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**CLIMATE CHANGE EFFECTS AND ADAPTATION PROGRAM THROUGH  
COLLECTIVE EFFORT IN SOUTH ASIA**

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**Abstract:**

Climate Change has major challenges for the present global phenomenon. Wide spreading this idea produce sense for the global community as well as south Asian Countries. South Asia is a region which occupies only 5 percentage of world landmass. But More than 1.7 billion populations live in this region. That's the 20 percent of total world population rise expected 25 percent by 2025. Over the years, south Asian countries strongly face climate-related hazard including cyclone, droughts, flood, extreme temperature growth, storm surges and others Climate related issues. Climate does not follow such nationalistic rule. Therefore, combined efforts are essential to protect such disasters. Regional arrangements or collective effort may face climate change challenges. Though The South Asian Association for Regional Cooperation (SAARC) has taken some initiatives, more concrete and coordinated actions are necessary to face the calamities of climate change. This paper will examines initiatives of South Asian Countries on climate change issue and tries to recommend what further steps they can adopt in this regard.

**Key Words:**

*Climate Change, Adaptation,  
Collective Effort, South Asia.*

## 1. Introduction

Climate change is neither an ancient concept nor of the long future. The Idea of Global warm up and climate change getting more popularity. It is happening everywhere all over the world. If we think about security! Climate change is one of the ultimate threats which world is facing nowadays. Though this is a global issue, the effects of it will not be touched in the same percentage of the world. It is certain the powers are likely to various in both amount and rate of variations in different regions, states and continents.<sup>1</sup>

*Reports say:* South Asian countries are facing harmful impacts of climate change on their livelihood. Humans and wild animals' appearance new challenges for their survival because of climate change. More frequent and intense drought, storms, extreme temperatures, rising sea levels, melting glaciers and warming oceans, floods, droughts, cyclones, extreme temperatures, glacial lake outburst floods (GLOF) and others can directly harm animals, destroy the places they live, and wreak havoc on people's livelihoods and communities.<sup>2</sup>

*The fifth report of the Intergovernmental Panel on Climate Change (IPCC) and first assessment report of Indian Network of Climate Change Assessment (INCCA) approve that climate change is likely to rise the incidence and toughens of climate-related hazards and also the manifestation of new misadventures that could manifest in the form of sea level rise and new liabilities with a number of latitudinal and socio-economic parodies on communities.*

According to the *INCCA Fifth Report*, the greenhouse gas (GHG) emissions in 2007 CO<sub>2</sub> emissions were 1222.00 million tons, CH<sub>4</sub> emissions were 21.00 million tons, and N<sub>2</sub>O emissions were 0.57 million tons.<sup>3</sup> The GHG emissions from energy, industry, agriculture and waste sectors instituted 59%, 22%, 16% and 4% of the net CO<sub>2</sub> emissions individually. This calculation was an outcome of contributions of more than 80 experts from seventieth institutions across the India. The Same ratio also has in others south Asian countries.<sup>4</sup>

Such natural disasters may have reflective controls on the hydrological cycle, coastal areas, forest and ecosystem, glaciers or mountain areas, water areas, and it would be devastating for the peoples of South Asia. Thus, climate change is not only an environmental phenomenon but also severe of socio-economic repercussions. As the countries face same types of dangers

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<sup>1</sup> 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.

<sup>2</sup> *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment* <https://www.worldwildlife.org/threats/effects-of-climate-change> accessed on 02.march, 2017

<sup>3</sup> "Report Climate Change Research Initiative" [http://www.academia.edu/2657683/Climate\\_change\\_research\\_initiative\\_Indian\\_Network\\_for\\_Climate\\_Change\\_Assessment](http://www.academia.edu/2657683/Climate_change_research_initiative_Indian_Network_for_Climate_Change_Assessment) accessed on 01.march, 2017

<sup>4</sup> <https://www3.epa.gov/ttnchie1/conference/ei19/session6/he.pdf> accessed on 28.february, 2017

arising from climate change, the mutual action is required to face such challenges.<sup>5</sup> Being a regional body, South Asian Association for Regional Cooperation (SAARC) should play a vital role in qualifying negative influences of climate change in the region. In this regard, the main purposes of the paper are to measure impacts of climate change in South Asian countries and to appraise the support of SAARC to look climatic disasters.

To speak the above revealed issues, the paper is shared by five units containing an introduction. Unit two argues the impact of climate change in South Asia. Unit three describes the initiative taken by SAARC on the concern of climate change. Unit Four marks an evaluation. Unit six ends with a concluding Remark.

