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India's Response to Global Climate Change: Action, Resilience, Mitigation chievement Adaptation and Sustainable Peace for Environment in the 21st Century

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Abstract

The South Asian region's volatile geological situation and high degree of mutual mistrust and the potential for environmental degradation to trigger events means environmental factors could become a major cause of instability and threat to South Asian security. This region comprises of seven adjacent countries- India, Pakistan, Sri Lanka, Bhutan, Nepal, Maldives and Bangladesh. The region has many interstate rivers and common sea coastline extending from Pakistan in the West to Bangladesh in the East. Five of them share land borders with India except the island nations of Sri Lanka and Maldives. Bhutan and Nepal are land locked nation. This geographic contiguity is separated by geo-political rivalries and security concerns between the different political units, whose political system run from a well established and deeply rooted democracy in India, to an inexperienced one in Bangladesh, uncertainty in Nepal, through monarchy in Bhutan and to military dictatorship/unstable democracy in Pakistan. Internally, these nations are struggling with their own internal problems.

Keyswords: -Climate Change, Global Warming, Environment and Conflict, Population Explosions, . Impact on Agricultural, Population Displacement, State v/s State Conflict, State v/s Group Conflict, Group v/s Group Conflict, Disrupted Institutions and Social Relations.

Introduction

In the outset of twenty first century, climate change has presents a serious threat to the international peace, security and prosperity. Environmental issues often have a direct impact on armed forces and national security as well. A number of scholars have recently asserted that large-scale human-induced environmental pressures may seriously affect national and international security. Environmental change is a serious and long term challenge that has the potential to affect each and every one of us. It is one of the biggest issues facing the world today-a regional and global threat, no nation can resolve alone. South Asia is a compact geographic unit and it is one ecological zone. Therefore, most of the environmental problems extend beyond national boundaries and shared by more than one country. There are some environmental issues which are beyond the jurisdiction of any one country of the region. These are regional issues indeed. The regional inter-linkages of environmental issues and problems have given rise to bilateral and multilateral conflicts. Thus, it can be said that the environmental problems are a threat to regional peace and stability in South Asia. Environmental degradation and despoliation the planet earth in terms of emission of carbon dioxide, greenhouse effects, punching hole in ozone layer, soil erosion, siltation, desertification, deforestation, sea level rise and extinction of species and livestock have alarming resulted not only in the multiple non-military threats to the security and survival of the people of the world but also challenged the very understanding and conceptualization of security in conventional military denomination. According to Lodgaard, "the concept of environmental security challenges established frames of mind political conduct. It conveys the message that environmental problems have a legitimate claim for status at the level of high politics just as much as military problems have."[1]

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Climate Change

Climate change refers to the variation in the Earth's global climate or in regional climates over time. It describes changes in the state of the atmosphere over time scales ranging from decades to millions of years. Climate change has been defined by many in many ways. While some define it as an offshoot of Earth's natural processes, others define it as a result of human activities. Striking a balance between these two varying perspectives, climate change is defined as "a change which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods".[2] Truly, the present changes in the Earth's climate cannot be explained alone by the natural processes that explain Earth's previous warm periods. There is a broad scientific consensus that most of the warming in the recent decades can be attributed to human activities.[3] If humanity is, in large part, responsible for this change, then whatever choices we make today, will have a significant bearing on the climate of the future. This makes climate change a formidable concern.

