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DEGRADATION OF ENVIRONMENT AS A THREAT TO THE SECURITY OF BANGLADESH: SOURCES AND CHALLENGES

Abstract

Attempt has been made in the paper to identify the sources of environmental threats to the security of Bangladesh and concrete challenges posed to the country with a focus on domestic, regional as well as global sources of environmental degradation. Bangladesh is exposed to a host of severe threats to its security emanating from a combination of domestic, regional and global sources. As evident from the study, environmental challenges posed to Bangladesh emanate considerably from the regional and global sources. Therefore, while the mobilisation of national efforts with a view to facing the challenges is indispensable, their success would significantly depend on the actions taken at the regional and global levels. It is argued that Bangladesh's ability to face the challenges would significantly depend on the ability of the country's diplomacy to galvanise international support and develop effective co-operation with the neighbours.

INTRODUCTION

Human being since its emergence on the planet had to learn to adapt itself to prevailing environment of the globe. In the process of such adaptation, it began to gain knowledge about the nature and

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develop appropriate skills and instruments of influencing and controlling the nature. Thus, over long historical periods, the advances of science and technology endowed the mankind with overwhelming power over nature. This is to the extent that man set the goal of conquering the nature. In the twentieth century, man pursued the goal with utmost aggressiveness and grandiose successes.

But the jubilation of conquering the nature is appearing to be somewhat ephemeral. The delicate balance between man and environment maintained through millennia is being distorted rapidly and severely because of unrestrained and unplanned exploitation of the nature by man. In this regard, the main responsibility lies with the developed countries, while the developing nations also in their quest for telescoping the socio-economic progress made in the West over centuries within decades have adopted the Western model of economic development that has essentially been unfriendly to the environment.[1] As a consequence, mankind is faced with a process of disastrous environmental degradation. It is resulting into the rise of mean temperature of the world, changed weather pattern, melting of polar ice cap, rise in sea level, depletion of ozone layer, water and air pollution, desertification and soil erosion to name a few.

As a consequence, natural calamities became more frequent and more devastating. Potential disasters are of frightening magnitude. Such a state of affairs posed a severe threat to human being in its individual, social and corporate existence. The magnitude of the environmental threat is of national, regional as well as global proportion. Therefore, it often generates conflicts at the national as

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[1] The impact of the development strategy on the environment is analysed in details in, Fukashi Utsunomiya, *Politics of Development and Environment*, (Tokyo University Press, Tokyo, 1980).

well as international levels on the one hand, and dictates the necessity of co-operation at all these levels, on the other.

In the circumstances, the whole notion of security as traditionally understood in terms of economic, political and military threats to national sovereignty as posed by other states is rapidly changing. In the changed context, while the state-centric security concerns did not disappear, the new security agenda came to include issues as diverse as intra-state conflict, ethno-religious violence, landmine, terrorism, democracy, human rights, gender, crime, consequences of underdevelopment, poverty, hunger, deprivation, inequality, diseases and health hazards, human development, economic security, market, water, energy, emigration, environmental degradation and so on.[2]

One of the most significant aspects of this change is the expansion of the scope of security studies to include the growing impacts of the degradation of environment – nationally, regionally as well as globally. Thus, in the late twentieth, and particularly in the twenty-first century, a wholly new dimension of security has emerged. Along with its traditional aspects – economic, social, political and military – now international security invariably encompasses environmental issues.

A number of countries, particularly in the Third World, along with the conventional tasks of attaining security through strengthening defence capability, political stability and socio-economic development, are also facing the challenge of ensuring mere physical survival *vis-à-vis* natural calamities. Bangladesh is certainly one of those countries.

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[2] A. K. M. Abdus Sabur, "Evolving a Theoretical Perspective on Human Security: The South Asian Context", paper presented at the Regional Conference on *Evolving a Theoretical Perspective on Human Security in South Asia* jointly organised by the Bangladesh Institute of International and Strategic Studies (BIISS), Dhaka and Institute of Peace and Conflict Studies (IPCS), New Delhi at the India International Centre, New Delhi during January 10-11, 2001.

Only a very few states are faced with security threats emanating from environmental degradation that could be compared with the ones faced by Bangladesh. The annually recurring devastating floods followed by severe droughts have already put the very survival of the nation at stake. Bangladesh is also one of the few countries which will be among the first victims of sea level rise.

