



# CLIMATE JUSTICE AND ITS IMPACTS ON BANGLADESH

A thesis submitted by

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## **Abstract**

This thesis examines the impact of global climate change on Bangladesh. While some action on climate change is being undertaken internationally, such as through policies developed by the United Nations and other regional organisations, Bangladesh must itself take action to address this issue. This thesis focuses on identifying and prioritising measures to prevent and mitigate climate change impacts on Bangladesh and to formulate a strategic plan. It discusses how the Government of Bangladesh can ensure, in taking such action, that all constitutional and other human rights standards are maintained. Bangladesh does not have any climate change laws per se, so the thesis considers whether its current environmental laws and climate change policies are adequate to address the impacts of climate change and concludes that they are not. Accordingly, this thesis reviews legislation in other jurisdictions as a possible model for relevant legislation in Bangladesh. It also discusses whether economic mechanisms provided for in the international responses to climate change can be utilised to mitigate and adapt to climate change in Bangladesh.

Finally, the role of the judicial system and the judiciary in implementing and enforcing the law related to environment protection and climate change is discussed. The purpose of this thesis is to ensure that ‘climate justice’—the goal of resolving or alleviating the unequal impact of burdens created by climate change—is achieved in Bangladesh. As a result, this thesis aims to articulate and promote the principle of climate justice in the setting of Bangladesh.

## **Certification of Thesis**

This thesis is entirely the work of Aparajita Alam except where otherwise acknowledged. The work is original and has not previously been submitted for any other award, except where acknowledged. Student and supervisors' signatures of endorsement are held at the University.

Principal Supervisor: Dr Noeleen McNamara

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Student and Supervisors signatures of endorsement held at the University.

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## List of Abbreviations

ARCAB	Action Research on CBA in Bangladesh
AWG-LCA	ad hoc working group on long-term cooperative action
BAP	Bali Action Plan
BCAS	Bangladesh Centre for Advance Studies
BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BCCTF	Bangladesh Climate Change Trust Fund
BELA	Bangladesh Environment Lawyers' Association
BFID	Bangladesh Forest Industries Development Corporation
BFRI	Bangladesh Forest Research Institute
BIDS	Bangladesh Institute of Development Studies
BOI	Board of Investment
BRT	bus rapid transit
BUET	Bangladesh University of Engineering and Technology
CAF	Cancun Adaptation Framework
CBA	Community-Based Adaptation
CBDR	common but differentiated responsibility
CCC	Climate Change Cell
CCD	climate change database
CDM	clean development mechanism
CDMP	Comprehensive Disaster Management Program ,
CENTAD	Consortium for Trade and Development
CERs	Certified Emission Reductions
CH <sub>4</sub>	methane
CIP	Country Investment Plan
CMP	Conferences of the Parties serving as the meeting to the Protocol
CO <sub>2</sub>	carbon dioxide
COP	Conference of Parties
CPP	cyclone preparedness programs
CSO	civil society organisation
CTCN	Climate Technology Centre and Network
CTx	Carbon Trading Exchange
DG	Director-General (of the Department of Environment)
DNA	Designated National Authority
DoE	Department of Environment

DoE	designated operational entity
DRC	Development Reform Commission
DRR	Disaster Risk Reduction
EB	executive body
EC	Environmental Court
ECT	environmental courts and tribunals
EPA	Environmental Protection Agency (USA)
ER	emission reduction
ERD	Economic Relations Division
ERU	Emission Reduction Units
ET	Emission trading
ETS	Emission Trading Scheme
EU	European Union
FBCCI	Federation of Bangladesh Chambers of Commerce and Industries
FD	Forest Department
GCF	Green Climate Fund
GDP	Gross Domestic Product
GFF	Global Environmental Facility
GHG	greenhouse gas
GoB	Government of Bangladesh
HHK	Hybrid Hoffman Kiln
IDCL	Infrastructure Development Company Limited
IETA	International Emission Trading Association
IFESCU	Institute of Forestry and Environmental Sciences
IMED	Implementation, Monitoring and Evolution Division
INDC	Intended Nationally Determined Contributions
IOM	International Organization for Migration ,
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union Conservation of Nature
JCM	joint credit mechanism
JI	Joint implementation
LDC	Least Developed Countries
LDCF	Least Developed Countries Fund
LGED	Local Government Engineering Department
MA	Multilateral Assessments
MCC	Ministry of Climate Change (Pakistan)
MoA	Ministry of Agriculture
MoEF	Ministry of Environment and Forestry
MoFA	Ministry of Foreign Affairs



MoST	Ministry of Science and Technology (China)
MRT	mass rapid transit
MWR	Ministry of Water Resources
N <sub>2</sub> O	nitrous oxide
NAMA	Nationally Appropriate Mitigation Actions
NAPA	National Adaptation Program of Action
NCCP	National Climate Change Policy (Pakistan)
NDC	Nationally Determined Contribution
NDRC	National Development and Reform Commission (China)
NGO	non-governmental organisation
NMEEE	National Mission for Enhanced Energy Efficiency (India)
PA	Project activity
PC	Planning Commission
PCCC	Pakistan Climate Change Council
PDD	project design document
PoA	programme of activities
PP	project participants
PPP	public–private partnership
PSF	People’s Survival Fund
REDD	reduction of deforestation
REDD+	reducing emissions from deforestation and degradation in developing countries
SD	sustainable development
SDG	sustainable development goals
SDM	sustainable development matrix
SGP	Small Grants Programme
SHP	small hydro power
SOE	state-owned entities
UNDP	United Nations Development Programme
UNEP	UN Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
USAID	US Agency for International Development
WCC	World Climate Conference
WMO	World Meteorological Organization

# Chapter 1. Introduction

## 1.1 Context

Climate change is a significant issue. It has implications for almost every sector of the economy, including food security and water security, and is thus closely interconnected with human rights. This thesis examines the international policy responses to climate change and reviews both current and potential impacts of climate change on Bangladesh. Bangladesh has been chosen as a case study since it is one of the countries most vulnerable to climate change. Despite global commitments made in the Paris Agreement in 2015, there appears to be a lack of international consensus about what actions should be taken to achieve the agreed targets.<sup>1</sup> Accordingly, this thesis argues that Bangladesh cannot simply rely upon others to address climate change, but must take action itself. Firstly, Bangladesh needs legislative reform, to provide climate change laws and policies that effectively address the issue. Secondly, the Kyoto Protocol provides economic instruments that Bangladesh can utilise to encourage investment by developed countries in adaptation technologies within its borders. Thirdly, there are examples in neighbouring countries on which Bangladesh can draw to further address climate change impacts.

A number of international agreements have been introduced in recent decades to address the climate change issue, the first being the Kyoto Protocol,<sup>2</sup> adopted in 1997 to set binding greenhouse gas (GHG) reduction targets. It is a protocol under the *United Nations Framework Convention on Climate Change 1992* and establishes legally binding GHG emissions targets for developed and industrialised countries. According to the Kyoto Protocol, ‘the main target of this binding agreement is to stabilise GHGs, control global warming and climate change and save the environment’.<sup>3</sup> The Kyoto Protocol has since been extended beyond the first commitment period, with the extension period running from 1 January 2013 to 2020. In support of the objectives of Kyoto Protocol, the Paris Agreement aimed to strength the global response

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<sup>1</sup> Mr Donald Trump had announced that the USA was pulling out of the Paris climate agreement. See Brian Resnick, ‘Trump is pulling the US out of the Paris climate agreement. Some men just want to watch the world burn’, *Vox* (online), 1 June 2017, <<https://www.vox.com/energy-and-environment/2017/6/1/15725510/trump-pulls-us-out-of-paris-climate-deal>>.

<sup>2</sup> *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, opened for signature 16 March 1998, 37 ILM 22 (entered into force 16 February 2005), <<https://unfccc.int/resource/docs/convkp/kpeng.pdf>>.

<sup>3</sup> United Nations Climate Change (UNCC), *Kyoto Protocol: Introduction* (UN, 2014), <[http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php)>.

to the threat of climate change by setting a target of limiting global temperature increases to less than 2° Celsius above pre-industrial levels, and pursuing efforts to limit it to 1.5° Celsius.<sup>4</sup> To reach this goal, the Paris Agreement also introduced a new technology framework and new mechanisms as supporting actions for developing countries and vulnerable countries.

The focus of this thesis is on climate change law rather than environmental law. Climate change law and environmental law are two different, but not entirely separate, areas. Climate change law has a very broad scope, touching on areas often not considered ‘environmental’ in nature.<sup>5</sup> The regulatory tools of climate change law are drawn from a wide range of legal fields, including administrative law, property law, tort law, corporations law, human rights law and international law.<sup>6</sup> The governance system of climate change law extends from international to national and local levels and focuses on addressing climate change mitigation and adaptation. It encompasses the concept of climate justice.

This thesis analyses two principal concepts—mitigation and adaptation—as the main instruments to formulate climate change laws and policies. There is no specific definition of mitigation and adaptation under the UNFCCC. Climate change adaptation is defined in the IPCC Fourth Assessment Report as the process of ‘adjustment in natural and human systems in response to actual and expected climatic stimuli or their effects, which moderate harm or exploits beneficial opportunities’.<sup>7</sup> Mitigation refers to ‘an anthropogenic intervention to reduce the sources and enhance the sinks of greenhouse gases’.<sup>8</sup> Adaptation and mitigation will be discussed in detail in Chapter 2.

There is a significant gap in implementation of climate change law between developed and developing countries. Many developed countries have implemented climate change law at the national or domestic level to ensure climate justice, but such law is still considered new in most

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<sup>4</sup> UNCC, *Report of the Conference of the Parties on its Twenty-First Session, Held in Paris from 30 November to 13 December 2015*, UNFCCC Dec 1/CP.21, UN Doc FCCC/CP/2015/10/Add.1 (29 January 2016) annex (‘Paris Agreement’), art 2(a), <[https://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_paris\\_agreement.pdf](https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf)>.

<sup>5</sup> Jacqueline Peel, ‘Climate Change Law: The Emergences of New Legal Discipline’ (2008) 32(3) *Melbourne University Law Review* 922.

<sup>6</sup> *Ibid.*

<sup>7</sup> Martin Parry, Osvaldo Canziani, Paul van der Linden, Jean Palutikof and Clair Hanson (eds), *Climate Change 2007: Impacts, Adaptation and Vulnerability. Working Group II Contribution to The Fourth Assessment Report of the IPCC* (Cambridge University Press, 2007) 750.

<sup>8</sup> *Ibid.*

developing countries.<sup>9</sup> As has been mentioned, Bangladesh is particularly vulnerable to natural disaster because of its geographical location.<sup>10</sup> An increasing number of natural disasters have taken place in the last decade, resulting in significant economic loss. Increased temperatures threaten its food security, human health and water resources. Bangladesh is also prone to urban flooding, which affects infrastructure and livelihood, as well as life and property.<sup>11</sup> Human health is also affected by the impact of climate change, especially for women and children. The Intergovernmental Panel on Climate Change (IPCC) has found that Bangladeshi people have suffered from heat stress, a condition that often affects urban populations in low- and middle-income countries.<sup>12</sup> According to United Nations Environment Programme (UNEP), over the last three decades Bangladesh has reduced its poverty rates significantly, from 60% in 1990 to 31.5% in 2010. This has come as a result of strong economic growth.<sup>13</sup> However, according to the World Bank, while Bangladesh continues to reduce poverty, the rate of poverty reduction slowed between 2010 and 2016.<sup>14</sup> The national poverty rate fell by 1.2% points annually from 2010 to 2016, compared to 1.7% annually from 2005 to 2010.<sup>15</sup> The UNEP notes that the threat of climate change puts at risk the hard-earned impacts of years of growth and development.<sup>16</sup> According to the IPCC, climate-related reductions in food productivity will impact on income and exports and increase poverty levels, and it predicts that, by 2030, Bangladesh will experience a net rise in poverty of 15%.<sup>17</sup> The IPCC report identifies other problems arising from climate

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<sup>9</sup> Clidi Odozor and Kola O. Odeku, 'Explaining the Similarities and Differences between Climate Law and Environmental Law' (2014) 45(2) *Journal of Human Ecology* 127.

