Environment as a National Security Concern: A Perspective

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Introduction

With changing security dynamics and emergence of multidimensional threats, the concept of National Security has acquired fresh connotations to encompass various non-military considerations. In the contemporary era, many factors relevant to human well-being and development are linked to broader security lexicon. According to United Nations Development Programme (UNDP), Human Development Report (1994) national security in the present epoch includes issues like economic security, food security, health security, personal security, common security, political security and environmental security. Of these, the environmental security is one of the most important issues as it not only deals with security of human beings from hostile aggressions in physical terms but delves in the very existence of ecology itself needed for survival of the human race.

Environmental issues transgress national boundaries, and can jeopardise not only the security of the country in which they occur, but also that of others it connects.[1] In a highly populated country as India with extremely variable resource distribution and uncoordinated development activities, the issue of environment security is gaining prominence with depletion and degradation of resources. This paper is an attempt to examine the linkages between environmental concerns and the national security paradigm.

Factors Affecting Environmental Security

Environmental security is a complex issue and examining factors that relate to national security is a challenging task. Environmental security encompasses the interactive dynamics of the diverse human and natural networks that constitute the modern world.[2] In

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the hierarchy of human needs, security is one of the most basic impulses–exceeded in its primacy only by the even more basic physiological needs for food, water, shelter, and the like, each of which is dependent on environmental well-being. These are serious issues that can ultimately lead to disasters, regional tensions and violence and many eminent scientists have predicted catastrophic consequences if environmental issues are not addressed on priority. Some of the factors affecting environmental security are analysed in the succeeding paragraphs.

Population

Since humans are part of the ecosystem, it is becoming increasingly clear that one cannot consider environmental security issues without concurrently examining human population. Every activity in the universe is human centric and many of them affect environment and in turn the Security. An increasing population would have environmental impacts, as only a finite population can be supported without damaging the land's ability to sustain its natural state.[3] An ever increasing population and its demands for natural resources, renewable and non-renewable, has led to unabated environment assaults. The heavy demand of renewable resources is resulting in rapid depletion of these resources than the rate with which it can be replenished by natural systems.

In reality, majority of the environmental problems are man-made. Encroachment on wildlife habitats due to agricultural extension, construction of infrastructure, construction of embankments and barrages, deforestation and land degradation are some of such problems. The pressure of a burgeoning population often damages the natural resources to such an extent that it can create imbalance for the region leading to migration of population from one region and uneven population influx in other areas, leading to heightened security concerns.

Global Climate Change

Climate change is another issue which has high environmental consequences associated with it. Temperature rise and uneven distribution, spatially and temporally, will change the weather and climate over large areas of the Earth. Higher temperatures over land would augment evaporation of soil moisture, raise dry soil temperatures, and increase melting of ice. All of these factors will

combine to change the weather pattern of a particular region, in both frequency and intensity of events.[4] Grasslands and forests will shrink, and deserts will expand with worsening climates. Due to melting of ice and resultant rise in sea levels estimated to rise by about half a metre by 2100, many islands in the Pacific and the Indian Ocean will have to face catastrophe.[5] Rise of sea water level, coupled with natural land subsidence in some low lying regions, could have large impacts in several critical areas of the world.

A second significant impact of global warming is likely to be non availability of usable water. Consequent to climatic change and resultant monsoon pattern, rains are expected to become increasingly erratic and unpredictable. Rainfall is likely to become more intense and concentrated to fewer days, which may lead to adverse situation such as flash floods. Floods erode arable and valuable land and in turn affect environment sustenance. Linked to this is the food production particularly because of changed water availability. Besides, some areas may even witness droughts due to changes in Hydrological cycle. Floods and droughts cause more deaths, misery and economic damage than any other type of disasters. Any increase in their frequency would have most damaging impact on global climate change which could in turn influence the environmental security.

Land Use

Deforestation is the most fundamental and ongoing action of human modification of the environment. There is a definite relationship between the deforestation in the world and the environmental security. Trees and plants control the carbon content in the environment and in turn regulate the greenhouse effect. The impacts of deforestation range from the very subtle changes in climate that loss of forest areas may induce, to urgent life-threatening issues of depletion of productivity of arable lands and the resultant displacement of populace. Desertification thus can generate broad scale problems for human welfare and political stability. By virtue of its capacity to trigger famines, desertification on occasion has served as a recipe for political instability (e.g. Algeria, Chad), for tensions between neighbouring countries (e.g. Zimbabwe, Botswana), and may even be a cause of armed conflict.[6]