The transformation of environmental degradation to the extent of posing a threat to the security of mankind is the combined outcome of activities starting from the micro to the macro levels. Some forms of environmental degradation have their most severe impact locally. But others tend to migrate. In a large number of cases, activities in a locality or a country cause environmental degradation in its surrounding or even in the world at large and *vice-versa*. As a consequence, threat to security of a country posed by environmental degradation may emanate from activities conducted within the concerned country itself, in its surrounding as well as anywhere in the world. Therefore, any attempt to identify the sources of environmental threats to a country needs to be focussed on domestic, regional as well as global sources of environmental degradation.

It is in this backdrop that the paper would deal with the environmental threats to the to security of Bangladesh with a focus on the sources of environmental degradation and the concrete challenges. Part I would deal with the domestic sources of environmental degradation. Part II would analyse the threats to the security of Bangladesh emanating from the regional sources of environmental degradation. Part III would be focussed on the global sources that pose, in the long run, a grave threat to the security of the country. Finally, an attempt would be made to draw some conclusions from the discussions on the issues and project an outlook for the future.

I. DOMESTIC SOURCES

The main domestic sources of the degradation of environment in Bangladesh are rooted in factors like, high concentration of population in the country, scarcity of resources, underdevelopment, chronic poverty and the drive for telescoping the development done in more advanced countries. About 128 million people live in Bangladesh with a surface area of 144 thousand square kilometres. This makes the density of population as 981 people per square kilometre.[3] The country lies at the confluence of three of the world's major rivers, the Ganges, the Brahmaputra and the Meghna, which originate from the Himalayan system and flow through China, Nepal and India before passing through Bangladesh as they drain out into the Bay of Bengal. As a result, 93 percent of the waters passing through Bangladesh come from outside its boundaries while only 7 percent from precipitation within its borders.[4]

Bangladesh is criss-crossed with over 200 rivers which pass through the country on a north to south trajectory. With a total length of approximately 24,000 kilometres, these rivers cover about 7 percent of the territory of Bangladesh.[5] Floodplains occupy 80 percent of the territory, hills 12 percent and uplifted blocks (terraces) 8 percent of the total territory of the country.[6]

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[3] *World Development Report 2000-2001*, (Oxford University Press, New York, 2001), Table 1, p.274.

[4] Saleemul Huq and A. Atiq Rahman, "An Environmental Profile of Bangladesh", in A. Atiq Rahman, Rana Haider, Saleemul Huq and Erik G. Jansen (eds.), *Environment and Development in Bangladesh*, (University Press Limited, Dhaka, 1994), p.38.

[5] *Ibid.*, p.41.

[6] H. Brammer, M. Assaduzzaman and P. Sultana, *Effects of Climate and Sea-Level Changes on the Natural Resources of Bangladesh*, **Briefing Document,** No. 3, (Bangladesh Unnayan Parishad, Dhaka, 1993), p.vii.

Bangladesh is still at the formative stage of modern industrial development and urbanisation. Therefore, the environmental consequences of modernisation have not become quite remarkable yet. Nonetheless, some of such consequences are already assuming alarming proportion. These are pollution of air in the big cities and industrial areas, pollution and depletion of surface and ground water and so on.

The most dangerous threat emanating from environmental degradation is, perhaps, the arsenic contamination of its ground water, almost the sole source of drinking water in the country. According to a study published by the World Health Organisation (WHO) on September 8, 2000 in Geneva, Bangladesh is facing the "largest mass poisoning of a population in history" because of arsenic contamination of its drinking water supplies.[7] During the last over three decades, the government has dug about five million tube wells to provide drinking water to save the people from cholera, diarrhoea and other waterborne diseases. But the naturally occurring inorganic arsenic poisoning in the ground water has overturned these health benefits. According to the survey, between 33 and 77 million people are at risk.[8] The risk is of wide range. Arsenic effects a wide variety of human organs: skin, lungs, liver, cardiovascular system, nervous system, haematopoietic system and reproductive system. The effect could be anywhere from disorder and deformity to cancer.[9]

Arsenic contamination, first noticed in 1993, has already assumed a gigantic scale. According to the WHO Study cited above, the scale of this "environmental disaster is greater than any seen before. It is beyond the accidents at Bhopal, India in 1994 and Chernobyl, Ukraine

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[7] *The Daily Star*, September 25, 2000.

