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CLIMATE CHANGE – A SECURITY THREAT FOR BANGLADESH: THE ROLE OF ARMED FORCES

Abstract

Climate change is a serious and inevitable threat for Bangladesh. The country faces significant challenges to its overall development due to frequent flooding, tropical cyclones, droughts and other natural calamities, all of which deplete a significant amount of the annual national budget. Researches show that climate change has increased the frequency of the natural disasters and is likely to intensify further in the future. It is estimated that, climate change combined with the threat of sea level rise, would cause forced-displacement of millions of people from low-lying and coastal areas of densely populated Bangladesh. The paper reveals that climate change has severe impacts on Bangladesh due to its unique geographical location and socio-economic characteristics. This suggests that climate change poses security threats for Bangladesh in terms of weakening the elements of national power and generating violence in the society. The paper also explored that though Bangladesh is making all out efforts to face climate change, but for obvious reason the role of armed forces has not yet been emphasised at the national strategic level. As such, this paper suggests for the incorporation of Bangladesh armed forces in the national response plans on climate change issues.

1. Introduction

Bangladesh is one of the most vulnerable countries to climate change due to its unique geographical location, dominance of floodplains and low elevation. The socio-economic characteristics of the country such as higher population density, poor social and economic capacity, inadequate infrastructures, overwhelming dependence on nature and nature-based livelihood also contribute to this vulnerability.¹ Bangladesh faces hard challenges to its overall development due to frequent floods, tropical cyclones, droughts and other natural calamities, which deplete significant amounts of the annual national budget. Researches show that climate change has already increased the frequency of natural disasters and is likely to intensify further in the near future. It is estimated that these environmental threats, combined with the sea level rise induced by global warming, will displace millions of people from

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¹ Fahmida Khatun and AKM Nazrul Islam, "Policy Agenda for Addressing Climate Change in Bangladesh: Copenhagen and Beyond", *Occasional Paper No. 88*, Dhaka: Centre for Policy Dialogue, 2010, p. 8.

low-lying and coastal regions. Hence, this presents a serious challenge to densely populated Bangladesh.

Bangladesh is vulnerable to different non-traditional security issues, out of which climate change is likely to become a major threat to national security. The security experts in Bangladesh believe that climate change will exacerbate other non-traditional security issues such as food and water security, environmental and health security, illegal migration and human trafficking, transnational crime and terrorism, by increasing the intensity and duration of natural disasters and other environmental hazards.² Richard A. Matthew finds that climate change poses challenges to national security; negative impacts of climate change may weaken the elements of national power, contribute to state failure and generate violence in the society.³ The Government of Bangladesh (GoB) realises that the climate change, an unfolding physical phenomenon with very drastic and adverse environmental, economic, social and human consequences, will infuse all sectors and human endeavours.⁴ Therefore, climate change management demands whole-of-government approach.

However, the paper reveals that the role of Bangladesh armed forces, an important tool of national power, in dealing with security threats of climate change is yet to receive adequate attention at national strategic level. As such, the objective of this paper is to analyse the role of Bangladesh armed forces in minimising the security threats of climate change and helping the nation adapting to climate change. The paper is organised in four sections. After introduction, the second section focuses on the climate change impacts on Bangladesh and its security implications. The role of Bangladesh armed forces in fighting security threats of climate change is discussed in the third section. In doing so, the paper suggests innovative/humanitarian use of the military, within the framework of ‘in-aid to civil power’, in helping the vulnerable population to adapt to climate change and uphold the social stability of the country. In the final section, the paper concludes with a set of recommendations for capacity building of Bangladesh armed forces to be able to fight security threats of climate change effectively.

2. Climate Change Impacts and Security Threats for Bangladesh

The impact of climate change on the developing countries, particularly on low-income countries like Bangladesh, is compounded by high population density, low resource base, high incidence of natural disasters, salinity intrusion and submergence of land due to sea level rise. The situation would

² Farooq Sobhan, President Bangladesh Enterprise Institute (BEI), stated during his speech on “Non-Traditional Security Threats to Bangladesh” at National Security Intelligence (NSI), Bangladesh on 10 July 2012, available at <http://www.bei-bd.org/teamdetails.php?tid=1>, accessed on 30 November 2013.

³ Richard A. Matthew, “Is Climate Change a National Security Issue?”, *Issues in Science and Technology*, Vol. 27, No. 3, 2011, p. 3.

