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" Role of Climate Change in Aggravating Resource Constraints Leading to Regional Conflicts: Case Study of South Asia"

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Abstract

Climate change is a significant factor in worsening resource scarcity in South Asia, which is already sensitive to climate changes. In this paper, the author examines how global climate shifts including changes in rainfall patterns, rising temperatures and increased frequency of natural disasters increases scarcity of resources most especially water, food and energy resource. Some of the geographical and socio-economic features of South Asia are vulnerable to these impacts such as reliance on monsoon rains and glacier-fed rivers, high population density. Drawing on historical and present day resources use conflicts, the study shows how climate change escalates resource competition in the region. The work also employs case studies to show how resource scarcity due to climate change leads to the following conflicts. For example, the conflict over water sharing like the Indus water issue between India and Pakistan and over the Brahmaputra River between India and China are used to show how climate variability aggravates the existing conflict. Also, the study deals with the impact of climate change on food security and adding to the energy crises which can potentially lead to conflicts as well. This is an indication that socio-economic factors such as poverty, inequality, and governance together with climate change, act as catalysts for instability of the region. Thus, the study underlines the importance of a joint regional and international response to the diverse consequences of climate change. The study recommends the strengthening of regional collaboration, sound policies and the adoption of gender perspective in climate change and conflict management. It also focuses on the involvement of the external actors in the promotion of Climate

Resilience in South Asia through funds and expertise. The discussed potential future realities imply that in order to prevent further aggravation of the situation and subsequent frequent occurrence of the climate-related conflicts and forced displacement, it is necessary to develop effective strategies for the region's sustainable development.

Keywords: Climate Change, Resource Constraints, Extreme Weather, South Asia, Sustainability.

Introduction

Climate change can be described as changes in temperature and weather that happen progressively in the atmosphere over time and which are attributed mostly to human activities like use of fossil energy and destruction of forests (IPCC, 2021). Climate change has significant effect on resources, which include water, food and energy, which are vital in any civilization. Climate change thus causes increased temperatures, changes in precipitation resulting in more intense droughts, with consequences on water and food sources (Klein et al., 2019). Likewise, the shift in climate can also impact energy generation as it alters the hydropower while at the same time increasing the need for cooling (McKinsey & Company, 2020). With these resources becoming scarcer, there is a high possibility of competition for these resources and their control. Due to the climatic conditions and socio-economic structures, South Asian region including India, Pakistan, Bangladesh and Nepal are the worst affected by climate change (Sankaran et al., 2019). The region is densely populated and has a rising population that is majorly dependent on agriculture as a source of income, food production and livelihoods, the sector is vulnerable to climate change (Sinha et al., 2020).

Also, South Asia relies much on the monsoon system for water resources, which exposes the region more since shifting of the monsoon system leads to both floods and droughts (Lal et al., 2021). The socio-economic disparities of this region coupled with high population density exacerbate these issues making the region a hotspot for climate induced resource based conflicts. It is the position of this paper that climate change is contributing to exacerbations of resource shortages in South Asia, which in turn raises the probability of regional conflicts. As climate impacts unfold, countries in the region are likely to compete for scarce resources due to the impacts of climate change hence escalating existing tension and creating new sources of conflict (Huq et al., 2018). As one of the most vulnerable regions to climate change and with complex socio-political landscape, South Asia is an ideal case to study how climate change exacerbates resource scarcity and regional insecurity. Mitigating these issues calls for broad strategic solutions that include both climate change mitigation and conflict sensitive approaches to development and resource use as well as peace in the region.

Climate Change and Resource Scarcity in South Asia

Climate change impacts South Asia significantly characterized by shifts in rainfall, increased temperature and frequent occurrences of storms and other disasters (Sharma et al., 2022). The monsoon system in the region is becoming less predictable hindering agriculture and water resources through irregular rainfall and more severe cyclones (Ghosh et al., 2021). It is observed

that increased temperature leads to increased glacier melt in the Himalayas and affect the amount of water available in rivers during dry months (Bajracharya et al. , 2020). All these changes, thus make the south Asian countries more sensitive to both flood and drought thus posing a really bad situation for the socio-economic development of the region.

Climate change has a profound impact on the water systems in South Asia through water availability and demand in which rivers, glaciers, and groundwater are in great stress (Immerzeel et al. , 2020). The Himalayan glaciers that feed major river systems such as the Ganges and Indus are melting fast due to climate change thus lowering the long-term water availability (Benn et al. , 2018). Agriculture and drinking water supply relies on the availability of groundwater and these are being exploited at a faster rate than they are being replenished through rainfall and natural recharge due to changing climate patterns and over pumping (Molden et al., 2021). This is a problem because it reduces the quantity of water for use in farming and available clean water, thus increasing competition and eventually conflicts for these essential commodities. For food security in South Asia climate change is a big concern because it changes the growing seasons and increases the number of adverse events affecting agricultural productivity (Gornall et al., 2010). Increase in temperature and reduction in precipitation negatively affect crop production thus decreasing food production and increasing the prices of food (Lobell et al., 2013).

