Climate Change and Global Security Nexus: Prospects for CTBT

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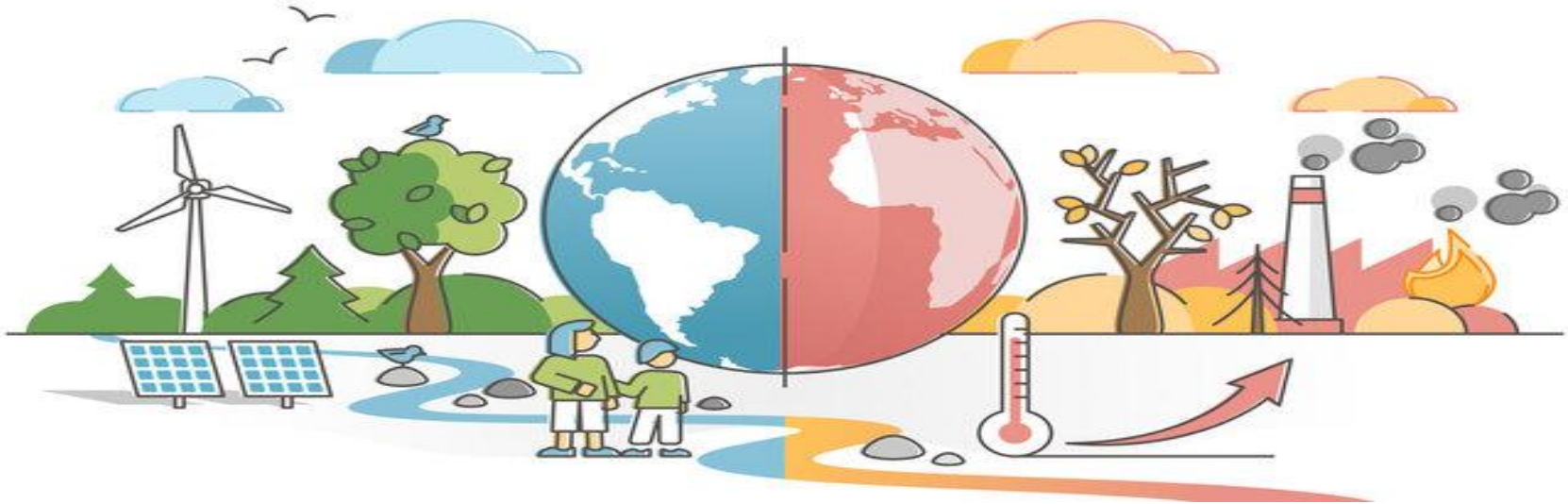


Overview

In recent years, the connections between climate change and security have drawn a widespread attention from spectrum of scholars and commentators. The CTBT, which promotes a ban on nuclear tests, was made open for signature in 1996 and the International Monitoring System (IMS) is a significant part of the treaty's verification regime which provides a wealth of data that may be utilized for a range of purposes, including climate change research and catastrophe warning and mitigation.

- To begin with, the presentation will explore the correlation between Climate Change and Global Security and will sketch out prospective contributions CTBTO can make to the issue.
- Furthermore, analysis of prospects for the IMS data for confidence-building measures will also be discussed.

Deciphering the ‘Threat’

- Climate change affects capabilities and operational concerns of a state in addition to acting as a threat multiplier. Currently, nations are becoming more conscious of the problems caused by environmental degradation and global warming.

- In the view of this, they are nations aiming to boost the use of renewable energy, improve energy efficiency, endeavouring to lower the carbon footprint and prevent escalating climate-related conflicts and crises as it works to redefine the relationship between climate change and security.

Deciphering the ‘Threat’

- A study on the effects of global warming was released in 2021 by the Intergovernmental Panel on Climate Change (IPCC), the UN agency responsible for evaluating climate change. According to the assessment, global warming of 1.5 °C is likely to be surpassed in the 21st century, and such warming would pose significant and asymmetric hazards to both natural and human systems.

- Failure to address climate change will cause the most impeccable long-term risk with the largest repercussion. According to the IPCC, climate change will cause supply chains disruption and disaster-related relocation. It will also cause a rise in water shortages, with droughts costing €65 billion by 2100. Additionally, competition for food and resources will increase, and public health will be impacted by environmental deterioration and harsh weather. In this regard, the impact on peace and security is significant.

Climate Change and Discourses of Security

- There is growing awareness that climate change poses a security risk. The relationship between climate change and security has been considered by the UN Security Council, is mentioned in the national security strategy papers of more than half of the world's governments, and is discussed in an array of think tanks and academic publications.
- It is necessary to comprehend the relationship between climate and security by defining risks and resilience, which frequently represents a vicious cycle of fragility, climatic vulnerability, and human insecurity.

Climate Change and Discourses of Security

- Climate change measures can improve a society's ability to adapt to the environment and create avenues for increased peace and security.
- These initiatives include developing local ability to translate early warnings and climate-informed advisories, early warnings for food security planning, climate-smart mapping and adaptation planning, safety-net programs, and risk financing.
- To end the vicious loop between climate change and conflict, integrate climate action with peace goals, and so support a climate-resilient peace, other adjustments and interventions are also required. In this regard, CTBTO can play a crucial role.