⁴ Ministry of Environment and Forest (MOEF), Bangladesh, *Bangladesh Climate Change Strategy and Action Plan 2009* (BCCSAP 2009), Dhaka: MOEF, 2009, p. 25.

become disastrous with even a meter rise of sea level due to global warming, as it would inundate a fifth of Bangladesh, displacing nearly thirty million people and leading to mass movement of people.

- Sheikh Hasina, Honourable Prime Minister of Bangladesh⁵

Bangladesh is one of the countries where millions of people are vulnerable to climate change. The country is geographically vulnerable to natural hazards; climate change exacerbates these hazards by increasing their intensity and duration. The disadvantageous socio-economic characteristics of the country such as poor social and economic capacity, poor provision of health care, inadequate infrastructures, higher density of population and higher rate of poverty, etc. make Bangladesh vulnerable to climate change. Now, it is undeniable issue that climate change poses threat to national security with increased risk of poverty, infectious diseases, mass migration, food shortages, etc.

To people of Bangladesh, climate change is real and it is happening now. Sea level rise is identified as a matter of grave concern for Bangladesh. Danish Climate Minister Connie Hedegaard while visiting Bangladesh in 2009 said, "It's not a distant fury, it's not a distant future. During my visit I saw people are struggling with climate change. It is already here."⁶ Experts in Bangladesh believe that climate change is expected to have major physical impacts on agriculture, industry, infrastructure, health and energy and consequently on people's livelihood.⁷

2.1 *Impacts of Climate Change*

Bangladesh is a South Asian country surrounded by India to the West, North and East; Myanmar in the Southeast and the Bay of Bengal in the South. The size of the country is 147,570 sq km (9.6 percent water) consisting mostly of flat lowlands.⁸ The elevation of the two-thirds of land area of the country is less than 5 meter and is susceptible to river and rainwater flooding.⁹ The country is one of the largest deltas in the world, formed by the dense network of the distributaries of the Ganges, the Brahmaputra and the Meghna rivers (GBM system).¹⁰ Millions of people of Bangladesh are dependent on these trans-boundary rivers for their livelihood. The climate change will cause heavier and more erratic rainfall in the GBM system, including Bangladesh.¹¹

⁵ Bangladesh Prime Minister Sheikh Hasina's Remarks on Climate Change, Asia Society New York, 26 September 2012, available at <http://asiasociety.org/new-york/bangladeshi-prime-minister-sheikh-hasinas-remarks-climate-change>, accessed on 13 December 2013.

⁶ Interview with Maruf Mallick, "Climate Change: Not a Distant Fury", [bdnews24.com](http://bdnews24.com/bangladesh/2009/02/04/interview---climate-change-not-a-distant-fury), 04 February 2009, available at <http://bdnews24.com/bangladesh/2009/02/04/interview---climate-change-not-a-distant-fury>, accessed on 14 December 2013.

⁷ MOEF, *National Adaptation Programme of Action (NAPA)*, Dhaka: MOEF, November 2005, p. 16.

⁸ *Ibid*, p. 1.

⁹ MOEF, BCCSAP 2009, *op. cit.*, p. 7.

¹⁰ MOEF, NAPA 2005, *op. cit.*, p. 1.

¹¹ MOEF, BCCSAP 2009, *op. cit.*, p. 14.

During the monsoon, heavier rainfall results in higher river flows, causing overtopping and breaching of embankments and widespread flooding in rural and urban areas. The higher flows will also cause river bank erosion resulting in loss of homes and agricultural land to the rivers; increased sedimentation in riverbeds leading to drainage congestion and waterlogging.

The coastal area of Bangladesh and the Bay of Bengal are located at the tip of northern Indian Ocean, which has the shape of an inverted funnel.¹² This shape, along with the shallowness of the Bay itself, makes the coastal areas of Bangladesh more vulnerable to frequent hit by severe cyclonic storms, generating long wave tidal surges.¹³ The frequency and severity of cyclones and storm surges would increase with climate change. The Intergovernmental Panel on Climate Change (IPCC) forecasted (2007) that a mere 1 meter rise in sea level will inundate 20 percent landmass of Bangladesh resulting in loss of much of its coastal regions permanently.¹⁴ Therefore, the unique geographic location makes Bangladesh one of the most vulnerable countries to climate change.