<sup>10</sup> Markus Zimmermann, Karl-Friedrich Glombitza and Barbara Rothenberger, *Disaster Risk Reduction Programme for Bangladesh 2010–2012* (Swiss Agency for Development and Cooperation, 2010), <<http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan050296.pdf>>.

<sup>11</sup> Yasuaki Hijioka et al, 'Asia', in IPCC, *Fifth Assessment Report* (IPCC, 2014), <[http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap24\\_FINAL.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap24_FINAL.pdf)>, Chapter 24.

<sup>12</sup> Intergovernmental Panel on Climate Change (IPCC), *The IPCC's Fifth Assessment Report: Executive Summary—What's in it for South Asia* (IPCC, 2014) <<http://cdkn.org/wp-content/uploads/2014/04/CDKN-IPCC-Whats-in-it-for-South-Asia-AR5.pdf>>.

<sup>13</sup> United Nations Development Programme/United Nations Environment Programme (UNDP-UNEP) *Poverty-Environment Initiative: Bangladesh* (UN, 2015) <<http://www.unpei.org/what-we-do/pei-countries/bangladesh>>.

<sup>14</sup> World Bank, 'Bangladesh Continues to Reduce Poverty But at Slower Pace' (2018) *The World Bank*, <<https://www.worldbank.org/en/news/feature/2017/10/24/bangladesh-continues-to-reduce-poverty-but-at-slower-pace>>.

<sup>15</sup> *Ibid.*

<sup>16</sup> UNDP-UNEP, *Poverty-Environment Initiative: Bangladesh*, above n 13.

<sup>17</sup> *Ibid.*

change as high temperatures<sup>18</sup> and drought,<sup>19</sup> rising sea levels,<sup>20</sup> cyclones and flooding,<sup>21</sup> heavy rainfall,<sup>22</sup> salinity intrusion<sup>23</sup> and more. These climate change impacts suggest that the right to life and other human rights of the citizens of Bangladesh, as well as its developing economy, are at risk. Therefore, this thesis focuses on climate change law at both national and local levels in Bangladesh to ensure climate justice.

Accordingly, one of the key concerns of this thesis is climate justice. Climate justice is a conceptual framework that advocates integration of climate change prevention, mitigation and adaptation strategies with sustainable development policies that incorporate a human rights-based approach.<sup>24</sup> This thesis will also consider the legal and policy mechanisms Bangladesh has adopted, or can adopt, to address climate change and its impacts. Strategies employed by India, the Philippines, Pakistan, Sri Lanka and Kenya will be discussed as examples of approaches that might inform Bangladesh's action on climate change.

## 1.2 Climate Justice

According to Professor Perry Wallace, 'climate change is the major, overriding environmental issue of our time and the single greatest challenge facing decision-makers at many levels'.<sup>25</sup> Climate change and its impact is one of the most widely discussed topics today, a discussion which raises the question of justice. The term 'climate justice' encompasses consideration climate change's implications for the notions and practices of justice, especially environmental and social justice. It examines issues of human rights and the development of law in the area of climate change. Climate justice is concerned with different countries' contributions to carbon emissions, their vulnerability to climate change, and their ability to bear the costs of mitigation and adaptation. Adaptation has built bridges to environmental justice, climate justice

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<sup>18</sup> International Centre for Climate Change & Development (ICCCD), *What does the IPCC Say About Bangladesh?* (ICCCD Briefing, 2014), <<http://icccad.net/wp-content/uploads/2015/01/IPCC-Briefing-for-Bangladesh.pdf>>.

<sup>19</sup> IPCC, above n 12.

<sup>20</sup> ICCCD, above n 18.

<sup>21</sup> Ibid.

<sup>22</sup> IPCC, above n 12.

<sup>23</sup> ICCCD, above n 18.

<sup>24</sup> Patrick Huntjens and Ting Zhang, *Climate Justice: Equitable and Inclusive Governance of Climate Action*, Working Paper 16 (The Hague Institute for Global Justice, 2016), <<http://www.thehagueinstituteforglobaljustice.org/wp-content/uploads/2016/04/Climate-Justice-April-2016.pdf>>.

<sup>25</sup> Perry Wallace, 'An Overview of This Issue: Climate Change in 2009' (2009) 9(2) *Sustainable Development Law & Policy* 2.

and social justice. It is also concerned with local impacts and experience, inequitable vulnerabilities, the importance of community voice and demands for community sovereignty and functioning.<sup>26</sup> A climate justice approach to adaptation keeps the focus on building adaptive capacity by improving poverty, reducing vulnerability and developing community-based ideas and support for adaptation policy.<sup>27</sup> These concerns are complicated by the inherent differences between developed and developing countries and raise complex ethical questions. This chapter begins by discussing the origin and definition of climate justice.

The concept of climate justice has grown out of the environmental justice movement. The term ‘climate justice’ is said to have been first used in academic literature by Edith Brown Weiss in 1989; it was also used in a political exposé by US indigenous activist Tom Goldtooth in 1995.<sup>28</sup> The term was also used in the 1999 report *Greenhouse Gangsters vs. Climate Justice* by the San Francisco-based Corporate Watch Group, which was an examination of the petroleum industry and its disproportionate political influence.<sup>29</sup> In 2001, the first Climate Justice Summit was held at The Hague during the Sixth Session of the Conference of the Parties to the UNFCCC (COP6); the Summit’s action statement proclaimed

we affirm that climate change is a rights issue and it affects our livelihoods, our health, our children and our natural resources. We will build alliances across states and borders to oppose climate change ... and advocate for and practice sustainable development.<sup>30</sup>

In 2009, climate change and climate justice took centre stage at the COP15 in Copenhagen, but this conference failed to produce a legally binding climate agreement.<sup>31</sup> The 2016 Paris Agreement is the first international treaty to implicitly encompass the concept of climate

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<sup>26</sup> David Schlosberg and Lisette Collins, ‘From Environmental to Climate Justice: Climate Change and the Disclosure of Environmental Justice’ (2014) 5 *WIREs Climate Justice* 359.

<sup>27</sup> Sydney Environment Institute, *Justice and Governance: Climate Justice* (University of Sydney, 2018), <<http://sydney.edu.au/environment-institute/research/environmental-justice/climate-justice/>>.

<sup>28</sup> Mary Robinson Foundation, *Climate Justice Baseline Report July 2013*, <<https://www.mrfcj.org/media/pdf/ClimateJusticeBaseline.pdf>>.

<sup>29</sup> Brian Tokar, ‘Movements of Climate Justice’, in M. Dietz and H. Garrelts (eds.), *Handbook of the Climate Movement* (Routledge, 2013), <<http://www.social-ecology.org/wp/wp-content/uploads/2012/12/Tokar-Climate-Justice-2013.pdf>>.

<sup>30</sup> Ambika Chawla, ‘Climate Justice Movements Gather Strength, in Worldwatch (ed), *Climate Connection: State of the World 2009* (Worldwatch, 2009), <[http://www.worldwatch.org/files/pdf/SOW09\\_CC\\_climate%20justice.pdf](http://www.worldwatch.org/files/pdf/SOW09_CC_climate%20justice.pdf)>, 120.

<sup>31</sup> Mary Robinson Foundation, *Climate Justice Baseline Report July 2013*, above n 28.

justice, noting in its preamble ‘the importance for some of the concept of “climate justice”, when taking action to address climate change’.<sup>32</sup>

Climate justice has been defined as ‘a vision to dissolve and alleviate the unequal burdens created by climate change. As a form of environmental justice, climate justice is the fair treatment of all the people and freedom from discrimination with the creation of policies and projects that address climate change and its systems that create climate change and perpetuate discrimination’.<sup>33</sup> This concept has become embedded within the UNFCCC through the principle of ‘common but differentiated responsibilities’.

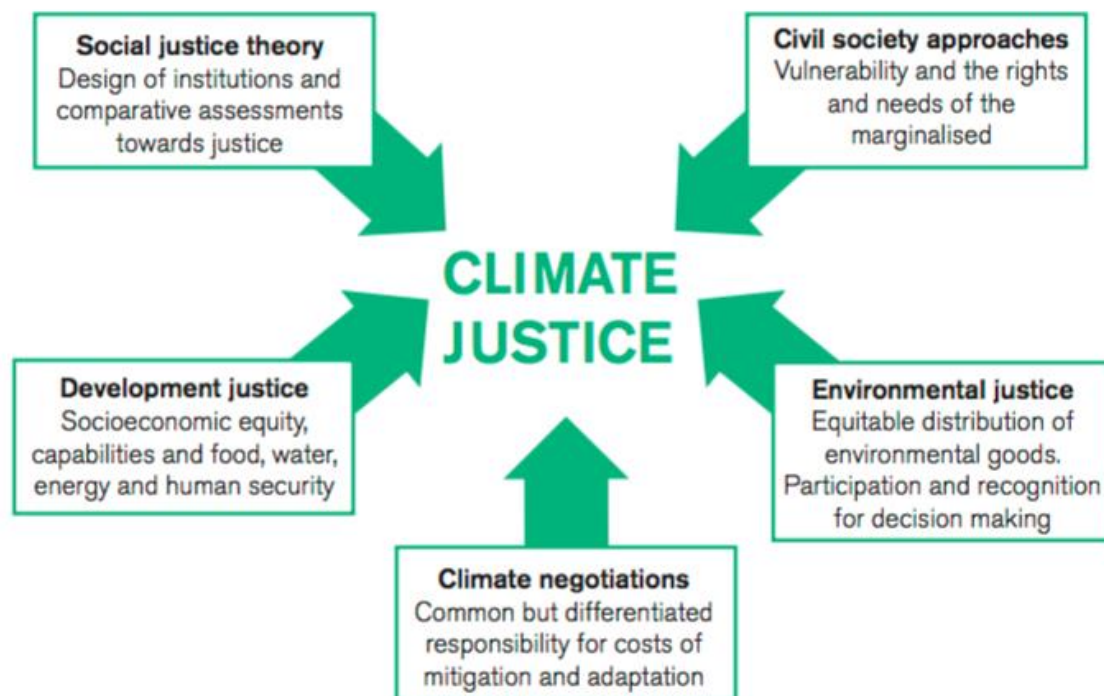


Figure 1.1: The basis of climate justice<sup>34</sup>

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<sup>32</sup> UNFCCC, *Conference of the Parties Twenty-First Session, Paris, 30 November to 11 December 2015* (2015) FCCC/CP/2015/L.9/Rev.1, Agenda item 4(b) ‘Adoption of the Paris Agreement’, <<https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>>.

<sup>33</sup> Climate Institute, *Climate Justice Movements* (Climate Institute, n.d.), <[http://www.climate.org/climatelab/Climate\\_Justice\\_Movements](http://www.climate.org/climatelab/Climate_Justice_Movements)>; cited in Huntjens and Zhang, above n 24.

<sup>34</sup> Simon Anderson, *Climate Justice and International Development: Policy and Programming* (IIED, 2013), <<http://pubs.iied.org/pdfs/17170IIED.pdf>>.

Simon Caney identifies two kinds of climate justice, burden-sharing justice and harm avoidance justice. He outlines three principles of burden-sharing justice: firstly, those who have caused the problem should bear the burden; secondly, those who have the ability to pay should bear the burden; and, finally, those who have benefited from the activities that cause climate change should bear the burden.<sup>35</sup> Harm avoidance justice, on the other hand, is concerned with the potential victims—those whose rights or entitlements are threatened—and it ascribes responsibilities to others to uphold these rights and entitlements.<sup>36</sup> Most of the international treaties reflect both kinds of climate justice. It is worth mentioning here, however, that some high GHG emitter states have not signed up to, and/or do not comply with, these treaties. This will be discussed further in Chapter 2.