Global Warming

The Earth's climate is dynamic and always changing through a natural cycle. It took billions of years for the Earth's climate to become conducive for the evolution of mankind. Global warming is the increase in the average temperature of the earth and the oceans in the recent times and the likelihood of a continued increase in temperature in future. Gases like Carbon dioxide, Methane, Ozone, Nitrous oxide, Sulpher hexafluoride HFCs and PFCs as well as water vapour-called greenhouse gases (GHGs) -collect in the atmosphere like a blanket trapping the Sun's heat that is radiated off the earth's surface. These emissions of Carbon dioxide and other greenhouse gases into the atmosphere help trap heat and lead to global warming. The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) clearly established that warming of the climate system was 'unequivocal' and if the annual emission of Greenhouse gases remains are today's levels, by 2050 it will be 550 parts per million. This means a potentially catastrophic mean global temperature increase of 5 degree Celsius. Today, there is evidence that we are overloading the carrying capacity of the Earth's atmosphere. Stocks of greenhouse gases that trap heat in the Earth's atmosphere are accumulating at an unprecedented rate. Today, increasing number of scientists believe that we have already crossed into a new weather regime marked by extremes of all kinds.[4] It is predicted that in the course of the 21st Century, average global temperature could increase by more than 5°C. Behind this prediction, there is an overwhelming fact that we are playing havoc with our environment, upsetting the ecological interdependence. In effect, our generation is compelling future generations to inherit an unsustainable ecological debt, which will jeopardize the future development and prosperity. Global warming is sure to become one of the most pressing security issues of this century. Global warming could reverse decades of social and economic progress across South Asia, where food shortages loom and more than half the continent's 4 billion people live along vulnerable coasts, a new report issued by Oxfam and Greenpeace in its document "Asia-Up in Smoke." It reports on the growing scientific consensus that all of South Asia will warm during this century, and the result could be less predictable rainfall and monsoons affecting the food supply.[5] The 2007 IPCC report predicts temperature rise of 1.1 - 6.4 °C by 2100 due to carbon emissions from burning fossil fuels for power and transport.[6] This will cause melting at the polar ice caps and weather patterns to change bringing floods, famines and violent storms, putting billions of lives at risk.[7] A temperature rise of between 3 and 4 degree Celsius would displace 340 million people through flooding, droughts would diminish farm output, and retreating glaciers would cut drinking water from as many as 1.8 billion people.[8] It will reorder the political map by submerging some nations, flooding others, and creating refugees from rising waters. All of Maldives and large parts of

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Bangladesh are among the South Asian regions estimated to go under water.[9] In the case of Bangladesh it is said that one third of the country may be submerged by 2050 due to the rise of sea level. It has been estimated that the one-meter rise in sea level would cover 14 per cent land area of the country and thereby displacing 10 per cent of its total population.[10] The United Nations' Intergovernmental Panel on Climate Change (IPCC) estimates that sea-level will rise 9 to 88 cm by the year of 2100 with a 50 per cent probability of sea-level rising to 45 cm.[11]The NASA scientists are projecting that the Arctic sea ice was melting so rapidly that it could be disappear entirely by the summer of 2040.[12] A NASA scientist Jay Z wally said that if the melting of Arctic ice is so rapidly the Arctic Ocean could be nearly ice-free at the end of summer by 2012 much faster than previous prediction.[13]

A few examples of possible impacts of climate change due to changes in extreme weather and climate events to the mid- to late 21st century are[14]

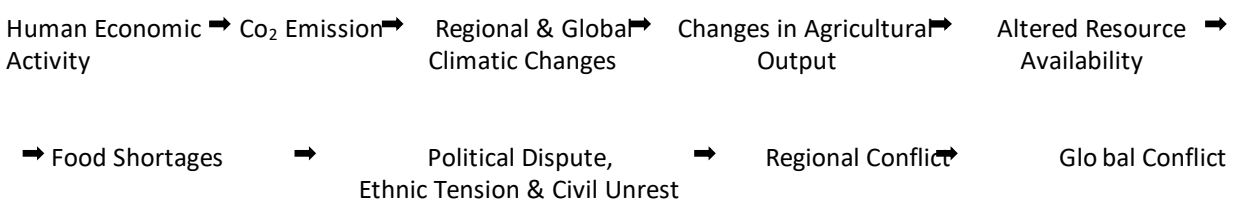
- Warmer and fewer cold days and nights, warmer and more frequent hot days and nights over most land areas - virtually certain (greater than 99% chance)
- Heat waves frequency increases over most areas - very likely (90–99% chance).
- Heavy precipitation events frequency increases over most areas- very likely (90–99% chance).
- Area affected by drought increases- likely (66–90% chance).
- Intense tropical cyclone activity increases- likely (66–90% chance).
- Increased incidence of extreme high sea level (excludes tsunamis)-likely (66–90% chance).