## **2. Impact of climate change in South Asia**

Climate change has emerged as one of the most threatening issues for billions of people in developing and underdeveloped society with serious insinuations for food, environment and human security. It is likely that climate change will interrupt on sustainable development of south Asian countries as it combinations the forces on natural resources and the environment attendant with abstained urbanisation, industrialisation and economic development.<sup>6</sup> The *IPCC Assessment Report fifth (AR5)* exposes climate change interrelated susceptibilities in South Asia. Besides, regular mean rainwater displays inter-decadal variability, unusually a falling tendency with more numerous deficit rains under regional heterogeneities.<sup>7</sup>

In South Asia, largest room of ice outside the Arctic area is glaciers of the Himalayas. Some of the world's biggest rivers are getting their water source from Himalayas and Hindukush. More specifically these two mountain ranges icebergs are the source of nine largest rivers of Asia.

In the seasons of rain, these glacial are melting, together with heavy rain. Because of heavy rain and melt of glacial may cause of flood, which force to affect the livelihoods of the people of south another Asian region.

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<sup>5</sup> A. Matthew Richard, "Is Climate Change a National Security Issue?" *Issues in Science and Technology*, Vol. 27, No. 3, 2011, p. 3.

<sup>6</sup> Farooq Sobhan, Chair Bangladesh Enterprise Institute (BEI), definite during his speech on "Non-Traditional Security Threats to South Asia" at *National Security Intelligence (NSI), Bangladesh* on 10 July 2012, available at <http://bei-bd.org/teamdetails.php?tid=1>, accessed on 02.march, 2017

<sup>7</sup> *5<sup>th</sup> Report IPCC* <https://www.ipcc.ch/report/ar5/> accessed on 28.february, 2017

More than 700 million South Asians are surviving on a smaller amount than US\$1.25 a day. This figure projected that how much poverty are prevailing in South Asia, so even a minor climate-related hazard can lead to a larger number of loss for peoples.<sup>8</sup>

South Asia's geography makes it mostly susceptible to natural disasters. According to the recently published 2016 *World Risk Report's* eleven editions, countries like Bangladesh, India, Nepal and Pakistan exhibit a high level of vulnerability as demonstrated by their lack of coping capacities and adaptive capacities. In evaluating 173 countries for purposes of creating this year's World Risk Index, the report gave the following countries its global risk index ranking: Bangladesh (6<sup>th</sup> most risk-prone country of the world), Pakistan (66<sup>th</sup>), India (77<sup>th</sup>) and Nepal (99<sup>th</sup>). There is a high level of variation within South Asia itself, but these rankings should not be misinterpreted to undermine the risk faced by these countries—particularly the poor—in the face of natural disaster.<sup>9</sup> Since 2004-05, the region became a neighbourhood of disasters. December 2004 tsunami, There was the October 2005 and earthquake in the Himalayan range that killed off thousand of life. Pakistan was ravaged by an earthquake in 2008 and floods in 2010. More than 7,500 people have died as a result of the earthquake that struck Katmandu, Nepal may 12, 2015. At least 8 million people have been affected by the earthquake, and more than 2 million have been displaced.<sup>10</sup> *Previous data also projected the alarming report on south Asian natural disasters*, from 1990 to 2016; more than 850 million people were affected by natural disasters, Which Cause of death more than 80,000 people and about US\$60 billion in damages.

It is manifest that the SAARC countries are facing severe moments of global climate change. The SAARC Secretary General mentioned that in May 2011, over the past four decades, South Asian countries faced 1,333 calamities that lead to death 980,000 people live, 2.4 billion lives were affected and damaged resources wealth US\$105billion.<sup>11</sup>

The rapid growth of the South Asian population and its increased deliberation in few places often in hazardous environments has increased both the regularity and brutality of natural

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<sup>8</sup> Chandra Swati, "BHU Scholars to Study Climate Changes in SAARC Countries", <http://timesofindia.indiatimes.com/city/varanasi/BHU-scholars-to-study-weather-changes-in-SAARC-countries/articleshow/20450515.cms> accessed on 05.03.2018

<sup>9</sup> The Global Risks Report 2016, 11th Edition, *World Economic Forum*, <http://www3.weforum.org/docs/Media/TheGlobalRisksReport2016.pdf> accessed on 05.march, 2017

<sup>10</sup> <http://www.ibtimes.com/nepal-earthquake-2015-death-toll-update-more-7500-dead-earthquake-14500-injured-1909038>

<sup>11</sup> "Kathmandu to Copenhagen: A Regional Climate Change Conference", *The World Bank*, 31 August 2009 <http://reliefweb.int/report/afghanistan/kathmandu-copenhagen-regional-climate-change-conference> accessed on 20.february, 2017

disasters. With the tropical climate and unbalanced land forms, coupled with deforestation, unplanned growth detonation, non-engineered constructions which make the disaster-prone areas more vulnerable, tardy communication, poor or no financial apportionment for disaster prevention, developing countries suffer more or less chronically by natural disasters. It is projected by member countries that SAARC will work together on this issue as poor, hot and the mostly agrarian South Asian region will sternly suffer largely due to the rise in aggregate temperatures. The coastal areas of South Asia or large deltas and coastline areas of the countries could be overcome by sea level rise. Various forecasts mention that climate differences among the SAARC countries will be diverse and dissimilar with some countries facing more forceful drizzle and increased flood risks while others come across the lighter amount of rains and scarcities.<sup>12</sup>