Climate justice is focused on human rights and development and advocates a human-centred approach, protecting the rights of the most vulnerable and sharing the burdens and benefits of climate change and its resolution equitably and fairly.<sup>37</sup> Fundamental principles of climate justice include respect for and protection of human rights, including the right to development; sharing climate change-related benefits and burdens equitably; ensuring that decisions on climate change measures are participatory, transparent and accountable; gender equality and equity; harnessing the transformative power of education for climate stewardship; and using effective partnerships to secure climate justice.<sup>38</sup> Climate justice places equity and human rights at the heart of climate change responses, whether those responses involve mitigation measures—such as clean development mechanisms (CDM) and sustainable development mechanisms (SDM)—or measures for climate change adaptation.

### 1.3 Climate Justice Mechanisms

A review of the implementation of climate justice internationally identifies Bolivia as an example of best practice.<sup>39</sup> In a report to the UNFCCC Climate Change Negotiations in 2012, the Bolivian delegation presented its view on three climate justice mechanisms: a mitigation

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<sup>35</sup> Simon Caney, 'Two Kinds of Climate Justice: Avoiding Harm and Sharing Burden' (2014) 22(2) *The Journal of Political Philosophy* 125.

<sup>36</sup> Ibid.

<sup>37</sup> Mary Robinson Foundation, *Principles of Climate Justice* (MRF, n.d.), <<https://www.mrfcj.org/pdf/Principles-of-Climate-Justice.pdf>>.

<sup>38</sup> Ibid.

<sup>39</sup> Mary Robinson Foundation, *Climate Justice Baseline Report*, above n 28.



mechanism, an adaptation mechanism and, finally, a joint mitigation and adaptation mechanism for sustainable management of forests.<sup>40</sup>

According to the IPCC's Fifth Assessment Report, climate change will increase existing risks as well as creating new risks for natural and human systems; furthermore, these risks are unevenly distributed and are generally greater for disadvantaged people and communities in countries at all levels of development.<sup>41</sup> The international regime (i.e. the UNFCCC) seeks to stabilise carbon emissions at a certain level, which requires significant sacrifices from all states. Developing countries have been adamant in maintaining that developed countries should shoulder the responsibility for cutting emissions, as they are most responsible for the historic emissions of CO<sub>2</sub> that have led to climate change. Both the UNFCCC and the IPCC conclude that industrialised countries must, first and foremost, take domestic action against climate change and are also obliged to support developing countries in mitigating and adapting to climate change through capacity building and technology transfer.<sup>42</sup>

## 1.4 Importance of Climate Justice

The question might be asked, why is climate justice so important for developing countries like Bangladesh? The answer is that it examines the unequal impacts of climate change on the poorest and those least capable and seeks to combine the climate change discussion with human rights in a way that is equitable for the most climate-vulnerable groups.<sup>43</sup> There is scholarly debate about the importance of climate justice. Jeremy Baskin identifies four issues underlying discussion of the importance of climate change: responsibility (i.e. for emissions), capacity (i.e. to take action), the need for development, and pragmatic considerations.<sup>44</sup> This thesis will focus on two of these points, namely the capacity of, and the importance of development to, developing countries. This is because developing countries, particularly those most vulnerable to climate change effects, suffer from a lack of resources to implement the necessary adaptation

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<sup>40</sup> Plurinational State of Bolivia, *The Mechanism of 'Climate Justice'*, UNFCCC Climate Change Negotiations, Bonn, Germany 2012, <[https://unfccc.int/files/bodies/awg-lca/application/pdf/20120518\\_bolivia\\_2100.pdf](https://unfccc.int/files/bodies/awg-lca/application/pdf/20120518_bolivia_2100.pdf)>.

<sup>41</sup> IPCC, *Climate Change 2014: Synthesis Report Summary for Policy Makers* (IPCC, 2014), <[http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf)>.

<sup>42</sup> Royal Irish Academy, *The Geography of Climate Justice: An Introductory Resource* (RIA, n.d.), <<https://www.ria.ie/sites/default/files/the-geography-of-climate-justice.pdf>>.

<sup>43</sup> International Council on Human Rights Policy, *Climate Change and Human Rights: A Rough Guide* (ICHRP, 2008), <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1551201](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1551201)>.

<sup>44</sup> Jeremy Baskin, 'The Impossible Necessity of Climate Change' (2009) 10(2) *Melbourne Journal of International Law* 424.

measures. They have low resilience when faced with natural disasters such as flooding, cyclone, storm surge etc.; at the same time, they have least funds to invest. The Global Humanitarian Forum also highlighted this and stated that most of the adverse effects of climate change are experienced by poor and low-income communities, who have much higher levels of vulnerability to environmental determinants of health, wealth and other factors and much lower levels of capacity to cope with climate change.<sup>45</sup> Uneven development (adaptive capacity) is an important driver of the experience of the negative impact of climate change; for example, while both the Netherlands and Bangladesh are low-lying countries vulnerable to rising sea level, the Netherlands was ranked the seventh most developed country in the United Nations Human Development index, while Bangladesh was ranked 129<sup>th</sup> out of 169 countries.<sup>46</sup> Thus, the Netherlands has greater capacity for adaptation than Bangladesh. Developing countries arguably need continuing development to support and enhance their economic growth and, thus, their capacity for responding to climate change. Developed countries, it is argued, should therefore share the burdens arising from the negative impacts of climate change, and the costs of mitigation or adaptation,<sup>47</sup> on an equitable basis.

Article 3(1) of the *United Nations Framework Convention on Climate Change 1992* indirectly articulates some general principles of climate justice, stating that

the parties should protect the climate system for the benefit of present and future generations of mankind, on the basis of equity in accordance with their common but differentiated responsibility and respective capabilities.

This created obligations for the developed countries but no obligations for least developed or developing countries such as India and China. However, findings from environmental science indicate that a reduction of greenhouse gas by 70–80% in industrialised countries is more significant in avoiding climate change impacts.<sup>48</sup> The UNFCCC agreed that industrialised countries will provide financial support and transfer technology to developing countries to support climate change mitigation, and the Kyoto Protocol further develops this concept by

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<sup>45</sup> Global Humanitarian Forum, *What is Climate Justice?* (GHF, 2009), <<http://www.ghf-ge.org>>.

<sup>46</sup> Royal Irish Academy, above n 42.

<sup>47</sup> National Environmental Research Institute, *Burden Sharing in the Context of Global Climate Change*, NERI Technical Report No 424 (NERI, 2002), <[http://www.dmu.dk/1\\_viden/2\\_Publikationer/3\\_fagrappporter/rapporter/FR424.pdf](http://www.dmu.dk/1_viden/2_Publikationer/3_fagrappporter/rapporter/FR424.pdf)>.

<sup>48</sup> Baskin, above n 44.

creating a mitigation instrument known as clean development CDM. Accordingly, this thesis discusses CDM and other mitigation instruments in Chapter 4.

This research examines international climate change regimes through the lens of climate justice. At the same time, it also examines the national climate change regime of Bangladesh, again with a view to establishing climate justice in Bangladesh. The purpose of this research is to provide recommendations for the Bangladesh Government and policy-makers on how to improve Bangladesh's legal efforts to combat climate change, and how best to implement and enforce those law and policies. In that context, this thesis also focuses on other developing countries' law and policies to better understand other relevant approaches.

### **1.5 Key Themes of Climate Justice Relevant to this Thesis**

Climate change impacts, both directly and indirectly, fundamental human rights such as the rights to life, to development, to food and to health. Climate justice requires climate actions that are consistent with existing fundamental human rights agreements and principles. Therefore, climate justice requires a right-based approach that integrates any climate change adaptation and mitigation measures without discrimination. This thesis will mainly focus on two key climate justice principles—respect for and protection of human rights, and support for the right to development—which are urgent for both present and future generations. In this context, states must to address climate change effectively because they are committed to respect, protect, fulfil and promote human rights for all citizens. it has to take actions to mitigate climate change which causes harms to human rights. They must include regulatory measures to mitigate climate change as well as build the necessary capacity to adapt to climate change. States need to consider the essential attributes of a human rights-based approach as well as principles and standards that derive from international human rights law in formulating climate change policies.

### **1.6 The Research Problem and Objectives of this Thesis**

Climate change is a global environmental problem; the Fifth Assessment Report of the Intergovernmental Panel Climate Change (IPCC) report confirms that increasing concentrations of anthropogenic GHGs in the atmosphere are the dominant cause of the Earth's

climate warming since the mid-twentieth century.<sup>49</sup> It also notes that recent climate changes have had widespread impacts on human and natural systems.<sup>50</sup> The United Nations Deputy High Commissioner for Human Rights, Flavia Pansieri, states that those who have contributed the least to GHG emissions will be the ones who suffer the greatest burden: the poorest people, in the poorest countries, their children and all our children.<sup>51</sup> While Bangladesh is one of the lowest carbon-emitting countries in the world, it has signed the UNFCCC and the Kyoto protocol (including the Kyoto Protocol second commitment period). Bangladesh is one of the countries most vulnerable to natural disaster because of its geographical location. Accordingly, it could be argued that Bangladesh is facing a significant human rights challenge.

Figure 1.2 is a graphical representation of the relationship between climate change and human rights. Steve Vanderheiden argues that there is a human right to a stable climate, which can be derived from a human right to an adequate environment.<sup>52</sup> Some scholars argue that climate change poses a serious threat to some of our most basic human interests.<sup>53</sup>

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<sup>49</sup>IPCC, *Climate Change 2013: The Physical Science Basis. Headline Statements from the Summary for Policymakers* (IPCC, 2013). Cited in *The IPCC's Fifth Assessment Report: What's in it for South Asia?*, above n 12.

<sup>50</sup> IPCC, *Climate Change 2014: Synthesis Report Summary for Policy Makers*, above n 41.

<sup>51</sup> Office of the High Commissioner for Human Rights, *Understanding Human Rights and Climate Change: Submission of the Office of the High Commissioner for Human Rights to the 21<sup>st</sup> Conference of the Parties to The United Nations Framework Convention on Climate Change* (OHCHR, 2015), <<http://www.ohchr.org/Documents/Issues/ClimateChange/COP21.pdf>>.

<sup>52</sup> Derek Bell, 'Climate Change and Human Rights' (2013) 4(3), *Wiley Interdisciplinary Reviews: Climate Change* 151, <<http://onlinelibrary.wiley.com/doi/10.1002/wcc.218/full#references>>.

<sup>53</sup> Derek Bell, 'Does Anthropogenic Climate Change Violate Human Rights?' (2011) 14(2) *Critical Review of International Social and Political Philosophy* 99 <<http://www.informaworld.com>>.

Climate Impact	Human Impact	Rights Implicated
<b>Sea Level Rise</b> <ul style="list-style-type: none"> <li>• Flooding</li> <li>• Sea surges</li> <li>• Erosion</li> <li>• Salinization of land and water</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of land</li> <li>• Drowning, injury</li> <li>• Lack of clean water, disease</li> <li>• Damage to coastal infrastructure, homes, and property</li> <li>• Loss of agricultural lands</li> <li>• Threat to tourism, lost beaches</li> </ul>	<ul style="list-style-type: none"> <li>• Self-determination [ICCPR;ICESCR,1]</li> <li>• Life [ICCPR;6]</li> <li>• Health [ICESCR;12]</li> <li>• Water [CEDAW,14; ICRC 24]</li> <li>• Means of subsistence [ICESCR,1]</li> <li>• Standard of living [ICESCR,12]</li> <li>• Adequate housing [ICESCR,12]</li> <li>• Culture [ICCPR;27]</li> <li>• Property [UDHR,17]</li> </ul>
<b>Temperature Increase</b> <ul style="list-style-type: none"> <li>• Change in disease vectors</li> <li>• Coral bleaching</li> <li>• Impact on fisheries</li> </ul>	<ul style="list-style-type: none"> <li>• Spread of disease</li> <li>• Changes in traditional fishing livelihood and commercial fishing</li> <li>• Threat to tourism, lost coral and fish diversity</li> </ul>	<ul style="list-style-type: none"> <li>• Life [ICCPR,6]</li> <li>• Health [ICESCR,12]</li> <li>• Means of subsistence [ICESCR,1]</li> <li>• Adequate standard of living [ICESCR,12]</li> </ul>
<b>Extreme Weather Events</b> <ul style="list-style-type: none"> <li>• Higher intensity storms</li> <li>• Sea surges</li> </ul>	<ul style="list-style-type: none"> <li>• Dislocation of populations</li> <li>• Contamination of water supply</li> <li>• Damage to infrastructure: delays in medical treatment, food crisis</li> <li>• Psychological distress</li> <li>• Increased transmission of disease</li> <li>• Damage to agricultural lands</li> <li>• Disruption of educational services</li> <li>• Damage to tourism sector</li> <li>• Massive property damage</li> </ul>	<ul style="list-style-type: none"> <li>• Life [ICCPR;6]</li> <li>• Health [ICESCR;12]</li> <li>• Water [CEDAW,14; ICRC 24]</li> <li>• Means of subsistence [ICESCR,1]</li> <li>• Adequate standard of living [ICESCR,12]</li> <li>• Adequate and secure housing [ICESCR,12]</li> <li>• Education [ICESCR,13]</li> <li>• Property [UDHR,17]</li> </ul>
<b>Changes in Precipitation</b> <ul style="list-style-type: none"> <li>• Change in disease vectors</li> <li>• Erosion</li> </ul>	<ul style="list-style-type: none"> <li>• Outbreak of disease</li> <li>• Depletion of agricultural soils</li> </ul>	<ul style="list-style-type: none"> <li>• Life [ICCPR;6]</li> <li>• Health [ICESCR;12]</li> <li>• Means of subsistence [ICESCR,1]</li> </ul>