Environment and Conflict

Environmental degradation or change does not simply mean the interaction between human beings and their environment. It implies a destabilizing interference in the ecosystem's equilibrium, which having negative implications on human society, expresses what is meant by environmental change of conflict. According to Liviszevski, "an environmental conflict is a conflict caused by the environmental scarcity of a resource that means caused by a human made disturbance of its normal regeneration rate. Environmental scarcity can result from the overuse of a renewable resource or from overstrains of the ecosystem's sink capacity that is pollution. Both can reach the stage of a destruction of the space of living.[15]

The question arises how environmental degradation leads to violent conflict? In complex web of social, political, and economic causes and effects of conflicts, to explore exclusively the environmental causes of conflicts is indubitably a Herculean task. In the words of an authority "Environmental change may contribute to conflicts as diverse as war, terrorism, or diplomatic and trade disputes. Furthermore, or it may have different casual roles; in some cases, it may be proximate and powerful cause; in others, it may only be a minor and distant player in a tangled story that involves many political, economic and physical factors."[16] gg

Figure 1- Climate Change and Conflict



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The environmental effects may cause social effects that in turn could lead to conflict. It is also assumed that environmental effects do sometimes lead directly to conflicts. They tend to produce and will increasingly produce several casually interrelated social effects. That does not play down the significance of other intervening variables- population growth, demographic structure, the effects of ideational factors like family, community and beliefs and the South's economic structure and pattern of development in the context of the dominant and mimetic Western frontiers model of economics. Without an understanding of these intervening factors, the causative linkage between environmental degradation and conflict cannot be easily formulated.

Security Dimensions of Climate Change:

Figure 2- Security Dimensions of Climate Changes

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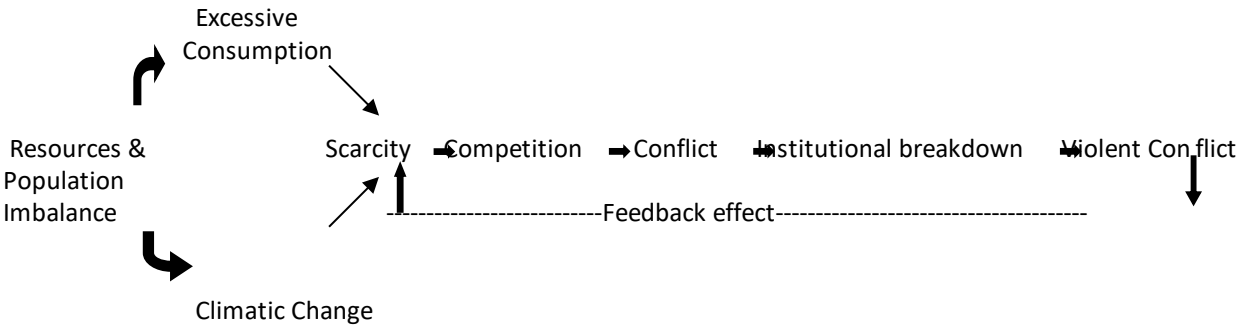

"We sink or swim together. Climate change can be a threat to peace and stability. There is no part of the globe that can be immune to the security threat."[17]

There are four main security dimensions in South Asian region:

1. Population explosion,
2. Impact on agricultural,
3. Population displacement or Migration
4. Disrupted institutions and social relations.

These social effects, in turn, may cause several specific types of conflict, including scarcity disputes between countries, clashes between ethnic groups, and civil strife and insurgency, each with potentially serious repercussions for the security interests of the South Asia.

Population Explosions:

One of the main drivers behind environmental degradation in South Asia is population explosion. Population has a direct bearing upon resources and the environment at large. There has to be a balance between population and resources. Otherwise, it is bound to create environmental hazards. South Asia is one of the most densely populated regions of the world. The region is among the most densely populated in the world. Population growth and increasing population density represent demographic forms of social change. Population growth may lead to geographic expansion of a society, military conflicts, and the intermingling of cultures. Increasing population density may stimulate technological innovations, which in turn may increase

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the division of labour, social differentiation, commercialization, and urbanization. As population increased, farm land sizes started getting smaller. People found it difficult to survive on such small land holdings. On the other hand, population growth may contribute to economic stagnation and increasing poverty, as may be witnessed in several South Asian countries today. In South Asian region three countries-India, Pakistan and Bangladesh are among the world's 10 most populous countries. The total population of South Asia is 1366 million (2001). The region holds more than 23 per cent of world's total population, while it has only 3.5 per cent of the total land area of the world. It shows that the region has much more population in comparison to the land area. India's current population is 1.10 billion and by 2050 it is predicted to overtake China, Pakistan current population of 159 million will reach 295 by 2050 and Bangladesh with a population of 141 million will have twice that number by 2050,[18] Nepal 24 million, Sri Lanka 19 million, Bhutan 2.13 million and Maldives 0.30 million. The average annual population growth of South Asia is 1.8 per cent, which is more than the average annual population growth of the developing countries (1.6%). Maldives has the highest population growth with 3.1 per cent followed by Bhutan, 2.8 percent, Nepal 2.3 per cent, Pakistan 2.7 per cent, India 1.7 per cent and Sri Lanka 0.9 per cent.[19]

