

M. G. Kabir

ENVIRONMENTAL CHALLENGES AND THE SECURITY OF BANGLADESH*

Introduction

In the mid-1950s, the famous Russel-Einstein Manifesto chillingly asserted that the survival of humanity is imperiled by the risk of nuclear war. Over the years the political and economic issues dominated world headlines, while the growing threats emanating from environmental disruption largely remained in the periphery of world concern. It is only recently that public figures, policy makers, scientists, and scholars have slowly come to realize the impending danger of environmental crisis. The "Dagomys Declaration" adopted at the 38th Pugwash Conference on Science and World Affairs in Dagomy, USSR in September 1981 by scientists, scholars, and public figures from 41 countries made a clarion call on all scientists of the world to expand their "concerns to a broader set of interrelated danger: destruction of the environment on a global scale and denial of basic needs for a growing majority of humankind." The declaration continued, "We must recognize that environmental degradation and large scale impoverishment are already facts and *can lead to massive catastrophe even if nuclear War is averted*".¹ The

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1. Pugwash Dagomys declaration, *Bulletin of the Atomic Scientists*, November 1988, p. 11.

declaration further added; "These linked environmental problems affect all nations. They exacerbate international tensions and increase the risk of future conflicts..."² The world Commission on Environment and Development in its report, *Our Common Future* (1987) which has been described as "the most important document of the decade on the future of the world" has underscored the urgency of understanding the issue of environmental crisis.³

Traditionally since World War II national security was conceived primarily in terms of defense capability and weaponry. At the root of this assumption was the apprehension that other nations, neighbouring and distant, were the principal sources of threat to the existence of the nation in question. As such, the concept of security has acquired a heavy military dimension. However, there has been attempts lately to establish "environmental dimension to security issues" in view of environmental nightmares threatening the prospects of the survival of our civilization. The present paper seeks to examine the environmental challenges to the security of Bangladesh. There are three primary sources of environmental challenge faced by our country—global, regional, and national. The paper primarily concentrates on the first two sources since these have important bearing on the country's foreign policy. The ramifications of environmental degradation will be discussed and policy options will be suggested.

Toward a New Definition of Security

In international studies literature scant attention has been given to security ramifications of environmental factors. On the other hand, we find a comparatively large body of literature on the environmental consequences of military campaigns, especially dealing with the effects of nuclear war on the environment. The environmental impacts on global and national security are now

2. *Ibid.*

3. World Commission on Environment and Development (WCED) *Our Common Future* (New York: Oxford University Press, 1987).

being slowly recognized by concerned quarters which leads to a reconceptualization of the term security. As noted by the World Commission on Environment and Development, "the whole notion of security as traditionally understood—in terms of political and military threats to national sovereignty—must be expanded to include the growing impacts of environmental stress—locally, nationally, and globally. *There are no military solutions to environmental insecurity*".⁴ In other words, we should not limit our vision only to military issues while thinking about security.

Environmental factors are becoming an increasingly important element in security considerations. The Oslo Workshop on the linkage between environment and security in 1986 addressed the pertinent issues. The Oslo Workshop viewed that "theorists must move beyond traditional thinking about security concepts and begin considering a series of environmental factors underpinning the material welfare. These factors include such natural resources as soil, water, forests, grasslands, and fisheries, all prime components of a nation's natural resource base. They also include climatic patterns and physiobiotic cycles that maintain the lifesupport systems of all nations. *If a nation's environmental foundations are depleted, the idea goes, its economy may well decline, its social fabric may deteriorate, and its political structures may become destabilized. The outcome, all too likely, is conflict, whether in the form of disorder and insurrection within the nation or tension and hostilities with other nations*".⁵ If we turn to the conflict in the Horn of Africa between Ethiopia and Somalia, the roots of hostilities can be traced in the agricultural decline of Ethiopia affected by environmental degradation of that country. Swelling food prices and loss of top soil induced agricultural migration to borderlands in Ethiopia which aggravated the existing tension between the two countries. The hostilities resulted in military conflict.