Source: Submission by the Maldives to the OHCHR in September 2008, as part of OHCHR's consultative study on the relationship between climate change and human rights

Figure 1.2 Climate impacts on human rights<sup>54</sup>

The Sixteenth Conference of the UNFCCC recognised the importance of human rights and determined that all parties should fully respect human rights in all climate change-related actions.<sup>55</sup> It is essential to integrate human rights into climate change actions to get effective results from mitigation and adaptation measures, some of which may have adverse effects on the lives and livelihood of citizens and communities. Reducing Emissions from Deforestation and Forest Degradation (REDD+) mitigation activities, for example, might affect the rights of local people or communities who live in or near forests, and whose livelihood depend on them.<sup>56</sup> In such cases, adequate consultation and consent is needed to protect their rights. In order to minimise harm, the Human Rights Council resolution 10/4 addresses policy-making in the area of climate change, stating that ‘human rights obligations and commitments have the

<sup>54</sup> Centre for International Environmental Law, *Climate Change: Tackling the Greatest Human Rights Challenge of Our Time* (CIEL, 2015), <[http://careclimatechange.org/files/CARE\\_and\\_CIEL-Climate\\_Change\\_and\\_Human\\_Rights\\_web.pdf](http://careclimatechange.org/files/CARE_and_CIEL-Climate_Change_and_Human_Rights_web.pdf)>.

<sup>55</sup> UNFCCC, *Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010*, Addendum, (2011), FCCC/CP/2010/7/Add.1, <<https://cop23.unfccc.int/sites/default/files/resource/docs/2010/cop16/eng/07a01.pdf>>.

<sup>56</sup> Mucahid M. Bayrak and Lawal M. Marafa, ‘Ten Years of REDD+: A Critical Review of the Impact of REDD+ on Forest-Dependent Communities’ (2016) 8(7) *Sustainability* 620, <<http://www.mdpi.com/2071-1050/8/7/620/htm>>.

potential to inform and strengthen international and national policy-making in the area of climate change, promoting policy coherence, legitimacy and sustainable outcomes'.<sup>57</sup> However, while the UNFCCC has acknowledged the need to respect human rights in all climate change-related actions, this acknowledgement has had little impact in practice.

The central questions of this thesis are:

- Can the outcomes of post-Kyoto negotiations meet the targets of the Kyoto Protocol and help Bangladesh combat climate change impacts specifically on Bangladesh, such as through adaptation measures?
- Are there any mechanisms in these global agreements that Bangladesh can utilise to reduce risks and harm arising from climate change while focusing on development, e.g. CDMs?
- What are the possible policy responses by Bangladesh to address climate change and improve climate justice?

## **1.7 Contribution of the Thesis**

The Conference of the Parties 15 (COP 15), held in Copenhagen in 2009,<sup>58</sup> ended without achieving its goal but produced a document, known as the Copenhagen Accord, that proposed extending the Kyoto Protocol beyond the first commitment period (that is, beyond 2012). In 2012, at COP 18, it was agreed that the timeframe of the Kyoto Protocol would be extended to 2020. For the purposes of this thesis, the most significant consideration is whether, in such a timeframe, the Kyoto Protocol can reach its goal and support any positive climate change outcomes in Bangladesh. The COP 21, held in Paris in 2015, saw the landmark agreement to combat climate change by aiming to keep global temperature rises below 2° Celsius above pre-industrial levels. The Paris Agreement also set the goals of increasing the ability of countries to deal with the impacts of climate change and making finance flows consistent with low GHG

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<sup>57</sup> Human Rights Council, *Tenth Session: Resolution 10/4. Human Rights and Climate Change* (2009), <[http://ap.ohchr.org/documents/E/HRC/resolutions/A\\_HRC\\_RES\\_10\\_4.pdf](http://ap.ohchr.org/documents/E/HRC/resolutions/A_HRC_RES_10_4.pdf)>.

<sup>58</sup> The Fifteenth Conference of the Parties (COP 15) of the United Nations Framework Convention on Climate Change and the Fifth Conference of the Parties serving as the Meeting of the Parties (COP/MOP 5) of the Kyoto Protocol.

emissions.<sup>59</sup> The IPCC Fifth Assessment Report concludes that adaptation is the only option to manage the impacts of climate change that mitigation cannot diminish.<sup>60</sup>

According to the United Nations Human Rights Commission, climate change directly and indirectly threatens the full and effective enjoyment of a range of human rights by people all over the world, including the rights to life, water and sanitation, food, health, housing, self-determination, culture and development.<sup>61</sup> Respecting and protecting human rights is one of the most essential principles of climate justice.<sup>62</sup> All climate change-related international, national and regional agreements and policy action should, therefore, guarantee a minimum, and seek the maximum, promotion and protection of human rights without any discrimination.

This thesis will review the existing laws and policies of Bangladesh. While this research relates to climate change law and policies, it should be noted that Bangladesh has no specific climate change regulation. As a result, the discussion will also focus on the laws that most closely relate to climate change—the forestry law and policies, and the *Environmental Conservation and Protection Act 1995* and its associated regulations—to determine whether these laws adequately address climate change. While it is well known that climate change and the environment are interrelated, there are specific gaps and challenges faced by the Government of Bangladesh (GoB); this thesis will focus on these gaps and seek a solution to create a pathway to combat climate change. Primarily, this thesis will focus on the principle of climate justice, and the need for a human rights-based approach to climate change that can be applied in Bangladesh, as well as more broadly.

This thesis will provide a detailed overview of the Kyoto Protocol and post-Kyoto negotiations as these represent the core of international climate change law. Climate change is not only an environmental law-related issue; it also impacts other international legal fields, including human rights law, refugee law and others. For instance, climate change is emerging as an important issue for many international human rights bodies, with a particular focus on addressing the phenomenon of ‘climate change refugees’—people from low-lying island

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<sup>59</sup> UNFCCC, *What is the Paris Agreement?* (UN, n.d.), <<https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement>>.

<sup>60</sup> IPCC, *The IPCC's Fifth Assessment Report: What's in it for South Asia?*, above n 12.

<sup>61</sup> Office of the High Commissioner for Human Rights, *Human Rights and Climate Change* (OHCHR, 2017), <<http://www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/HRClimateChangeIndex.aspx>>.

<sup>62</sup> Mary Robinson Foundation, *Principles of Climate Justice*, above n 37.

nations likely to be rendered homeless and stateless if sea levels continue to rise.<sup>63</sup> It will also focus on the climate change risks that Bangladesh faces and will face in future, as well as the mitigation and adaptation measures that Bangladesh has already taken. The research in this thesis identifies the shortfalls in Bangladesh's efforts to date to mitigate climate change impacts, prioritise its adaptive capacity and formulate a strategic plan. At the same time, it points a way to possible policy development and implementation to address climate change while upholding the principles of climate justice. Finally, this thesis will focus on the new role of citizen lawsuits and domestic courts in limiting the risks posed by climate change. The focus in this thesis thus differs from the focus in previous research on public interest environmental litigation in Bangladesh (see for example the work of Jona Razzaque).<sup>64</sup> Because climate change directly impacts on human rights, climate change litigation needs to be addressed from an economic and political perspective as well as a human rights perspective.<sup>65</sup> Climate change law is still considered novel regulation and garners little attention in Bangladesh. There is a huge gap between the treaty regimes in theory and their implementation through national policies. Climate change litigation can play a vital role in filling this gap. It can be used as an important mechanism to shape climate policy and to seek redress from climate-related injuries.<sup>66</sup>

## 1.8 Overview of the Thesis

This thesis comprises seven chapters, highlighting the major topics and areas of discussion.

Chapter 1 sets out the research problems and objectives of the thesis. It examines the rationale behind the research and discusses the significance of the following review of policy, legal and economic instruments used to address climate change in Bangladesh.

Chapter 2 provides a background to the UNFCCC, Kyoto Protocol and post-Kyoto negotiations and their objectives. This discussion will focus on the international developments in climate change action and the principles of climate justice, which require sharing benefits and burdens

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<sup>63</sup> Emma Brindal, 'Asia Pacific: Justice for Climate Refugees' (2007) 32 *Alternative Law Journal* 240. Cited in Jacqueline Peel, 'Climate Change Law: The Emergences of New Legal Discipline' (2008) 32(3) *Melbourne University Law Review* 922.

<sup>64</sup> Jona Razzaque, *Public Interest Environmental Litigation in India, Pakistan and Bangladesh* (Kluwer Law International, 2004).

<sup>65</sup> Vidya A. Jacob, Bhavna Mishra and Rishav Ambastha, *Climate Change Litigation and Human Rights*, (LAWASIA, 2018), <<https://www.lawasia.asn.au/sites/default/files/2018-05/Academic-Paper-Climate-Change-Litigation-and-Human-Rights-22Mar2018.pdf>>.

<sup>66</sup> *Ibid.*



equitably and the acceptance of common but differentiated responsibilities in relation to reduction of GHG emissions.<sup>67</sup> It will evaluate the ability of these mechanisms to assist developing countries such as Bangladesh.

Chapter 3 begins with a geographical overview of Bangladesh, as a way of highlighting the nature of the problem. It then describes the two main instruments of the UNFCCC, adaptation and mitigation. Mitigation has enjoyed more attention than adaptation, but the cost of adaptation will be higher for the low-income countries. The chapter provides an overview of international adaptation and mitigation approaches under the Paris Agreement to contextualise the actions Bangladesh has taken domestically in accordance with international regimes. The mainstreaming of an adaptation approach in Bangladesh is discussed with specific reference to the Bangladesh Climate Change Strategy and Action Plan, which prioritises mitigation first, then adaptation. However, while Bangladesh is one of the most climate-vulnerable countries, it will be argued that Bangladesh should prioritise adaptation over mitigation. This chapter also focuses on the role of the central government and local governments in Bangladesh, including the roles of different environmental authorities in addressing climate change adaptation and whether the approaches currently being taken achieve climate justice outcomes.

Chapter 4 examines specific economic instruments that can be applied to achieve mitigation of climate change in Bangladesh based on a comparative study for economic development. This chapter is divided into two sub-chapters. The first part deals with the Kyoto Protocol and how it provides opportunities for developed and low-income countries to work together. This part focuses particularly on the development of CDM in Bangladesh and relevant jurisdictions. It emphasises the principle of climate justice, e.g., supporting the right to development. It also reviews the Kyoto Protocol and compares it with Paris Agreement, to find the best options for introducing the principles of climate justice in Bangladesh. At the same time, it also refers to the practice of other countries, including China, India and Sri Lanka, with the aim of informing mitigation measures in Bangladesh. The second sub-chapter deals with available options for Bangladesh, other than CDM, that may help Bangladesh to achieve mitigation of climate change as well as economic development.