[8] *Ibid.*

[9] Jamal Anwar, "Arsenic Mitigation: A Costly Delay", *The Daily Star*, January 8, 2001.

in 1986".[10] As indicated, arsenic contamination of its ground water remains the single-most environmental challenge facing Bangladesh.

While the country remains at the early stage of urbanisation and industrialisation, urban and industrial pollution has already reached an alarming scale. In this regard, the most alarming case is the pollution of the air in Dhaka. According to a recent study, Dhaka appeared to be one of the most polluted cities of the world. The study revealed that in different parts of the city, air contained from 85,100 to 29,100 microgram of carbon monoxide per one cubic metre as against the WHO permissible limit of 10,000 microgram. The level of nitrogen monoxide ranged between 500 to 300 microgram per one cubic metre as against the WHO permissible limit of 120 microgram. According to one estimate, the amount of airborne lead in Dhaka is 383 microgram in one cubic metre.[11] According to the study, air pollution in Dhaka is often 10-12 times higher than the recommended WHO guidelines for suspended particulate matter and sulphur dioxide.[12] The situation is so alarming that an analyst called Dhaka a 'veritable gas chamber'.[13]

Not only the air and ground water, surrounding of the city and its surface water are also being polluted by industrial waste. In this regard, the worst pollutants are the tanneries. Ninety percent of the 270 tanneries of the country are located in the populous Hazaribag area of Dhaka. According to one estimate, these tanneries release 8.47 million litters of liquid waste and 98 tons of solid waste per day. One of the worst victims of wastes from the tanneries is the river Buriganga and the life and eco-system that the river supports.[14]

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[10] *The Daily Star*, September 25, 2000.

[11] Daily Sangbad, January 14, 1999.

[12] *The Daily Star*, January 1, 2001.

[13] Jamal Anwar, *op. cit.*

[14] *The Daily Sangbad*, October 25, 1998.

With a very narrow resource base and endemic poverty, Bangladesh, since its birth, was suffering from recurring natural calamities like, droughts, highly devastating floods and storm surges with large-scale loss of property and lives. As evaluated in the World Resource Institute's Final Report on Bangladesh Environment and Natural Resource Assessment published in 1990, all these have been a constant threat to the food security of the country and the quality of life of its people.[15] Over the last decade since the publication of the Report, the country has achieved remarkable success in food production, particularly rice production and, by now, achieved self-sufficiency in food. It is also thriving for the improvement of the quality of life of its people, but at a high cost to its environment. Survival imperatives in the environment of extreme poverty compelled Bangladesh to address the economic tasks through vigorous endeavours even when such ventures contributed to the long-term depletion of resources and degradation of environment. Overuse and improper use of scarce natural resources have been rampant. All these already have had a serious debilitating impact on the country's fragile eco-system. Bangladesh has lost 50 percent of its forest cover over the last 20 years and tree cover now amounts to only less than 6 percent of the total territory.[16]

II. REGIONAL SOURCES

Bangladesh is also exposed to a host of severe environmental challenges emanating from regional sources. The country is the lower riparian of the common rivers shared by the Himalayan states

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[15] *Bangladesh Environment and Natural Resources Assessment*, **Final Report,** (World Resource Institute, Centre for International Development and Environment, Washington, 1990), p.2

[16] Nahid Islam, *Environmental Challenges to Bangladesh*, **BIISS Paper,** (No.13, July 1991), p.38.

viz., Bhutan, India and Nepal. Bangladesh is a flat alluvial plain with an average elevation above sea-level of only 10 meters into which flow no less than 57 rivers and of which 54 flow into the country through India. These include two of the three mightiest rivers of South Asia – the Ganges and the Brahmaputra – which converge in the centre of Bangladesh and empty into the Bay of Bengal. Various development activities in the upper riparian states like, flood control and irrigation projects particularly, dams and barrages on the common rivers as well as a growing process of deforestation precipitated by the pressure of ever increasing population, poverty and energy deficiency are disrupting the natural equilibrium of regional environment rapidly and severely.