High population growth rates lead to more intense use of resources, exacerbating existing scarcities and over exploitation.[20]The region's population growth will have a direct bearing on its renewable resource system such as forest, land and water as well as on energy demand. The renewable resources are being subjected to significant pressures. Some important factors like deforestation, land degradation and water crisis indicates a high level of stress on the South Asia region's renewable ecosystem. On account of industrial and agricultural expansion as well as trade in forestry products, deforestation remains a major concern in South Asia. Bangladesh and Pakistan are the countries with the highest rates of deforestation. In Nepal too, over 75% of population depends on fuel wood for energy needs, which puts tremendous pressure on the country's forest resources. Landslides and soil erosion increase the sediment loads in rivers and cause sedimentation and flooding downstream.[21]Areas with most extensive degradation, already, include the cultivated Himalayan belt in India and Nepal, the Western Ghats of India ad watershed areas of Sri Lanka. According to the Food and agriculture organization forest Resources assessment 2005, the six countries of South Asia – (India, Pakistan, Bangladesh, Nepal, Bhutan and Sri Lanka) together account for the loss of more than half a million hectares of forest annually between 1990 and 2000.[22] The FAO predicts that at exiting rate of deforestation, Bangladesh and Pakistan will completely lose their forest by 2011 and 2015 respectively.[23]It is very alarming for the South Asian countries.

In the continuing struggle to provide food and other basic needs of the South Asian region's burgeoning populace, land degradation has emerged as an important issue. Soils suffer from varying degrees of degradation on account of rapid deforestation, poor irrigation and drainage practices, and overgrazing. The depletion of land resources through desertification and the loss of nutrient-rich topsoil through water and wind erosion threaten the livelihood of countless millions throughout the region. The per capita unit land resources are below the world average of 0.26 hectares in South Asian countries. Population increase and unsustainable agricultural practices are primary contributors to land shortage and land degradation. Another cause of land degradation common to the countries in the region is mining, which is typically unorganized and unscientific, without any defined environmental management and land reclamation plans. In some cases there are clear trans-boundary impacts. Poor mining practices in the dolomite mining areas of Bhutan, adjoining the state of West Bengal in India, have resulted in increased landslides and soil erosion. The Indian foothills have taken the burden of landslide debris. Climate change worsens water quality and availability in regions with water

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scarcity. Currently, 1.1 billion people are without access to safe drinking water. 120 million to 1.2 billion will experience increased water stress by the 2020s in South Asia. More than 3.5 million people die each year from water-related disease; 84% of them are children. Nearly all deaths -- 98% -- are in the developing world.[24] This shortage will force water-usage restrictions and will increase the cost of water consumption. Water could become the "energy crisis" of the early 2000. Conflicts over water will grow over the coming decades as growing populations demand more and climate change affects supply. With the overwhelming majority of the world's rivers shared by two or more nations, these challenges will test diplomats and political leaders worldwide.[25] Some South Asian countries are in water crisis. South Asian countries may fight over dwindling supplies of water and the effects of upstream pollution. The quantitative supply problems are increasing. It is estimated that India will enter the stress zone by 2025, where the per capita water availability fell from 6000 cubic meters in 1947 to 2300 cubic meters in 1998. Estimates for the year 2050 predict acute shortage of water in India,[26] Pakistan, Sri Lanka and Bangladesh shortly after 2025.[27]

The rapid growth of both agriculture and urbanization has imposed growing pressure on the region's already strained water resources in terms of both quantity and quality. This is evident in the gradual decline in per capita availability of water throughout the region. Increase in population and per capita consumption levels create a greater demand on the resource base, thereby creating a demand induced resource scarcity. The population growth plays an important role contributing to environmental degradation that interacts with other social, political and economic factors leading to conflict. This crisis may in turn fuel existing internal or inter-state conflicts and social conflict and it is feared that unresolved water issues could trigger Indo-Pak conflict, which would have unpredictable consequences internationally.