Chapter 5 examines the role of NGOs, who are playing a vital role in addressing climate change adaptation in Bangladesh. This chapter focuses on Community-Based Adaptation, which

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<sup>67</sup> Mary Robinson Foundation – Climate Justice, *Principles of Climate Justice*, above n 37.

identifies the most vulnerable communities to climate change in the developing world. At the same time, it discusses how NGOs work on issues such as food security and resilience for the local community, thus advancing climate justice outcomes. It also focuses on challenges such as NGOs face in running their projects.

Chapter 6 examines specific policy and legislative approaches that have been taken to address climate change impacts in Bangladesh. It considers whether Bangladesh could and should adopt environmental rights as a part of the constitutional rights of the country. It focuses on the constitutional environmental rights of Bangladesh and other developing countries, and ways to protect human rights and achieve environmental justice as a form of climate justice. It also considers what current laws are in place to address climate change. There is, thus far, no specific legislation on climate change at the national level in Bangladesh; therefore, it is necessary to review the environmental and forestry law of the country to reveal how actions have been taken in Bangladesh to protect the natural environment and address the climate change issue. Case studies of relevant countries suggest that Bangladesh should reform its environmental and forestry law to address the climate change issue. Finally, as Bangladesh has no climate change policy for national guidance, the discussion turns to relevant policies in comparable jurisdictions, such as the climate change action plan of India and the national climate change policies of Pakistan, to illustrate potential strategies Bangladesh could employ to achieve climate justice.

Chapter 7 discusses the role of the Bangladeshi courts and tribunals in the enforcement and implementation of national law. Bangladesh has inadequate governmental institutional arrangements and is deficient in the implementation and enforcement of the laws and policies that could be utilised to address climate change. This chapter provides an overview of the Environment Courts of Bangladesh and makes recommendations for the reform of law and policies. It focuses on public interest environmental litigation and climate change litigation, again with case studies from relevant jurisdictions to inform policy development in Bangladesh.

The final chapter of this thesis presents the main research conclusions. After a critical overview and discussion of the preceding chapters, it turns to the practical and academic implications of the research. The limitations of the present governmental conditions and potential options for the policy-makers and the legislature of Bangladesh are discussed and directions for future research suggested.

# Chapter 2. Climate Justice in the Post-Kyoto Era

## 2.1 Introduction

The main concern of this chapter is to explore international climate change negotiations, which is inextricably linked to establishing climate justice. The ‘no harm rule’, is a principle of international Environmental Law, which means that individual countries may not cause any environmental harm beyond the limits of their countries. It is worth mentioning that the need for climate justice is not equal, as geographic distribution, economic development and demographics all influence climate change impacts. The most equitable approach, reflected in current regimes, recognises that developed countries make, or have made, the greatest contribution to climate change while developing countries suffer the most extreme consequences.<sup>68</sup> Climate change impacts directly on social and outcomes, and if international negotiations cannot establish climate justice they may undermine the rights of the vulnerable and poor. At a global level, the management of global climate change action is undertaken through a number of key mechanisms: the UNFCCC Convention, conferences of the Convention parties, the Kyoto protocol, the Bali Road Map and the Paris Agreement, which are discussed in detail below.

Climate change is not a new phenomenon, and efforts to combat climate change have been of global concern for more than three decades. In late 1980, the United Nations General Assembly identified climate change as one of the biggest challenges to the human development in the 21st century.<sup>69</sup> It is, therefore, relevant to consider the following: what is the current state of the overall climate protection programme in post-Kyoto scenario; and, how much progress has been made in pursuance of the key objectives of UNFCCC 1992 and the Kyoto Protocol?

Before discussing the performance of the UNFCCC and the climate protection programme, it is important to consider the background to these instruments, in terms of their initiation, goals, mechanism, participants and the post-Kyoto Protocol developments. Through this UNFCCC

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<sup>68</sup> International Bar Association, *Achieving Justice and Human Rights in an Era of Climate Disruption: International Bar Association Climate Change Justice and Human Rights Task Force Report* (IBA, 2014), <<https://www.ibanet.org/PresidentialTaskForceClimateChangeJustice2014Report.aspx>>.

<sup>69</sup> Daniel Bodansky, ‘The History of the Global Climate Change Regime’, in Urs Luterbacher and Detlef F. Sprinz (eds), *International Relations and Global Climate Change*, (The MIT Press, 2001), 23.

process, the member states have endorsed the importance of addressing human rights in the context of climate change. This chapter will discuss and evaluate the UNFCCC, the Kyoto Protocol framework, and KP mechanisms in terms of achieving the objectives of the Kyoto Protocol and UNFCCC, in particular from the perspective of developing countries to ensure climate justice.

## 2.2 Managing Global Climate Change

Scientists have been aware of the connection between greenhouse gases and environment since 1896, when Swedish scientist Svante Arrhenius explained the mechanism of climate change. Under normal circumstances, the Sun's radiation reaches Earth and is largely reflected into space.<sup>70</sup> But, when there are excessive levels of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases (GHG) in the Earth's atmosphere, the radiation—in the form of heat—is trapped, causing a greenhouse effect.<sup>71</sup> There are two kinds of greenhouse effect, natural and anthropogenic. Natural greenhouse effects, arising from the presence of naturally occurring GHGs, are responsible for the global mean temperature of the Earth throughout much of its history.<sup>72</sup> The second greenhouse effect is caused by humans. The increasing level of CO<sub>2</sub> and other GHG in the atmosphere through burning fossil oil, and other activities, trap more solar radiation which leads to an increasing mean temperature. This anthropogenic greenhouse effect is also termed 'global warming'. The primary objective of climate change initiatives is to control CO<sub>2</sub> and GHG emissions to reduce anthropogenic global warming.

Over the past decades, the impacts of global warming are becoming more evident. Since the 19th century, global mean temperatures have risen by 0.3–0.6° Celsius and are expected to increase by 2–3.5% by 2100.<sup>73</sup> The Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report assessed that the increase in global average surface temperature between 1951 and 2010 was caused by anthropogenic increases in GHG concentrations.<sup>74</sup> The

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<sup>70</sup>CINU Mexico. (2010). *Fact Sheet: An Introduction to the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol* (online), <[http://www.cinu.mx/minisitiio/cop16/unfccc\\_and\\_kyoto\\_protocol.pdf](http://www.cinu.mx/minisitiio/cop16/unfccc_and_kyoto_protocol.pdf)> (accessed 5 July 2017).

<sup>71</sup>S. Oberthür and S. Ott, *The Kyoto Protocol: International Climate Policy for the 21st Century* (Springer, 1st ed, 2017) 3–6.

<sup>72</sup> Australian Academy of Science, *The Enhanced Greenhouse Effect* (AAS, 2017), <<https://www.science.org.au/curious/earth-environment/enhanced-greenhouse-effect>>.

<sup>73</sup> Bill Hare, *Fossil Fuels and Climate Protection – The Carbon Logic*, (Greenpeace International, 1997), <[https://www.climateemergencyinstitute.com/uploads/Gpeace\\_carbonn\\_logic\\_95.pdf](https://www.climateemergencyinstitute.com/uploads/Gpeace_carbonn_logic_95.pdf)>

<sup>74</sup> *Climate Change 2014 Synthesis Report: Summary for Policymakers*, (Intergovernmental Panel on Climate Change, 2014) <[https://www.ipcc.ch/site/assets/uploads/2018/02/AR5\\_SYR\\_FINAL\\_SPM.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_SPM.pdf)>

increasing temperatures are causing a rise in sea level; by 2100, the sea level may have risen by between 15cm and 95cm, threatening coastal cities and islands.<sup>75</sup>

According to UNFCCC, Greenpeace and the Union of Concerned Scientists, in addition to rising sea levels the impacts of global warming include increases in destructive hurricanes, wildfire seasons, heat waves, forest deaths in mountains, severe droughts, heavy flooding, worse air quality, energy risks, destruction of coral reefs and rising risks of disease.<sup>76</sup> The FAO found in its report that climate change is one of the environmental drivers interacting with food systems and will affect not only food production but also processing, distribution and consumption.<sup>77</sup> Other adverse impacts will affect food security through soil carbon sink sequestration<sup>78</sup> and changing dynamics of natural pests through the emergence of new habitats.<sup>79</sup> While there are some scientists who dispute the certainty of climate science findings, such as Dr Kiminori Itoh, author of *Lies and Traps in the Global Warming Affair*,<sup>80</sup> and Australian Professor Ian Plimer, author of *Heaven and Earth*,<sup>81</sup> this thesis will accept the findings of IPCC that anthropogenic climate change is certain and that addressing climate change is an important global priority.

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) includes a long list of climate change effects observed by scientists around the world; sea-level rise is one of the most important issues, and the effects have already been felt in South Asia.<sup>82</sup> It is highly likely that due to rising sea levels throughout the 21<sup>st</sup> century and beyond, coastal systems and low-lying areas will gradually experience adverse effects, from coastal flooding and coastal erosion to submergence. The Fifth Assessment Report also notes that some ecosystems and many human systems are also significantly vulnerable to other climate change-

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<sup>75</sup>Oberthür and Ott, above n 71, 4.

<sup>76</sup>CINU Mexico, above n 70; Greenpeace International, *Negative Effects of Climate Change* (Greenpeace, 2017), <<http://www.greenpeace.org/international/en/campaigns/climate-change/impacts/>>; Union of Concerned Scientists, *Global Warming Impacts* (UCS, 2017), <<http://www.ucsusa.org/our-work/global-warming/science-and-impacts/global-warming-impacts>>; L. Rajamani, 'From Berlin To Bali And Beyond: Killing Kyoto Softly?' (2008) 57(04) *International and Comparative Law Quarterly* 909.

<sup>77</sup>The Food and Agriculture Organization, *Climate change and Food Security*, (FAO, 2012), <<http://www.fao.org/elearning/course/FCC/EN/pdf/learnernotes0854.pdf>>

<sup>78</sup>R. Lal, 'Soil Carbon Sequestration Impacts on Global Climate Change and Food Security' (2004) 304(5677) *Science* 1623.

<sup>79</sup>J. Logan, J. Regniere and J. Powell, 'Assessing the Impacts of Global Warming on Forest Pest Dynamics' (2003) 1(3) *Frontiers in Ecology and the Environment* 130.

<sup>80</sup>Dr. Kiminori Itoh's new book is available (currently in Japanese only) at <<http://climaterrealists.com/index.php?id=1461>>

<sup>81</sup>Ian Plimer, *Heaven and Earth: Global Warming, the Missing Science* (Taylor Trade Publishing, 2009).

<sup>82</sup>IPCC, above n 6.

related irregularities—heat waves, droughts floods, cyclones and wildfires.<sup>83</sup> The potential results include disruption of food production and water supply, damage to infrastructure and settlements, disease and death.<sup>84</sup> Ecologically, migration patterns of freshwater and seawater species are also changing because of ongoing climate change. According to Mary Robinson, the impacts of climate change are undermining a whole range of human rights: to food, safe water, health and education, among others.<sup>85</sup>

### **2.3 Background of Adaptation and Mitigation Measures**

This chapter discusses the background of adaptation and mitigation to climate change and makes clear how the international community addresses climate change. Article 2 of the UNFCCC sets a long-term objective of limiting global warming. To that end, the Kyoto Protocol introduced a binding commitment on 37 industrialised countries and the European Community to reduce their carbon emissions by an average of five per cent against 1990 levels over the period 2008–2012. Despite this, the IPCC reports that the global average temperature is rising at a rate at the top of the predicted range, while the sea level is rising faster than predicted. As discussed in Chapter 1, in 2012, the Parties to the Protocol met at COP 18 in Doha and agreed on a second commitment period from 2013 to 2020. Japan, New Zealand and Russia, among others, have refused to sign up to the second commitment period, however, and it did not set binding targets for the USA.<sup>86</sup> Nor did it impose legally binding targets for the fast-growing developing countries such as India and China. In the absence of these countries, the eventual success of this agreement is questionable.

As mentioned above, the UNFCCC has introduced two main instruments to address climate change, with three policy options: mitigation, adaptation and technology or geoengineering. Mitigation addresses the emission of GHG into the atmosphere in the first place; geoengineering takes place when the GHG concentration increases in the atmosphere; and

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<sup>83</sup> IPCC, above n 28.