Let us start with a discussion on the Bangladesh-India common rivers and the management and development of common water resources. As indicated, international character of the Ganges and the Brahmaputra river basins generated interdependence among the co-riparian states. Co-operation among them, particularly between Bangladesh and India, for the efficient utilisation and proper management of water resources is crucial to their interests. The task, however, for a long time remained unattainable. In case of common Bangladesh-India rivers two types of natural problem are equally operative: too little water during the dry season and too much floodwater during the monsoon.[17] The average discharge of the Ganges is in excess of a million cusecs, which rises to over two million cusecs in monsoons often creating severe flood problem for Bangladesh. In

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[17] For details, see, Nurul Islam Nazem and Mohammad Humayun Kabir, *Indo-Bangladesh Common Rivers and Water Diplomacy*, **BIISS Papers,** (No.5, December 1986), pp.3-23; and M. Rafiqul Islam, "Indo-Bangladesh Common Water Resources Development: Problems and Prospects", M. G. Kabir and Shaukat Hassan (eds.), *Issues and Challenges Facing Bangladesh Foreign Policy*, (Bangladesh Society of Internal Studies, Dhaka, 1989), pp.62-79.

crucial dry season, i.e., January to May, particularly during mid-March to mid-May, the flow reduces to mere 55,000 cusecs creating a severe shortage of water.[18]

In the circumstances, while co-operation between the two countries with a view to devising a plan for the whole year covering both dry and monsoon seasons was indispensable, India constructed the Farakka Barrage with a view to diverting 40,000 cusecs of water from the Ganges to the Bhagirathi-Hoogli river through a feeder canal during the leanest period leaving Bangladesh with only 15,000 cusecs of water.[19] Thus, the problems around the sharing of Ganges water was created which in course of time turned to be the most stumbling block in the way of co-operation between the two countries. The dispute persisted for about more than a quarter of a century and thwarted all efforts at co-operation between the two countries in managing and developing the common water resources of the Ganges and other fifty three rivers that flow from India through Bangladesh and empty into the Bay of Bengal.[20] The dispute, by implications, also hindered co-operation between the two countries in other areas as well.

However, the dispute was resolved in the environment of relative improvement of bilateral relations that followed in the wake of change of governments in both the countries in 1996. The diplomatic initiative under taken by the new governments in Dhaka and New Delhi culminated in a Summit meeting between Bangladesh Prime Minister

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[18] Chandrika J. Gulati, *Bangladesh: Liberation to Fundamentalism*, (Commonwealth Publishers, New Delhi, 1988), p.102.

[19] Nurul Islam Nazem and Mohammed Humayun Kabir, *op. cit.*, p.12.

[20] For details on the dynamics of conflict between Bangladesh and India on the distribution of Ganges water, see, A. K. M. Abdus Sabur and Mohammad Humayun Kabir, *Conflict Management and Sub-Regional Co-operation in ASEAN: Relevance for SAARC*, (Academic Press and Publishers Limited, Dhaka, 2000), pp.65-67.

Sheikh Hasina and her Indian counterpart Deve Gowda.[21] During the summit meeting, the two leaders signed a Treaty on December 12, 1996 that envisages the sharing of Ganges water between the two countries for the next 30 years. Under the new agreement, Bangladesh will receive a 50 per cent share of the Ganges water when the water flow at Farakka is less than 70,000 cusecs. If the flow rises beyond that level, Bangladesh is guaranteed 35,000 cusecs; if it passes the 75,000-cusec mark, India is guaranteed 40,000 cusecs.[22] The treaty paved the way for the resolution of the oldest and, by far, the thorniest dispute between the two countries.

Bangladesh-India Treaty on the sharing of Ganges water is an important milestone in South Asian quest for resolving inter-state dispute in general and environmental disputes in particular. First of all, the Treaty has generated hopes that the rest of the disputes between Bangladesh and India, including some over the distribution of the water of other rivers, as well as similar disputes between other regional countries could also be settled amicably. It is very important for South Asia in terms of boosting regional co-operation within the Framework of South Asian Association for Regional Co-operation (SAARC), including on the issues of the utilisation of common resources and the management of environment.

