

Climate Change and Militarization: Making Change Through Rotary

Kathi Futornick, Environmental
Professional, Peace Advocate, Rotary
Club of Newberg, Oregon, USA

Alan Bazzaz, Peace Builder and Business
Owner, Rotary Club of Lake Oswego
Oregon, USA

Tom Baker, Positive Peace Activator,
Rotary Club of Golden Colorado, USA



Healing in a Divided World
**PRESIDENTIAL
PEACE CONFERENCE**

Istanbul, Türkiye
20-22 February 2025

AGENDA

“LIFE IS SHORT. MAKE IT COUNT BY DOING GOOD.”- *Paul Harris*



**MAY PEACE PREVAIL
ON EARTH
INTERNATIONAL**

COLLABORATION: ROTARY ACTION GROUPS (RAGS) + OTHERS



**IMPACT OF WAR & CLIMATE CHANGE
ON OUR PLANET, PEOPLE & ECONOMY**



THE FACES OF WAR

IEP

GLOBAL PEACE INDEX, POSITIVE PEACE



DISCUSSION: INCREASING ROTARY'S IMPACT

“THE SECRET OF OUR SUCCESS IS THAT WE NEVER, NEVER GIVE UP.”
Wilma Mankiller, former Principal Chief of the Cherokee Nation

WHY WE ARE HERE

People Fleeing Floods in Pakistan (UNHCR)



<https://www.unhcr.org/news/stories/pakistan-getting-bogged-down>

Los Angeles (Cal Matters)



The Palisades Fire jumps the Pacific Coast Highway and burns lifeguard towers near the highway in Los Angeles, on Jan. 7, 2025. Photo by Ted Soqui for CalMatters

The increasing loss of lives, people losing their homes & families, loss of infrastructure and biome; the destruction of the natural systems which sustain life on earth....

BEFORE WAR: Kharkiv region: Izyum Forest, July 28, 2021



Source: Radio Free Europe: Ukrainian service of RFE/RL), images taken by Planet Labs satellites.

Ukrainian service of RFE/RL), images taken by Planet Labs satellites.
<https://www.ukrainer.net/war-affects-animals/>

AFTER: Kharkiv region: Izyum Forest, July 6, 2022.

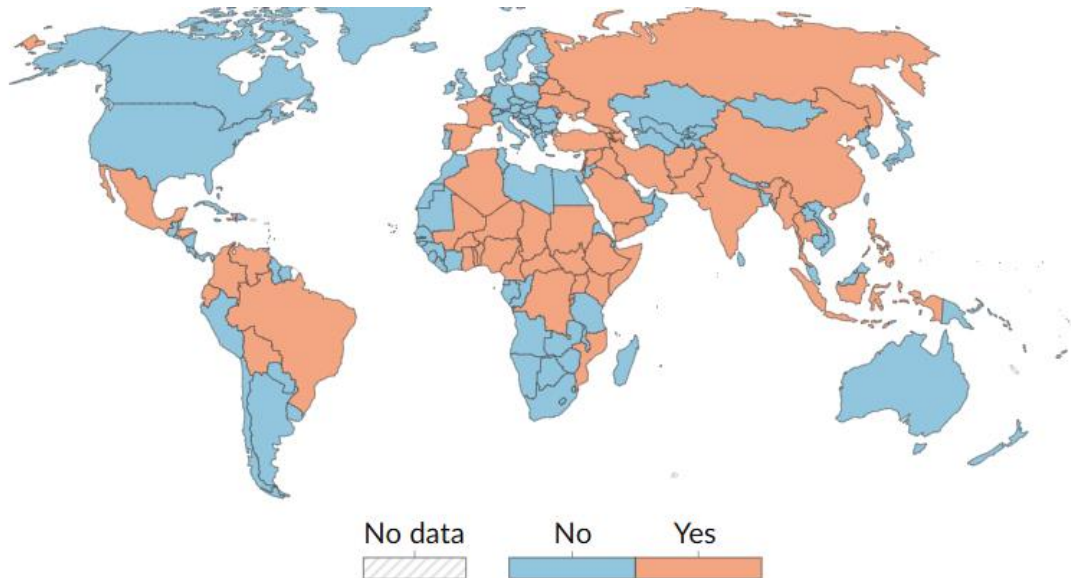


"EVERYTHING, EVERYWHERE ALL AT ONCE." - 2022 FILM TITLE

THE MAJORITY OF OUR PLANET IS IMPACTED BY WAR & CLIMATE CHANGE

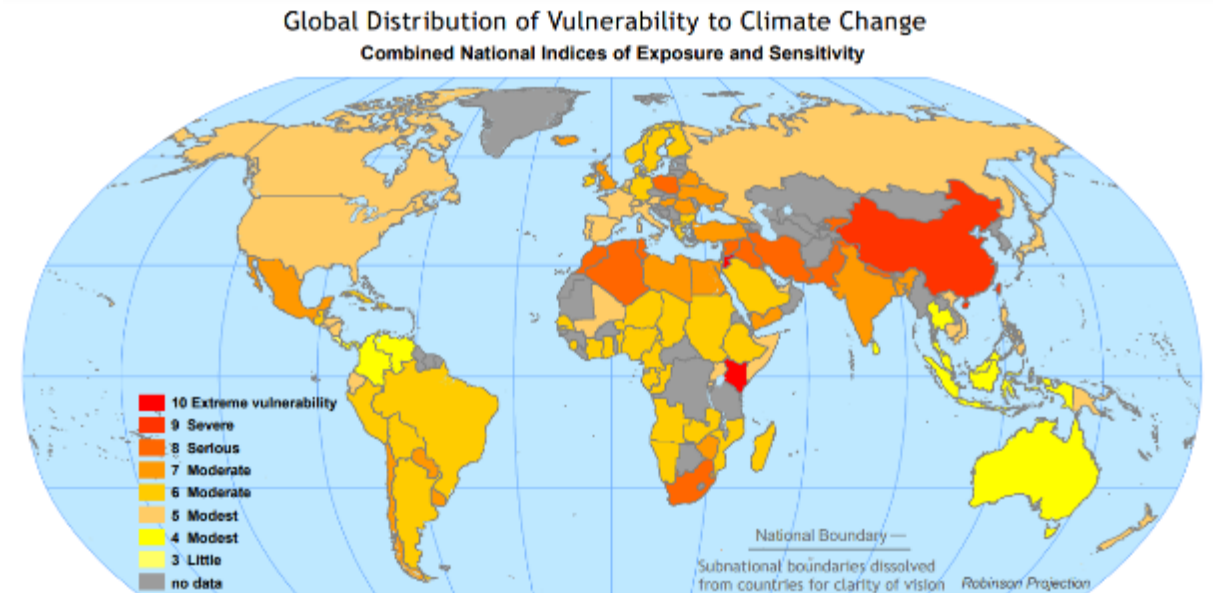
Countries Where Wars Took Place (2023)

Included are conflicts that caused at least one death in that year. Source: Uppsala Conflict Data Program (2024; Natural Earth (2022))



<https://ourworldindata.org/grapher/locations-of-ongoing-armed-conflicts>

Human Vulnerability to Climate Change



Scenario B2 in Year 2100 with Climate Sensitivity Equal to 5.5 Degrees C
Annual Mean Temperature with Aggregate Impacts Calibration and Enhanced Adaptive Capacity