Water Use

Water is the life source of the environment without which no living being can survive. Water, apart from being the very basis of human survival is also essential for food production, power generation, transportation and critical to many industries. In fact it is a resource which is utmost essential for economic growth in present day society. With development and population rise, demand for water has increased manifold, resulting in overexploitation of surface and ground water, leading to water scarcity. Environmental degradation has not only affected water in terms of availability of sufficient quantity but also deterioration of quality as well. Fresh water supplies are increasingly coming under threat of pollution from industrial effluents and municipal waste. Inadequate and contaminated water has severely affected the health and hygiene of many people across the globe. Nearly all infectious diseases and major epidemics in the world have degraded water and poor sanitation as the root cause. Water scarcity is also a major factor contributing to population migration and this can have a delimiting impact in the affected regions/countries. Further, as water is "shared" by different countries or different peoples, water scarcity emerges as a serious security issue.

Under the ambit of water use, oceans are also considered an environmental security concern, primarily because of their role in feeding the world's population and the regional economic importance of fishing for some countries. Annual fish harvesting increased from 22 million tons in 1950 to just over 90 million tons in 1995.[7] The increased harvesting is caused by the demand as population grows, resulting in increased per capita consumption of fish. This has led to an imbalance in oceanic and sea water ecology. A secondary impact of the water quality is the damage to the estuaries, which causes a reduction in the production of food for the ocean's fauna. Discharge of domestic and industrial refuse into sea, is also adversely impacting the blue water ecology of many regions of the world.

Technology

Development brings in technological upgradation and most of these lead to environmental degradation, one of the major concern areas which can seriously impact the safety and security of the region and world at large in times to come. Problem of toxic and hazardous

waste disposal are another modern day reality. Today, millions of tons of different chemicals are manufactured for some "beneficial" use. These organic and inorganic chemicals have become ubiquitous throughout the world. Many of these chemicals biodegrade very slowly, and therefore, when released into the environment, they have the capacity to cause long lasting damage to the environment and mankind.

Environmental Issues and Their Impact on National Security

Today, nations face multiple security challenges from traditional conflicts between states – such as territorial disputes, cross-border terrorism to non-traditional issues to include environmental degradation and energy crisis. The new challenges posed by environmental issues are due to multiple reasons; natural and man-made, which have resulted in complicating the environmental security issues. While some issues are global, the others are peculiar to a particular region. Environmental issues are universally centrepiece to human survival and as a source has strategic significance for nations who build power through natural resources like water, oil, gas and various other minerals. Environmental devastation faced by a country due to natural calamities, especially those originating from beyond its borders, eventually sour bilateral relations and hamper regional stability. Some of the major environmental issues that are likely to cause security ramification have been deliberated in the succeeding paragraphs.

Environment Deterioration and Disruption. Environmental deterioration and degradation involving deforestation, desertification, reclamation of wetlands, damming of rivers, clearing of vegetation etc have adversely affected the health of the ecosystem. According to recent estimates, environmental degradation is threatening the health and livelihood of two billion people living in arid regions around the world. Ecosystem disruption from natural disasters such as tsunami, floods, hurricanes, Al Nino, La Nina etc caused large scale devastation, unprecedented economic loss and human suffering and death. Unless effective prophylactic and remedial measures are taken, tsunami and Katrina type of disasters are likely to be common features in the coming decades. This is a serious issue, as continuous environmental calamities decrease the economic growth of a nation, hamper its social cohesion, and destabilise its political structure.[8]

Environment Induced Migration. In recent times, environmental challenges ranging from pollution, excessive carbon emissions and rapid population growth have led to increased scarcity of natural resources like water, energy, and food. Environmental resource scarcity, fostered by a combination of population growth and resource depletion, has already been a cause or a contributing factor in regional conflicts. As the population increases, there is a related increase in environmental hazards for national security. Population-increase creates many societal and economic problems that cause environmental degradation and resource deficit. Further, environmental change reduces economic opportunities for a country by causing demographic displacement within states and across international borders. An unexpected movement of population across the international border raises political tension between neighbouring countries. The ecological impacts of large movement of people can have significant environmental implications for the receiving region. This cumulative causality is a characteristic feature of the link between environment and security including ethnic conflict. Thus environmental induced migrations are potential trigger of economic and political conflicts and in turn national security.