The increased intensity of natural disasters due to climate change implies major constraints to the country's social and economic development.¹⁵ Bangladesh has a population of 156.6 million (2013 estimate).¹⁶ With over 1200 people per sq km, the country is one of the most densely populated in the world.¹⁷ About 21 percent of the population lives in the coastal districts are vulnerable to rising sea level.¹⁸ Though still most people live in rural areas, urbanisation is growing rapidly due to irregular migration from low-lying and coastal areas. These 'climate migrants' find their place in urban slums, often away from city services. On the health sector, the GoB expends US\$ 12 per person per year, a figure well below the US\$ 21 spent in low income countries in general.¹⁹ It is natural that poor people spend their household income for food first, then for health care, education, etc. As a result, the poor people in the rural areas as well as in the urban slums are vulnerable to health hazards and environmental hazards.

The economy of Bangladesh is also under tremendous threat emanating from climate change. The country has a Gross Domestic Product (GDP) of US\$ 129.9 billion (2013 estimate) and has a low per capita GDP of US\$ 829.²⁰ The standard of living varies in different parts of the country. The disparity between the rich and

¹² MOEF, NAPA 2005, *op. cit.*, p. 13.

¹³ *Ibid.*

¹⁴ Fahmida and Nazrul, 2010, *op. cit.*, p. 10.

¹⁵ MOEF, NAPA 2005, *op. cit.*, p. 13.

¹⁶ The World Bank Data, available at <http://www.worldbank.org/en/country/bangladesh>, accessed on 08 July 2014.

¹⁷ *Ibid.*

¹⁸ MOEF, NAPA 2005, *op. cit.*, p. 2.

¹⁹ *Ibid.*, p. 16.

²⁰ The World Bank Data, *op. cit.*

poor is also growing.²¹ NAPA team estimates that still about 36 percent of the people of Bangladesh are living on a dollar per day or less.²² The country has 5 percent unemployment but about 40 percent of the population is underemployed.²³ Though the service sector and readymade garment industries are growing, agriculture is still a major economic sector of Bangladesh. Over 60 percent of the people depend on agriculture directly or indirectly for their livelihoods.²⁴ The impacts of climate change on agriculture sector will result in more unemployment and pose a threat to food security. Droughts and crop failures due to erratic weather pattern would leave millions of people of Bangladesh without their lifeline, which may trigger waves of mass migration to urban areas.

From the above discussion, it is evident that climate change will disrupt economic element of national power of Bangladesh because a great deal of the development budget will have to be diverted to minimise its impacts.²⁵ The cost of each major cyclone and flood is more than a billion dollars to the economy of Bangladesh. For example, Table 1 summarises damages to our national economy from major floods in last 25 years.²⁶

Table 1. Impacts of Major Floods on Bangladesh	
Events	Impact
1984	Inundated over 50,000 sq km, estimated damage worth US\$ 378 million
1987	Inundated over 50,000 sq km, estimated damage worth US\$ 1 billion, caused 2055 deaths
1988	Inundated 61 percent of the country, estimated damage worth US\$ 1.2 billion, rendered more than 45 million people homeless, caused 2,000-6,500 deaths
1998	Inundated nearly 100,000 sq km, rendered 30 million people homeless, damaged 500,000 homes, heavy loss to infrastructure, estimated damage worth US\$ 2.8 billion, caused 1,100 deaths
2004	Inundated 38 percent of the country, damage worth US\$ 6.6 billion, affected nearly 3.8 million people, caused 700 deaths
2007	Inundated 32,000 sq km, destroyed over 85,000 houses and partially damaged almost another 1 million, destroyed or partially damaged approximately 1.2 million acres of crops, estimated damage worth over US\$ 1 billion, caused 649 deaths

Source: MOEF, BCCSAP, Dhaka: MOEF, September 2009, p. 9.

²¹ MOEF, NAPA 2005, *op. cit.*, p. 2.

²² *Ibid.*, p. 3.

²³ Bangladesh Unemployment Rate, *index mundi*, available at http://www.indexmundi.com/bangladesh/unemploy-ment_rate.html, accessed on 20 December 2013.

²⁴ MOEF, BCCSAP 2009, *op. cit.*, p. 14.