## 2.1 Effect of climate change in Bangladesh

peoples of Bangladesh are affected by dangerous calamities like cyclones, floods, droughts, and sudden hit raises. Under the present trends of climate change, per person, water accessibility in 2025 will turn into 7,660 cubic meters against 12,160 cubic meters in 1991. Bangladesh is predominantly susceptible to typhoons, earthquakes, tsunamis and due to its experience to seismic activity. In reaction, the Government of Bangladesh has engaged ladders before two years to set up a national program for disaster risk reduction.<sup>13</sup> The comment of *Shafiqul Alam* published by *The Financial Express*, writes about *climate change and vulnerability*, “Adaptation & mitigation and are possibilities available, however, adaptation & mitigation are the conflicting to each other’s.” Adaptation is interested in self-interest. Peoples of Bangladesh are migrating from rural to urban areas because they have affected the agriculture culture.<sup>14</sup>

Cyclone ‘Sidor’ in 2007 and ‘Aila’ in 2009 bang Bangladesh, which forced migrate more than 500,000 peoples from South and western part to other regions. And the losses of wealth were totalled US\$269 million. A natural disaster is a consequence when a natural hazard affects

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<sup>12</sup> South Asia & Recurring Natural Disasters, *the Indian economist*, <http://theindianeconomist.com/south-asia-recurring-natural-disasters/> accessed on 15.february, 2017

<sup>13</sup> Braun David, “Bangladesh, India Most Threatened by Climate Change, Risk Study Finds”, *National Geographic*, 20 October 2010.

<sup>14</sup> South Asia & Recurring Natural Disasters, *The Indian economist*, <http://theindianeconomist.com/south-asia-recurring-natural-disasters/> accessed on 15.february, 2017

humans and/or the built environment.<sup>15</sup> Human vulnerability and lack of appropriate emergency management lead to financial, environmental, or human impact. This understanding is concentrated in the formulation: “disasters occur when hazards meet vulnerability”. Various phenomena like earthquakes, landslides, volcanic eruptions, floods and cyclones are all natural hazards that kill thousands of people and destroy billions of dollars of habitat and property each year.<sup>16</sup>

With the tropical climate and unbalanced land-dwelling procedures, combined with deforestation, accidental growth explosion, incomprehensible engineered constructions which mark the accident-prone areas more vulnerable, delayed communication, poor or no commercial apportionment for disaster prevention, developing countries feel pain more or less frequently by natural disasters. Inside developing countries, the lowly often tolerate the effect of disasters as they are situated in areas that are more vulnerable to earthquakes, floods and hurricanes; disasters often resulting in loss of livelihoods, interrupt food production and higher food prices; and, finally, not only do the poor lose wealth but they also limited access to risk- allocation instruments such as insurance.<sup>17</sup>

The compact flow of Ganges water all through the summer season has aggravated the route. In coastline zones, sea level are rising, the salinity of ground water also increasing day by day. Those changes will make a negative impact on agricultural and food production system of Bangladesh.

## **2.2 Natural Disasters in India & Pakistan**

In South Asia 80% of land covered by India, it is also facing negative impact of climate change. By one approximation, climate change will cause a 30-40 percent drop in India's agricultural output by 2080.<sup>18</sup> It is projected that temperature rise rate of India will increase 2.5°C to 4.9°C, rice produces will fall by 30-40 percent and wheat produced by 40-52 percent and this would affect Gross Domestic Product (GDP) to yields by 1.9-3.5 percent. A World Bank reported that due to the negative impact on climate change in agricultural sector about

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<sup>15</sup> Ali Anwar, “Climate Change Impacts and Adaptation Assessment in Bangladesh”, *Climate Research*, Vol. 12, Dhaka, 1999

<sup>16</sup> Davis Peter, “Exploring Local Perceptions of Climate Change Impact and Adaptation in Rural Bangladesh”, *International Food Policy Research Institute*, February 2014

<sup>17</sup> South Asia & Recurring Natural Disasters, *The Indian economist*, <http://theindianeconomist.com/south-asia-recurring-natural-disasters/> accessed on 15.february, 2017

<sup>18</sup> Anupam Khajuria and N.H. Ravindranath, “Climate Change in Context of the Indian Agricultural Sector”, *Journal of Earth Science and Climatic Change*, Vol. 3, Issue 1, 2012.

