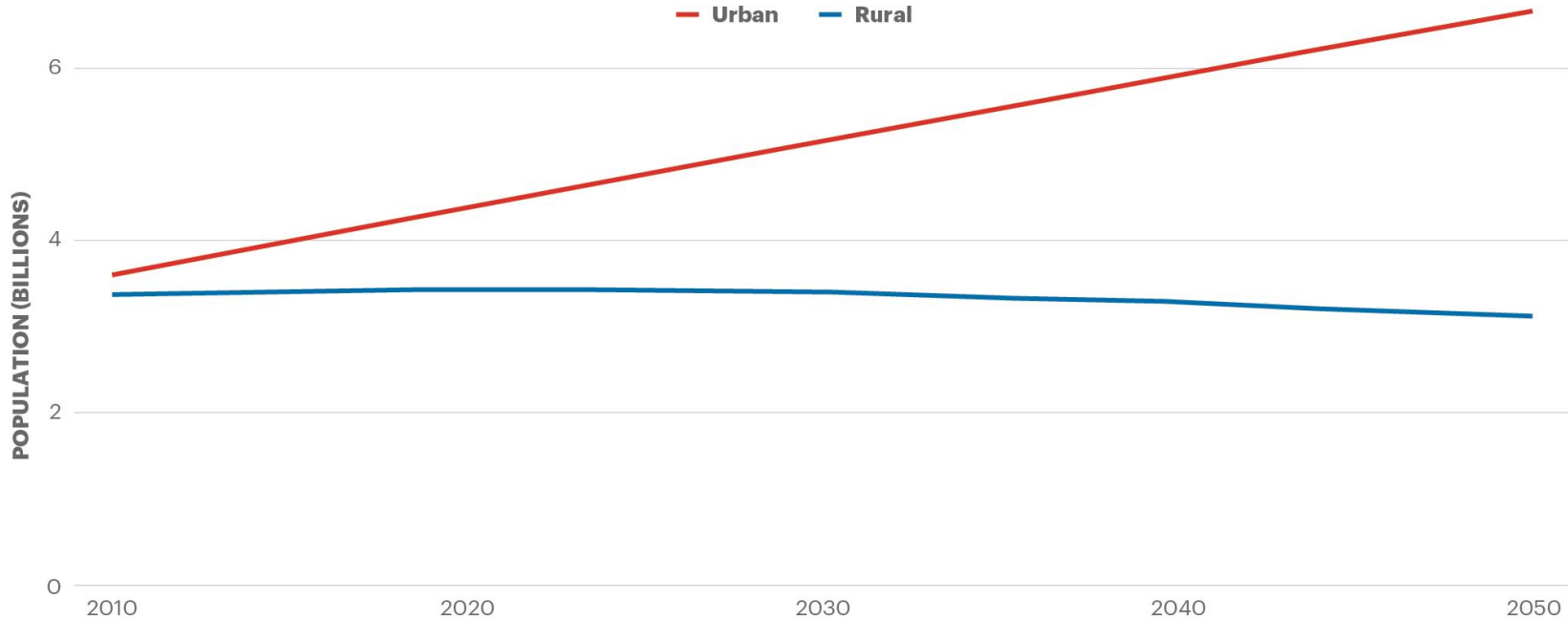
# Ecological Changes and Megacities

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# Projected population growth 2010-2050, urban versus rural

The world's population is projected to continue to rise, with the growth occurring in cities, while rural areas will marginally decline.

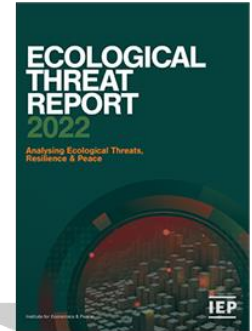


Source: IEP; OWID; Masanobu Kii 2021



# Megacities – currently 34, increasing to at least 47 by 2050

- **The fastest growing cities face similar challenges – lack financial capacity, high rates of violence, civil unrest, pervasive pollution, poor sanitation, high population growth.**
  - The least resilient cities are Kinshasa, Nairobi, Lagos, Dhaka, Baghdad, Lahore, Kolkata, Delhi.
  - Nine cities have more than 20 times the WHO recommended maximum air pollution level – most in India and China.
  - By 2050, 60% of cities will be in low peace countries and will be the fastest growing.



07.

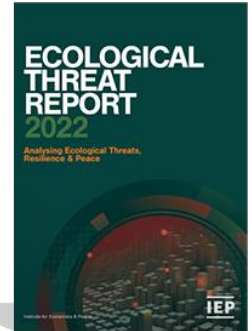
# Policy Recommendations

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# Policy recommendations

- **Current policies will not be enough to reverse the deteriorating environments of the poorest and least peaceful countries.**
  - The countries with the highest resilience will manage their way through current and emerging ecological shocks.
  - Better analysis of the societal systems would enable better environmental outcomes.
  - For the countries with the fastest population growth culturally appropriate family planning is urgently needed.
  - Micro water capture projects aid the poorest. Enable food production, allowing micro value added businesses – cooperatives work well.
  - Micro projects need stronger community design.
  - Substantial improvements in bio-mass needed – FMNR cheap, successful and highly scalable.



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