²⁵ In this regard, Dr. Dipu Moni, the then Foreign Minister of Bangladesh, made similar statement at the Climate Vulnerable Forum held in the Maldives in November 2009. "...The interruptions caused by climate change have eroded our development gains made in previous decades; slowed down the attainment of Millennium Development Goals (MDGs) of the United Nations..." For details, see, "Statement of Dr Dipu Moni, the Hon'ble Foreign Minister of Bangladesh", at the *Climate Vulnerable Forum*, Maldives, 09 November 2009, available at www.climatevulnerableforum.gov.mv/?page_id=45, accessed on 15 December 2013.

²⁶ MOEF, BCCSAP 2009, *op. cit.*, p. 18.

Several studies by IPCC and others indicate significant changes in local climatic conditions and sea level of Bangladesh which are devastating consequences of climate change. Table 2 shows estimated changes in temperature and rainfall. The projected changes in climatic conditions are expected to exacerbate many of the current problems and natural hazards that Bangladesh experiences. The erratic changes in temperatures will cause warmer and more humid weather leading to increased prevalence of disease and disease vectors.²⁷ The melting of Himalayan glaciers due to global warming will lead to higher river flows in the warmer months of the year, followed by lower river flows and increased saline intrusion after the glaciers have shrunk or disappeared. Again the climate change will cause the lower and more erratic rainfall, resulting in increased droughts especially in drier northern and western regions of the country.²⁸

Table 2. Projected Changes in Climatic Conditions of Bangladesh

Year	Mean Temperature (°C)			Mean Rainfall Change (mm)		
	Annual	December-February	June-August	Annual	December-February	June-August
Baseline 2030	+1.0	+1.1	+0.8	+3.8	-1.2	+4.7
2050	+1.4	+1.6	+1.1	+5.6	-1.7	+6.8
2100	+2.4	+2.7	+1.9	+9.7	-3.7	+11.8

Source: Fahmida Khatun and Nazrul Islam, "Policy agenda for Addressing Climate Change in Bangladesh: Copenhagen and Beyond", *Occasional Paper No. 88*, Dhaka: Centre for Policy Dialogue, March 2010, p. 9.

Table 3 shows the estimated changes in sea level rise. Sea level rise due to global warming will lead to the submergence of low-lying coastal areas and saline water intrusion in coastal rivers and into groundwater aquifers, reducing fresh water availability.²⁹

Table 3. Projected Changes in Sea Level Rise and Sediment of Bangladesh

Year	Sea Level Rise (in cm)	Sediment (area in sq km)
2030	14	325
2050	32	700
2100	88	1350

Source: Fahmida and Nazrul, 2010, *op. cit.*

2.2 Security Threats of Climate Change

The climate change is now considered as a threat to national security at least by 110 countries of the world.³⁰ In Bangladesh, climate change will exacerbate other

²⁷ *Ibid.*, p. 14.

²⁸ *Ibid.*

²⁹ *Ibid.*

³⁰ William Fassuliotis, "The Key facts: Climate Change", American Security Project, 22 September 2014, available at <https://www.americansecurityproject.org/the-global-security-defense-index-on-climate-change-2/>, accessed on 24 September 2014.

non-traditional security issues such as food and water security, environmental and health security, illegal migration and human trafficking, transnational crime and terrorism by increasing the intensity and duration of natural disasters and other environmental hazards. These non-traditional security issues are the possible vectors through which climate change will impact national security.

As shown in Table 4, Richard A. Matthew finds relationship between climate change and national security and categorises challenges to national security into three groups: “anything that weakens the elements of national power, contributes to state failure, or leads, supports or amplifies the causes of violent conflict.”³¹ He observed that climate change has the potential to have a negative impact in each of these domains.³²

Table 4. Climate Change and National Security Relationship

National Security Concerns	Climate Change Impacts	Weakening of Elements of National Power	State Failure	Disruption and Violent Conflict
	Changes in water distribution	Job loss in rural areas	Reduce agriculture outputs, basic needs unmet	Increased competition for water
	Severe weather events	Undermine economic strength	Funds diverted to disaster relief, away from infrastructure, etc.	Displaced people into areas where they are not welcome
	Heat waves	Pandemics	Greater demands to meet basic needs	Riots in urban area
	Drought	Undermine economic development	Deepen social inequality as some groups control food and water	Displaced people into areas where they are not welcome
	Sea level rise	Destroy coastal military bases (also national economic development infrastructure)	Increase inequality and promote extremism as some people lose land	Put the survival of states such as the Maldives and Bangladesh are at risk
	Flooding	Reduce military effectiveness in the field	Destroy critical infrastructure	Increase urban strife

Source: Richard A. Matthew, “Is Climate Change a National Security Issue?,” *Issue in Science and Technology*, Vol. 27, No. 3, 2011, p. 4.