<http://ciesin.columbia.edu/data/climate/>

©2006 Wesleyan University and Columbia University

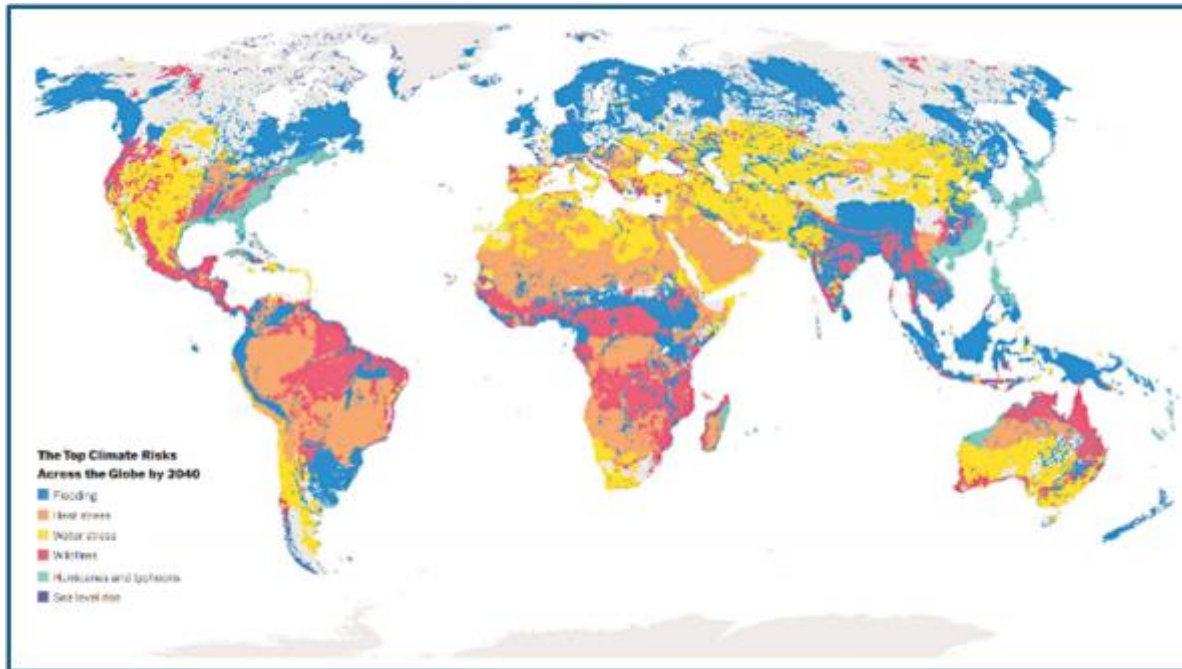
file:///C:/Users/kmfut/OneDrive/Documents/Rotary/Istanbul%202025/NASA%20Vulnerability%20MAP_12_2.pdf

JUNE 2024 WAS THE WARMEST JUNE ON RECORD FOR THE GLOBE IN NOAA'S 175-YEAR RECORD.

“TWENTY-FIVE YEARS AGO PEOPLE COULD BE EXCUSED FOR NOT KNOWING MUCH, OR DOING MUCH, ABOUT CLIMATE CHANGE. TODAY WE HAVE NO EXCUSE.” - Desmond Tutu, Former Archbishop of Cape Town

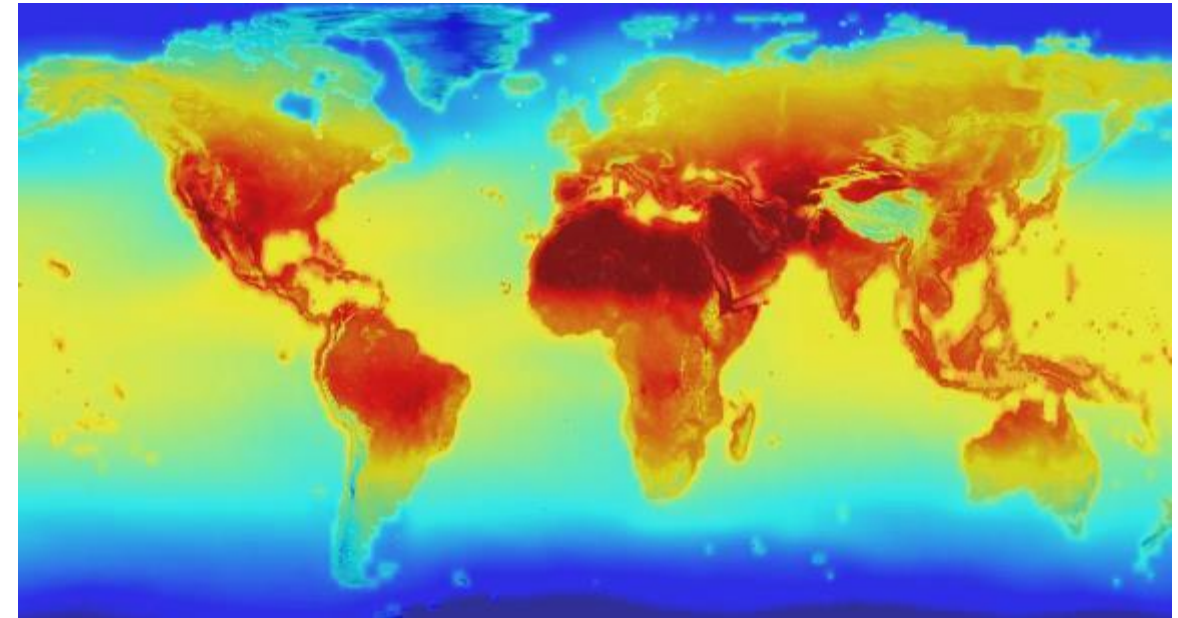
CLIMATE RISK PROJECTIONS

CLIMATE RISK PROJECTED: 2040



Source: Four Twenty Seven & The New York Times
<https://www.nytimes.com/2021/03/25/learning/whats-going-on-in-this-graph-global-climate-risks.html>

CLIMATE RISK PROJECTED: 2100



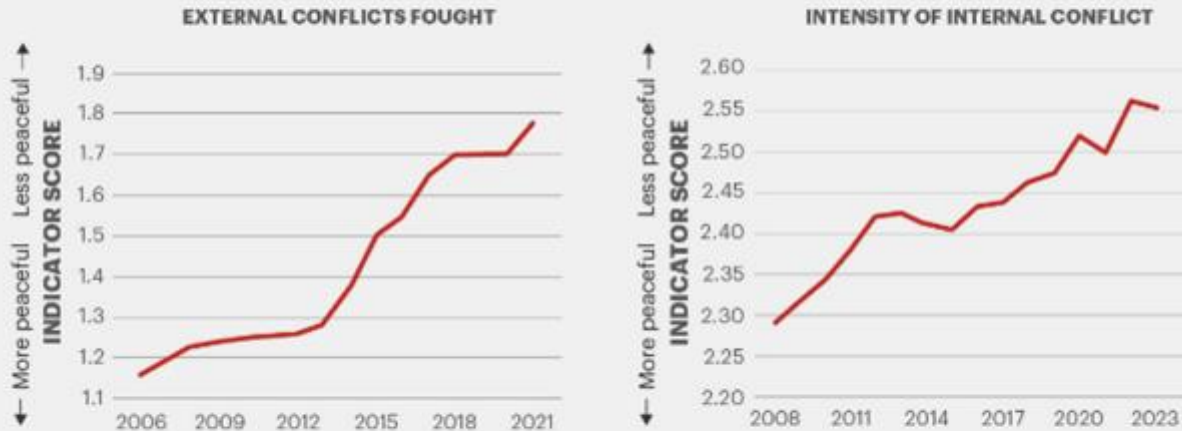
<https://www.nasa.gov/news-release/nasa-releases-detailed-global-climate-change-projections/>

"ALL WAR IS STUPID. AVOID IT AT ALL COSTS, AND
YOU COME OUT AHEAD."

WWII Veteran: 101-Year-Old Tuskegee Airman Shelton Ware:

NUMBER OF CONFLICTS INCREASING

Trends in key ongoing conflict indicators



Source: UCDP, EIU, IEP calculations



GLOBAL INVESTMENT IN PEACE

\$6.20/Person

\$49.6 Billion

(Source: GPI/IEP)

GLOBAL INVESTMENT IN CLIMATE

\$162/person

\$1.3 Trillion

(Source: GPI/IEP)

GLOBAL INVESTMENT IN MILITARY

\$300/person

\$2.4 Trillion

(Source: GPI/IEP)