Impact on Agricultural:

Agriculture is the mainstay of Indian economy and provides food and livelihood security to a substantial section of the Indian population. The impact of climate change as witnessed in recent times has immense potential to adversely affect agriculture in this country in a variety of ways. As large parts of the arable land in South Asia are rain-fed, the productivity of agriculture depends on the rainfall and its pattern. Agriculture will be adversely affected not only by an increase or decrease in the overall amounts of rainfall but also by shifts in the timing of the rainfall. Any change in rainfall patterns poses a serious threat to agriculture, and therefore to the economy and food security. Summer rainfall accounts for almost 70 per cent of the total annual rainfall over India and is crucial to Indian agriculture. However, studies predict decline in summer rainfall by the 2050s.[28]

Land constitutes the most important natural resource of South Asia and agriculture is the most important activity using this resource. Increased industrialization, transportation and projects means increased run off of the fertile soil, decline the arable land resulting in food scarcity, atmosphere and water pollution and health hazards stemming from industrial accidents. The global warming may worsen the crisis in agricultural production. While a two-to-three degree Celsius mean global warming might not seem too significant for agricultural production, it may produce a large increase in crop-devastating droughts, floods, heat waves, and storms.[29] Productivity of most crops may decrease due to increase in temperature and decrease in water availability, especially in Indo-Gangetic plains. This apart there would be decline in the productivity of seasonal crops. Rising temperature would increase fertilizer requirement for the same production targets and result in higher GHG emissions, ammonia volatilization and cost of crop production.[30] Increased frequencies of droughts, floods, storms and cyclones are likely to increase agricultural production variability. Therefore, we have to place equal emphasis on saving lives and sustaining livelihoods.[31]

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Reduced agricultural productivity and the resultant situation of food insecurity is potentially the most worrying consequence of climate change. If global warming rises to 3°C it is likely that the number of people suffering from hunger will increase by 250 million to 550 million. According to German Advisory Council on Global Change, agricultural production from rain-fed agriculture could fall by about 50% in some regions by 2020. Rising food prices could potentially push hundreds of millions of people back into poverty. This situation can undermine the economic performance of weak and unstable states, thereby aggravating destabilization, the collapse of social systems and violent conflicts.[32] For South Asian countries, cropland grew at just 0.26 percent during the 1980s, less than half the rate of the 1970s. More importantly, in these countries per capita arable land dropped by 1.9 percent a year.[33] In the absence of a major increase in arable land in South Asian countries, experts expect that the per capita world average of 0.28 hectares of cropland will decline to 0.17 hectares by the year 2025, given, [34] 73% of all rural households in developing countries are either landless or nearly landless. In the case of Bangladesh and Bhutan, per capita unit land resources are well below the world average of 0.26 hectares. Population increase and unsustainable agricultural practices are primarily contributors to land shortage and land degradation. For example, In India, the intensive agriculture has degraded 125 million hectares of land owing to monoculture, salinity and water logging with a result many fertile lands are now wastelands.[35] Large tracts are being lost each year to urban encroachment, developmental projects, and environmental degradation-erosion, nutrient depletion, sanitization, water logging, acidification, and compacting. The geographer Vaclav Smil, who is generally very conservative in his assessments of environmental damage, estimates that two to three million hectares of cropland are lost annually to erosion; perhaps twice as much land goes to urbanization, and at least one million hectares are abandoned because of excessive salinity.[36]

Decreased agricultural production is often mentioned as potentially the most worrisome consequence of environmental change. The effects of this change causing greenhouse gases, global warming and climate change which affect the agricultural production. Coastal cropland in countries such as Bangladesh is extremely vulnerable to storm surges. Such events could become more common and devastating, because global warming will cause sea levels to rise and might intensify storms. The greenhouse effect will also change precipitation patterns and soil moisture; while this may benefit some agricultural regions, others will suffer. Many plants grow faster and larger in a warm environment rich in carbon dioxide, and they often use water more efficiently.[37] Thus, the scarcity of productive agricultural land and decline in agricultural production seem to be two important reasons for inducing cross border migration in South Asia. One study suggests that the number of people crossing over to India increases during periods of environmental disaster.[38] If these situations continue unabated, the volume of migration from affected countries will increase in the future and sheer dictates of history, geography and economy will encourage their movements to India and other countries.