4. *Ibid.*, p. 19. (italics added),

5. Norman Myers, "Linking Environment and Security." *Bulletin of the Atomic Scientists*, June 1987, p. 46. (italics added).

Ethiopia spent an annual average of \$225 million on military activities between 1979 and 1980. A recent UN report has observed that much of Ethiopia's agricultural decline could have been averted with an annual expenditure of \$ 50 million for environmental improvement. This would have halted agricultural migration and there would have been a less compelling situation for military confrontation.⁶ The environmental factors often contribute to soaring international relations as evidenced in the case of Indo-Bangladesh dispute over the Ganges water. Domestic political instability is frequently the product of environmental impoverishment. "Environmental refugees" are very common in several parts of the world, 10 million of them are currently fighting their tragedies in Sub-Saharan Africa alone. So, the linkage between environment and conflict, both domestic and interstate, is an undeniable fact with which policy makers will have to grapple.

The environmental challenge has forced the forward-looking public figures and scholars of the world to redefine the concept of security. The WCED rightly noted, "the deepening and widening environmental crisis presents a threat to national security—even survival that may be greater than well-armed ill-disposed neighbours and unfriendly alliances".² In a redefined and much broader concept, the threats emanating from environmental degradation are considered important issues to be squarely addressed in policy formulation. The new sets of threats are extraordinarily complex, and national defense establishments are beleived to be useless against these new threats. Lester Brown, a leading world resource analyst, maintains that blocking 'external aggression may be relatively simple compared with stopping the deterioration of life-support systems.'⁸

6. *Ibid.*, pp. 6-7.

7. WCED, *op. cit.*, pp. 6-7.

8. Lester R. Brown, "Redefining National Security," in Brown, *et al. ed.*, *State of the World-1986* (New York: W.W. Norton & Co., 1986), p. 210.

Global Sources of Environmental Challenge

Now let us turn to the global sources of environmental crisis that pose serious threat to our security. The unprecedented economic development and technological change over the past few generations have not been without great costs. One of the greatest paradoxes of human civilization is that the machine of progress has also put enormous pressure on natural support system. Human activities have engendered alarming environmental degradation. Deforestation, soil erosion, acidification, desertification, global warming induced by "greenhouse effect"⁹, depletion of the ozone layer, and loss of biological diversity due to the destruction of tropical forests are some of the principal manifestations of deteriorating environment.

Our planet is constantly changing. Even before the appearance of human life, the earth was in the process of very slow change. Due to dramatic climatic changes during the Ice Age, the landscape of the world was subjected to enormous change. Besides some of the dramatic climatic changes, the transformation of the planet in millions of years did not create serious imbalance in the natural system. Nature is a total system which must be held in balance. The world is divided into different natural ecosystems. The ecosystem is composed of all living and nonliving things. The way the different elements of the system interact is also an important element of the ecosystem.

In the past, a delicate balance was maintained between human power and environment. But the advances of modern science and technology endowed humans with overwhelming power over nature. But the jubilation of conquering nature is appearing to be quite ephemeral. Human activities can often be harmful to the continued natural stability of the ecosystem. Swelling body of scientific literature now claims that major changes in the ecosystem are causing

9. David C. King, *People of the World* (New York: American Book Co., 1982), p. 11.

serious disruptions in the environment. These disruptions have threatening consequences both on the economic and political fronts.