900 million people of India will be forced to migrate from one state to another state or rural to urban areas. By 2100 surface air temperature will rise of up to 4°C cause of Climate change.<sup>19</sup> In addition, climate change leads to rising number of risky climate measures, like a flood, tsunami, droughts, and cyclones in India. Also, irregularities in global climate pattern carriage thoughtful threat to the town water supply of India. According to *IPCC*, by the year 2030, in north Indian rivers will shrink from 500,000 km<sup>2</sup> to 100,000 km<sup>2</sup> of Himalayan glaciers and would affect 50 percent of water, which comes from snow flux.<sup>20</sup>

In June 2013, the North Indian states of Himachal Pradesh & Uttarakhand, because of drizzle some parts of Western Nepal and their joining areas experienced landslides and elicited shocking floods. More than 1,000 people have died with more than 6000 missing. Damage to bridges and roads left over 70,000 pilgrims and tourists trapped in various places, many of whom were rescued.<sup>21</sup>

Pakistan consumes an area of over 88 million hectares which contains a diverse of land alternating from hilly ranges to plain deserts. The Indus River and its branches separate the country, given that a source of the world's largest adjacent irrigation network. In the year of 2010, Pakistan was hit by dreadful floods in its the past time rendering 20 million people down-and-out and carrying one-fifth of the country underwater.<sup>22</sup> But, in spite of this optimistic characteristic, climate change also affected this country. It may cause more vulnerable this country to natural disasters. This occurrence in Pakistan is estimated to escalation glacial melt, sea level increase along its seaside and increase stages without rain.<sup>23</sup> The statistic shows in previous four decades climate-related disasters leads to death more than 90,000 people and total losses amount US\$20 billion, only 2010 floods damage US\$10 billion. The 2010 and later 2011 floods (in Sindh) exposed the extremely grim conditions that marked the daily lives of a large section of the population that had compromised access to

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<sup>19</sup> "SAARC Summit Should Address Climate Change Issue", *Times of Assam*, 9 November 2011.

<sup>20</sup> "Climate Change Adaptation in Rural Areas of India", *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)*, <http://www.giz.de/en/worldwide/16603.html>, accessed on 02.march, 2017

<sup>20</sup> K. Shadananan Nair, "An Assessment Of The Impact Of Climate Change On The Megacities Of India And Of The Current Policies And Strategies To Meet Associated Challenges", *Fifth Urban Research Symposium, 2009*, <http://siteresources.worldbank.org/inturbandevelopment/Resources/336387-1256566800920/6505269-1268260567624/Nair.pdf>, accessed on 15.february, 2017

<sup>21</sup> Himachal Pradesh, Uttarakhand flood 2013: At least 5,500 killed, <http://www.disaster-report.com/2013/06/himachal-pradesh-uttarakhand-flood-2013.html> accessed on 01.march, 2017

<sup>22</sup> Disasters in South Asia – A Regional Perspective [https://www.tdh.de/fileadmin/user\\_upload/inhalte/04\\_Was\\_wir\\_tun/Themen/Humanitaere\\_Hilfe/Katastrophenhilfe/Disaster\\_in\\_South\\_Asia\\_-\\_Naseer\\_memon.pdf](https://www.tdh.de/fileadmin/user_upload/inhalte/04_Was_wir_tun/Themen/Humanitaere_Hilfe/Katastrophenhilfe/Disaster_in_South_Asia_-_Naseer_memon.pdf) accessed on 01.march, 2017

<sup>23</sup> Karen O' Brien, "Developing Strategies for Climate Change: The UNEP Country Studies on Climate Change Impacts and Adaptation Assessment", *Cicero Report*, University of Oslo, July 2010.

basic amenities of life such as health, education, and shelter, and fundamental human rights, including decent livelihoods. Forecast says that by 2020, the temperature of Pakistan is projected to increase by 0.90c to 1.80c by 2050.<sup>24</sup>

### 2.3 Natural hazard of other South Asian Countries

Sri Lanka is also vulnerable to the impacts of global climate change. As an island country, the northern part of Sri Lanka and Jaffna will be submerged under the sea if sea level rises one or two meters. Climate change will bring dreadful concerns for Sri Lanka for livelihood, health, animal, water, agriculture, and coastal areas. There are strong risks to reach serious amounts by 2025.<sup>25</sup> Any contrary changes in already unpredictable weather decorations are likely to effect on the social and economic events of the country. In the case of climate change, Sri Lanka might experience extensive impacts, comprising climate variability and sea level rise, directly affecting the overall wealth and security of widespread species within the country.<sup>26</sup>

In the case of Maldives is also at a high risk of global climatic change. The country comprises of about 1,200 islands in the Indian Ocean. *Asian Development Bank Economic Report* for South Asia revealed that if the climate change would not be checked, Maldives would face losses of over 12 percent of its GDP by the end of this century and one meter sea level rise would inundate 66 percent of the archipelago's land area which would affect tourism industry, the lifeline of the country's economy.<sup>27</sup> The natural beauty and tourism industry of Maldives are mainly centred on its beautiful sea beach which represents 5 percent of the country's total land area. It is to be noted that more than 97 per cent inhabitants of islands reported beach erosion in 2004, of which 64 per cent reported severe erosion and more than 45 per cent of the country's 87 per cent tourist resorts have also reported about severe erosion.<sup>28</sup> In the long run, climate change will threaten the entire country's existence. The highest point of the country is 8 feet above sea level. Therefore; the country will be severely affected by the global sea level

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<sup>24</sup> "Disaster Risk Management in South Asia: A Regional Overview, World Bank. 2012. <https://openknowledge.worldbank.org/handle/10986/13218>

<sup>25</sup> Florita Gunasekara, "Climate Change and Ethnic Conflict in North East Sri Lanka", *ICE Case Studies*, No.241, July 2011.