Displacement of people from low-lying and coastal areas is a matter of security concern for Bangladesh. Millions of people living in the coastal areas at less

³¹ Richard A. Matthew, 2011, *op. cit.*, p. 3.

³² *Ibid.*

than 1 meter elevation are vulnerable.³³ The large-scale migration from affected areas to the cities and towns may disrupt public service systems leading to violence. The poor in rural areas and the poor who live in urban slums, often in low-lying areas away from city services, are more vulnerable to endemic disease. The GoB estimates that by 2050, the country will have more than 200 million people with almost half living in the cities and towns, many as 'climate migrants' from rural areas.³⁴ These cities and towns are ill-equipped and already struggling to meet demands from growing population.

City administrations will struggle and likely fail to provide basic public services leading to public agitations against the state. Bangladesh already experienced such social agitation in recent years. In September 2006, thousands of people, infuriated by severe power crisis, set fire to power distribution offices in some parts of the capital and elsewhere in the country.³⁵ In another instance, the GoB had to deploy army to manage water distribution in the capital following public demonstrations at water treatment plants.³⁶ Unwelcomed migration of climate change victims is another cause for internal conflict. In the 1980s, people in Chittagong Hill Tracts (CHT) experienced internal conflict over the influx from low-lying areas. Therefore, threats of climate change may put negative impact on livelihoods of people in rural areas as well as those in urban areas. In such a situation, the state's failure to fulfil basic needs is likely to trigger public anger and violence. The resulting civil unrest may lead to social instability. Security experts predict that this type of instability may provide space for extremist forces which may further contribute to political instability and weaken national powers.³⁷

Damage to the different infrastructures and resources is another security concern for Bangladesh. Most parts of the coastal region in Bangladesh are economically productive. Loss of international and domestic airports, military bases, ports, industries, tourist attractions, etc. to sea level rise will greatly hamper the economy. The cost of rebuilding of such infrastructures will be high, although rebuilding may not be possible due to land scarcity. Further, any constraint on natural resources like oil and natural gas fields, marine fisheries, etc. in the maritime area is also critical. Sea level rise may again aggravate maritime boundary disputes in regards to new calculation of territorial water, continental shelf or exclusive economic zone, etc. Bangladesh may be drawn into maritime boundary tensions again with neighbouring countries, as did in the past.³⁸

³³ MOEF, NAPA 2005, *op. cit.*, p.1.

³⁴ *Ibid.*, p.16.

³⁵ "City bursts into violence to protest power cuts," *The Daily Star*, 29 September 2006.

³⁶ Radio Australia website, posted 08 April 2010, available at <http://www.radioaustralia.net.au/international/2010-04-08/bangladesh-army-deployed-over-water-shortage/193230>, accessed on 25 November 2013.

³⁷ Paul J. Smith, "Climate Change, Weak States and the 'War on Terrorism' in South and Southeast Asia", *Contemporary Southeast Asia*, Vol. 29, No. 2, 2007, p. 277.

³⁸ In November 2008, tension mounted over the intrusion of Myanmar vessels into Bangladesh territorial waters with intention of illegal exploration of oil and gas in deep-sea blocks in the Bay of Bengal. When Bangladesh asked immediate withdrawal, Myanmar refused and that led to military alert between both

Another security concern from climate change impacts is likely regional tension over migration out of the country. Security experts claim that the Indian government has started building an 8-foot-high barbed wire fence along the length of its 2,500-mile frontier with Bangladesh to stop potential 'climate migrants'.³⁹ However, there is no evidence of such trans-boundary migration from Bangladesh due to climate change. But without serious attention to climate change impacts on Bangladesh, this potential migration problem is expected to become a regional as well as a global issue.

Water security is a serious security concern for Bangladesh. Climate change impact may exacerbate this concern in the future. Water flow of the GBM system is regulated by upstream countries. Their 'climate change adaptation' such as diversion of water from trans-boundary rivers may adversely impact millions in Bangladesh. The Farakka barrage dispute between Bangladesh and India led to considerable tensions in the 1980s.⁴⁰ The Ganga Water Treaty of 1996 helped reduce the tensions somewhat, but the dispute continues over the issue of water sharing. It is likely that upstream countries will respond to the forecasts of more erratic water flows in all major river basins by building new upstream dams and water storage.⁴¹ The security experts opined that such "'climate change adaptation' will drive cross-border tensions in the next decade, including the potential for armed inter-state conflict."⁴² Any unilateral decision of water sharing by upstream countries would have a devastating impact on millions in the region and in Bangladesh.