Another crucial issue is that of an intensified process of deforestation around Bangladesh and its impact on the country. Forests play a vital role in maintaining ecological balance. These stabilise soil, conserve soil nutrients and facilitate moderate water supply. The loss of tree covers lead to the uneven distribution of rainfall over the year, loss of fertile topsoil and soil nutrients,

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[21] *Ibid.*, pp.82-83.

[22] *Far Eastern Economic Review*, (December 26 & January 2, 1997), p.16.

excessive soil erosion, landslide, river clogging and so on. One of the worst outcomes of such processes is recurring and highly devastating floods and also the reverse, droughts.

The deforestation is widespread in all areas of the Himalayas stretching from Pakistan through India to Nepal and Tibet. To grasp the extent of deforestation in the region, it is suffice to mention that land under forest cover in Nepal reduced from about 32,000 square miles in 1961 to about 12,000 square miles in 1982. According to Centre for Science and Environment in New Delhi, India has lost 40 per cent of its forest cover in the last 30 years.[23] According to some estimate, if the present rate of deforestation continues, it will take only 25 years to make the Himalayas totally bald.[24]

As a result of deforestation, the Himalayas are increasingly losing their capability to buffer the powerful monsoon, as the sponge effect of soil to absorb certain amount of water is gradually declining. Due to unprecedented siltation, the Ganges and Brahmaputra river systems are to carry over 2.2 billion tons of sediments each year.[25] This results in the rise of riverbed in between 6 and 12 inches a year, thus, making it impossible for the rivers to mange the water.[26] The ultimate consequence of it is recurring devastating floods the last of which took place in Bangladesh in July-September 1998.

III. GLOBAL SOURCES

As indicated, unrestrained and unplanned exploitation of nature by man without adequate concern for its far-reaching consequences

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[23] Nahid Islam, *op. cit.*, p.17.

[24] M. G. Kabir, "Environmental Challenges and the Security of Bangladesh", *BIISS Journal*, (Vol.10, No.1, 1989), p.101.

[25] A. H. Shibusawa, "Co-operation in Water Resources Development in South Asia", *South Asia Journal*, (Vol.1, No.3), p.319.

[26] M. G. Kabir, *op. cit.*, p.101.

is the root-cause of the environmental degradation. Deforestation, loss of biological diversity, soil erosion, acidification, desertification, depletion of the ozone layer, and the most alarming `greenhouse effect' are some of the manifestation of the gradual degradation of environment.

The Earth's ecosystem maintains a very delicate equilibrium. In the prehistoric ages, the decrease of less than five degrees in the global mean temperature ushered in a series of ice ages. We are now witnessing a temperature change of just a few degrees in the opposite direction that is termed by the scientists as the "Green House Effect". It is caused by a number of 'greenhouse gases' like, carbon dioxide (55 percent) originating from the fossil fuel burning, chlorofluorocarbons (CFC) (24 percent) originating from industrial uses, methane (15 percent) and others (6 percent).[27] These gases acting like a gigantic greenhouse trap part of the heat that enters the atmosphere from the sun, and thus, contribute to the rise of global mean temperature.

The production of greenhouse gases in individual countries has a truly global impact. Layers of these gases accumulating in the upper atmosphere contribute to global warming. Gradual warming of the earth's atmosphere is leading to proportionate rise in the sea level, more severe hurricanes, cyclones, storm surges, and the disruption of agriculture. Bangladesh's enormous suffering due to flood, hurricanes, cyclones, storm surges and the likes is a fact well known to the international community. In the past, such calamities have taken the life of hundreds of thousands of peoples and properties worth tens of billions of dollars. In 1998, the country suffered the most devastating flood in its history.

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[27] Nahid Islam, *op. cit.*, pp.5-7.