In South Asian countries, a sharp drop in food crop production could lead to internal strife across urban-rural and nomadic-sedentary cleavages.[39] If environmental degradation makes food supplies increasingly tight, exporters may be tempted to use "food as a weapon".[40] The region's economy is heavily reliant on climate-sensitive sectors such as agriculture and forestry. The impacts of climatic change on potential rice production, as studied by the International Rice Research Institute indicate that increasing temperatures may decrease rice potential yield up to 7.4 percent per degree increase in temperature,[41] while wheat production could fall by 32%by 2050.[42]The changes in rainfall pattern and distribution owing to climatic change can lead to shifting of agricultural lands and may also force intensive cultivation of marginal lands which in turn will exacerbate deforestation in future. Environmental change could ultimately cause the gradual impoverishment of societies

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in this region, which could aggravate class and ethnic cleavages, undermine liberal regimes, and spawn insurgencies.[43]

Population Displacement or Migration:

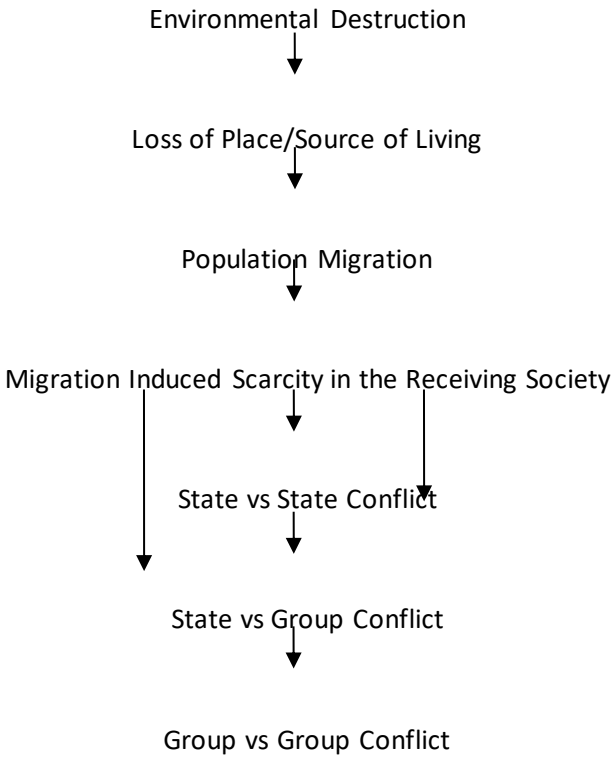
The International Organization for migration (IOM) defines climate change migrants as persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment as a result of climate change adversely affect their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporally or permanently, and who move either within their country or abroad. However, the climate-induced migration has the potentiality to trigger different kinds of conflict at various levels. Ashok Swain has argued that such migration can generate three kinds of conflict[44]:

a. State versus state conflict

b. State versus group conflict

c. Group versus group conflict

Figure3: Environmental Destruction, Population Migration and Types of Conflict



(a) State v/s State Conflict

The reduced production in the agricultural and industrial sectors in the environmentally affected regions might force local small and marginal farmers and laborers to flee their homeland in large numbers in search of other areas for survival. The massive deforestation and loss of fishing habitats can also potentially lead to large scale migration. Furthermore, the predicted sea level rise will worsen the situation undoubtedly. These migrations can transgress inter-state boundaries, culminating in creation of massive cross-border migration.

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However, the large-scale trans-border environmental migration has several conflict inducing dimensions between the receiver and sender states. The trans-border environmental migrants pose structural threat to the host country by increasing demands on its scarce resources. Competition with local population over resources leads to conflict with migrants and bring political problem for when the environmental migrants try to enter into the domestic political process and exert pressure on the government, as in Assam and North Eastern States. Due to these factors, the receiving state might work for stopping the migration at its border or repatriating them from its territory back to the country of origin, which can potentially lead to conflict with the sender state. Moreover, when the environmental migrants due to various reasons indulge themselves in the anti-government activities of the country of their origin, relations between sender and host countries can usually get strained. Sender states might regard the host states with suspicion for giving support to the migrants in their subversive activities, creating negative implication for the regional security.