Prospects for CTBT

- The CTBT has already working efficiently to make the world safer even if it has not yet come into effect through ratification.
- It not only serves as a powerful brake on nuclear proliferation, stopping the development of more lethal nuclear weapons and halting a hazardous spiral of international nuclear competitiveness.
- The Comprehensive Nuclear-Test-Ban Treaty (CTBT) significantly aids in preserving and maintaining the environment by putting an end to nuclear test explosions.

Prospects for CTBT

- The International Monitoring System (IMS) stations of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) gather up signals from a wide range of natural phenomena while continuously searching for indicators of nuclear explosions in violation of the CTBT. These data are widely regarded as being exceptional and a gold mine of knowledge with several civil and scientific uses. Seismic, hydroacoustic, infrasound, and radionuclide data are all collected by IMS.
- Nearly 300 monitoring facilities have been operational. The information may also be used by institutions and scientists from all 183 CTBTO Member States for scientific research on climate change and catastrophe warning.

Prospects for CTBT

The ability of the system to track atmospheric disturbances, whether volcanic eruptions, severe storms or other large scale turbulence, provides a way to improve weather forecasts and, by using nearly two decades of accumulated data, track climate change. Scientists have presented their findings on the use of IMS data for climate monitoring applications. These include:

- ➔ Identification Signals from Atmospheric Storms
- ➔ Tracking Icebergs with Hydro-Acoustic Arrays of the International Monitoring System
- ➔ Global Infrasound from Nonlinear Ocean Wave Interactions
- ➔ Ocean Acoustic Thermometry Using Active Biological Sources Recorded at IMS Hydrophones: A Feasibility Study and the list still goes on.

Prospects for CTBT

- Along with other United Nations and international entities housed in the Vienna International Centre, and globally, the CTBTO seeks to minimise the environmental impact of its everyday operations. Measures adopted include offering a paperless conference document system for Member States' meetings, using renewable sources of energy and reducing travel.
- The same care applies to building and operating IMS stations, which are increasingly equipped with solar panels. None of the stations produce emissions or waste, and local stations operators are contracted for routine service and maintenance.

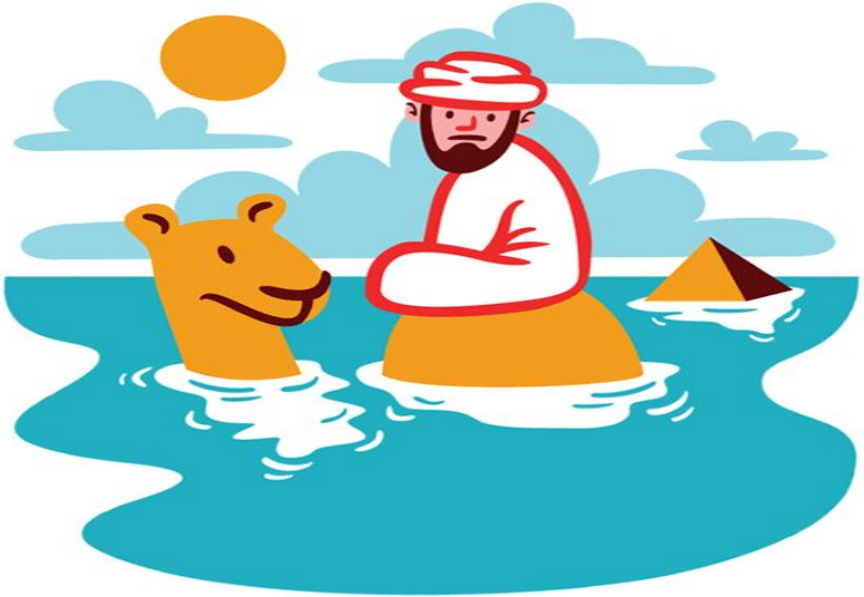
Prospects for CTBT

- The International Monitoring System (IMS), a global network of cutting-edge monitoring facilities, will be used to demonstrate compliance with the CTBT.
- IMS data may also help mankind in a wide range of other ways, from monitoring climate change to assisting with early tsunami warnings to enhancing global response capabilities in the case of a nuclear disaster. At a time when the world is dealing with several crises that threaten the norms and institutions that were established to enhance international peace and security.

Way Forward

Role of CTBTO in minimizing the disproportional impact of climate change, nuclear tests and natural hazards are praiseworthy. To conclude the CTBTO is contributing to multiple aspects of climate change mitigation by adopting measures like:

- Building Multi-Level Governance Frameworks to Support the Peace, Development, and Humanitarian Nexus:
- Finding Ways to Integrate Climate Security Evidence in Early Warning and Early Action Systems.
- Designing Coherent Adaptive Safety-Net Policies and Programmes:
- Bridging Innovations and Social Capital.



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