Environmental Conflicts. The root cause of most violent conflicts throughout history has been competition for territory and resources; such conflicts are likely to intensify as resources progressively become scarce and the quality of the environment degrades even further. Resource criticality has many times led to violent conflict within and between states. One particular area of tension and rivalry will be over trans-boundary resources such as river waters that flow between countries. Out of 261 of the world's major rivers, water is shared; with 176 of them flowing through two countries, 48 through three countries and 37 through four or more countries and many of these countries have some kind of dispute on water sharing.[9] As many as 80 countries, with nearly three billion people or two-fifths of the world's population, already suffer serious water deficits; hence with rise in water scarcity, likelihood of conflict emanating from distribution pattern of the river waters cannot be ruled out.[10] Given the geopolitical scenario, the situation can ignite local tensions and provoke violent resource-based conflicts. This type of insecurity severely affects the resources challenges both at intra or inter-state level and has a potential to expand to international levels also.

Impact on Military

Use of different facets of environment during military operations is of utmost importance and is inescapable. In the modern times, it has assumed greater significance due to emergence of latest environmental challenges and demographic dynamics. With depletion and degradation of natural resources there will be high demand for protection of important environmental assets. Force deployment to accomplish mission will have to include principles to avoid unnecessary environmental impact and limit collateral damage. As environmental factors become strategically vital, military analysis for planning of any operation will need special deliberations:-

(a) Environmental effect of military operations on economics and social aspect of the country will have to be examined in detail. It may well be that the potential long-term environmental risk due to loss of productivity outweighs the importance of other considerations.

(b) Resource rich areas close to the border falling in potential conflict zone need to be identified for their strategic environmental importance. For instance, a particularly productive area or a seashore may need to be avoided for its economic importance or survivability of the people of that region. Areas which assume importance are :

(i) Region contributing to the global climate balance.

(ii) Ecosystems of national importance recognised as fragile.

(iii) Areas that provide habitat to an endangered or threatened species.[11]

(c) Response to an environmentally destructive attack needs to be engaged with an aim to prevent destruction of the ecosystem rather than just retaliation to cause similar damage in adversary's country. Actions whether military or diplomatic need to be decisive and trenchant, with the larger goal for avoiding environmental catastrophe.

(d) Treaties and conventions with potential adversaries need to be in place to serve as a foundation, for environmental conservation during war.

In addition to operating within the limitations brought about by environmental considerations, military as a responsible constituent of the society will have to be prepared for innovative environmental challenges:-

(a) Conducting humanitarian operations after environmental disasters and large scale natural calamities like floods, earthquake, cyclone, tsunami, famine, drought etc.

(b) Integrating force health protection considerations in environmentally degraded areas that lack substantial public health measures.

(c) Responding to environmental terrorism or sabotage.

(d) Remedying adverse environmental impact as a part of the exit strategy.

Way Ahead

It is critically important to recognise that environmental security is only one component of the larger process of national security and cannot be separated from the whole. The strategic analysis needs to begin with understanding of the key environmental security issues and how environmental scarcity and environmental degradation could impact security.

Deteriorating environment is a threat to individuals, nations and the entire universe. Hence, there is a need to identify problems and issues concerning environmental security of the region; to enhance common understanding of the issues at hand along with the emphasis on shared responsibility. Threats to environmental security are usually diffused, unintended, and trans-national; causes and effects often separated in time and space, have long term implications, and their quick resolutions requires commitment and cooperation from a wide range of actors. These issues have extended human understanding of environmental change, conflict, and vulnerability in promoting peace, stability, and human security.[12]

Growing threats to environmental security demand promotion of 'collective security', as part of accommodative diplomacy and international cooperation. Multilateral security cooperation on environmental issues is vital to regional security, stability and economic growth, and to elicit regional responses on the most

viable approaches to addressing these issues. Resolutions of environment security threats will not only remedy the environmental constraints but will also serve as confidence building measures contributing towards peace making and peace building. In view of global ecological interdependence, there is a need to design new forms of ecologically enlightened development, diplomacy and governance.

As regard involvement of military, it is very important to examine the multiple dimensions of roles of military in dealing with threats arising due to environmental terrorism and in protecting the environment during military operations. Some of the steps have been taken in the form of setting up of National Disaster Management Authority; however the role and impact on military needs holistic analysis for a successful disaster response and consequence management.

Conclusion

Traditionally, the realistic understanding of security does not include the environment as a matter of concern. Comprehensive security of the state must incorporate the political, economic, diplomatic, societal and environmental dimensions of security. To protect the citizens and to ensure their well-being, nations need to plan and promote environmental conservation for safeguarding environmental security. Healthy ecosystems form the basis of environmental security, sustainable development and ultimate survivability of people. If not addressed and resolved, environmental problems viz; water shortages, land degradation, pollution etc could become security threats. In this respect the South Asian region is one of the world's most vulnerable areas. Because of the destabilising potential of environmental issues, environmental security should form an inescapable part of national security analysis and planning.

Endnotes

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