Further, cyclones, floods and droughts bring about crop failure and reduction of cultivable land area thus increasing food insecurity (Tubiello et al., 2014). These disruptions not only pose risks to employment but also to poverty and malnutrition causing vulnerability to millions of people in the region. It is also noteworthy that climate change aggravates the energy problem in South Asia, affecting the production and consumption of energy resources (Rao et al. , 2020). Hydroelectric power is the most dominant source of electricity in the region, and the irregularity of river flows due to glacier melt, and changes in precipitation patterns reduces the reliability of energy supply (Gao et al. , 2021). Heat increases the use of energy for cooling and hence puts a lot of pressure on the energy resources and facilities (Ranjan et al., 2022). The conflict between climate change impacts on water availability and energy demands establishes the necessity for the combined management of water and energy in the context of climate change.

Resource-Based Conflicts in South Asia

Resource based conflicts in South Asia can be traced back to history wherein most of the conflicts arose over issues like water, land and minerals (Reddy, 2019). The first resource conflict was at the time of British India partition in 1947, and the conflict over sharing the waters of Indus waters system is a classic example (Khan, 2021). Existing tensions based on historical issues of sharing and control of resources have therefore persisted in the conflict between India and Pakistan especially on the issue of water sharing of the river waters (Gleick, 2014). Also, the issues of land and natural resources have led to ethnic and regional tensions within countries and therefore, general regional insecurity (Lal, 2020). Issues of competition over resources in the particular region of South Asia describe the effects of the scarcity of resources on the stability of the region.

The conflict over water sharing between India and Pakistan has been rife touching on the Indus Water system with both countries fighting for the distribution of water essential for irrigation and drinking (Ahmad, 2018). In the same manner, the river water sharing dispute

between India and China being the Brahmaputra River entails different agendas of accessing and regulating the water resource (Bhaumik, 2019). Other factors like tension in borders including the boundaries of Kashmir are also linked to the competition of resources since some territories are of strategic importance and contain valuable resources (Cohen, 2021).

It is evidenced by the following case studies that show how shortages of resources may lead to a general war. Climate change is found to be contributing significantly towards aggravating the already existing resource based conflict in South Asia by changing the nature of access to the key resources (Huq et al. , 2018). Variations in precipitation and glacier melt affect water flows in transboundary rivers raising the stakes on water sharing agreements (Immerzeel et al. , 2020). This presses resource management and escalates the possibilities of clash due to the higher rates of occurrence of severe climate conditions like floods and droughts (Gornall et al. , 2010). Climate change also continues to affect availability of resources hence exacerbating existing problems and hence it is necessary to look at both the environmental and the political aspects of resource issues.

Climate Change as a Threat Multiplier

Climate change exacerbates conflict by affecting socio-economic and political factors thereby increasing the likelihood of conflict. In the following, climate change and poverty are interrelated because the former magnifies the latter since poor communities are generally in a worse position to cope with climate shocks (Mastrorillo et al., 2016). These effects are further worsened by inequality because marginalized groups are more affected by climate related natural resource shortages and natural disasters (Kates et al., 2012). Another factor is governance where there is poor management of resources and/or weak institutions these increase conflict from climate stresses than makes conflicts from climate stresses worse (Ribot, 2019).

The idea of climate refugees brings out the issue of forced human migration as a result of the effects of climate change including the rise of sea level, increased occurrence of natural disasters, and scarcity of natural resources (Schwerdtle et al. , 2018). In South Asian region, the countries like Bangladesh and India are highly sensitive with millions of people possibly being forced to migrate due to floods and rising sea levels (Mastrorillo et al. , 2016). Climate refugees' mobility can put pressure on other countries and bring instability to the region since the competition for resources and the pressure to establish new settlements in host areas rise (Boas, 2015). This displacement does not only add to the existing tensions but at the same time raises questions on regional integration and stability.

Climate change has serious security consequences in that resource competition is inevitable, especially for resources such as water, food and energy (Gleick, 2014). Climate change, through alteration in the precipitation regime and reduction in glacier volume, affects the availability of water resources with adverse impacts on international relations within the context of transboundary water bodies (Hassan et al., 2019). Likewise, lower yields from crop damage that is caused by floods and other climate-related disasters can cause food scarcity and social upheaval (Lobell et al. , 2013). The competition causes tension, insecurity and in extreme can foster insecurity in the region as nations and communities fight over these few resources.