<sup>84</sup> Ibid.

<sup>85</sup> Mary Robinson, 'Climate change is a 'serious issue of human rights, *Climate Change Watch* (online), 19 September 2013, <<http://www.climatechangenews.com/2013/09/19/mary-robinson-climate-change-is-a-serious-issue-of-human-rights/>>.

<sup>86</sup> Greenpeace, *What Happened in Doha? Analysis of the Conduct and Outcome of the COP 18 Climate Negotiations* (Greenpeace, 2012), <<http://www.greenpeace.org/international/Global/international/briefings/climate/Doha2012/QandAoutcomeDoha.pdf>>.

adaptation addresses the impacts after climate change has occurred. This paper will discuss the UNFCCC's two main instruments to manage climate change, mitigation and adaptation.

Although there is no specific definition of adaptation and mitigation, the Fourth Assessment Report of the IPCC has defined those measures this has already been discussed in Chapter 1. Article 2(a) of the UNFCCC states that 'each of these parties shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs.'<sup>87</sup> On the other hand, under Article 4 of the UNFCCC, 'the developed country parties and other developed parties included in Annex II shall also assist the developing country parties that are particularly vulnerable to the adverse effects of climate change in meeting cost of adaptation to those adverse effects'.<sup>88</sup> Mitigation limits greenhouse gases such as carbon dioxide and methane to prevent, or at least reduce, further climate change; adaptation accepts that some degree of climate change is already inevitable and seeks to limit the negative impacts.<sup>89</sup>

In 2001, the IPCC Third Assessment Report demonstrated that climate change impacts are already occurring. For the first time, the IPCC used observations over the previous 10 years rather than working solely on predictions.<sup>90</sup> However, while adaptation and mitigation are both set out in the UNFCCC as responses to anthropogenic climate change, the Eleventh Conference of the Parties (COP 11) at Montreal in 2005 focused on adaptation.

Under Article 12 of the Kyoto Protocol, mitigation has been linked to funding for developing countries through the creation of the CDM—discussed in detail in Chapter 4.<sup>91</sup> COP11 also tried to attract business interest in CDMs so that developed countries and developing countries could participate to combat climate change as well as participate in socio-economic growth. However, by that time 800 billion tonnes of greenhouse gases, almost 80% of which were

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<sup>87</sup> UNFCCC, art 2(a), <<https://unfccc.int/resource/docs/convkp/conveng.pdf>>.

<sup>88</sup> UNFCCC, art 4, <<https://unfccc.int/resource/docs/convkp/conveng.pdf>>.

<sup>89</sup> Jessica M. Ayers and Saleemul Huq, *The Value of Linking Mitigation and Adaptation: A Case Study of Bangladesh* (IIED, 2008) <<http://pubs.iied.org/pdfs/G02370.pdf>>.

<sup>90</sup> IPCC, *Climate Change 2001: Synthesis Report, Contribution of Working Groups I, II and III to the Third Assessment Report of the Intergovernmental panel on Climate Change*, R.T. Watson and the Core Writing Team, eds. (Cambridge, UK: Cambridge University Press, 2001), 365. Cited in Jessica Ayers and Tim Forsyth, 'Community Based Adaptation to Climate Change' (2009) 51(4) *Environment: Science and Policy for Sustainable Development* 22 <<http://www.tandfonline.com/doi/pdf/10.3200/ENV.51.4.22-31>>.

<sup>91</sup> Kyoto Protocol, art 12.

emitted by developed countries, had been stored in the atmosphere.<sup>92</sup> As a result, the global temperatures had already increased and Arctic ice had started melting. At the Thirteenth Conference of the Parties, adaptation formed one of the five steps of the Bali Roadmap, which points the way to a post-Kyoto policy framework to include adaptation together with mitigation, technology cooperation and finance.<sup>93</sup> The Marrakech Accords have increased the emphasis on climate justice as part of the role of developing countries in decisions on adaptation.

Overall, mitigation has attracted most attention since the UNFCCC was drafted, as it was more important from the beginning. Even over the past decade, debates on climate justice have also focused on mitigation of greenhouse gas emissions because of the importance of promoting international action to reduce the causes of human-induced climate change.<sup>94</sup> Many of the important discussions on climate justice ignore adaptation to climate change impacts.<sup>95</sup> One of the main reasons for ignoring adaptation may be the fear that a focus on adaptation would decrease international efforts to mitigate climate change. Its omission, however, has created injustices for those vulnerable countries that have no other than adaptation measures to address climate change.

Policy-makers have begun to pay more balanced attention to adaptation and mitigation, which have to be seen as equally significant in addressing climate change. International negotiations have also encouraged linking adaptation and mitigation, through the Adaptation Fund financed by a two per cent levy on CDMs (discussed in detail in Chapter 4). The IPCC's Working Group II has developed assessments of climate change impacts, adaptation and vulnerability, and its Fourth Assessment Report has focused on adaptation.

As adaptation measures depend on the nature and extent of climate change impacts at the local and regional level it is difficult to estimate adaptation costs, but policy-makers would need to recognise that adaptation offers great benefits. To incorporate this approach—i.e., recognising the need for locally appropriate national adaptation policies—the UNFCCC set out the process

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<sup>92</sup> Jyoti Parikh 'India and Climate Change: Mitigation, Adaptation and A Way Forward' in Ernesto Zedillo (ed) *Global Warming Looking Beyond Kyoto* (Brooking Institution Press, 2008) 207.

<sup>93</sup> J. Ayers and D. Dodman, 'Climate Adaptation and Development: The State of the Debate,' *Progress in Development Studies* (accepted 2009). Cited in Ayers and Forsyth, above n 90.

<sup>94</sup> Jouni Paavola and W. Neil Adger, 'Fair Adaptation to Climate Change' (2006) 56(4) *Ecological Economics* 594, <<https://www.sciencedirect.com/science/article/pii/S0921800905001187>>.

<sup>95</sup> *Ibid.*



of the National Adaptation Program of Action (NAPA). NAPA ‘provides a process for the least developed countries (LDCs) to identify priority activities that respond to their urgent and immediate needs with regards to adaptation to climate change’—those for which ‘further delay could increase vulnerability or lead to increased costs at a later stage’.<sup>96</sup> Through the NAPA programme, LDCs identify and communicate urgent adaptation activities, focusing on immediate adaptation needs in agriculture and food security, water resources coastal zones and early warning and disaster management.<sup>97</sup> However, while NAPAs focus on urgent and immediate needs, no NAPA project has been completed yet; indeed, there is no specific mechanism for implementing those projects. The fact is that adaptation policies gained legitimacy gradually within international negotiations. According to Schipper, there is a lack of specific definition, made more confusing by its association with other aspects of the Climate Convention.<sup>98</sup> On the other hand, mitigation has a clear definition agenda and targets and clear funding regimes.

### *2.3.1 The Adaptation Gap*

Since climate change impacts are not equally distributed, nor are adaptation needs. Least developed countries, developing countries and small island developing countries are likely to be more vulnerable and therefore have greater adaptation needs. In such cases, failure to implement early adaptation needs will have a disproportionate impact and extend the current adaptation gap. The United Nations Environment Programme (UNEP) published a report in 2014 providing preliminary assessment of the adaptation gap. It defined the adaptation gap as ‘the difference between actually implemented adaptation and societally set goals, determined largely by preferences related to tolerated climate change impacts, and reflecting resources limitations and competing priorities’.<sup>99</sup> But it is a great challenge to estimate the adaptation gap because there is no globally agreed estimation for adaptation. The UNEP report found gaps in areas such as funding, technology and knowledge. The IPCC Fifth Assessment Report also highlighted finance and technology for realising adaptation potential and possibly reducing risk and impacts. This report has predicted a major adaptation funding gap after 2020 unless new

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<sup>96</sup> UNCC, National Adaptation Programmes of Action (UN, 2016),

<[http://unfccc.int/adaptation/workstreams/national\\_adaptation\\_programmes\\_of\\_action/items/7567.php](http://unfccc.int/adaptation/workstreams/national_adaptation_programmes_of_action/items/7567.php)>.

<sup>97</sup> Irene Suarez and Progresum J. Huang, *Addressing Adaptation in a 2015 Climate Agreement* (Center for Climate and Energy Solutions, 2015), <<https://www.c2es.org/docUploads/adaptation-brief-06-2015.pdf>>.

<sup>98</sup> E. Lisa F. Schipper, ‘Conceptual History of Adaptation in the UNFCCC Process’ (2006) 15(1) *Review of European Community and international Environmental Law* 82.

<sup>99</sup> UNEP, *The Adaptation Gap: A Preliminary Assessment Report* (UN, 2014), <[http://climateanalytics.org/files/unep\\_adaptation\\_gap\\_report\\_2014.pdf](http://climateanalytics.org/files/unep_adaptation_gap_report_2014.pdf)>.

and additional finance for adaptation becomes available.<sup>100</sup> The Adaptation Gap Report 2014 also indicated that by 2030 the costs of adaptation could be two to three times higher than the range cited by the IPCC, and possibly four to five times higher by 2050.<sup>101</sup> However, in 2015 the UNEP also published an updated report on the Adaptation Finance Gap which stated that enhanced mitigation action is essential to limit adaptation costs.<sup>102</sup> As a result, the Paris Agreement has provided co-benefits to adaptation and given priority to adaptation finance to achieve global goals on adaptation. This thesis will argue that Bangladesh should take advantage of this increasing focus on adaptation.

## 2.4 Climate Justice: Implications of Mitigation and Adaptation

As discussed in Chapter 1, the cumulative impact of climate change on the natural world, individuals, communities and states has implications for climate justice. To reduce GHG emissions, to mitigate the impact of climate change and to adapt to its unavoidable effects, action is needed. Climate change also undermines human rights and will create more injustice if mitigation and adaptation to climate change are not taken into consideration. Article 4.3 of the Resolution 2/2014 stated that ‘states shall protect the climate system as a matter of urgency, keeping in mind that to the extent they delay taking adequately ambitious mitigation action to meet the multilaterally agreed global goal, the locus of action will shift of necessity, to adaptation and the burden of responsibility to the most vulnerable and least responsible states’.<sup>103</sup> The IPCC and UNFCCC focus is on adaptation and mitigation, which are needed to achieve climate justice but which can create additional justice concerns. The IPCC Fifth Assessment Report stated that

mitigation and adaptation can positively and negatively influence the achievement of other social goals, such as those related to human health, food security, biodiversity, local environmental quality, energy access, livelihoods, and equitable sustainable development; and vice versa, policies towards other social goals can influence the achievement of mitigation and adaptation objectives.<sup>104</sup>

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<sup>100</sup> Ibid.

<sup>101</sup> Ibid.

<sup>102</sup> Ibid.

<sup>103</sup> Lavanya Rajamani et al, *Report of the International Law Association's Committee on Legal Principles Relating to Climate Change (Washington, 2014)* (International Law Association, 2014), <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2461556](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2461556)>.

<sup>104</sup> Ottmar Edenhofer et al, *Summary for Policymakers: The IPCC Fifth Assessment Report (AR5)* (IPCC, 2014), <[https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc\\_wg3\\_ar5\\_summary-for-policymakers.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policymakers.pdf)>.

This chapter will explain the UNFCCC, which is the main international treaty governing the response to climate change, and how it deals with climate justice mechanisms to mitigate emissions and adapt to the effects of climate change. Though the UNFCCC itself does not use the term directly, the principle of ‘common but differentiated’ responsibilities can be seen as the root of the concept of climate justice. This chapter focuses on how the climate justice concept has gradually developed in the international arena. This concept allows us to view climate change and efforts to combat it as having ethical implications, and to consider how these issues relate to wider justice concerns<sup>105</sup> and mitigation.<sup>106</sup>

This thesis has mentioned that there are three climate justice mechanisms, but has focused on the more traditional approaches of adaptation and mitigation. The third mechanism, a joint mitigation and adaptation mechanism, is a non-market-based approach to the sustainable management of forests. The Joint Mitigation and Adaptation Mechanism for Integral and Sustainable Management for Forests and Mother Earth has the goal of effectively advancing mitigation of, and adaptation to, climate change through holistic management and sustainable use of forests and the life systems of Mother Earth, promoting conservation and restoration of the life system and protection of biodiversity, facilitating a transition towards better land use through development of production systems.<sup>107</sup> This mechanism, completely opposite to the neoliberal concept, is based on the ‘green economy’ and respects indigenous, native and present populations but, unlike REDD+, has not received much international approval. The REDD+ approach is unable to address the issue of joint mitigation and adaptation.

