

Climate Change and Armed Conflict: An Investigation

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Abstract— It is obvious that the processes that lead to conflict are multidimensional and complex. Similarly, we can make a connection between climate change and conflict by focusing on natural resources and conflict. The conflict may be due to poverty, religion, foreign intervention, racism, human nature, political disparities, and economic inequalities and more specifically due to the competition of scarce resources, especially non-renewable energy resources. The present study tries to explore the link between climate change exclusively due to the excessive use of non-renewable energy resources and its repercussions on climate which ultimately turns into armed conflict.

Keywords— *Climate Change, Armed Conflict, Competition over Scarce Resources, Energy Security, Environment Security, National Security*

I. INTRODUCTION

Environment is the basic fundamental source of all life on earth. Environment not only determines but also directs the very existence, development, growth of mankind and all other related activities. The Environment provides the opportunity for the mankind to survive. The future of humanity depends on a clean environment and a commitment to long-term, environmentally friendly growth.

Pollution, forest loss, environmental degradation, solid waste disposal, and other related issues, such as global warming [4], ozone layer depletion, weather pattern shifts, and a loss of biological diversity, have brought environmental concerns to the attention of the public

The development in human society have brought serious consequences on the environment. Man has been indulging in over utilization and mindless exploitation of nature and its resources for their own developmental cause [1]. Therefore, the net result is environment degradation and the depletion of natural resources.

The States are working on Sustainable development [28] models. One of the key concepts is that it is possible to meet current needs through sustainable development [25] without compromising future generations' capacity for self-sufficient self-sufficiency with the environment security Sustainable Development (2015) [2]. If environment is not cared then the

result is global warming and climate change. The scientists around the world are very much worried because of the human activities particularly the burning of fossil fuels which produce enormous amount of CO₂ in the atmosphere which have its reflections in earth's climate [3].

One of the hot topics in research right now is climate change and global warming. Human activities, particularly the use of fossil fuels such as coal, oil, and natural gas, are the primary cause of long-term warming of the Earth's climate system, also known as global warming. Climate change, on the other hand, is a long-term shift in the average weather pattern that has come to define Earth's local, regional, and global scales⁴. Scientists are more concerned about the variations in the climate of different places.

Therefore, it is the Environment Security intersects with Energy Security. Energy is all powerful and Energy makes things happen. It makes atoms to move, light to shine and electricity to flow. If there is no energy then the universe would be very quiet and very odd place to live. There is now energy everywhere and in everything as a result of the Big Bang. Energy can take many different forms and change forms as if by magic therefore it is called as immortal and it is impossible to destroy it.

Energy is everywhere and it keeps changing from one and another like chemical to kinetic, electricity to light and it is important to note that new energy cannot be created [5]. While changing forms, some of it always turns into heat, which is much more difficult to capture and recycle than other types of energy. Most of that heat escapes into the atmosphere, warming the entire planet.

The problem with energy is that fossil fuels such as oil, coal, and natural gas provide the majority of the energy required to heat houses, run computers, planes, ships, automobiles, and bicycles. Due to overuse, the Earth is running out of these fossil fuels. It is also important that these fossil fuels will take millions of years to form a new one [7]. The real underlying problem is burning these fossil fuels. It gives off waste gases and pollutes air, water and also harm living things. CO₂ which is the main reason for global warming is because of burning of these fossil fuels only.

The serious effects like Melting icecaps which leads to colder seas, rising in sea water levels and flooding in some places and changing climates like some part of the world may become too hot to live [8]. Some types of animals may even extinct. The other effect is that most extreme weather such as hurricanes and droughts which cause massive damage. Water and food insecurity made worse due to droughts, floods and heat waves. These factors increase the risk of conflict [9]. Though Fossil fuels have so many advantages like easy to find, easy to transport etc but the most disadvantage is the pollution and greenhouse [3] effect which is irreplaceable. The Indian Ocean Region (IOR), for example, has been dubbed the "World Hazard Belt" due to its vulnerability to both natural and man-made disasters [26]. Nearly half of the region's natural disasters are climatogenic and seismogenic, according to the United Nations Economic and Social Commission for Asia and the Pacific [10].