Bangladesh's contribution to global warming is negligible, while its ability to prevent the trend is virtually non-existent. However, with an average elevation above sea level of only 10 meters, the country is certain to be one of the worst victims of sea-level rise due to global warming as a result of the emission of greenhouse gases caused by developed countries. According to a 1990 report of the Intergovernmental Panel on Climate Change (IPCC), in a 'business as usual' scenario, the concentration of greenhouse gases would double in the year 2025 with respect to pre-industrial levels. It is predicted that this would lead to an increase in global temperature by about 0.3^0C per decade with an accompanying sea-level rise of 6 cm per decade.[28]

According to the most recent report of the IPCC issued in March 2001, worldwide temperatures have climbed more than $.5^0$ C over the past century and the 1990s were the hottest decade on record. After analysing data going back at least two decades on everything from air and ocean temperatures to the spread and retreat of wildlife, the IPCC asserts that this slow but steady warming has had an impact on no fewer than 420 physical processes, and animal and plant species on all countries.[29] According to the IPCC prediction, average temperatures will increase between 1.4^0C and 5.8^0C by 2100, more than 50 percent higher than predictions of just a half-decade ago.[30]

The developed industrialised countries produce most of the greenhouse gases. In 1989, the United States and the former Soviet Union were the largest producers of such gases respectively responsible for 18 percent and 14 percent of total global emissions. A recent study conducted by the Oak Ridge National Laboratory on the emissions of

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[28] *Climate Action Network South Asia: First Regional Meeting and Research Agenda*, (Bangladesh Centre for Advanced Studies, Dhaka, 1991), p.5.

[29] *Time*, April 9, 2001, p.29.

[30] *Ibid.*, p. 30.

carbon per person in 1997 by different countries also confirmed the lead of developed industrialised countries in this regard. According to the study, oil producing country Qatar produced more than 18 tons of carbon per person in 1997 and had the lead in this regard. Beside this, all the countries that produced more than one ton of carbon per person in 1997 have been developed industrialised countries. Singapore produced more than six tons of carbon per person in 1997, the US more than five tons, Australia more than four tons, Finland and Germany more than three tons, Russia, Britain and Japan more than two tons, and Italy, France and Switzerland more than one ton.[31] In terms of the total emissions of greenhouse gases, the US has got the lead. With 4 percent of the world population, the US produces 25 percent of greenhouse gases.[32]

Possible devastating impact of greenhouse effect on Bangladesh has already been discussed. Suffice it to mention that Bangladesh which produces only 0.3 percent of global emissions could see its land area shrink by 17 percent in case of one metre rise in sea level due to global warming.[33] While Bangladesh is not responsible for the situation, it is also absolutely powerless to reverse the trend. The country had to rely on the increasing consciousness at the global level with regard to the consequences of greenhouse effect and resultant international efforts aimed at curbing the emissions of greenhouse gases.

As a matter of fact, late-1980s and particularly 1990s witnessed vigorous efforts on the part of international community to reach a deal on global warming. In this regard, Earth Summit held in Rio de Janeiro

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[31] *The Economist*, April 7, 2001, p.74.

[32] *Time*, April 9, 2001, p.34.

[33] *Human Development Report 1994* (Oxford University Press, New Delhi,1994), p.36.

in 1992 has been a crucial milestone. The Summit adopted the Framework Convention on Climate Change, the landmark treaty that launched the process leading to Kyoto. The than President of the US, George W. Bush, the father of the present President, signed the Convention on behalf of the US and it was also ratified by the US Senate.[34]

The Kyoto climate conference held in December 1997 in Kyoto, Japan was aimed at reaching an agreement on binding targets for cutting the emissions of six greenhouse gases. After hard bargain, an agreement known as Kyoto Protocol was reached at the conference. Main points of the Protocol are as follows:

- Six greenhouse gases subject to mandatory cuts: carbon dioxide, methane, nitrous oxide, hydrofluorocarbns (CFCs), perfluorocarbns (PFCs) and sulphur hexafluoride (SF6).
- A total of 38 industrialised countries agreed to cut the emissions of these six greenhouse gases by 5.2 percent from 1990 levels between 2008 and 2012.
- Japan, the USA and the 15-member EU to reduce emissions by 6, 7 and 8 percent respectively.
- Iceland and Australia to be permitted to increase emissions by 10 and 8 percent respectively.
- Russia, Ukraine and the developing countries, including China and India, to be exempt from the new commitments.
- Countries to be permitted to trade emission quotas.
- Sanctions for the countries which failed to reach their targets to be agreed at a later date.[35]

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[34] *The Economist*, April 7, 2001, pp.73 and 75.

[35] *Keesing's Record of World Events*, (Vol.43, No.12, 1997), p.41984.