<sup>26</sup> "Maldives Most At-Risk Economy in South Asia from Climate Change– *Asian Development Bank (ADB), Report*", 19 August 2014, available at <http://www.adb.org/news/maldives-most-risk-economy-south-asiaclimate-change-report>, accessed on 11 September 2014

<sup>27</sup> "Preamble of the National Climate Change Policy of Sri Lanka", [http://www.preventionweb.net/files/28587\\_climatechangeenglish.pdf](http://www.preventionweb.net/files/28587_climatechangeenglish.pdf), accessed on 02.march, 2017

<sup>28</sup> "National Adaptation to Climate Changes," *Ministry of Housing, Transport and Environment of the Maldives, Background Paper*, available at [http://www.ifrc.org/docs/idrl/nationalpercent20adaptationpercent20programmepercent20\(climatepercent20change\)\)/maldives percent20Adaptationpercent20topercent20Climatepercent20Change.pdf](http://www.ifrc.org/docs/idrl/nationalpercent20adaptationpercent20programmepercent20(climatepercent20change))/maldives percent20Adaptationpercent20topercent20Climatepercent20Change.pdf),

rise.<sup>29</sup> Along with rising sea levels, increased beach erosion, more powerful storms, higher storm surges and threats to biodiversity are among the major threats to the Maldives due to climate change over the coming decades.<sup>30</sup>

Nepal is a country of diverse climatic conditions, ranging from tropical in the south to alpine in the north. The country is facing problems like drought and flooding and there are possibilities that these will be magnified by climate change in future. In 1999, *Shrestha* suggested that temperatures were increasing in Nepal and rainfall was becoming more variable. A decade later, in 2009, a modeling exercise conducted by a team of *Nepali, American, British, Pakistani and Bangladeshi experts* using the emissions scenarios in the *IPCC's special report (2007)*, found that the temperature would indeed increase in the mid-hills and the region was likely to grow arider in non-monsoon seasons. It also suggested that precipitation was likely to be more uncertain and that storm intensity would increase.<sup>31</sup>

Another small country of South Asia, Bhutan straddles between two major biogeographic realms, the Indo-Malayan and Palearctic and is part of the Eastern Himalayan region which contains part of three global biodiversity hotspots, 60 Ecoregions, 330 bird areas, 53 important plant areas, a large number of wetlands and 29 Ramsar sites. Bhutan is a country of a diverse array of flora and fauna including 5,603 species of vascular plants, 400 lichens, 200 mammals and about 700 birds.<sup>32</sup>

In future, climate change is likely to affect Bhutan in various ways e.g., changes in hydrological cycles like lower winter in streams and intense monsoon rains may affect present level of drinking water of the country. As 80 percent of Bhutanese practice subsistence farming, climate change can cause changes in temperature which will increase the vulnerability of a large group of this population. In addition, climate change will affect forests, biodiversity as well as human health badly with increasing number of natural disasters.<sup>33</sup>

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<sup>29</sup> Hoffmann Justin, "The Maldives and Rising Sea Levels", *ICE Case Studies*, No.206, May 2007

<sup>30</sup> Intergovernmental Panel on Climate Change, *Third Assessment Report: Climate Change 2001*, Chapter 17: Small Island States, Executive Summary, Cambridge: Cambridge University Press 2001.

<sup>31</sup> S Solomon (ed.), "Climate Change 2007: the physical science basis", *Contribution of Working Group 1 to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge: Cambridge University Press, 2007, pp. 1-996.

<sup>32</sup> "National Action Plan Biodiversity Perspective and Climate Change Bhutan", *Climate Change for a Living Himalayas*, Bhutan, 2011, available at [http://www.nbc.gov.bt/40wp-content/uploads/2010/06/NationalPaper-on-Biodiversity-and-Climate-Change-\\_Bhutan1.pdf](http://www.nbc.gov.bt/40wp-content/uploads/2010/06/NationalPaper-on-Biodiversity-and-Climate-Change-_Bhutan1.pdf), accessed on 02.march, 2017

<sup>33</sup> "Climate Change Impacts and Adaptation in Bhutan", National Environment Commission/Hydro-met Services Division, Department of Energy, Ministry of Economic Affairs, Thimphu, Bhutan, available at <http://>