The increase in population growth, depletion of natural resources, competition over fossil fuel sharing, rise in energy price, poverty, famine and all the imbalances in global market heightened the concept of sustainable [27] energy security. In recent times, Earthquakes and tsunamis in Indonesia, severe droughts in Madagascar, floods and landslides in India, seasonal cyclones in the islands of the Indian Ocean and many more calamities were witnessed during 2018 and 2019[11]. Energy resources have the potential to create conflicts within and among states[12].

Because of the failure of climate change prevention and adaptation, extreme weather events stay in first place, as shown in fig 1.

II. ARMED CONFLICT AND CLIMATE CHANGE

The environment will be greatly affected by climate change. Notable among them are:

- Scarcity and uncertainty of renewable resources,
- Rise in sea levels and increasing desertification.
- Rise in the number and intensity of natural disasters.

Based on how well a society can adapt to changing circumstances, there is a chance that climate change will lead us into conflict. Developed societies (in terms of infrastructure, education, financial power, strong governance) can cope with disasters and shortages. They have the mechanisms to recover and rebuild. Lessor developed societies will look to move to "better areas" thereby causing conflict with unaffected areas. Dispossessed population are more likely to take to conflict.

Only if certain conditions exist will a warming climate increase the likelihood of armed conflict.

a) If the availability of renewable resources decreases in societies that rely on subsistence, this could lead to a decrease in state revenue due to job losses and other economic activity losses.

b) In heterogeneous societies, increasing resource rivalry may attract opportunistic elites who increase social cleavages [30] – particularly ethnic identities – and render the people more open to radicalization.

c) The delivery of public goods, political legitimacy, and the formation of political competitors may all be harmed if state finances are cut.

d) Attempts to adapt to a changing climate or to address the core causes of global warming may unintentionally inflame friction and conflict. Climate change may be used as a scapegoat or rallying point by individuals with hidden agendas because of its notoriety. Migrating large numbers of people due to worsening environmental conditions may increase environmental stress in the receiving area, as well as ethnic hatreds and radicalization.

Climate and weather are fundamentally different, and understanding this difference is critical to addressing or tackling non-traditional security threats.

TABLE I. DIFFERENCE BETWEEN WEATHER AND CLIMATE

<i>Weather</i>	<i>Climate</i>
Short-term variations in atmospheric conditions are referred to as weather that last from a few minutes to a few weeks.	When it comes to climate, it all comes down to the weather in the long run patterns of a specific location.
Temperature and other short-term atmospheric conditions can vary from location to location.	The climate of a region is defined as weather and atmospheric averages over time conditions.
Temperature, pressure, humidity, cloudiness, wind, precipitation, rain, flooding, ice storms, and other weather-related events all play a role in the overall weather.	Temperature, pressure, humidity, cloudiness, wind, precipitation, rain, flooding, ice storms, and other weather conditions all have an impact.
Due to the short-term nature of the weather's effect, it may have an impact on the daily activities of	Agriculture, industry, and human well-being are all adversely

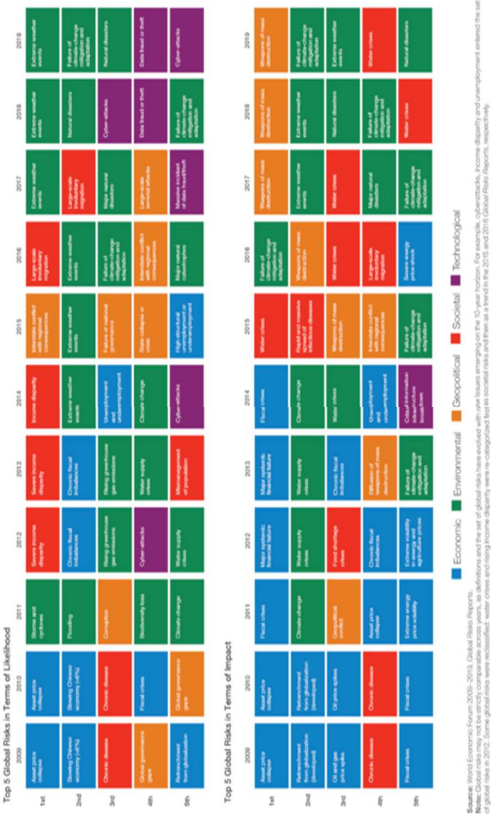


Fig. 1. Global risks report in terms of Climate Change

<i>Weather</i>	<i>Climate</i>
people such as transportation and agriculture.	affected by climate change over the long term.
The weather can change at any given time, and it does so frequently.	It takes a long time to see climatic variations