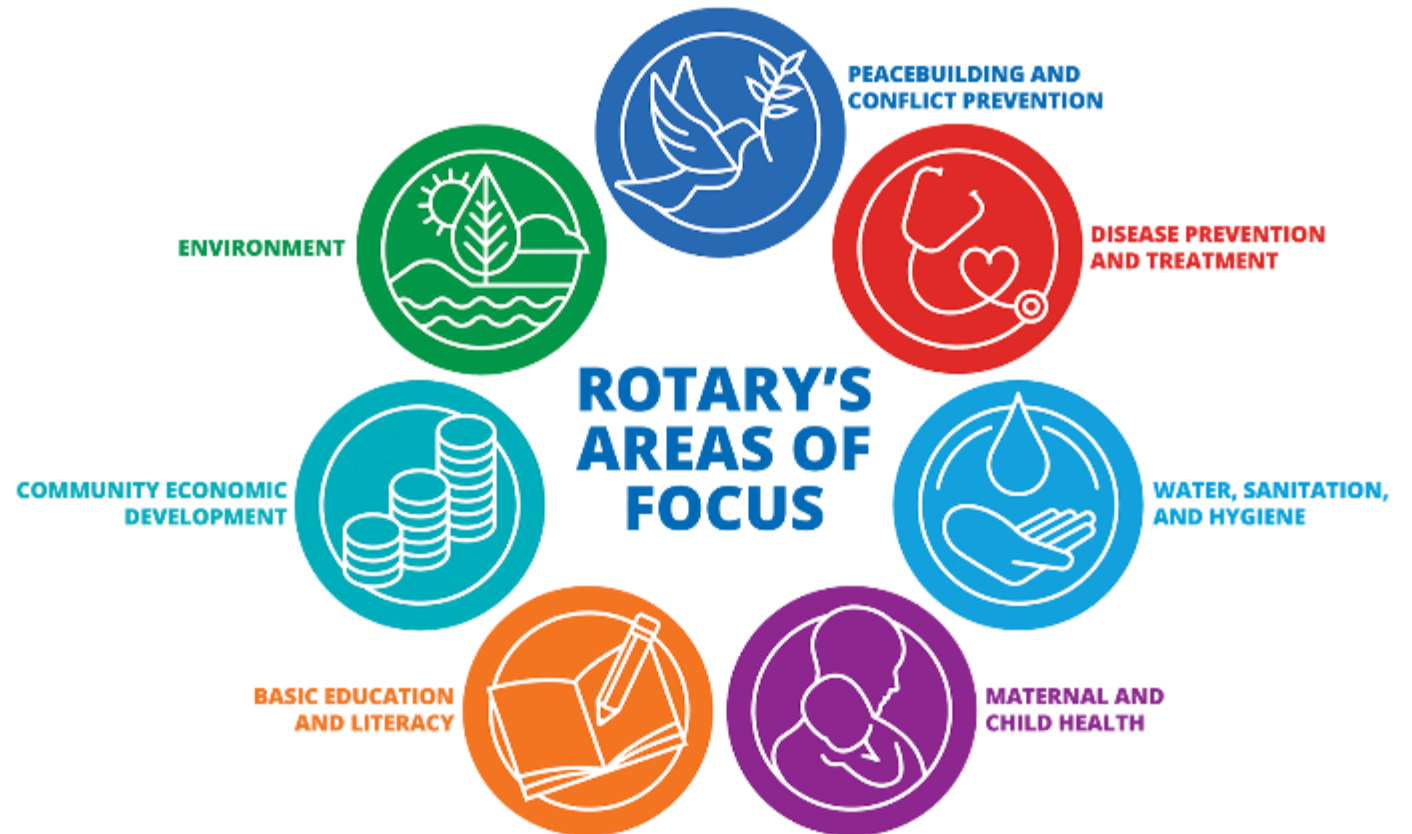
“DO YOUR LITTLE BIT OF GOOD WHERE YOU ARE; IT’S THOSE LITTLE BITS OF GOOD PUT TOGETHER
THAT OVERWHELM THE WORLD” - *Desmond Tutu*

ROTARY’S 7 AREAS OF FOCUS & PARTNERSHIPS

ROTARY • ROTARACT • INTERACT CLUBS – THE HEARTBEAT OF ROTARY

JUST IMAGINE,
ROTARIANS BUILDING A
WORLD BEYOND WAR

JUST IMAGINE
ROTARIANS SLOWING
DOWN OUR CLIMATE
CRISIS



"I HAVE SEEN THAT IN ANY GREAT UNDERTAKING IT IS NOT ENOUGH FOR A MAN TO DEPEND SIMPLY UPON HIMSELF."

Lone Man (Isna-la-wica) - Teton Sioux

THE MAGIC OF ROTARY - UNITING IN A COMMON CAUSE



- **Peace Builder Clubs, partners**
- **Partnering with Community & Clubs Worldwide**, e.g., peace pole project, peace gardens & trails, Peace Village, clean water is peace – debris tracker
- **Education**, e.g., Peace k-12 programs, **Peace Fellowships**, Peace Centers, partnerships
- **Weekly Meetings, Podcasts**
- **Empowering Communities**
- **EcoClubs, partners, Project Drawdown**
- **Climate Change**, e.g., ESRAG at COP29, Climate Action Network
- **Pollution – Worldwide Partnerships**, i.e., Plastics Solution Task Force, recycling lithium battery recycling (Faso Recycling), clean water
- **Education, Training**
- **Renewable Energy**, e.g., roof top solar, Navajo Solar Project,
- **Weekly Seminars, Podcasts**
- **Empowering Communities**

“Politics is war without bloodshed while war is politics with bloodshed” - *Mao Tse-Tung*
“War is the point at which politics turns into murder” - *Michel Serres, (Le Contrat naturel, 1990)*

“THE MOST VIRTUOUS WAR IS THE WAR AGAINST WAR.”
Paul Harris

WHAT IS WAR?

PREWAR



<https://www.visualcapitalist.com/the-top-25-defense-companies-by-revenue/>



<https://worldbeyondwar.org/military-empires/>

Unplanned Explosions At Military Sites (UEMS)



<https://www.nato.int/docu/review/articles/2011/06/01/dangerous-stockpiles-unplanned-explosions-high-costs/index.html>

DURING WAR



<https://news.un.org/en/story/2023/04/1135252>



Source: Radio Free Europe: Ukrainian service of RFE/RL, images taken by Planet Labs satellites.

AFTER WAR



More than 100 soldiers were set on fire, creating an environmental catastrophe that required an international response. Photograph: Steve McCurry



<https://news.un.org/en/story/2023/04/1135252>

“THE MOST VIRTUOUS WAR IS THE WAR AGAINST WAR.”
Paul Harris

WHAT IS WAR?

PREWAR



<https://www.visualcapitalist.com/the-top-25-defense-companies-by-revenue/>



<https://worldbeyondwar.org/military-empires/>

Unplanned Explosions At Military Sites (UEMS)



<https://www.nato.int/docu/review/articles/2011/06/01/dangerous-stockpiles-unplanned-explosions-high-costs/index.html>

DURING WAR



<https://news.un.org/en/story/2023/04/1135252>



Source: Radio Free Europe: Ukrainian service of RFE/RL, images taken by Planet Labs satellites.