Afghanistan is the last country to join SAARC in 2007. The country is mountainous and very dry which is located in the arid subtropics at the 9-37° north of the equator. It has an arid and semi-arid continental climate with cold winters and hot summers. Due to climate change, Afghanistan is currently suffering from droughts. Available data and trends from neighbouring countries indicate that mean annual temperature has increased by 0.6 ° c since 1960, at an average rate of around 0.13 ° c per year.<sup>35</sup> According to the *IPCC report*,<sup>36</sup> people living in developing countries in low latitudes, particularly those along the coast of Asia will suffer the most. The scientists who prepared the draft report also mentioned that hundreds of millions of people would be affected by coastal flooding and land loss due to global temperature rise, ice caps melt and sea level rise. The majority of it would be in East, Southeast and South Asia. Some small island countries are likely to face very high influences. Hence, countries like Bangladesh and Maldives have possibilities to become worst sufferers. The consequences of climate change will be drastic for the region as about 70% of South Asians lives in rural areas and account for about 75 percent of the poor, who are the most impacted segments by climate change. Due to geographical contiguity, the countries of South Asia have to face common problems and the problems of one country have spillover impacts for other countries. The countries need an integrated effort to face the common calamity of climate change.<sup>34</sup>

### **3. SAARC on Climate Change**

In the latest development, Seventeenth Summit of the South Asian Association for Regional Cooperation (SAARC) was held in Addu city of Maldives on 10-11 November 2011. In Addu declaration, member countries articulated their realisation of the environmental degradation and specific vulnerabilities of the region to the hazard of climate change.<sup>35</sup> The declaration also welcomed the signing of the SAARC Agreement on Quick Response to Natural Disasters. Prior to this in May 2011 an inter-governmental meeting on draft SAARC Agreement on Quick Response to Natural Disasters held in Colombo, Sri Lanka has gotten a

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[www.editoria.u-tokyo.ac.jp/projects/awci/6th/GEOSS-AP\\_bali\\_100311/pdf/D2\\_WG-2\\_S3/D2\\_WG-2\\_S3-3\\_KARMA\\_Bali\\_Bhutan\\_Presentation.pdf](http://www.editoria.u-tokyo.ac.jp/projects/awci/6th/GEOSS-AP_bali_100311/pdf/D2_WG-2_S3/D2_WG-2_S3-3_KARMA_Bali_Bhutan_Presentation.pdf), accessed on 05.march 2014.

<sup>34</sup> South Asia & Recurring Natural Disasters, *the Indian economist*, <http://theindianeconomist.com/south-asia-recurring-natural-disasters/> accessed on 01.march, 2017

<sup>35</sup>, Dr. Bill Dougherty, Dr. Mohammed Hamza, Dr. Ruth Butterfeld, Dr. Sukaina Bharwani, Matthew Savage "Socio-Economic Impacts of Climate Change in Afghanistan", available at [http://www.nesci.edu/afghanistan/pdf\\_data\\_2007447\\_Afghancc\\_Exs\\_09Mar09.pdf](http://www.nesci.edu/afghanistan/pdf_data_2007447_Afghancc_Exs_09Mar09.pdf), accessed on 01, march 2017

broad consensus on the Agreement. This agreement was adopted in Seventeenth SAARC Summit held in Maldives in November 2011.<sup>36</sup>

SAARC Summit	Time and Venue	Action
3rd Summit	1987, Kathmandu	“Regional Study on the Causes and Consequences of Natural Disasters & the Protection, Preservation of the Environment”.
4th Summit	1988, Islamabad	Participants decided to undertake a joint study on the “Greenhouse Effects and its impact on the Region.”
14th Summit	2007, New Delhi	Participants expressed ‘deep concern’ over the global climate change & called for pursuing a climate resilient development in South Asia.
15th Summit	2008, Colombo	The organisation made “Colombo Declaration & the Colombo Statement on Climate Change and Food Security

Additionally, no noticeable yields are yet seen from the Coastal Zone Management Centre in Maldives (2005) and Forestry Centre in Bhutan (2008). Even the Dhaka Declaration and SAARC Plan of Action on Climate Change (2008) were not succeeded to describe SAARC as a single entity at Copenhagen. It is also sawed that the 18th SAARC Summit held in Kathmandu, Nepal in November 2014 also unsuccessful to convey any considerable outcome on climate change issue.<sup>37</sup> It is marked that SAARC members often absence political consent on important issues. In South Asia, conflicting national interests created hostile relations between and among states. In the face of the acceptance that environmental issues might be less debated, compromise has still been poorest and this lack of compromise has prolonged into climate change issues as well. The lack of regional approach and its cost are generally rewarded by the lives of the general people of this region. The regional approach to disaster management and variation of an inclusive road map to define source sharing and policy guidelines are still not acceptable for the South Asian people. South Asia is a poverty live region, where inhabitants are more vulnerable to climate change. Hence, any initiative allied to climate change will have to support the poor people of this region and attempt to quickly move them out of poverty. Improving their income will hurry their acquiring power which in