## **2.5 United Nations Framework Convention on Climate Change (UNFCCC)**

In pursuance of the objective of ‘stabiliz[ing]... greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system’, the United Nations Framework Convention on Climate Change (UNFCCC) was

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<sup>105</sup> International Bar Association, *Achieving Justice and Human Rights in an Era of Climate Disruption: International Bar Association Climate Change Justice and Human Rights Task Force Report* (IBA, 2014), <<https://www.ibanet.org/PresidentialTaskForceClimateChangeJustice2014Report.aspx>>.

<sup>106</sup> Reid et al, above n 410.

<sup>107</sup> Plurinational State of Bolivia, *Joint Mitigation and Adaptation Mechanism for the Integral and Sustainable Management of Forests and Mother Earth: Implementation Progress in the Plurinational State of Bolivia* (UN, 2014), <[https://unfccc.int/files/cooperation\\_and\\_support/financial\\_mechanism/standing\\_committee/application/pdf/annex\\_2.\\_implementation\\_joint\\_mitigation.pdf](https://unfccc.int/files/cooperation_and_support/financial_mechanism/standing_committee/application/pdf/annex_2._implementation_joint_mitigation.pdf)>.

established by 197 signatories at the Earth Summit in Rio Di Janeiro in May 1992<sup>108</sup> and came into force in March 1994.<sup>109</sup> The establishment of the Convention was the outcome of multiple climate change negotiations. The history of the UNFCCC began in 1979, when the first World Climate Conference (WCC) was organised.<sup>110</sup> The second major success was achieved in 1988, when the Intergovernmental Panel on Climate Change (IPCC) was established by the collaboration of the World Meteorological Organization (WMO) and the UN Environment Programme. Two years later, in 1990, the second World Climate Conference (WCC) took place, which was important not just as the sequel to the first conference but because it was at the second WCC that calls for a global treaty on climate change emerged, leading to negotiations that resulted in the establishment of the UNFCCC.

The primary aim of the UNFCCC is ‘to protect the climate system from dangerous human interference’.<sup>111</sup> It has formulated a number of ‘soft’ law principles: common but differentiated responsibility, the precautionary principle, special consideration for vulnerable developing countries, the polluter-pays principle and the promotion of sustainable development. Article 4(3) of the UNFCCC is based on the principle of common but differentiated responsibilities; that is, that developed country parties are responsible for providing financial resources, environmentally sound technology and adaptation assistance to participating developing country parties.<sup>112</sup> Later, the 2002 Bali Principles of Climate Justice also affirmed (in Principle 4) that ‘governments are responsible for addressing climate change in a manner that is both democratically accountable to their people and in accordance with the principle of common but differentiated responsibilities’.<sup>113</sup>

The general goal, set out in Article 2 of the UNFCCC, is to stabilise greenhouse gas concentrations in order to promote sustainable development. The Convention itself has no binding limitation on GHG emissions. According to the preamble of the Convention, the obligations are specifically recognised as common but differentiated responsibilities, meaning

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<sup>108</sup>E. Diniz, ‘Lessons from the Kyoto Protocol’ (2007) 10(1) *Ambiente & Sociedade* 27.

<sup>109</sup>European Commission, *Kyoto Protocol* (online, 2003), <[http://europa.eu/rapid/press-release\\_MEMO-03-154\\_en.htm?locale=en](http://europa.eu/rapid/press-release_MEMO-03-154_en.htm?locale=en)>; UNCC, *Introduction To The Convention* (UN, 2017), <[http://unfccc.int/essential\\_background/convention/items/6036.php](http://unfccc.int/essential_background/convention/items/6036.php)>.

<sup>110</sup>Florencia Nino, *Towards A Climate Agreement: UN And Climate Change* (UN, 2017), <<http://www.un.org/climatechange/towards-a-climate-agreement/>>.

<sup>111</sup>UNCC, *What Is the United Nations Convention on Climate Change?* (online, n.d.), <[http://unfccc.int/essential\\_background/convention/items/6036.php](http://unfccc.int/essential_background/convention/items/6036.php)>.

<sup>112</sup> Nicola Durrant, *Legal Responses To Climate Change* (The Federation Press, 2010) 41.

<sup>113</sup> International Climate Justice Network.. *Bali Principle of Climate Justice* (Business and Human Rights Resource Center, 2002), <<https://business-humanrights.org/en/bali-principles-of-climate-justice>>.

greater responsibilities for mitigation are imposed on developed countries. Article 3 also states that the parties should adopt precautionary measures to anticipate, prevent and minimise the causes of climate change and mitigate the adverse effects of it.<sup>114</sup>

The UNFCCC, along with the Kyoto Protocol, also helps the countries in meeting their commitments by producing information for them and providing assistance in adopting development techniques.<sup>115</sup> Industrialised countries are expected to take the lead to mitigate climate change impacts and promote climate justice which are presented at the Conference of Parties (COP). Specific details will be discussed in the following section.

## **2.6 Conference of the Parties (COP)**

The Conference of Parties (COP) is an annual event convened under the UNFCCC. The first COP took place in Berlin in 1995. Under the UNFCCC, Article 7, the COP is the supreme body under the Convention and has the mandate to (a) implement the aim, objectives and instruments of the Convention and COP, (b) examine the obligations and necessary arrangements of the COP under the Convention, (c) encourage and facilitate information exchange among parties regarding Convention and Protocol aims, implementation performance, responsibilities, capabilities and commitments, (e) coordinate and guide the parties regarding measures for combating climate change, (f) facilitate the mobilisation of financial resources, (g) assess implementation and its effects in terms of social, financial and environmental benefits along with the progress towards the objectives, (i) establish subsidiaries, review their performance and report regarding the implementation of the Convention, and (j) make recommendations for improvement and report to the parties regularly.<sup>116</sup>

To date there have been 23 conferences, the most recent in Bonn, Germany, in November 2017. The next COP is scheduled to be held in Katowice, Poland, in 2018.

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<sup>114</sup> *United Nations Framework Convention on Climate Change* (1992), FCCC/INFORMAL/84, art 3, <<http://unfccc.int/resource/docs/convkp/conveng.pdf>>.

<sup>115</sup> CINU Mexico, above n 70.

<sup>116</sup> *United Nations Framework Convention on Climate Change* (1992), FCCC/INFORMAL/84, <[http://unfccc.int/files/essential\\_background/convention/background/application/pdf/convention\\_text\\_with\\_annexes\\_english\\_for\\_posting.pdf](http://unfccc.int/files/essential_background/convention/background/application/pdf/convention_text_with_annexes_english_for_posting.pdf)>.

### *2.6.1 Conference of the Parties Serving as the Meeting to the Protocol*

Structurally, the Convention and its protocols are totally separate, and there are some countries that are parties to the Convention but not signatories to a specific protocol. The Parties to the Protocol are addressed in the COP. However, all states that are party to the Kyoto Protocol are represented at the Conference of the Parties, with states that are not parties participating as observers.<sup>117</sup> Parties to the Convention that are not Parties to the Protocol are able to participate in the CMP as observers without the right to take decisions. The CMP observes and oversees the implementation of the Kyoto Protocol and takes decisions to uphold its effective implementation. The first CMP was organised in 2005 in tandem with COP11 in Montreal, Canada. Likewise, all subsequent CMPs have been held concurrently with the annual COP; when COP23 was held in Bonn in 2017, so was CMP-13 for the non-Parties to the Protocol.

## **2.7 The Kyoto Protocol and Its Instruments**

The Kyoto Protocol (which emerged from COP3) is widely known as a framework for combating climate change.<sup>118</sup> Complementing the UNFCCC, the Kyoto Protocol was established by treaty in 1997 and signed by 192 UNFCCC members. Under the Protocol, the European Union (EU) countries and 37 other industrial countries committed to reduce their CO<sub>2</sub> and GHG emissions, against the 1990 level, by an average of five per cent from 1990 levels from 2008 until 2012 (the first commitment period). The Kyoto Protocol is a significant treaty that was achieved as a result of compromises between developed and developing nations. In fact, the UNFCCC and Kyoto Protocol was the only multilateral legal regimes addressing the issue of climate change<sup>119</sup> before the Paris Agreement. The United Nations Environment Programme (UNEP) describes the Protocol as an agreement that sets binding targets for industrialised countries for the reduction of GHG emissions.<sup>120</sup>

It is notable that the Kyoto Protocol is also based on the principle of ‘common but differentiated responsibility’ (CBDR). The idea of CBDR is that, on the issue of climate change, there have

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<sup>117</sup> Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) (2018) United Nations Climate Change <<https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-serving-as-the-meeting-of-the-parties-to-the-kyoto-protocol-cmp>>.

<sup>118</sup>European Commission, above n 109.

<sup>119</sup> Rajamani, above n 103, 909.

<sup>120</sup>UNEP (2017). *The Emissions Gap Report 2016. A UNEP Synthesis Report* (UNEP, 2017), 8.

are significant differences among countries in the world,<sup>121</sup> with rich and poor countries contributing differently to climate change and also differing in terms of capabilities and resources to tackle the issue of climate change. This is why the Rio Declaration stated that countries, while having common problems, have different responsibilities. Developed countries, due to their resources and capabilities, are given responsibilities (emission reduction targets), but developing countries are given exemptions in terms of emission reduction targets. According to Honkonen, the responsibilities of states are also built according to the CBDR principle.<sup>122</sup> The primary responsibility of states should be the protection of the environment at all levels. The secondary focus should be monitoring events and circumstances contributing to the problem along with improving capabilities to overcome the problem.

The Kyoto Protocol introduced some flexible mechanisms to reduce GHG emissions at a national level to meet targets through national measures. These three market-based mechanisms are joint implementation, clean development and emissions trading which are relevant measures for developed and developing countries to reduce carbon emission.

### *2.7.1 Joint Implementation (Article 6)*

Joint implementation (JI) is defined in Article 6 of the Kyoto Protocol. It allows an industrialised country (Annex B party) with a emission reduction or limitation commitment under the Protocol to earn Emission Reduction Units (ERUs), which can be counted towards meeting its Kyoto target, from an emission reduction or emission removal project in another Annex B party.<sup>123</sup> This offers a flexible and cost-efficient way to fulfil the first country's commitments while the second party gets benefits from foreign investment and technology transfer, in addition to emission decreases once the project is functional. As Catrinus Jepma states, the JI mechanism is an attractive solution because it leads to cost minimisation and it reduces the global cost of achieving emission reduction targets.<sup>124</sup> This change of location neither influence the emission reduction outcomes, nor the quality.<sup>125</sup>

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<sup>121</sup> Centre for International Sustainable Development Law, *The Principle Of Common But Differentiated Responsibilities: Origins And Scope* (CISDL, 2017).

<sup>122</sup> Tuula Honkonen, 'The Principle of Common But Differentiated Responsibility In Post-2012 Climate Negotiations' (2009) 18(3) *Review of European Community & International Environmental Law* 18.

<sup>123</sup> UNCC, *Joint Implementation* (UN, 2017), <[http://unfccc.int/kyoto\\_protocol/background/items/2882.php](http://unfccc.int/kyoto_protocol/background/items/2882.php)>.

<sup>124</sup> Catrinus J. Jepma, *The Feasibility Of Joint Implementation* (Kluwer Academic Publishing, 1995).

<sup>125</sup> David Pearce, 'Joint Implementation: A General Overview', in David Pearce (ed), *The Feasibility of Joint Implementation* (Kluwer Academic Publishers, 1995) 15.