The security implications discussed above are not likely to lead Bangladesh to become a failed state. It may, however, weaken the economic element of national power and disrupt and hurt social stability of the country. However, these changes need not cause societies to fall into conflict if, with reasonable foresight, Bangladesh can adapt to the effects of climate change. The country needs to use Bangladesh armed forces to prevent the security problem of climate change before it is too late.

3. The Role of Bangladesh Armed Forces in Dealing with Security Threats of Climate Change

The role of military is to fight a war, not to fight climate change – it is the general perception. However, the use of military does not mean 'militarising' the climate change issue. The results of the Global Security Index published recently show

the countries. However, Bangladesh could resolve maritime boundary issue with Myanmar in subsequent moves. Maritime boundary dispute with India has been resolved in 2014 as well.

³⁹ Daniel Moran (ed.), *Climate Change and National Security: A Country-Level Analysis*, Washington: Georgetown University Press, 2011, p. 108.

⁴⁰ Ashok Swain, *The Environmental Trap: The Ganges River Diversion, Bangladeshi Migration and Conflicts in India*, Uppsala: Uppsala University Press, 1996, p. 80.

⁴¹ Nick Mabey, "Delivering Climate Security – International Security Responses to a Climate Change World", *RUSI Whitehall Paper*, No. 69, Philadelphia: Routledge Journals, 2008, p. 4.

⁴² *Ibid.*

that almost all nations consider missions like humanitarian assistance and disaster relief as critical responsibilities of their armed forces.⁴³ The Bangladesh armed forces are organised, equipped and trained to fight wars against adversaries (external/internal) and protect the hard-earned sovereignty of the motherland. In peace time, the armed forces participate, within the framework of ‘in-aid to civil powers’, in nation building activities and also quick responses to any disasters or other emergencies. Since transitioning to democracy in 1991, institutionalisation of democracy in Bangladesh is progressing. Similarly, Bangladesh armed forces also have developed in great extent. Now Bangladesh is proud to have an army, a navy and an air force, all of which possess world standard and capable to fight against any threats, as three components of its armed forces. These forces have skill and experiences to participate in any disaster operations as well as in national development activities. However, it is not to suggest that the armed forces will solve entire problem of climate change but it is suggested that if they are tasked they can and should be ready to deal any security challenges that are created or exacerbated by climate change. It is required that the GoB utilises its armed forces in a proactive way to prevent threats of climate change.

Opinions are growing in favour of humanitarian use of the military to help poor people adapt to climate change. Bangladesh should use its experienced military to help poor to adapt to climate change. Major General Muniruzzaman (Retd) also thinks that “in various ways military can contribute to face climate change. The military can handle situations that involve migratory patterns of people due to climate conditions. When there is a disease pandemic, or when emergency shelter and water is needed, there are a host of things that can best be handled by the military. They can also prevent conflict in destabilized areas.”⁴⁴

3.1 *Disaster Operations and Nation Building*

In any natural calamity, the Bangladesh armed forces quickly responses to assist the GoB in helping people under distress. They play a very important role in evacuation, rescue, relief and rehabilitation operations during disasters. As an organised force, the armed forces can quickly respond to provide important logistical and command-and-control resources during any disasters and other emergencies. The Bangladesh armed forces has played a vital role in the responses to a number of recent disasters at home and abroad including the 2004 Indian tsunami, the 2007 cyclone Sidr and the 2013 Rana Plaza disaster, etc. It is a reality that only armed forces can marshal the resources required to respond to these events on such short notice.

The Bangladesh armed forces also have nation-building experiences at national and international levels. They are involved in numerous infrastructure

⁴³ William Fassuliotis, 2014, *op. cit.*

⁴⁴ Isabel Hilton, “Militarizing Climate Change”, Interview with Major General Muniruzzaman, *China Dialogue*, 04 July 2011, available at <https://www.chinadialogue.net/article/show/single/en/4388-Militarising-climate-change>, accessed on 12 November 2013.

development projects. The constructions of roads, flyovers and overpasses, projects like Hathirjheel, are some of the success stories of Bangladesh armed forces. Bangladesh Army is now a proud partner in Padma bridge construction, a high value mega project of Bangladesh. The armed forces are working with other civil agencies as a team for successful implementation of different projects undertaken by the GoB. It is seen that, damage to the important infrastructures like airports, military bases, ports, industries, tourist attractions, etc. due to cyclones and other natural calamities greatly hamper the country's economy. Employment of armed forces in restoring these facilities can rapidly augment the repair/rebuilt capability in shortest possible time.