AFTER WAR



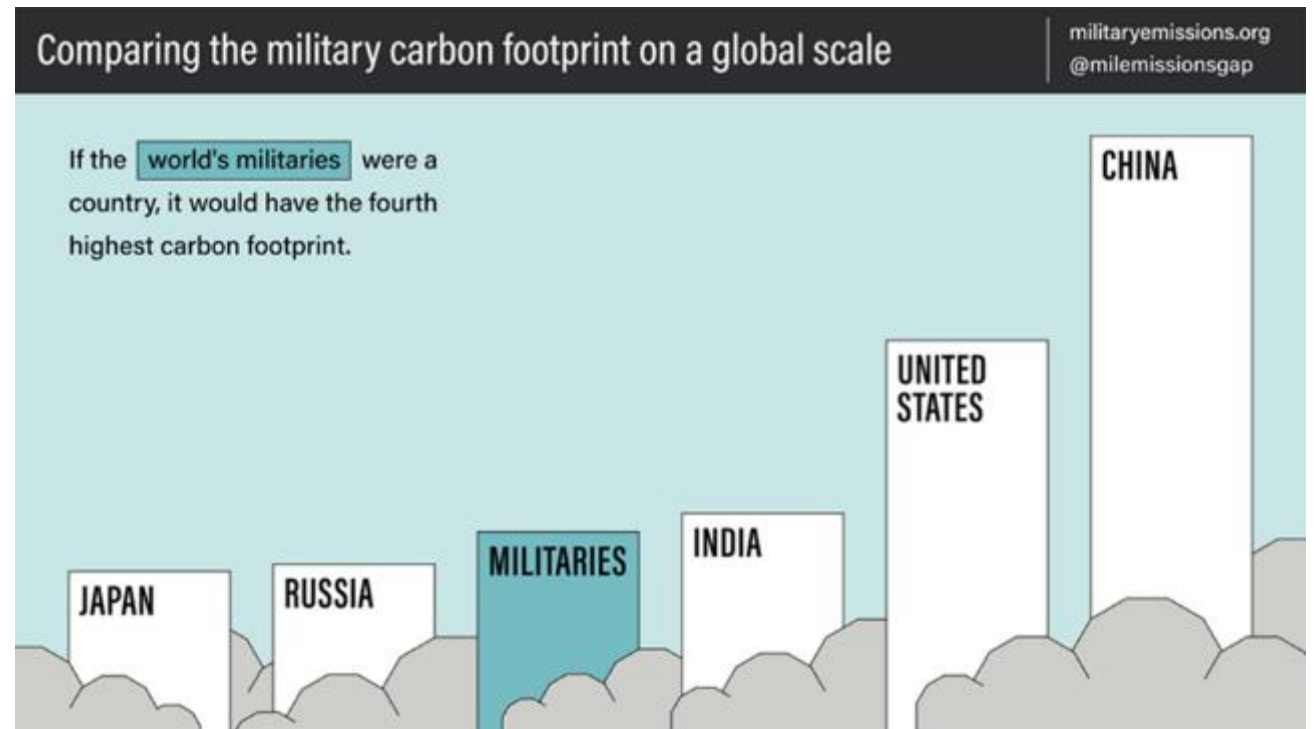
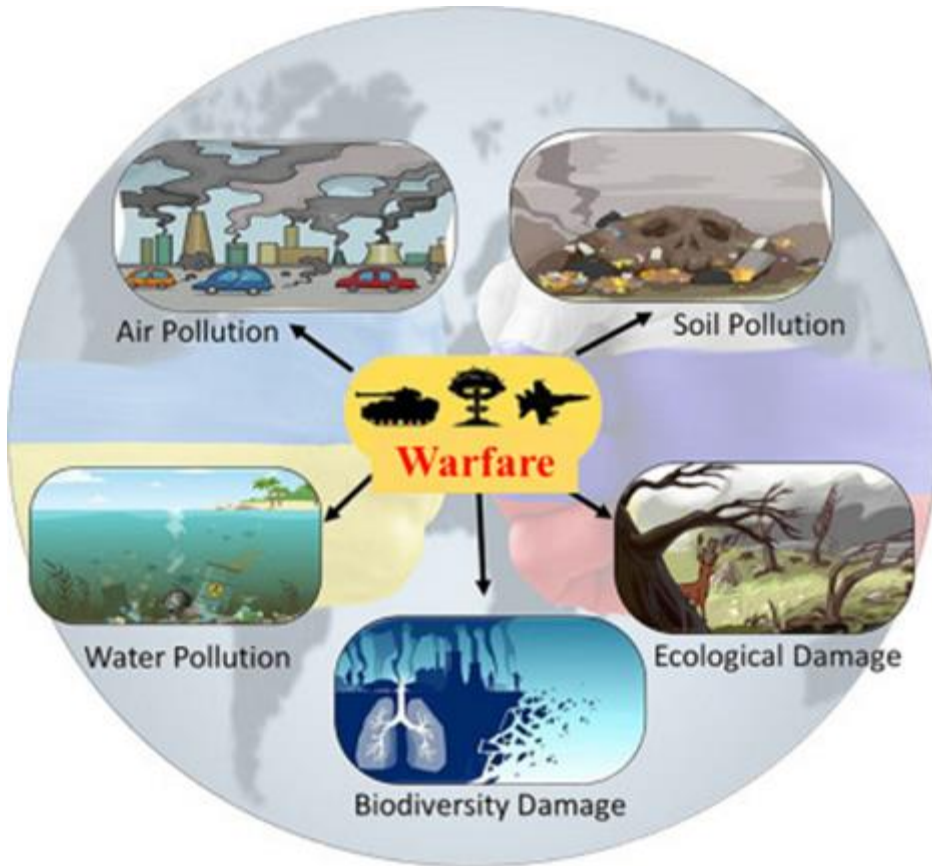
More than 100 missiles were set on fire, creating an environmental catastrophe that required an international response. Photograph: Steve McCurry



<https://news.un.org/en/story/2023/04/1135252>

“IN OUR EVERY DELIBERATION, WE MUST CONSIDER THE IMPACT OF OUR DECISIONS ON THE NEXT SEVEN GENERATIONS.”
Iroquois Proverb

MILITARY OBJECTIVES TAKE PRECEDENCE - OVER EVERYTHING

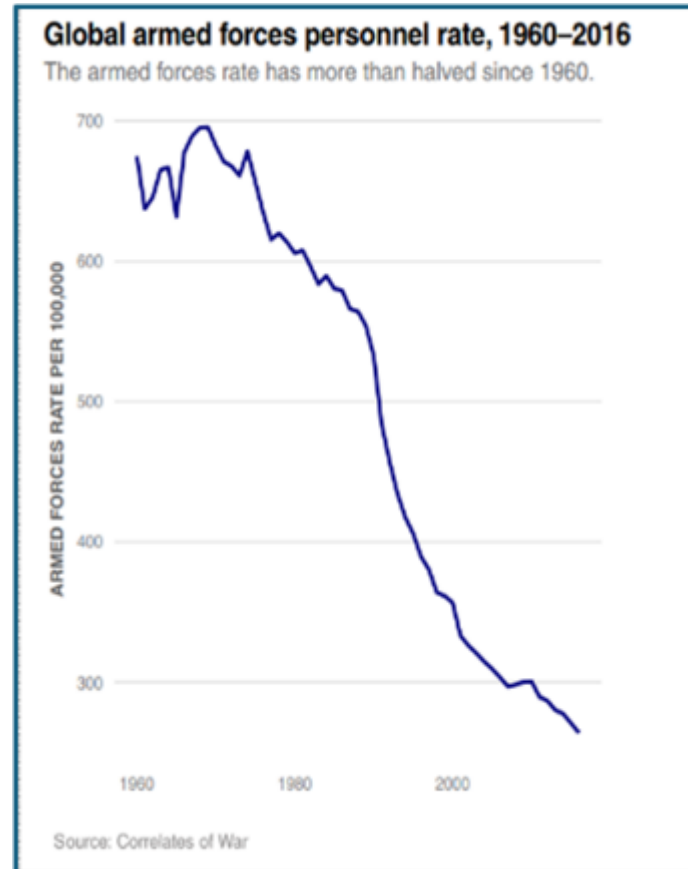
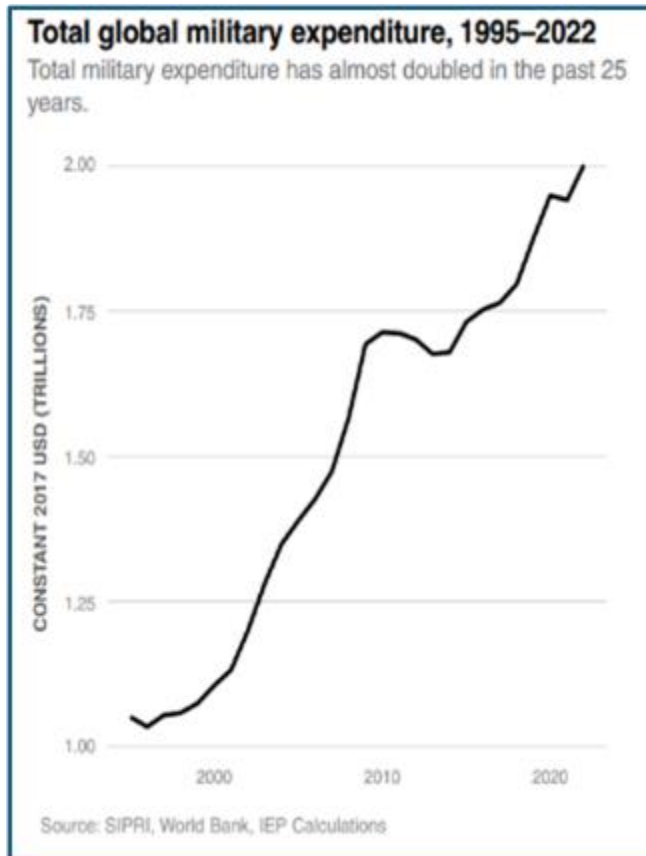


“MUST THE BEST GENIUS OF MEN BE DEVOTED TO THE SCIENCE OF WAR AND NONE TO THE SCIENCE OF AVERTING IT?”