The Protocol, however, did not specify any concrete measures to put this plan into action due to severe disagreement among the signatories.[36]

The US, a signatory to the Kyoto Protocol, has been far from being prepared to fulfil its part of the obligations as envisaged by the Protocol. In this regard, US oil and coal industries played a crucial role. Even under Clinton Administration in 1997, the Senate that is empowered to ratify treaties, voted 95 to 0 that no global-warming pact that came before it would be ratified unless it treated developed and developing countries equally.[37] Thus, the Protocol was facing severe resistance in the US even under Clinton Administration. The last round of negotiations over the implementation of Kyoto held under Clinton Administration in November 2000 in The Hague ended in disarray. Notwithstanding pressures from European countries, the Americans made it clear that they could not implement Kyoto as it stood.[38] As a consequence, the dialogue between the US and EU on the issue became highly strained.

Soon after Bush Administration assumed office, in a private meeting with the ambassadors from the 15-nation European Union (EU) in Washington, US National Security Adviser Condoleezza Rice told that Kyoto is "not acceptable to the Administration or the Congress". While the EU ambassadors wanted to know the new Administration's approach towards global warming, she said, "we will have to find new ways to deal with the problem. Kyoto is dead." Subsequently, in early April 2001, Christine Todd Whitman, the Director of the US Environmental Protection Agency, publicly

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[36] *Ibid.*, (Vol.44, No.11, 1998), p.42649.

[37] *Time*, April 9, 2001, p.38.

[38] *The Economist*, April 7, 2001, p.73.

confirmed such a position.[39] According to Whitman, "the Kyoto Protocol is unfair to the United States and to other industrialised nations because it exempts 80 percent of the world from compliance".[40] While explaining US position, Condoleezza Rice also argued that "A protocol that excepts China and India and ... penalises American industry ... wouldn't be ratifiable".[41]

Global reaction to Bush Administration's stance on Kyoto was swift and sharp characterising it as being "uninformed and even reckless". EU bitterly criticised the new US stance. China's Foreign Minister called the US stance on Kyoto "irresponsible".[42] During his meeting with President Bush, on April 5, 2001, German Chancellor Gerhard Schroder employed vigorous efforts to justify Kyoto to the President. But the President stood firm on the issue. While justifying his stance on Kyoto, President Bush argued that the US economy has slowed down and there is also "an energy crisis". In the circumstances, "the idea of placing caps on CO_2 does not make economic sense".[43] French President Jacques Chirac called on all nations to implement Kyoto despite US abandonment.[44] However, without the US, efforts at implementing Kyoto are likely to be fruitless.

The Bush Administration's approach is certainly a severe blow to the Kyoto Protocol. It has put the very survival of the Kyoto process under severe threat. Nonetheless, the Protocol is not yet dead. Ongoing debate between the US and the EU has virtually put the developing

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[39] *Time*, April 9, 2001, p.34.

[40] *The Economist*, April 7, 2001, p.73.

[41] *Time*, April 9, 2001, p.36.

[42] *Ibid.*

[43] *Ibid.*

[44] *Ibid.*

countries on the sideline of the negotiation process. Coming months are likely to witness intense negotiations and also harsh exchanges between the US and EU on global warming. The Bush Administration is still willing to participate in the next round of negotiations on Kyoto process scheduled to be held in Bonn in mid-July. Dutch Environment Minister Jan Pronk who presided over the failed talks in The Hague last November is preparing a new proposal that he hopes will bridge the ever-wider gulf between the US and EU.[45] Expectations from the forthcoming negotiations in Bonn very from despair to scepticism. There is little optimism in the countries like Bangladesh that relied on the international community and the Kyoto process to reverse the trend towards global warming that poses a potentially grave threat to their physical survival.

CONCLUDING REMARKS

The degradation of environment as a threat to the security of human being in its individual, social and corporate existence is assuming an increasingly alarming nature. The threat is all embracing. It concerns everybody and every country of the world, while its intensity may very from country to country. As we have seen, such a threat emanates from unscrupulous exploitation of nature and its resources by people and the development activities conducted by them without any or inadequate concern for their impact on the environment at national, regional and global levels. On the positive side, increasing degradation of environment of the planet has already attracted wider attention on the issue on the part of academia, media, statesmen as well as the conscious people all over the world. In order to resolve the development *versus* environment dichotomy, the central objective has

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[45] *The Economist*, April 7, 2001, p.75.

already been identified as "to meet the need of the present without compromising the ability of future generations to meet their own need".[46] Mankind has also expressed tremendous determination to face the environmental challenge collectively through concerted efforts at the national, regional as well as global levels.