3.2 *Adaptation Projects*

The GoB has taken various steps to adapt to climate change. They formulated the NAPA 2005 and BCCSAP 2009. The actions of GoB indicate its seriousness in protecting citizens from the dangers of climate change. Thanks to the resilience of Bangladeshi people, they have adapted over generations to the risks of floods, droughts and cyclones.⁴⁵ But the predicted massive impacts of climate change will overwhelm this ability of the poor people. In this situation, they need support from the state mechanisms.

The Bangladesh armed forces have experiences of participating in various environmental adaptation projects undertaken by the GoB. Bangladesh Navy and Bangladesh Air Force have played pivotal role in the coastal 'greenbelt' projects, involving mangrove planting along nearly 9,000 km of the shoreline.⁴⁶ The armed forces have undertaken 'Ashrayan' and 'Barack House' construction projects for providing shelter to the poor.⁴⁷ The 'Marine Drive' project, an 80 km long road-cum-embankment on sandy beach from Cox's Bazar to Teknaf is another milestone project of armed forces.

3.3 *Breaking the Link between Climate and Conflict*

The Bangladesh armed forces provide a very significant resource base to the GoB in breaking the link between climate and conflict. It is estimated that millions of people of coastal and low-lying areas of Bangladesh would be victims of forced-displacement due to climate change and sea level rise. Without serious attention this potential migration problem is expected to destabilise the society, intensify resource conflicts and also become a regional/global issue. The Bangladesh armed forces have a crucial role to play in preventing such security threats. For example, for last three

⁴⁵ *Ibid.*

⁴⁶ MOEF, BCCSAP 2009, *op. cit.*, p. 19.

⁴⁷ Bangladesh Government, *Ashrayan-2 Project*, available at <http://www.ashrayanpmo.gov.bd>, accessed on 09 December 2013.

decades, the Bangladesh armed forces are working in the (CHT) to maintain peace and stability and support developmental activities. The GoB is using armed forces to ensure that any development projects in this resource-rich land area are done without endangering forestry, eco-system and livelihood of the indigenous people of the area. The Bangladesh armed forces have material capability to protect and develop any new reclamation land area 'chars' as a result of climate change, as well as to help people living near river banks through protection of river erosions.

3.4 Challenges to the Role of Bangladesh Armed Forces

The GoB has taken various steps to adapt to climate change. As mentioned earlier, they formulated the NAPA 2005 and BCCSAP 2009. At the local level, Bangladesh has developed various plans on mitigation and adaptation to climate change. The GoB has established a National Climate Change Fund with US\$ 100 million for adaptation to climate change.⁴⁸ At the diplomatic level, Bangladesh is doing all it can to mitigate carbon emissions and to find better opportunities to adapt to climate change. Since the inception of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, Bangladesh has actively participated and demonstrated its willingness and sincerity for a proper solution to the problem of global warming and climate change.⁴⁹ The country strongly supported the Kyoto Protocol which entered into force in 2005. Bangladesh is also trying to find common cause with its neighbours to manage climate change impacts through regional action plans.⁵⁰

The actions of GoB indicate its seriousness in protecting citizens from the dangers of climate change. But danger posed by climate change is likely to overwhelm Bangladesh's capacity and capability to adapt. Another challenge for the GoB is the efficient utilisation of UNFCCC's Green Climate Fund (GCF).⁵¹ It is likely that by 2016, Bangladesh will start receiving financial support from this fund for climate change adaptation programme. As such, Bangladesh needs a greater engagement of its armed forces in fighting the threats of climate change. However, due to misperception, e.g. 'militarisation' or 'securitisation' of climate change, on the use of military to fight threats of climate change people tend to keep military away from it. The policy makers at national strategic level yet to emphasise incorporation of Bangladesh armed forces in national climate change strategy. Due to this inadequate attention, the progress of the readiness of the armed forces, in terms of man and materials, to respond to climate change is slow.