Over a hundred years ago, the land-hungry European settlers in America in their attempts to expand farmland in the western prairies found their newly cultivated land all dry and worthless. This area of land came to be known as the Dust Bowl.⁹ The settlers did not know the consequences of uprooting trees and grasslands. Deforestation is one of the greatest global environmental concerns. Every minute one hundred acres of tropical forest is destroyed. It is estimated that at least 50 million acres of tropical forests are destroyed each year. About half of the world's rain forest has been uprooted since World War II. At this rate of destruction, the forests will be completely destroyed within less than a half-century. The destruction of forest cover will bring about ecological Armageddon. Unless effective measures are taken to halt the suicidal process of deforestation, "our generation will have presided over the greatest extinction of living things since the ecological catastrophe that wiped out the dinosaurs".¹⁰

The effects of global rainforest destruction may not seem to alert scholars and policy makers in Bangladesh since the bulk of such forests is located in South and Central America, West Africa, South-East Asia, and the Pacific Islands. Rainforests presently occupy an area about the size of the United States. But the impacts of forest destruction in distant lands are directly linked with the future of all nations. Rainforests contain the extraordinary treasurehouse of plant and animal species which have largely remained unexplored. This treasurehouse can be used for many beneficial purposes. With the destruction of forests, half of the species on earth will disappear. The fast disappearance of forests threatens the lives of over a billion people, since their water resources are being dried up and their croplands are turning to dust bowls. As a result of these changes,

10. Brain Johnson, ed., *The Paradise Lost* (London: Earthlife Foundation, 1986), p. 6.

global climate will change in a direction un hospitable for sustainable growth. So, the environmentalists warn us that the effects of rain-forest depletion "could be as severe as those of nuclear war. In many ways the threat is greater."¹¹

It should be noted here that deforestation does not mean the destruction of rainforests alone. The shrinking forest area around the world causes erosion of top soil, drying up of ground water supply and desertification. All these factors lead to agricultural decline. Despite unprecedented scientific advances, per capita grain production has declined in more than 40 countries including Bangladesh over the last three decades.¹² Industrial pollution also poses a threat to the healthy existence of forests in Europe and America. German scientists were surprised to detect the large volume of sick trees in their country.¹³ In Czechoslovakia, the annual damage from acid rain is estimated to be \$ 1.5 million. The Czechoslovak case clearly demonstrates the adverse effect of air pollution and acid rain on farm productivity.

Loss of tree cover also causes flooding. The roots of the trees absorb water. In the absence of forests, rain or melting snow water is not absorbed into earth. As mentioned earlier, deforestation is also contributing to global warming. Rainforests absorb heat generated by the sun. When tree cover over the earth is removed, more sunlight is reflected which is likely to alter weather patterns in distant places. For millions of years atmospheric carbon dioxide stayed at a stable level. But with the increasing use of fossil fuel in modern times, carbondioxide emission into the atmosphere has increased manifold. Just in three decades from 1950 to 1982, carbondioxide

11. *Ibid.*

12. Lester R. Brown and Edward C. Wolf, "Assessing Ecological Decline", in Brown, *et al.*, *op. cit.*, p. 33.

13. *New Scientist*, November 12, 1988, p. 23.

14. Brown and Wolf, *op. cit.*, p. 30.

emission has increased over 300 per cent.¹⁵ The build up of carbon-dioxide is considered to be the most ominous and intractable of all environmental threats. This build up of carbondioxide, or "greenhouse effect" as it is popularly called, has led to global warming up. Deforestation makes the greenhouse scenario even worse. 'Greenhouse effect' poses serious threat to the existing climate patterns. At the present rate of warming, global temperature would rise 3 degree celsius in next 45 years which is greater than the rise of temperature in the post one million years. As a result of increased temperature, ice caps in the poles are likely to melt with the frightening prospect of rise of the sea level. Bangladesh's very existence has been projected to be at stake due to the rise of sea-level in not too a distant future. It has been projected that as much as half of the the country may be inundated which will force the relocation of at least 38 million people by 2050 A.D. Judi L. Jacobson notes that "combined effect of rising sea-level, harsher storms and subsistence may wreak so much damage that Bangladesh as it is known today, may virtually cease to exist."¹⁶