(b) State v/s Group Conflict

The failure of the environment, which ropes the rural economy, might trigger the people to eventually migrate to the nearby urban areas. Such influx of migration into urban areas not only creates various social problems but also brings environmentally affected people in close physical proximity with each other. The local community life might help them to organize against the state authority that they recognize as the cause of their unhappiness. In this way, the organized and forced environmentally displaced people in the near cities may bring the struggle to the door step of the state administration. Such situation intensifies the intensity of the conflict in the society and poses threat to the government

(c) Group v/s Group Conflict

Wherever environmental migrants settle, they deluge the lab our market; add to local demand for food and other basic requirements of life, which put new threats on the society. The influx of migrants is likely to reduce local food supplies and to sweeping the food prices. Moreover, migrants can harm hosts who depend on laboring for all or part of their livelihoods, by reducing their opportunities for work and by driving down wages. The ensuing scarcity of the new situation might help to generate strong feeling of activism among the original populace of the area. Such feeling can help to organize themselves as a group to defend their interests on the belief that they as a people exist only within their own country, while others have other countries to which they can return and that itself can raise native-migrants conflict in the society.

Environmental crisis in the rural areas of developing countries has increasingly become an important cause of cross-border migration of population and South Asia is no exception of this phenomenon. Bulging populations and land stress may produce waves of environmental refugees,[45] that spill across borders with destabilizing effects on the recipient's domestic order and on regional stability. Due to migration of refugees, the ethnic and social divide manifested in the state between various groups causing political and civil strife and conflict in society. Climate change could potentially trigger large-scale displacement and migration from one region to another. The 2001 World Disasters Report estimated that there were currently 25 million environmental refugees. It is estimated by IPCC that by 2050, 150 million people could become climate refugees, being displaced by sea level rise (SLR), desertification, increasing water scarcity, floods and storms, etc.[46]

Large scale migration in South Asia has continued unabated for last five decades. This gravest problem has been faced by India from last twenty years. In 2003, India has about 20 million Bangladeshi migrants to neighboring West Bengal and Assam and various part of India,[47] 2.2 million Nepalese, 70,000 Sri Lankan

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Tamils and about 100 thousand Tibetans.[48] Presently, this migration is limited not only to Assam, Tripura and West Bengal but is to far-off states like Tamil Nadu, Maharashtra, Gujarat and Delhi.[49] This phenomenon has generated a host of destabilizing political, social, economic, ethnic and communal tensions in many states and union territories of India.

Issues of migration or population displacement, refugee repatriation and alleged state support for insurgent groups have become a point of tension between India and Bangladesh. It is alleged that this migration has not only environmental base, instead they are induced to cause premeditated population imbalance on religion line. Assam's ethnic strife over the last decade has apparently been provoked by the migration of Bangladesh. Environmental degradation as well as population pressures on the scarce natural resources in Bangladesh has contributed to a large scale migration of Bangladeshis to the north-eastern states as well as to some of the large urban centers in India. Though the exact number of migrants from Bangladesh to India is difficult to assess, about 12-17 million Bangladeshis were estimated to have migrated to India by the year 1993. In many instances the immigrants have benefited at the cost of the development of the original inhabitants thereby leading to adverse social, economic, environmental and political impacts. The migrants have also been regarded as a security threat by the intelligence agencies in India for their susceptibility to getting involved in information gathering activities for extremist groups both on the India - Bangladesh border and on the frontier with Pakistan.[50]

The volatile situation in Assam as well as the approaching saturation point in West Bengal has led to large-scale migration to the large urban centers like Delhi, Mumbai and Hyderabad. The migrants have become a part of the local political struggle in many areas, with a potential for violent conflict. To some political parties in India, the migrants have been a tool to enlarge the political base either by winning their support or by mobilizing the native Hindu population against the Muslim immigrants. Within Bangladesh, in the Chittagong Hill Tracts, south of the north-eastern Indian state of Tripura, an ethnic conflict rages between the Bengali speaking Muslim population and the native Buddhist and Christian tribal population of the thinly populated but densely forested area. The ensuing clashes have transformed into insurgency operations involving the Bangladeshi military forces.[51]On the other hand the subversive elements are being pushed by ISI in the garb of environmental migrants to implement its sinister design of 'Greater Bangladesh.'[52] It is a challenge for India to manage its borders. In this situation, it is the first and foremost duty of our leadership to take concrete action to secure our frontiers and sub-serve the best interests of the country.