PAUL HARRIS, 1940

DIVERSION OF RESOURCES

INCREASED MILITARY EXPENDITURE AT A TIME OF CLIMATE COLLAPSE



Battles of the Future

- Focus on Highly Lethal Weapons
- Increase weaponry to go farther & with precision
- Protect against missiles, drone & satellite attacks.
- Protect communication systems i.e., EMP

VIOLENT CONFLICT

25%

1/4 of the world or
2 billion people affected by
violent conflict

ENVIRONMENTAL DAMAGE

80%

**More than 80% of conflict
& militarization occurs in
sensitive ecological
areas. Wars impact about
6% of the earth's surface.**

CHILDREN

18%

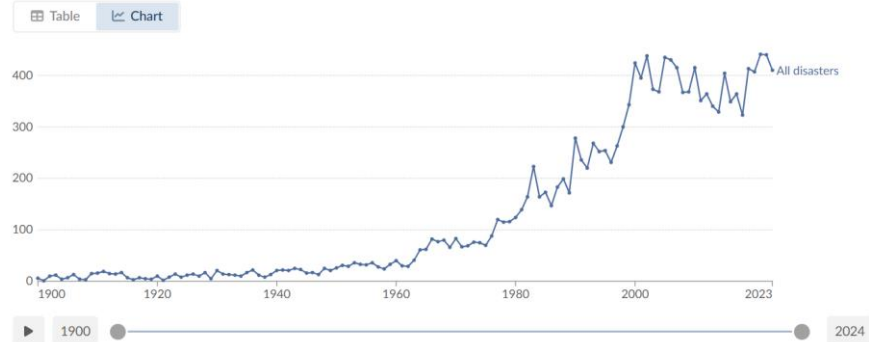
468 MILLION CHILDREN
AFFECTED BY VIOLENT
CONFLICT

CLIMATE CHANGE: WHAT WE SEE

Number of recorded natural disaster events, 1900 to 2023

The number of global reported natural disaster events in any given year. Note that this largely reflects increases in data reporting, and should not be used to assess the total number of events.

Our World
in Data



<https://ourworldindata.org/grapher/number-of-natural-disaster-events>



UN News Media



<https://www.climatecentre.org/14986/california-fires-hundreds-of-american-red-cross-workers-deployed-to-assist-affected-residents/>



<https://www.climate.gov/news-features/blogs/beyond-data/2018s-billion-dollar-disasters-context>



<https://www.nationalgeographic.com/animals/article/140721-animals-wildlife-wildfires-nation-forests-science>; EPA Photo



<https://www.weather.gov/safety/hurricane-after>

CLIMATE CHANGE – WHAT WE DON'T SEE



<https://worldoceanreview.com/en/wor-6/climate-change-impacts-in-the-polar-regions/retreating-ice/catastrophic-fires-in-the-tundra/>



NASA



The Kutuk River in Alaska's Gates of the Arctic National Park is one of 75 orange-stained rivers found in the region. KEN HILL / NATIONAL PARK SERVICE



<https://www.unilad.com/news/world-news/siberian-gateway-to-hell-growing-027900-20240606>

UNDERESTIMATION OF CLIMATE CHANGE & CONFLICT

WEATHER DISASTERS INCREASE RISK FACTORS FOR ARMED CONFLICT

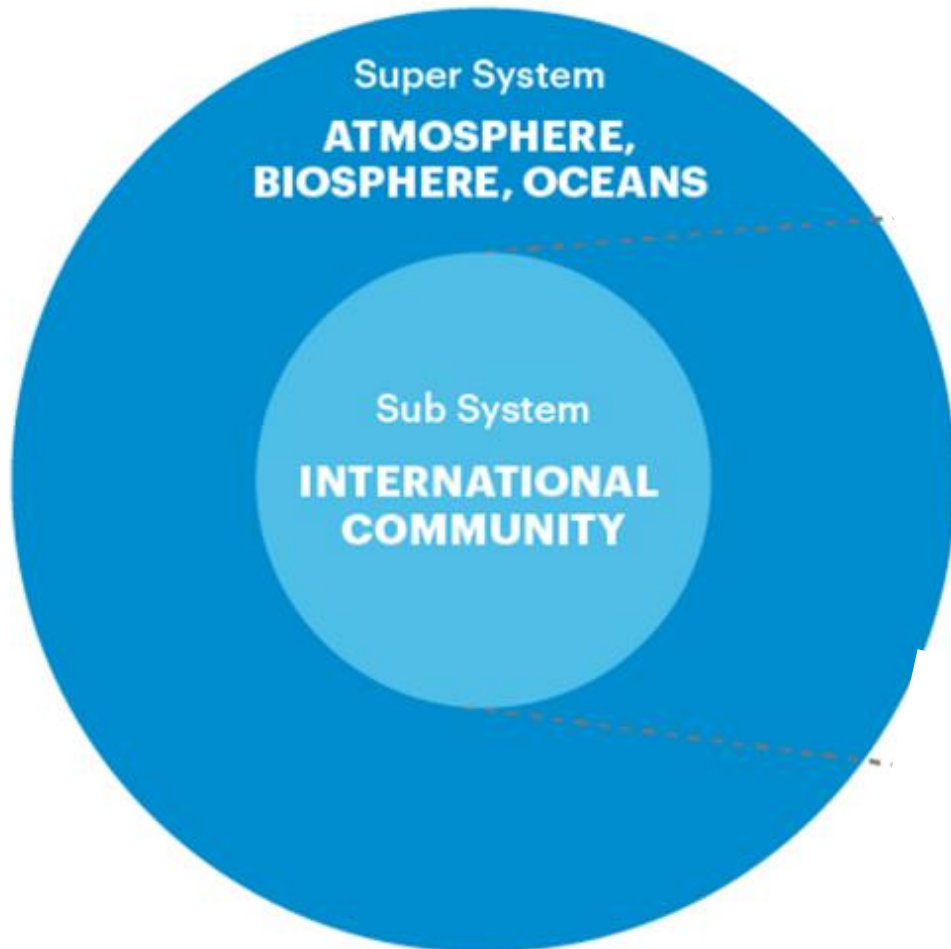
- Severe drought can create political instability
- Crop failure and ensuing high food prices can fuel conflict

CONFLICTS INCREASE VULNERABILITY WHEN WEATHER DISASTERS OCCUR

- Infrastructure destroyed
- Poverty increases
- 58% of deaths occurred in top 30 “fragile” countries

"Just as climate change adaptation and mitigation measures should not ignore conflict risks, peacebuilding efforts cannot and should not ignore the effects of climate change on key drivers of conflict."

UNDERESTIMATION OF OUR INTERDEPENDENCE ON BIODIVERSITY



**BIODIVERSITY –
OUR STRONGEST
NATURAL DEFENSE
AGAINST CLIMATE
CHANGE**

"IT ALWAYS SEEMS IMPOSSIBLE UNTIL IT IS DONE."
Nelson Mandela

IF WE DO NOTHING TO SLOW DOWN CLIMATE CHANGE

HEAT WAVES

**TORNADOES,
HURRICANES**

DROUGHTS

**SEA LEVEL
RISE**

FLOODING

INFLATION

SOLUTIONS - WHAT WE CAN DO....

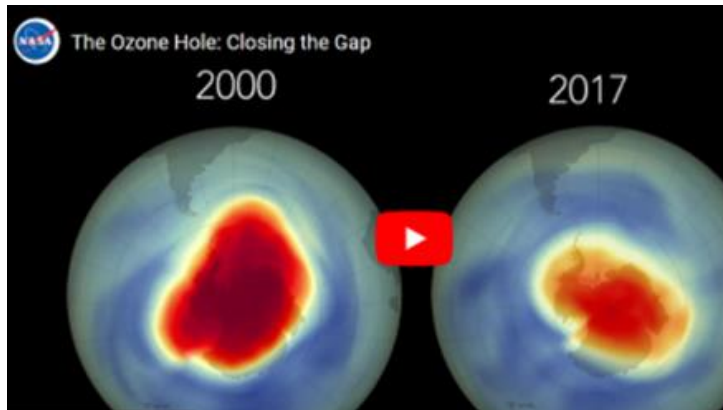
- **QUESTION** rationale for war & "do nothing" approach to slow down climate crisis
- **JOIN** ESRAG & RAGFP, other RAGS
- **CHALLENGE** build-up of military & continued use of fossil fuels
- **NON-VIOLENT** conflict resolution
- **INCREASE** education on positive peace and climate change
- **SUSTAIN** natural resources
- **PROTEST** non-violently
- **EQUITY**
- **ELIMINATE** conditions which lead to climate crisis & discontent & terrorism
- **REFOCUS MILITARY** to maintain peace, rescue operations, rebuilding....

“NATIONS ARE CAPABLE OF UNDERTAKING COMPLICATED COOPERATIVE ACTIONS
IN THE REAL WORLD OF AMBIGUITY AND IMPERFECT KNOWLEDGE” - *Anonymous*

WITH A LITTLE HELP....