<sup>36</sup> A. Surjan, E. Lindgren, G.E. Insarov, R.D. Lasco, J. J. Pereira, R.T. Corlett, X. Cui, Y., E. Lin, *Climate Change 2014: Impacts, Adaptation and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge: Cambridge University Press, 2014, p.1352

<sup>37</sup> “Areas of Cooperation”, SAARC, available at [http://saarc-sec.org/areaofcooperation/cat-detail.php?cat\\_id=54](http://saarc-sec.org/areaofcooperation/cat-detail.php?cat_id=54), accessed on 27 August 2014

a greater regional context will work on poverty reduction and reducing climate vulnerabilities concurrently. This will also work to reduce large-scale internal migration from rural to urban areas.<sup>38</sup>

*The IPCC Fifth Report* emphasised on regional effort to address climate change challenges. As a regional object, SAARC requirements to take compulsory phases to address climate change disasters in South Asia. SAARC has given a policy for its member states to exertion in a frame on climate change issue. In this regard, inspiring features of such assistance would be common practices of facing climate change and geographical closeness. Since 1987, heads of states of SAARC member countries at consecutive summits have been repeating the need to support regional cooperation to the sanctuary, defend and achieve the varied and delicate ecosystems of the region counting the need to address the challenges modelled by climate change and natural calamities.<sup>39</sup>

It is also significant to opinion available that a regional reaction to natural disasters, whether in the form of the SAARC Structure on Disaster Management or other mutual organised activities that states may think of, is really significant.<sup>40</sup>

#### **4. An Evaluation**

The SAARC Disaster Management Centre (SDMC) was set up in October 2006 at the premises of National Institute of Disaster Management in New Delhi. The Centre has the command to help eight Member Countries of the South Asian Association for Regional Cooperation (SAARC) Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka by 31 Disasters in South Asia –The Centre is a sleek body of professionals employed in several proportions of disaster risk discount and management in the region. SDMC is networking over the National Central Points of the Member Countries with the several Ministries, Technical, Research and Academic Departments, and Scientific institutions inside and outside the Government working on different characteristics of disaster risk reduction and management. The Centre departments organise workshops and training

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<sup>38</sup> “Fifteenth SAARC Summit Declaration Addresses Climate Change and Food Security”, *Climate Change Policy and Practice*, 3 August 2008, available at <http://climate-l.iisd.org/news/fifteenth-saarc-summitdeclaration-addresses-climate-change-and-food-security/>, accessed on 17 february 2017

<sup>39</sup> “Areas of Cooperation”, *op.cit.*

<sup>40</sup> *Ibid.*

programmes, studies and research, publishing reports and documents and offer several policy advisory facilities to the Member Countries.<sup>41</sup>

The group including Afghanistan Bangladesh, Bhutan, China, India, Nepal, and Pakistan was set up in 2006 in Abu Dhabi. Later on, the England, Australia and Norway joined it to support its actions. It would strive to reach within ten years a supportive and knowledge-based partnership for managing equally and developing the Himalayan River Systems to bring social harmony, prosperity, peace and environmental sustainability from the basis to the sea. Apart from security and economy, disasters & climate change are just one more aim for active regional cooperation for the overall wellbeing of more than a billion populations of the region. Seeing the measure of poverty and vulnerability to natural disasters, all member countries south Asia have no choice but to improve regional cooperation to protection their own populations and national interests. Information sharing, capacity building and practical strategies on shared water bodies could be the key areas of regional cooperation for SAARC countries. Though more or less every country has established some policy framework and strategies to moderate and manage disasters in their won concerns, trans-boundary cooperation with neighbouring countries would be unavoidable in the coming years. Long term visualisation and strategies in the stir of malicious climate change effects are of serious importance among the SAARC members. Another important aspect in regional cooperation is fetching China on the panel. The challenged by South Asian countries affecting to climate change and disasters have their origins in China as major rivers of the region originate from Chinese orderly Tibet highland. Shared water bodies and sources of water would be the climatic hotspots in coming years and a basin-wide approach to managing hydro-disasters would be much necessary. It is therefore of supreme importance that SAARC should involve expressively with China for regional cooperation on climate change and disasters. Similarly, trans-boundary cooperation among SAARC countries is attaining greater importance in the wake of rising frequency of disasters in the region.<sup>42</sup>

It is seen that in arrears to climate change, farmers become the worst sufferers. Therefore, SAARC should take special care on this issue. Although SAARC has started specific steps like the formation of SAARC Regional Agricultural Information Centre, disaster management training and food bank, these need functioning. Simultaneously, practical steps should be taken to educate farmers with adaptive farming practices like low tillage or crop rotation.

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<sup>41</sup> sarnd.

<sup>42</sup> "Areas of Cooperation", *op.cit.*

SAARC also should focus more attention on climate change research funding to diminish the losses from climate change. Moreover, SAARC should form a monitoring committee on climate change issue which will monitor updates about the application of different agenda set by previous SAARC summits.