As evident from the foregoing study, by now, Bangladesh is exposed to a host of severe threats to its security emanating from a combination of domestic, regional and global sources. Recurrent cyclones and storm surges, floods followed by droughts, loss of top soil and soil nutrients as well as agricultural and forest land, pollution of water and air, depletion and degradation of resource base are some of its worst manifestations. The country is also likely to be the worst victim of the sea-level rise.

The environmental challenges posed to Bangladesh emanate considerably from the regional and global sources. Therefore, while the mobilisation of national efforts with a view to facing the challenges is indispensable, their success would significantly depend on the actions taken at the regional and global levels. In this regard, the role played by the international community and the country's ability to involve the neighbours in co-operative endeavours would be of crucial importance.

The process of negotiations at the global level that culminated in reaching the landmark agreement known as the Kyoto Protocol generated considerable hope in Bangladesh with regard to devising the ways and means of thwarting the process of global warming. However, with the Bush Administration's decision to abandon the Kyoto process, everything became unsettled. As the indications suggest, the impasse is likely to continue for some time to come. The resolution of the issue

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[46] *Our Common Future: The Report of the World Commission on Environment and Development*, (Oxford University Press, Oxford, 1987), p.8.

remains highly difficult. This has generated considerable misgivings in Bangladesh. However, there is very little that Bangladesh can do to make the Kyoto process workable. So far, only hope is that the EU still remains firm on Kyoto.

The Treaty envisaging the sharing of Ganges water between Bangladesh and India is an encouraging sign. However, in order to respond to the environmental challenges faced by Bangladesh and its neighbours, much more needs to be done. First of all, it is necessary to mobilise the collective will and efforts of the countries of the Ganges and the Brahmaputra river basins. For a long time, this seemed to be an impossible task. Geography dictates that no co-operative effort could be initiated without the participation of India. India, because of its strict adherence to the principle of bilateralism in dealing with the neighbours, persistently opposed any multilateral venture.

However, New Delhi seems to be on the threshold of a qualitative change with regard to its policy towards multi-lateral co-operation among the countries of the Ganges and the Brahmaputra river basins. The emerging sub-regional grouping, South Asian Growth Quadrangle (SAGQ), that includes Bangladesh, Bhutan, Nepal and the Seven North-eastern states of India and the commitment made by the leadership of these countries to the success of the venture are indicative of such a trend.[47] The project still remains in its formative stage. Therefore, it is too early to make any assessment on whether, when and how far SAGQ could unleash a process of meaningful co-operation within its framework. However, a very high concentration of poverty, the need for rapid socio-economic development and the environmental challenges as discussed would continue to create tremendous pressure on the countries of the sub-region to develop their common natural

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[47] See, A. K. M. Abdus Sabur and Muhammad Humayun Kabir, *op. cit.*, pp.167-90.

resources in a way so as to make the developmental efforts environmentally sustainable.

For Bangladesh, pursuing 'environmental diplomacy' would be of crucial importance not only for facing the challenges emanating from regional and global sources, but also from domestic sources. Naturally occurring inorganic arsenic contamination of Bangladesh's ground water, almost the lone source of drinking water, has already been characterised as a challenge potentially more devastating then those thrown by the accidents at Bhopal and Chernobyl. For Bangladesh, a challenge of such gigantic proportion would be impossible to face on its won. Therefore, mobilisation of substantial assistance on the part of international community for initiating effective measures of arsenic mitigation would be indispensable.

This implies also to challenges thrown by recurring devastating floods. In this regard, along with attracting international assistance, co-operation with the neighbours, India in particularly, aimed at the proper management and utilisation of common water resources is of crucial importance. To sum up, Bangladesh's ability to face the challenges to its security thrown by the process of environmental degradation would significantly depend on the ability of the country's diplomacy to galvanise international support and develop effective co-operation for the management of common resources and environment with the neighbours, particularly India.