Mitigation and Adaptation Strategies

The SAARC countries must cooperate and collaborate with each other for tackling the menace of climate change and coping with resource scarcities. Some of the regional cooperative efforts that have been undertaken include the SAARC which has attempted to address the environmental and resource management (SAARC, 2021). Another source of cooperation is the Indus Waters Treaty between India and Pakistan with the primary goal of addressing the shared water resources and avoiding conflicts (Gleick, 2014). Moreover, such sub regional organizations as the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) are also aimed at developing cooperation in countering the climate change effects and improving the management of resources through partnership projects and exchange of experience and information (BIMSTEC, 2022). These initiatives underscore the need for co-action in the fight against climate change since the challenges are complex in the region.

MENA's Policy suggestions to address and mitigate conflict prospective of climate change are increasing the cooperation of international water resource management and increasing the stability of regional organizations. Appropriate mechanisms of sharing of such resources should be established to reduce conflict among countries that rely on these resources (Gleick, 2014). Climate smart investments especially in infrastructure and promoting sustainable agriculture reduces on the vulnerabilities and brings stability (Lobell et al. , 2013). Furthermore, it can be stated that the adoption of climate change adaptation measures in national and regional development frameworks can deal with the causes of resource-related conflicts and bring about sustainable peace and stability (Mastrorillo et al., 2016).

The external partners are very important in enhancing climate change resilience through provision of funds, knowledge and capacity development in South Asia (UNFCCC, 2020). Multilateral institutions like the United Nations Development Programme (UNDP) and the World Bank play the role of funding Climate Change adaptation projects and Resilience enhancement (UNDP, 2021). Further, global climate conventions such as the Paris accord serves an international platform and climate initiatives which can be of advantage to South Asian nations for climate friendly development (UNFCCC, 2015). The strategies that are necessary to build up the capacity of the region in order to cope with climate change and minimize the chances of climate-related conflicts consist of the improvement of the international cooperation and utilization of the international assets.

Gender Dimensions of Climate Change and Conflict

Gender also plays a part in climate change as it brings about different impacts on men and women as well as changes the conflict sensitivity on the two differently. This is especially realized in the developing world, especially in the South Asian region, where women undertake most of the work in agriculture and water sourcing and have the responsibility of managing the homesteads (Dankelman, 2010). Through decreased crop yield and the frequency of the events of extreme weather conditions in the course of climate change, women, who have the responsibility of feeding families, experience a surge in challenges of providing for their households (Meinzen-Dick et al. , 2014). Further, when women are denied input, access to resources and decision-making

structures, they are likely to fail in their efforts to respond to climate stressors hence increasing their susceptibility to climate induced conflicts.

When looking at the connection between gender and conflict, and how climate-induced resource scarcity impacts households and communities, this becomes clear. In conflict prone areas for instance where there is scarcity of water or land degradation, women are likely to change their roles and take up extra chores or even move from one place to another in the search for water or fertile land (Neumayer & Plümper, 2007). This shift may also cause more domestic and community conflicts, as women are more likely to be at the receiving end and suffer physical/violent abuse (Jost, 2014). Moreover, women's lack of equal access to resources and decision making, puts them at the periphery in climate change adaptation and conflict settlement, thus increasing the inequalities and inefficiency of solutions.

The policy responses to climate change and conflicts should hence integrate gender perspectives to redress such differences. The incorporation of gender dimension in climate change adaptation and in conflict sensitive analysis and planning guarantees the consideration of the needs of both male and female individuals (UN Women, 2014). The policies should seek to improve women's ability to access resources, increase their representation in decision-making processes and address the unique risk factors that women face in relation to climate change interventions (O'Brien et al. , 2019). Also, promoting the rights of women and girls can help to increase the stability of communities and advance more effective approaches to resolving conflicts that are more sustainable when it comes to climate change and other pertinent issues affecting the society.

Conclusion

Summing up it is possible to conclude that climate change, affecting the South Asia through the changes in precipitation regime, temperature rise, and frequency of extreme events, influences resource availability and provokes conflicts in the region. Socio-economic risks and vulnerabilities, and governance issues that have long complicated the sharing of resources are worsened by the disruption of vital resources such as water, food, and energy that are increasingly becoming scarce. Real-life examples of historical and current conflicts over resources, primarily water and land, show that changes due to climate make them worse and this calls for a need for effective management strategies. The need to act in unison is now more important than ever as climate change remains to present severe security risks in the region.

Institutional cooperation and policy strategies and frameworks stress on cooperation, resource sharing, fair resource use and utilization and sustainable resource use. Improving the institutional framework and regional cooperation, and adopting gender-responsive measures for climate change and conflict management are the key to sustainable development. Possible future developments may be the continuation of the climate change resulting in more often and severe climatic events, with the consequent development of more tensions due to the competitive demand for resources and geopolitical instability. The projected migration due to climate change and new conflict zones show that it requires collective action and intervention. Solving these problems needs multidisciplinary focus on environmental and resource management but also socio-economic and political aspects for the sustainable development and peace of South Asia.

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