4. Disrupted Institutions and Social Relations:

The environmental change and acute conflict result in the disruption of many legitimized political institutions and social relations. The economic deprivation and frustration among people result in overthrowing of established authority. One authority points out that, "any event or broad social process that serves to undermine the calculations and assumptions on which the political establishment is structured occasions a shift in political opportunities.[53] Thus, it is a matter of great concern that the seriousness of the environmental crisis as a threat to security escapes the attention of the policy makers of the region. The governments of the region should come forward to check the menace before it becomes too late.

Steps to be Taken:

The environment related problems and their implications are regional issues as the countries of the region in most of the cases share them. It is true that there is a growing awareness on environmental issues in almost all the countries of South Asia in the last few years. 31 The individual countries have persuaded environment

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friendly policies in certain sectors. Attempts have been made towards reforestation, flood control, controlling desertification, etc.

A common approach to securing the environment at the regional level may involve the following aspects:

1. Deep cuts in carbon emissions
2. Sharing of knowledge and expertise regarding population control measures, policies and programmes
3. Strengthening of institutions and legislation
4. Training and orientation programmes in environmental management
5. Promoting environmental awareness
6. Rehabilitation of project ousters
8. Cooperation for development and poverty eradication.
9. Regularization of inter-state migrations, evolving a regional framework for controlling, repatriation and rehabilitation of refugees.
10. Establishment of a system of disaster management and disaster preparedness at the regional level.
11. Exchange of knowledge and researches on seismic tremors, earthquakes, and landslides, their causes and possibilities.
12. Evolving common flood control measures and development of a regional flood warning system.
13. Common measures can be taken up for increased agriculture productivity, treatment of salinity, development of cyclone warning system, reforestation, development of water resources, air pollution control system, etc.
14. Focus should be given on the military response to climate security. Hence, military needs to assess the impact of natural calamities and evaluate their capacity to respond to such crisis. Climate change induced impacts will pose a serious threat to national and international security. The military will need to prepare, train and be ready to face this threat.
15. Adopt a regional approach to address climate change and manage migration.
16. Above all, it requires a strong political wills on the part of regional governments. Governments of the region should come forward and should take concrete action to comprehend the emerging threats of the environmental mismanagement. All these measures can be covered within the framework of a Regional Environmental Security Treaty.

Conclusion: At this juncture, it is crucially important to recognize that climate change is pervasive and has more security implications than any other threat today. Climate-induced challenges should be placed at the core of security considerations in a rapidly changing world. Hence, effective national and international cooperation should be formed to address the unpredictable security consequences of climate change. It is widely accepted that the national security has to be viewed in a wider perspective. The environmental security constitutes a significant dimension of the comprehensive national security. The environment has to be viewed in a wider perspective where human and non-human living beings are also important along with the nature. The environment and the living organs are closely interlinked. Hence, environmental security must take into consideration a balanced and sustained inter-relationship between the two. In South Asia environmental issues have become significant in the overall framework of security due to high population growth, excessive dependence on nature, uneven infra-structural development, poverty, under-development and fragile ecology. While there is an urgent need to take measures for environmental protection, a regional approach alone can be fruit bearing because of eco-geographical inter-linkages and interdependence in the region. Therefore,

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along with the strengthening of SAARC a Regional Environment Security Treaty can be suggestive. Such a treaty will provide an institutional basis for the growth of a common approach to environmental protection and management in South Asia. The South Asian Association for Regional Cooperation (SAARC) can take a lead in this regard and prepare the necessary background for a regional environmental security treaty. The SAARC can further consolidate its environmental protection measures. Because it is through regional cooperation alone that many of the environment related issues can be settled.

It has to be realized that the environmental security in South Asia is possible through a regional approach only. Therefore, the efforts made by the individual countries need to be co-ordinate in a regional framework. Effective implementation of necessary measures, as outlined in this paper, will be facilitated by a partnership role of South Asian nation's Governments. Many environmental problems assume regional significance. Hence, the policies and programmes at the regional level should be drawn up keeping in view overall national policy considerations. Hence, Climate change is happening now in South Asia and the worst is yet to come. If not addressed adequately, it could seriously hinder the region's sustainable development and poverty eradication efforts there is no time for delay.

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