RESILIENCE OF NATURE

OZONE LAYER (NASA)



DAM REMOVAL & RETURN OF FISH (100+ YEARS)



EMPOWERMENT OF PEOPLE

TOOLS YOU CAN USE

INTERACTIVE MAPS: DETERMINE YOUR RISK

Climate Risk • Conflict Risk • Vulnerability
(Socioeconomic, demographic, political, environmental)

EMERGENCY GEAR: RADIOS + PLANS + READY BAG

CIVIL PROTECTION EMERGENCY AID EUROPE....

EUROPE – EC <https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk/Map-Explorer>; <https://maps.eu-risk.eucentre.it/>

MIDDLE EAST - <https://www.atlanticcouncil.org/in-depth-research-reports/report/an-energy-and-sustainability-road-map-for-the-middle-east/>;
<https://www.worldbank.org/en/region/mena/publication/middle-east-north-africa-climate-roadmap>

WORLD BANK - <https://climateknowledgeportal.worldbank.org/country-profiles>

EXTINCTION

THE 6th MASS EXTINCTION

50%

6 million different species will be extinct by 2050.

Species are estimated to be going extinct at 1000X faster than the background rate of extinction

BIODIVERSITY

70%

Global populations of mammals, birds, fish, reptiles & amphibians declined by an average of 69% since 1970 . Biodiversity is one of our strongest defenses against climate change

CLIMATE CHANGE

80%

Of the earth's surface is impacted by climate change; 85% of the earth's population impacted by climate change.

Carbon Sink: 2023 near complete collapse

“THE WAY TO WAR IS A WELL-PAVED HIGHWAY AND THE WAY TO PEACE IS STILL A WILDERNESS.”

PAUL HARRIS

THE MYTH - WAR IS GOOD FOR THE ECONOMY

WARS

- **Increase** - public debt, inflation, tax rates
- **Decrease** – investment, consumption, economic growth
- **Displacement** – industry, education, infrastructure, trade

<https://warpreventioninitiative.org/peace-science-digest/effects-military-spending-economic-growth/#:~:text=%5B1%5D%20Key%20findings%20of%20the,affect%20long%2Dterm%20economic%20growth>



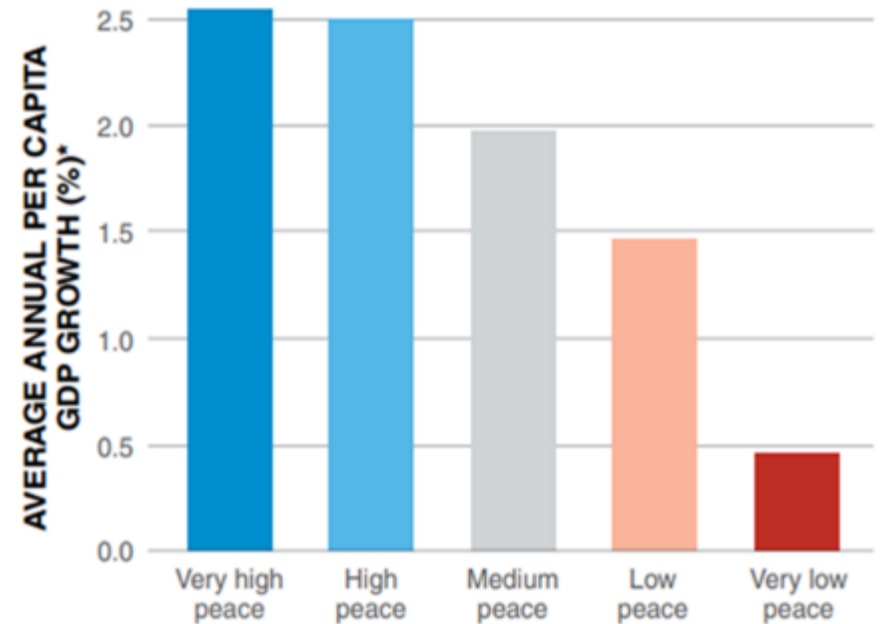
Photo by OSRSG CAAC/Paddy Dowling (Mosul Iraq)



<https://childrenandarmedconflict.un.org/>

GDP per capita growth by level of peacefulness, 1960–2022

Countries with very high levels of peace achieved on average over four times higher per capita GDP growth compared to the least peaceful countries.



Source: World Bank; IEP Calculations

IMPACTS OF WAR & CLIMATE ON GDP

GDP

Gross Domestic Product (GDP) is the measurement of the economic health of a country.

WAR

GDP on average falls 30% and inflation increases by 15%

CLIMATE CHANGE

2 degrees C rise before 2100 is projected to lead to a decline in GDP of between 30 and 50 %

WORLD ECONOMIC FORUM

August 2024, *Bilal & Kanzig*

“...by the end of the century **people may well be 50% poorer than they would’ve been if it wasn’t for climate change.**”



<https://www.weforum.org/stories/2024/06/nature-climate-news-global-warming-hurricanes/>



**CUMULATIVE
IMPACTS**

UNSUSTAINABLE FUTURE

Public Domain, RAID ON VAAGSO, 27 DECEMBER 1941.

British commandos watch as an ammunition dump burns.

<https://yaleclimateconnections.org/2024/07/how-much-will-climate-change-drag-down-the-economy/>

“NO ONE LEAVES HOME UNLESS HOME IS THE MOUTH OF A SHARK.”

Warsan Shire, Somali British Writer & Poet

MASS MIGRATION: PEOPLE FLEEING THEIR HOMES

PHOTO FROM THE PULITZER COLLECTION



<https://www.ipsnews.net/2020/07/great-migration-clash/>

“More than 120 million individuals have been forcibly displaced worldwide as a result of persecution, conflict, violence or human rights violations. We are now witnessing the highest levels of displacement on record.” UNHCR

<https://www.unrefugees.org/refugee-facts/statistics/>

“On average, 20 people were driven from their homes every minute last year, or one every three seconds – less than the time it takes to read this sentence.”

-UN High Commissioner for Refugees Filippo Grandi

“THE TRUE MEASURE OF ANY SOCIETY CAN BE FOUND IN HOW IT TREATS ITS MOST VULNERABLE MEMBERS.”

Mahatma Gandhi

THE FACES OF WAR

Chemical Weapons



Treating the Wounded



https://commons.wikimedia.org/wiki/File:Iranian_soldier_holding_IV_bag_during_Iraq_war.jpeg

Prisoners of War Children



<https://garystockbridge617.getarchive.net/media/iran-iraq-war-photos-by-amir-ali-javadian-20-258240>

https://en.wikipedia.org/wiki/File:Omer_Khawar_and_his_infant_by_Ahmad_Nateghi.jpg

DRAINING OF THE MESOPOTAMIA MARSHES (1991)

BEFORE, A Marsh Arab Village, 1974
Marsh Arabs lived for centuries, undisturbed



Sommayeh Amiri, Historians for the Future

Source: European Society for Environmental History, <http://eseh.org/nextgate-blog-what-does-home-look-like-now-the-marshes-of-mesopotamia-and-sustainable-academia/>

AFTER,
Dams diverted waters away from marshes



Source: <https://www.worldwateratlas.org/narratives/marsh/marshes-in-the-river-tigres-and-euphrates-dried-up/#saddam-arab-marsh>



Global Peace Index

- Ranks 163 independent states & territories according to their level of peacefulness

Positive Peace

- The attitudes, institutions & structures which create & sustain peaceful societies



"THE BEST WAY TO CHANGE THE WORLD, IS TO START WITH YOURSELF."
Paul Harris

INSTITUTE FOR ECONOMICS & PEACE

GLOBAL PEACE INDICATORS (23)

SOCIETAL SAFETY & SECURITY

- Criminality
- Refugees & internally displaced
- Political instability
- Terrorism
- Homicides
- Violent crime
- Violent demonstrations
- Number jailed

ONGOING DOMESTIC & INTERNATIONAL CONFLICT

- Number of deaths from external organized conflict
- Number of deaths from internal organized conflict
- Number, duration, and role in external conflicts