Another global environmental threat is the depletion of stratospheric zone layer which absorbs 99 per cent of the incoming ultraviolet radiation from the sun. It is a zone of thin and fragile concentration of naturally occurring ozone. Scientific investigations conclude that the depletion of ozone layer is caused by industrially produced chemicals, especially chlorofluorocarbons. Alarming loss of the ozone layer has been reported in the past few years. Ozone destruction was detected in the Antarctic as well as the Arctic.¹⁷ It is feared

15. Lester R. Brown, "A False Sense of Security," in Brown, *et al.*, (ed). *The State of the World-1985* (New York: W.W. Norton & Co. 1985), p. 16.
16. Earthscan Press Briefing, *Natural Disasters*, (Washington, Earthscan, 1984); *Dhaka Courier*, December 9, 1988; "No Escape form the Global Greenhouse", *New Scientists*, November 12, 1988, pp. 38-43.
17. "Evidence of Arctic Ozone Destruction," *Science*, May 27, 1988, p. 1140; Marvin S. Soroos, "The Atmosphere as an International Common Property Resource," paper presented at the Annual Meeting of the American Political Science Association, September 1-4, 1988, p. 5-7.

that the life of many plant and animal species will be threatened by the higher dose of ultraviolet radiation if the depletion of the ozone layer cannot be reversed. However, it is encouraging to note that the world community is quite sensitive to this issue. Both the U.S.A. and Soviet Union along with others are buying to reduce the emission of chlorofluorocarbons. There has been some improvements in the past years. Another potential source of environmental challenge is the dumping of hazardous nuclear and radioactive industrial wastes of the industrialized nations. In the past couple of years, the Third World resource poor nations have become or favourable dumping ground of hazardous wastes in exchange of apparently lucrative financial deal.

It is clear from the above discussion that environmental degradation caused by other people in distant lands have life threatening consequences for other nations. Bangladesh cannot escape the impacts of greenhouse effect nor can it shield against the consequences of the depletion of the ozone layer. Michael Robinson has aptly described that we "are facing the first human created extinction cycle that is on the same scale as the major geological events of the past, but condensed into an incomparably smaller span of time. This is not hyperbole, not even hypothesis, but imminent actuality."¹⁸

Regional Sources of Environmental Degradation

In the wake of the apocalyptic floods last year, an English language weekly in Dhaka while indicating the need for effective government policy to deal with the flood, maintained that inaction "may well mean the end of our race, our country and our nation. We are not trying to be alarmist but the dimensions of this year's flood should make it clear to all that complete destruction of Bangladesh is a distinct possibility."¹⁹ The above expression demonstrates the gravity of environmental crisis that is regional in origin. Apart from global

18. Quoted in *Sunday Times*, "Roots of Destruction". 11 September, 1988.

19. *Dhaka Courier*, September 16, 1988, p.5.

environmental challenges, the regional sources of environmental degradation are no less alarming. The principal areas of regional environmental issues that concern Bangladesh are, deforestation, top soil erosion, flood and sharing of waters of the international rivers.

The consequences of deforestation have been mentioned earlier. Population growth and increased demand for food and fuel have resulted in the destruction of half of the Himalayan forests in Nepal in recent years. These forests used to regulate water flow and prevented soil erosion. If the present rate of deforestation continues, it will take only 25 years to make the Himalayas totally bald. Deforestation is widespread in all areas of the Himalayas stretching from Pakistan through India to Nepal and Tibet. It has eroded the fertile soils from the hills which, in turn, triggered landslides and river cloggings. Topsoil erosion causes unprecedented siltation in the Ganges and Brahmaputra river systems. It is estimated that these two river systems carry over 2.2 billion tons of sediments each year.²⁰ Large scale soil erosion results in the rise of the riverbed and between 6 to 12 inches a year.²¹ An even increasing riverbed and decreased drainage capacity, alone with diminished ability of the uphill to hold monsoon waters due to deforestation, make a comfortable scenario for flood devastation. As a result the frequency of flood has increased manifold in the region since 1950. The construction of dams and barrages have compounded the problem in some instances.