⁴⁸ MOEF, BCCSAP 2009, *op. cit.*, p. 24.

⁴⁹ Fahmida and Nazrul, 2010, *op. cit.*, p. 17.

⁵⁰ MOEF, BCCSAP 2009, *op. cit.*, p. 24.

⁵¹ "The Green Climate Fund is a proposal by Parties to the UNFCCC to establish an international financial institution to assist developing countries in their efforts to combat climate change." For details, see, White House, *National Security Strategy*, May 2010, p.

4. Conclusion and Recommendations

Bangladesh is a disaster prone low-lying country. Climate change is causing erratic weather patterns and may further increase both intensity and duration of natural disasters such as tropical cyclones, storm surges, floods and droughts. All of these disasters cost a significant amount to the national economy. The threats of climate change, combined with the threat of sea level rise, would bring devastating impacts on the livelihoods of millions of people of Bangladesh. The serious consequences of climate change would weaken the elements of national power and generate violence in the society, results of which are threats to national security.

The GoB is working seriously to mitigate the security implications of climate change. The country has developed a national climate change strategy. The effective implementation of these national plans requires integration of diplomatic, economic and military instruments of national power of Bangladesh. A whole-of-government approach along with concerted approach from civil society, non-governmental organisations (NGOs) and the international community is important in facing this non-traditional security threat. The activation of wider state mechanisms including the innovative use of the military is now the necessity to fight climate change threats. The armed forces can participate in the framework of 'in-aid to civil power' to prevent climate change threats and quickly response to any disasters.

The economy of Bangladesh alone cannot support such a massive burden of climate change. Bangladesh is working closely with the international community to find a global solution and also is working within regional cooperation mechanisms to find a regional solution to climate change. Bangladesh is willing to protect its citizens from the dangers of climate change and the world community should stand beside it in this regard. However, Bangladesh must take charge of its own problems and cannot afford to allow the situation to go out of control. Therefore, the climate change issue must advance to the rank of top priorities at the national strategic level. The GoB should plan to integrate all the instruments of national power including its armed forces in facing this climate change. The policy makers of Bangladesh should now realise that armed forces is not the tool only to respond to disasters but it is a tool in their hand to prevent those disasters.

Now most of the countries are considering the use of their military to fight against the threats of climate change. It is time to take political decision to use all of national assets including Bangladesh armed forces against climate change issue. In this regard, following are recommended:

- Necessary steps may be taken for a participatory approach to share the burden of huge tasks to face climate change. Bangladesh armed forces should be better prepared to face climate change and utilised for rescue, relief, evacuation and rehabilitation operations during any disasters. The GoB should mobilise Bangladesh

armed forces along with other elements of the government, NGOs, civil society, etc. to fight the threats collectively;

- The armed forces should be prepared to participate in the framework of ‘in-aid to civil power’ to prevent climate change threats and quickly response to any disasters. A coherent civil-military relation should be established for proactive actions against the threats of climate change. Here, along with other agencies, the Bangladesh Armed Forces can play a vital role in innovative ways to help vulnerable people to adapt to climate change;

- The forces goals of the armed forces should address climate change strategy. A separate ‘directorate of disaster management’ may be created in all three services HQs for better civil-military coordination on the climate change issue. They are also to conduct research and development activities on mitigation of carbon emission and adaptation to climate change;

- Necessary steps may be taken to bring awareness within armed forces and prepared them through training, exercises, etc. to fight climate change. The military leaderships should design strategy for innovative use of their forces in helping poor people adapting to climate change;

- The GoB should increase military forces capabilities to undertake climate change adaptation projects through military-to-military bilateral training programme with the development partners;

- The Bangladesh Armed Forces should be tasked to protect the densely populated urban areas from floods, water logging, etc. emanating from climate change. They can also be deployed to build raised shelters for the people in coastal and low-lying areas to protect the poor from sea level rise and storm surge;

- Necessary steps may be taken to appropriately equip the armed forces to enhance their pre and post-disaster management capabilities. To minimise loss to the economy, the Bangladesh Armed Forces should be involved to repair and rebuild the damaged infrastructures caused by natural disasters;

- Necessary technology transfer and information exchange on climate change adaptation strategy may be included in the security assistance cooperation programme with the international partners;

- The Armed Forces should conduct study on survivability of their bases and facilities situated in coastal and low-lying areas; and finally,

- The armed forces should do needful to continue with national mitigation and adaptation responses to climate change.

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