The Secretary General of SAARC should be the key person to take necessary steps according to the reports of the committee. SAARC's commitment to work on regional cooperation in some cases is not considered as successful. One of the examples may be the July-August 2010 devastating flood which hit Pakistan. The flood not only destroyed infrastructure in several areas but also affected a huge population of approximately twenty million people. Except for a pledge of a meagre US\$32 million by SAARC countries, there was virtually no action to help the member state. The incident happened only a few months after (2010) the Silver Jubilee Climate Theme oriented SAARC Summit held at Thimphu, Bhutan. In fact, SAARC over the years has become captive of bilateral contentious politics in South Asia. Member states have to play an effective role in promoting the agenda of regional cooperation. There is an ostensible political difficulty of suspicion and lack of trust amongst some key countries which effort as difficulty in achieving regional perspective. One common strategic restraint facing all South Asian countries in international teamwork on climate change is the collective action quandary. All countries want to escape a "sucker's payoff" in the strategic game of climate change cooperation.

South Asia is vulnerable to the impacts of climate change and this will significantly affect the human security in the region. Although SAARC has had the unique opportunity to handle the issue and over the years, it has initiated and made progress, the governance structure of SAARC has restricted this regional entity from increasing potential regional cooperation in South Asia. The common SAARC posture in global climate sweepstakes, therefore, is more of an ornamental value aimed at deceiving regional population that SAARC is together in responding to the threats of climate change."

## **5. Concluding Remark**

Climate change and its dire consequences increasing number of natural disasters and their threatening impacts can bring paradigm shifts on lives and livelihoods of South Asian people. As environmental causes go beyond national boundaries, the regional collaborative approach is required to face such challenges. In the era of globalization, collective efforts can accelerate the phase of national, regional and global development. Regional cooperation through

regional organizations can become change makers for respective countries. It is evident that SAARC nations are facing severe consequences of global climate change. Due to geographical contiguity, the South Asian countries face common problems and the problems of one country have spillover impact for another country. As the leading regional body, SAARC is expected to play an important role in mitigating negative impacts of climate change in South Asia. Although the issue has been in focus right from the 3rd SAARC summit of 1987, there is not much tangible outcome on this issue. There were different projects taken on climate change issue but the implementation is very slow. Therefore, combined efforts are needed to mitigate the negative consequences of climate change emanated calamities. In this regard, to address the climate change issue, SAARC should adopt a comprehensive road map to define resource allocation and policy guidelines based on an integrated approach which will help decision makers, policymakers, scientists and academicians to act better in coming days. In the context of South Asia, all actors including central and local governments and their agencies, local and international NGOs, development partners, civil society and environment partners should move together in a coordinated way. As the countries have the common experience of facing climate change, they should exchange more information. Resource constraint is a big problem in South Asia; therefore, SAARC should put more emphasis on resource mobilisation to mitigate climate change impacts. As climate change related risks are high in this region, it is needed to respond proactively to build resilience through prevention and preparedness rather than through relief and responses. The countries of South Asia need to view the problem through a regional lens to reduce the costs of climate change and work in a body coming out from narrow national interests. If they can work from a common platform and with the same tune, it is expected they can achieve desired goals.

## **6. Bibliography**

- A. Surjan, E. Lindgren, G.E. Insarov, R.D. Lasco, J. J. Pereira, R.T. Corlett, X. Cui, Y., E. Lin, *Climate Change 2014: Impacts, Adaptation and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge: Cambridge University Press, 2014, p.1352
- Hoffmann Justin, "The Maldives and Rising Sea Levels", *ICE Case Studies*, No.206, May 2007

S Solomon (ed.), "Climate Change 2007: the physical science basis", Contribution of Working Group 1 to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge: Cambridge University Press, 2007, pp. 1-996.

Florita Gunasekara, "Climate Change and Ethnic Conflict in North East Sri Lanka", ICE Case Studies, No.241, July 2011.

Karen O' Brien, "Developing Strategies for Climate Change: The UNEP Country Studies on Climate Change Impacts and Adaptation Assessment", Cicero Report, University of Oslo, July 2010.

Anupam Khajuria and N.H. Ravindranath, "climate change in context of the Indian agricultural sector", journal of earth science and climatic change, vol. 3, issue 1, 2012

K. Shadananan Nair, "an assessment of the impact of climate change on the megacities of India and of the current policies and resources strategies to meet associated challenges", *fifth urban research symposium, 2009*

Braun David, "Bangladesh, India Most Threatened by Climate Change, Risk Study Finds", *National Geographic*, 20 October 2010.

Ali Anwar, "Climate Change Impacts and Adaptation Assessment in Bangladesh", *Climate Research, Vol. 12, Dhaka*, 1999

Davis Peter, "Exploring Local Perceptions of Climate Change Impact and Adaptation in Rural Bangladesh", *International Food Policy Research Institute*, February 2014

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.