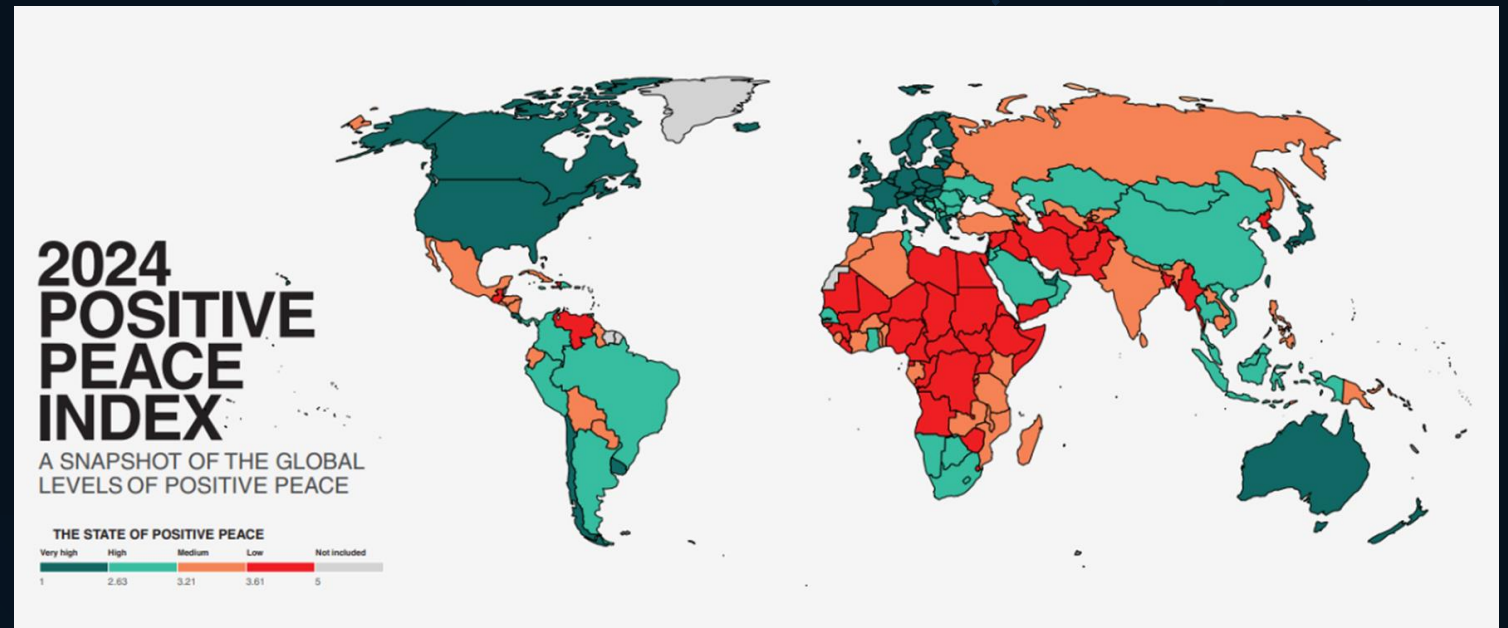
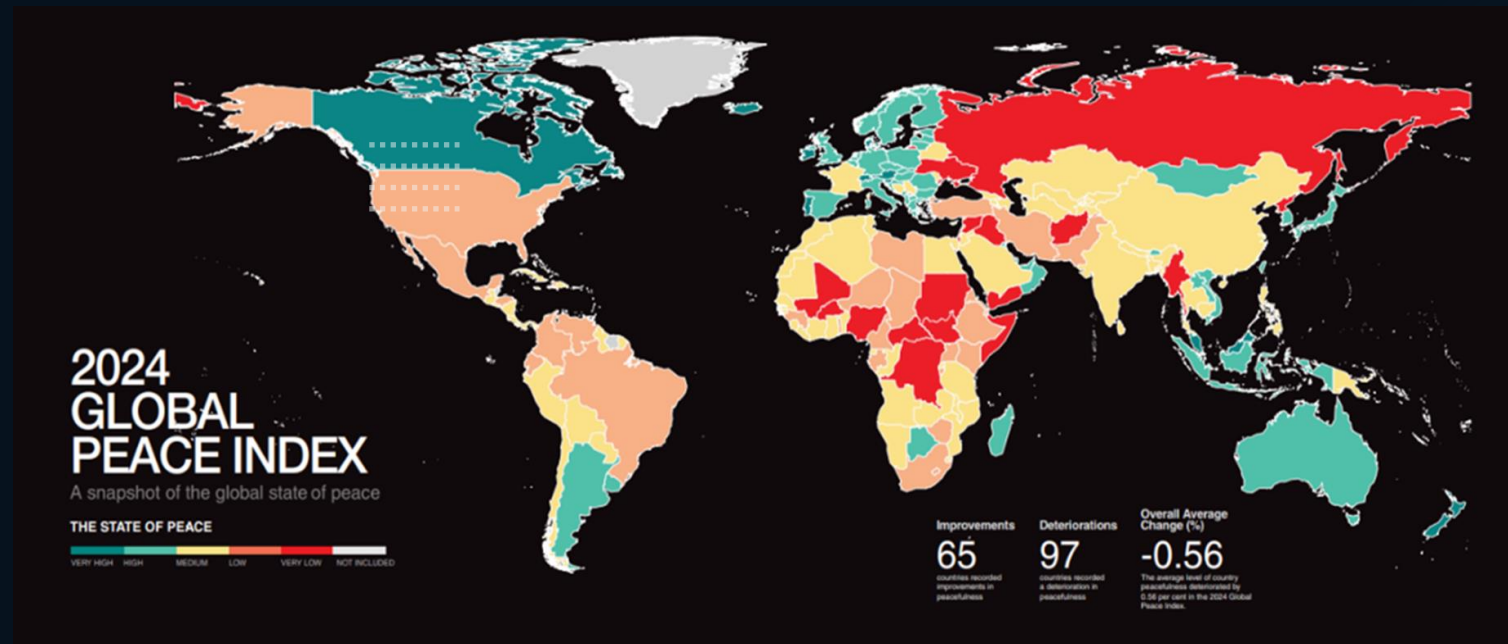
MILITARIZATION

- UN peacekeeping funding
- Military expenditure (% of GDP)

POSITIVE PEACE INDICATORS



**“PEACE CANNOT BE KEPT BY FORCE; IT
CAN ONLY BE ACHIEVED BY
UNDERSTANDING.” — *Albert Einstein***



"WE RISE BY LIFTING OTHERS."
Paul Harris

23 COUNTRIES WITH NO STANDING ARMIES

ATTRIBUTES

- No perceived enemy
- Military too costly
- Maintain neutrality
- Protective umbrella
- Regional security
- Strong police & security
- Peacekeeping force
- NATO alliance

INVESTMENTS IN

- Stable government
- Education
- Health
- Environment
- Development
- Equity
- Strong GDP



PEACE EDUCATION AND ACTION FOR IMPACT



WORLD BEYOND WAR.org
a global movement to end all wars

Rotary



rotary **action**
group **for peace**
peace through service

**“WHAT YOU DO MAKES A DIFFERENCE, AND YOU HAVE TO DECIDE
WHAT KIND OF DIFFERENCE YOU WANT TO MAKE.”**
Dr. Jane Goodall, Scientist & Activist

KEY TAKEAWAYS



PEACE IS POSSIBLE



STABILIZE CLIMATE



REFOCUS MILITARY



COLLABORATE

“BE THE CHANGE YOU WISH TO SEE IN THE WORLD.”
Mahatma Gandhi



TAKING ACTION FOR CHANGE

DISCUSSION INCREASING ROTARY'S IMPACT

We are at a defining moment in Rotary's history. We're implementing our Action Plan, a strategic road map that will help us better connect with each other, grow as an organization, and more effectively share our stories of how we are making a difference in communities.

At every level of Rotary, we have embraced opportunities to work together to achieve our goals. Over the coming four issues, you'll hear from Rotary members around the world who will offer their inspiration, encouragement, and guidance as we carry out the four priorities of the Action Plan.