Since there has been inundation of flood studies in Bangladesh in the wake of the 1987 and 1989 floods, details of the specific causes of flood are not discussed here. But what may be emphasized is that flood disasters have their roots in the regional environmental degradation. The disastrous impacts of floods on economy and polity are all too well known to be documented here. If effective

20. A.H. Shibusawa, "Cooperation in Water Resources Development in South Asia", *South Asia Journal*, Vol. 1 (3), 1988, p. 319.

21. *Sunday Times*, September 11, 1988.

measures cannot be taken to halt deteriorating environmental condition in the region, the consequences will not just be limited to floods alone. Closely associated with the flood issue is the question of the use of the common water resources of the international rivers in the region. Deteriorating environmental conditions have forced competing demands on scarce available water resources. To keep its agricultural economy going and to stop the spectre of desertification, a fair and uninterrupted share of the Ganges waters is indispensable for Bangladesh. Hence, we also see how regional environmental issues are linked to the security of our country.

Domestic Environmental Degradation

In the past, environmental degradation usually carried the notion of population effects in the industrialized nations. The problem of developing countries was thought to be related to resource depletion. But this distinction is fast appearing to be inappropriate. The Third World nations in their quest for rapid economic development in a comparatively smaller span of time have adopted the western model of economic development. Emulation of this model has proved costly and damaging for not considering the consequences on man-nature relationship.²² The developing world is enslaved by this progress syndrome.

Since Bangladesh is at present in a formative phase of industrial and agricultural development, the fall-outs of the development process have not yet attracted the attention of policy makers and attentive public. Due to the low level of development of the country, the environmental impact of various development programme have not become quite visible yet. Some of the adverse environmental impacts have been catalogued recently. They include acute shortage of ground water in dry season in Northern Bengal, crisis of drinking

22. For an elaborate account of the environmental consequences of traditional development strategy, see Fukashi Utsunomiya, *Politics of Development and Environment* (Tokyo: Tokyo University Press, 1980).

water in urban areas, increased salinity, sulphur and zinc deficiencies in nearly 6 million acres of arable land, chemical pollution of land and water due to heavy utilization of fertilizer, danger of permanent genetic erosion due to artificially imposed monoculture, and health hazards due to automobile pollution, etc.²³

Soil degradation process, as well as soil erosion in the districts of Chittagong, Chittagong Hill Tracts, Comilla, Jamalpur and Mymensingh, and the shrinking of water resources constitute major environmental concerns that threaten the well being of the agricultural economy of Bangladesh.²⁴ Population growth and competing demands for fresh water will diminish the per capita supply of water by nearly 33 percent in the near future.²⁵ Increased demand for irrigation water and the sharp decline of surface water flow in our rivers make the scenario even worse. The decline of the supply of ground and surface water simply spells disaster for our economy. Moreover, the construction of roads, highways, embankments and dams throughout Bangladesh without considering their environmental impacts has worsened flood situation.²⁶ Some of the flood protection embankments and roads

23. For a detailed study of environmental impacts of development programs, see M. Mainul Nurul Islam, and Mr. Nazrul Islam "Impact of Development Programmes on Environment and Its Effect on Polarization", a paper presented at the National Seminar on Social Polarization Process in Bangladesh, Dhaka, September 9-10 1988.

24. Ainun Nishat, "To Secure the Sustainable Use of Water Resources in Bangladesh", paper presented at the Conservation for Development Seminar, Dhaka, September 8, 1986; Rezaul Rahman, "Land Use and Soil Degradation Specific to Agro-ecological Zones in Bangladesh", paper presented at the same seminar.

25. Sandra Postal, "Managing Freshwater Supplies", in Lester R. Brown, *et al.*, *State of the World 1985* (New York, W.W. Norton & Co., 1985), p. 46.

26. Large dams are thought to be detrimental to the environment. The San Francisco Declaration of the International Rivers Network in June 1988 has called for a moratorium on all new dam projects which fail to satisfy environmental requirements. See, "The San Francisco Declaration", International Rivers Network.

actually aggravated the flood situation in some parts of Bangladesh. The impacts of environmental degradation caused by domestic policies are no less pervasive than the global and regional concerns.