III. CLIMATE CHANGE INDICATORS

The above table clearly explains the basic difference between weather and climate. It is also essential to know the key indicators for climate change. The increase in the temperature can be compared with the past historical records. It is estimated that there is a standard increase in temperature every year [13]. As a result of an increase in temperature, the planet gets warming which leads to melting of ice. This melting of ice is seen as a major threat to low lying states and island states as when these water level increases there is a chance of these few island land states can be submerged. Many of the pacific, Indian Ocean and Caribbean oceans island nations like Marshall Islands, Maldives [14]. Sea level rise poses a challenge to nations with significant low-lying topography. Extreme weather events such as heat waves, wildfires, droughts, and floods are also becoming more often as a result of climate change [6].

As a result of climate change, extreme weather events have become more common, sea levels have risen, and resources have become scarce. Supply and demand issues are already a problem in many states. Around 40% of humanity gets its water from the Himalayas and Tibetan plateau's six to seven largest rivers, which are fed by glaciers.

If these glaciers recede and the primary river from which they flow diminishes, states may divert water to meet their own needs. They might construct dams which will have its serious effects on other countries [29] who rely on these water sources where conflict like situation arises.

If climate change is improperly addressed then the adverse effect will be climate change which in turn will be a direct threat to any Nation's Security. This climate change actually acts as a threat multiplier. It acts as a burden for the states which are already facing security challenges like poverty, unemployment, unequal distribution on scare resources etc.

IV. IMPORTANCE OF NATURAL RESOURCES TO SOCIETY

Natural resources are the gift from nature and it is not a man made. All the human activities are based on natural resources that are available in the state. It acts as a revenue generator, for industrial development as well as for identity too.

If the resources are available in all place and in all time, there won't be any conflict. The problem arises when the resources are scarce or abundant in turn creates political instability due to the sharing of resources which makes countries much more vulnerable to conflict.

Generally, resources are categorized into renewable and non-renewable resources [15]. Renewables like solar, wind, tide etc. and non-renewables like coal, oil, natural gas. The problem sparks when these non-renewable scare resource start depleting due to over exploitation. Most importantly, the states are heavily dependent on theses fossil fuel for the development. Like a chain reaction the excessive use of these non-renewable resource leads to global warming affects the environment therefore climate change.

V. WATER AS AN EXAMPLE

All human activity require water. 97.5 percent is salt water, 2.5 percent is fresh water, and just 0.3 percent of the fresh water on the surface is liquid, which must supply the needs of a huge population on a long-term basis. They are scares and they are available only in few geographical areas. Along with this issue drought also affect almost every continent and appear to be growing even worse because of climate change.

This leads to water stress. The major reason for Water Stress is mainly due to rapidly increasing population, Modern Industrialization, Agricultural growth [16]. Water is consumed by these factors without any control. The amount of water used is also increasing. Due to deforestation the amount of rainfall is decreased and water is reduced in rivers, lakes and ponds. The other issue is deforestation and urbanization are the main factors for the flood like situation. Water becomes Scarce and it is to note that water is the basic need for human survival. Therefore, scarcity of water creates conflict like situation.

Yet man cannot control weather and climate. Water problem is found everywhere, at home, in the cities and between states and between countries. When rivers form borders between countries, such as the Cauvery River conflict between Karnataka and Tamil Nadu or the Indus Water Treaty between India and Pakistan, problems occur.

Climate change have the potential in creating resource-based conflict. Natural resources have been related to 40% of wars during the last 60 years, according to the United Nations Environment Program (UNEP) [17]. Changes in the climate affects the environment as a result resource scarcity which in turn affects the peace and security of the state.