IMPACT

We want to put our resources
behind programs that will have

REACH

We're committed to
exemplifying and embracing
diversity, equity, and inclusion
in everything we do

ENGAGE

We're tearing down the walls
between "us" and "them"
and focusing on participants

AD

We're asking people how they want
to find a way

"A VERY GREAT VISION IS NEEDED, AND THE 'PERSON' WHO HAS IT MUST FOLLOW IT AS THE EAGLE SEEKS THE DEEPEST BLUE OF THE SKY."
Crazy Horse, Sioux Chief

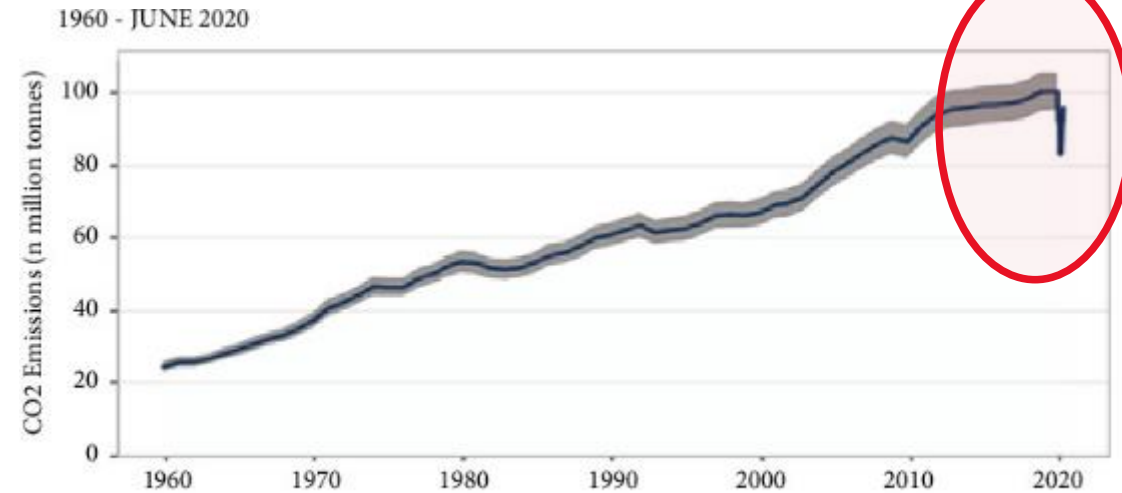
DISCUSSION Q1: WHAT CAN ROTARY DO TO SLOW CLIMATE CHANGE?

EDUCATE

- **Greatest Impact:** women & children
- **Remove Fossil Fuel Subsidies:** \$20 Billion/yr. – US; \$1 Trillion in 2022 - global
- **Change Transportation:** largest GHG source
- **Jobs:** clean energy (35 million jobs); fossil fuel (12 million jobs)
- **Protect Forests, Habitat, & Oceans:** improve hunting, fishing, carbon sink
- **Protect Agriculture:** reduce drought, brush fires
- **Public Health:** fossil fuels are toxic

<https://forcesfornature.com/podcast/eleanorleacain/>

The one positive of our COVID-19 experience, CO₂ emissions in the Ten Countries with the Highest Carbon Dioxide Emissions dramatically declined



Source: Integrated Carbon Observation System; Global Carbon Project
<https://pmc.ncbi.nlm.nih.gov/articles/PMC10281825/>

EconoFact econofact.org

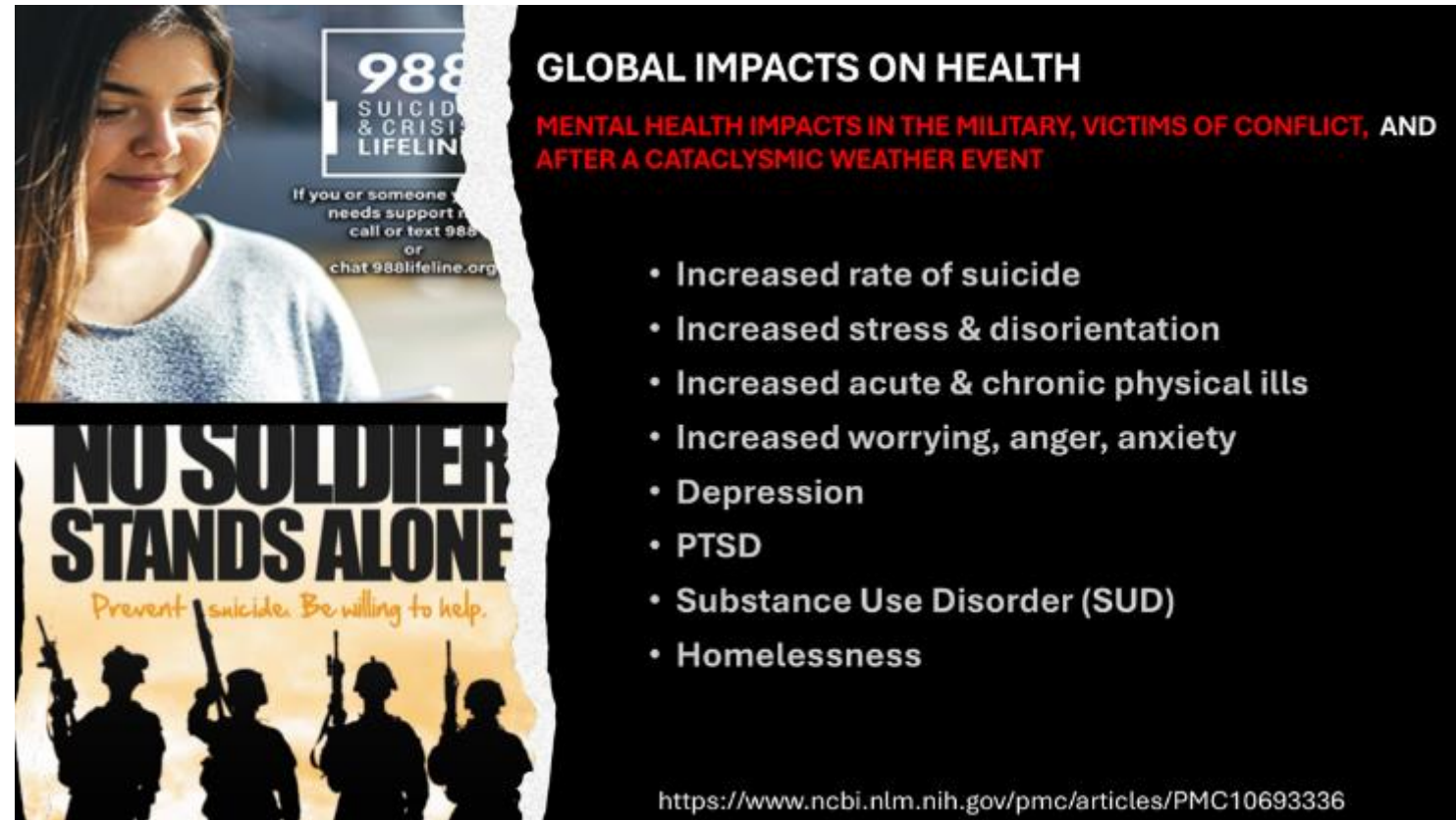
“DO NOT JUDGE ME BY MY SUCCESSES, JUDGE ME BY HOW MANY TIMES I FELL DOWN AND GOT BACK UP AGAIN.”

Nelson Mandela

DISCUSSION Q2: HOW DO WE BUILD RESILIENCE INTO PEACE BUILDING?

SUGGESTED ACTIONS

- **Determine Level of Risk In Communities You Serve**
- **Support Victim Assistance**
- **Assist With Rebuilding of**
 - Homes, Schools. Hospitals
 - Roads, Water Supply....
- **Advocate For Funding Of Local Search & Rescue Operations**
- **Train With Community-Based Search & Rescue Operations**



988
SUICIDE & CRISIS
LIFELINE

If you or someone you know needs support, call or text 988 or chat 988lifeline.org

GLOBAL IMPACTS ON HEALTH

MENTAL HEALTH IMPACTS IN THE MILITARY, VICTIMS OF CONFLICT, AND AFTER A CATAclysmic WEATHER EVENT

- Increased rate of suicide
- Increased stress & disorientation
- Increased acute & chronic physical illness
- Increased worrying, anger, anxiety
- Depression
- PTSD
- Substance Use Disorder (SUD)
- Homelessness

NO SOLDIER STANDS ALONE

Prevent suicide. Be willing to help.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10693336>

**"WHEN YOU EDUCATE ONE PERSON YOU CHANGE A LIFE, WHEN
YOU EDUCATE MANY YOU CAN CHANGE THE WORLD."
*Shai Reshef, Founder, University of the People***

DISCUSSION Q3: HOW DO YOU THINK ROTARY CAN INCREASE ITS IMPACT?

PEACE EDUCATION & TRAINING PROGRAMS

ENDING WAR 101
Making Peace Possible – A Call to Action

- Can War Be Ended?
- Is a "Just War" Even Possible?
- What Does War Cost Us? Our Environment?
- What Can We DO?



We are more powerful than we think.

Rotary   +  **WORLD BEYOND WAR.org**
a global movement to end all wars



**PEACE
EDUCATION
AND ACTION
FOR IMPACT**