Some Policy Considerations

First of all, the basic dimensions of the environmental crisis need to be fully recognized and grasped by the policy makers. Since the ecological Armageddon is well advanced, we need to pursue appropriate institutional and legal approach. In order to deal with the growing menace of environmental challenge, a full-fledged ministry of environment should be established immediately for this purpose, since the environmental stakes are very high. Not only the advanced industrial countries have environmental agencies, even neighbouring India has a central ministry of environment.

If a full-fledged ministry seems too costly, a separate department of environment can be established under the existing framework of Science and Technology Ministry. The Environmental Pollution Control Department maintains a very precarious existence with meager resources insufficient even to handle the domestic pollution concerns.²⁷

Secondly, we need to formulate a sound environmental policy to address all important issues of environmental crisis. Coherent public policy is an imperative for our survival.

Thirdly, life threatening consequences of global environmental crisis have to be unitedly handled by all nations. Bangladesh being a developing nation may think that our responsibility is peripheral in this area. Our share in the degradation of global environment may be minimum, but our stakes are so great that our very existence is in question. We must act in concert with others. An environmental cell in the Foreign Ministry may be given the special

27. *Ittefaq*, February 3, 1989 reported about the meager facilities and staff position of the department.

responsibility to address the issue of global and regional environmental challenge. The nations of the world should work out planetary ethics in view of the crisis. Side by side with new national policies and institutions, new international cooperation is urgently needed. Our foreign ministry can become one of the most eloquent advocates of global environmental concerns in international forums.

Fourthly, our regional environmental challenge is the most serious of our environmental concerns. The SAARC forum can be meaningfully utilized to meet this challenge. It is heartening to note that Rajiv Gandhi has also emphasized the urgent need for cooperation in the area of environmental degradation in his Islamabad speech.²⁸ Beside regional approach, bilateral efforts also should be continued in this regard. We must realize that bilateralism is a cornerstone of Indian policy, there is very little we can do to change their policy. And we need Indian cooperation mostly to deal with our regionally originated environmental disaster.

Fifthly, our development policies and programmes in the past were growth oriented, with little or no consideration for environmental impacts. Our Planning Commission does not seem to have environmentalists on its staff despite its elaborate structure. A full fledged environment division should be created in the Planning Commission. All major projects should be scrutinized by this division before final approval to minimize their adverse environmental effects.

Sixthly, we should also launch a mass awareness programme to sensitize the public about the impacts of environmental degradation. Universities, other educational institutions, newspapers and local government bodies can be entrusted with this responsibility.

Finally, an integrated approach should be devised to deal with environmental issues. Because of diversity of the environmental

28. Speech by Rajiv Gandhi at the 4th SAARC Summit, December 29, 1988, pp. 14-15.

challenge, we need to pull together scientists, environmentalists, social scientists, policy makers and public figures to grapple with the issue.

Conclusion

Although environmental challenges pose serious threat to security of all nations, the developing world is more vulnerable to the impacts of environmental nightmares. Yet our policy makers and scholars seem to be less sensitive about this issue.²⁹ But the consequences of environmental degradation threaten the survival of our nation. As mentioned at the outset, no military solution to environmental insecurity can be imagined. We need proper institutional framework to formulate national environmental policy which can be effective to meet the challenge of global, regional, and national environmental degradation. The political implications of environmental crisis can be listed indefinitely. We must recognize that environmental crisis is more pervasive and more political than any other crisis in the ultimate analysis. So, we should place environmental challenge at the core of our security considerations in a rapidly changing world.

29. For example, environmental challenge was not included as an element of security considerations of small states by a recently held international seminar on the subject. See, M. Abdul Hafiz and A. Rob Khan, (eds.) *Security of Small States* (Dhaka: UPL, 1987).