Violent armed conflicts, whether intranational or international, receive more attention than less violent conflicts. Climate change-induced resource scarcity could lead to more intense conflicts, as evidenced by the low-intensity conflicts. Low-intensity conflicts, on the other hand, are more likely to go unnoticed or to draw attention only when they escalate.

VI. REGIONAL ORGANIZATIONS RESPONDING TO CLIMATE CHANGE

Climate change issues cannot be addressed solely by a state. Because climate related security issues go beyond the borders. Climate change is transnational and multidimensional in character. Therefore, the issue of climate change creates challenges for the regional organizations. For the sake of avoiding environmental degradation and climate change-related risks [32], it is critical that climate change and other related security issues be examined from a regional organization point of view. To address the issue, it is necessary to identify the climate-vulnerable regions regionally. For instance, the South Asian Association for Regional Cooperation (SAARC) was established in Dhaka, Bangladesh, in December 1985 [18]. South Asian states are considered to be more vulnerable due to climate impacts ranging from water scarcity to floods, rise in the sea level, extreme weather conditions [19]. The head of the states within SAARC expressed their deep concern for the regional challenges related to environmental degradation and climate change in the 1987 SAARC Katmandu Declaration [20]. In several declarations, SAARC has expressed their concern for

climate change. After 2004 Indian Ocean Tsunami- the SAARC members agreed on concrete actions to address both natural and climate related disasters. SAARC also established an Expert group on Climate Change to ensure policy direction and guidance for regional cooperation [21]. Though SAARC has tremendous challenges in terms of implementing climate related security policies it is the cooperation among the south Asian states are very much essential for addressing the common issue especially when responding to climate change. The figure 2 given below clearly explains the link between climate change and armed conflict.

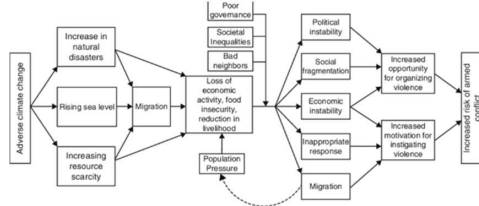


Fig. 2. Linkage between Climate Change and Armed Conflict

VII. CONCLUSION

Armed conflict and climate change are intertwined because of the scarcity of resources, the rapid depletion of those resources, and the potential for armed conflict that arises from the competition for those resources. Climate change will not be the direct cause of armed conflict but climate driven scarcity of resources may contribute to armed conflict where the demand and supply is not met. Predictions can be uncertain but it is very essential to identify the risk factors [31].

Climate change and security challenges like migration continue to jeopardize national, regional, and worldwide peace and security plans. An increase in natural disasters can have a negative impact on security by reducing resource availability, and it can also lead to humanitarian disasters and mass sudden migration.

Effective resource management and sound social protection programs reduce climate change vulnerability when there is good governance. Corruption and insecurity are less common, and resource management is more equitable. Those whose countries, industries, or sectors are plagued by ineffective leadership, corruption, or mismanagement of their resources are the ones who are most vulnerable to climate change.

With climate change, flooding is expected to rise, which has been linked to periods of conflict and instability in the past. For example, the 1970 typhoons in the Bay of Bengal [22], killed between 3 lakh and 5 lakh people, have been credited for contributing to the eruption of civil war in Eastern Pakistan. It was estimated that during the civil war nearly 3 million people were killed and resulted in Bangladesh's formation.

Following the typhoon, tensions reached a boiling point when those most affected discovered that the response of the then-Pakistani central government was inadequate [23]. The Awami League emerged as a distinct political force, and tensions between east and west Pakistan intensified. As a result, large numbers of people fled to Indian territory, where Bangladesh was established with the assistance of the Indian government.

Resource-based conflicts may occur both within and between user groups, as well as across state lines, and this can have a negative impact on regional stability.

The development of climate-friendly policies to some extent they are working but

Conflict resolution and climate change adaptation are not one-size-fits-all problems.

Climate change has the potential to reduce the distance between natural resources and conflict if comprehensive governance mechanisms are not established. There is a serious threat to peace and stability as a result of the increased global tension brought on by climate change [33]. To avoid the perfect storm environment has to be taken care. Carbon tax [24] should be increased to improve the quality of the environment.

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