However, there are some limitations or conditions on this method. First, the host country does not get any of the emission reduction credits (at least until the project is operational). Second, the sponsoring country must comply with a range of requirements and processes, such as registration of emission units and keeping accurate inventories. Third, the sponsoring country must bear all the costs incurred in the host country.<sup>30</sup> Another constraint of JI is that the emission reductions to be achieved in the host country must be sufficient to match the emission reduction target being ‘avoided’ by the sponsoring country.<sup>31</sup> However, the cost of building and operating projects is often lower in transitioning economies, so investing in or sponsoring such projects is often cost-effective.

According to Fankhauser and Lavric, the role of transitioning economies is vital in joint implementation. However, the investment decisions of carbon investors looking for opportunities in transitioning economies or regions are not being influenced solely by the cost advantages. The carbon investors also evaluate the business climate of transitioning economies in terms of political and economic stability, regulatory systems, JI infrastructure and process capacity.<sup>126</sup> In some cases, the countries with the cheapest JI opportunities may have unstable business environments, for example, and carbon investors will have to make a trade-off between cost advantages and business climate. Ideally, carbon investors need to find a median point, where both the factors are favourable to some extent. Researchers have suggested that Croatia, Ukraine, Russia, EU accession countries and the eastern EU region (Romania, Bulgaria and the Slovak Republic) offer good opportunities for JI projects because they offer an acceptable business climate and reasonable cost advantages.

In summary, JI helps those countries (Annex B countries) with binding greenhouse gas emissions targets under Kyoto Protocol. Bangladesh, however, derives no benefits from JI projects because it has no binding GHG emission targets and is not an Annex B party. Accordingly, JI will not be discussed further in this work.

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<sup>126</sup> Samuel Fankhauser and Lucia Lavric, ‘The Investment Climate for Climate Investment: Joint Implementation In Transition Countries’ (2003) 3(77) *Climate Policy* 3.



### 2.7.2 Clean Development Mechanism (Article 12)

The CDM is another cost-effective and market-based tool to encourage the private sector and developing countries to contribute to emission reduction efforts.<sup>127</sup> The nature of the method makes it a mitigation tool for combating climate change.<sup>128</sup> In this method, industrialised countries can earn credits by making sustainable investments that reduce CO<sub>2</sub> and GHG emissions in developing countries. This mechanism is another way for industrialised countries to meet their commitments to CO<sub>2</sub> and GHG reductions without focusing within their own countries.<sup>129</sup> Thus, the CDM resembles the JI system, but the host country may be a developing country rather than an Annex B country. This is important given that, while under the Kyoto Protocol developing countries (i.e., non-Annex 1 countries) are not allocated emission reduction targets, these developing countries are nonetheless producing emissions, especially India and China. According to the World Health Organization, New Delhi, the capital of India, is the eleventh-most polluted city in the world, with other Indian cities— Patna, Gwalior, Allahabad and Raipur—appearing in the top ten.<sup>130</sup> Developing countries, often lacking in institutional capacity, are also less equipped to respond to environmental problems without international investment.<sup>131</sup>

The aim of the CDM is to accomplish the goals and objectives of the Kyoto Protocol and UNFCCC. At the functional level, the key objectives of the CDM are (a) to steer sustainable investments to developing countries to assist in achieving sustainable development, and (b) to reduce the high cost of meeting emission targets for developing countries by providing a cost-effective mechanism to achieve their emission targets.<sup>132</sup>

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<sup>127</sup> Michael Gillenwater and Stephen Seres, *Clean Development Mechanism: A Review of the First International Offset Program* (Pew Center on Global Climate Change, 2010), <<https://www.c2es.org/site/assets/uploads/2011/03/clean-development-mechanism-review-of-first-international-offset-program.pdf>>, 6.

<sup>128</sup> Anita Talberg and Leslie Nielson, *The Kyoto Protocol's Clean Development Mechanism* (Parliament of Australia, 2009), <[http://www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/pubs/BN/0809/KyotoProtocolCDM](http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BN/0809/KyotoProtocolCDM)>.

<sup>129</sup> CINU Mexico, above n 70.

<sup>130</sup> Oliver Smith, 'Is Delhi the Most Polluted City on Earth? Not Quite', *The Telegraph* (online), 9 November 2017), <<https://www.telegraph.co.uk/travel/destinations/asia/india/articles/delhi-most-polluted-city-in-the-world/>>.

<sup>131</sup> K., Begg, T. Anderson, S. Parkinson and Y. Mulugetta, *Issues for the Clean Development Mechanism*. CES Working Paper 04/99 (Centre for Environmental Strategy, University of Surrey, 1999) 2.

<sup>132</sup> Talberg and Nielson, above n 128.

The benefits of the CDM mechanism are similar to those of the JI mechanism. CDM benefits developing countries through (a) direct foreign investment in their infrastructure, (b) access to better technology, and (c) environmental benefits such as reduction of emissions and decreased environmental degradation. Industrialised countries are required to meet their own emission targets, which they can do in one of three ways: (a) investing in their own country, where land, labour and technology is expensive; (b) investing in other industrialised or transitioning countries—where cost, although it may be lower, is still often significant—under the JI mechanism; or (c) investing in developing countries through the CDM. As developing economies offer low land and labour costs, the CDM provides an option that generates emission credits at a lower cost than investing in projects in their own countries. This is, therefore, a relevant economic instrument for Bangladesh.

In short, the CDM appears to offer effectiveness, efficiency and flexibility and to create a win–win situation for the sponsor (industrial country) and host (developing country). Whether it is effective, however, depends upon whether it contributes to the goals and objectives of the Kyoto Protocol. To assess this, it is necessary to examine the performance of the CDM.

The planners of the CDM highlight its five defining features.<sup>133</sup> First, the CDM is a cost-effective way to reduce the GHG emissions, especially for the industrial countries. As discussed above, industrialised countries are legally bound to meet their emission reduction commitments, which is expensive when they develop sustainable projects in their own countries. The CDM allows them to meet these emission commitments at less cost by investing in developing countries. Second, the CDM provides flexibility, because the industrialised countries can meet emission reduction commitments either by investing in their own countries or in other (developing) countries. Third, the same benefit in terms of emission reduction is achieved whether measures are taken in the home country or in the host country. Fourth, successful execution of projects under the CDM will provide emission credits to the industrialised country, which can be used in three ways: (a) adjusting emission reduction targets, (b) saving into a credit bank for future use, or (c) selling on to another industrial country in accordance with the emission trading system under the Kyoto Protocol. Finally, another

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<sup>133</sup>UNCC, *The Clean Development Mechanism* (UN, 2017), <[http://unfccc.int/kyoto\\_protocol/background/items/2881.php](http://unfccc.int/kyoto_protocol/background/items/2881.php)>.

feature of CDM is that it is not only available to governments; private investors or private companies can also make investments and earn profits under the CDM mechanism.

Projects under the CDM are supervised by a CDM Executive Board, which ensures that all processes—development of the proposal, approval of the recipient government, approval of donors, allocation of certified emission credits to the industrialised countries or private investors and other matters—are performed according to the guidelines of the Kyoto Protocol.<sup>40</sup> To qualify for the establishment of a board, a project must meet several criteria, verified through due process and documentation: (a) the ability to reduce emissions, (b) the approval of all the parties, (c) a long-term orientation, and (d) reliability and measurability.

The CDM has been the target of considerable criticism. According to one study (which examined 16 CDM projects in terms of their contributions to CDM objectives such as technology transfer, reducing emissions and contributing to sustainable development), 72% of CDM projects are dominated by China, India and Brazil, and while these have been successfully reducing emissions by up to 77% in the host country, their contribution to sustainable development was a little as one per cent.<sup>134</sup> The question may arise, why is the contribution to sustainable development as low as one per cent? One reason would be that the Kyoto protocol has neither explicitly defined sustainable development nor specified how it can be achieved alongside the CDM. Based on these findings, it appears that while CDM projects are largely able to fulfil the first objective of the Kyoto Protocol, the objective of sustainable development has not been achieved. This raises the question of why full performance has not been achieved. Are the problems on the implementation side or with the mechanism itself? If the latter, can the mechanism be rectified?

Another study has found that the effectiveness of the CDM is strongly influenced by transaction costs, the size of CDM projects and institutional rigidity.<sup>135</sup> When a CDM project is initiated, it involves significant costs for project planning, registration, baseline development, verification and certification. As the implementation costs increase, they also increase the transaction cost of the project, which influences the feasibility of CDM projects. The research findings also show the impact of institutional rigidity, especially in the host country, such as

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<sup>134</sup> UNCC, *The Contribution of the Clean Development Mechanism Under the Kyoto Protocol to Technology Transfer* (UN, 2010), <<https://cdm.unfccc.int/Reference/Reports/TTreport/TTrep10.pdf>> 21.

<sup>135</sup>A. Michaelowa and F. Jotzo, 'Transaction costs, institutional rigidities and the size of the clean development mechanism' (2005) 33(4) *Energy Policy* 511.

delays, additional levies by governments and other institutional barriers. As the problems or barriers increase, the cost of the project goes up. These factors have tended to reduce the size of CDM projects in developing countries. This study concludes that the demand for CDM exists, but that relatively few CDM projects have been completed due to transaction cost and institutional rigidity; to address this, enhanced cooperation between governments is needed. Chapter 4 of this thesis will discuss scope, structures and potential areas that create opportunities for CDM projects in Bangladesh.

### *2.7.3 Emission Trading (Article 17)*

Emission trading (ET) is a mechanism under the Kyoto Protocol through which countries can trade (buy or sell) their emission allowances (assigned amount units, or AAUs) with each other in the carbon market.<sup>136</sup> Like the preceding two mechanisms, ET is recognised as an effective method for emission reduction. According to the International Emission Trading Association (IETA), ET provides several benefits, including emission reduction, low-cost solutions, incentivising innovation, flexibility, effective cap-and-trade policy and environmental sustainability.<sup>137</sup> The effectiveness of ET has been demonstrated in a case study of the power sector's switch to gas-based generation plants in place of coal.<sup>138</sup> It has also been shown in unexpected areas, such as the cement industry; cement production contributes about eight per cent of EU ETS emissions, arising both from burning fuel to provide heat for the kilns and from the chemical processes that convert limestone into clinker.<sup>139</sup> In the EU, simulation models of the cement industry have shown benefits from emission trading in three different markets (the 27 European Union countries, the EU 15 countries and Annex B countries of the European Union), derived both from lower compliance costs and the revenues of emission trading.<sup>140</sup>

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<sup>136</sup> Among the various greenhouse gases, carbon dioxide (CO<sub>2</sub>) is the most significant; thus its name is applied to the general emissions market.

<sup>137</sup> International Emission Trading Association, *Benefits Of Emissions Trading* (IETA, 2015), <<http://www.ieta.org/resources/Resources/101s/ieta-emissions-trading-101-library-april2015.pdf>>.

<sup>138</sup> Tim Laing, Misato Sato, Michel Grubb and Claudia Combetti, *Assessing the Effectiveness of the EU Emissions Trading System*, Grantham Research Institute on Climate Change and the Environment Working Paper No. 106 (London School of Economics, 2013), <<http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2014/02/WP106-effectiveness-eu-emissions-trading-system.pdf>>.

<sup>139</sup> Ibid.

<sup>140</sup> Szabó, László et al, 'CO<sub>2</sub> Emission Trading Within The European Union And Annex B Countries: The Cement Industry Case' (2006) 34(1) *Energy Policy* 34; International Carbon Action Partnership, *Benefits Of Emissions Trading* (ICAP, 2016), <[https://icapcarbonaction.com/en/?option=com\\_attach&task=download&id=389](https://icapcarbonaction.com/en/?option=com_attach&task=download&id=389)>.

There are a number of significant characteristics of the emission trading mechanism. The first is the cap-and-trade policy, which enables governments to put a cap (limit) on gases such as nitrous oxide (N<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>). For this purpose, the governments sell permits (allowances) through selling companies, which are then traded. For example, an airline cannot exceed its emission limit, but if it buys an emission allowance on the carbon market, it can exceed up to additional allowance. The trading mechanism of emission trading is another key feature. Other research findings have shown the impact of emission allowance trading on cost minimisation for pollution control.<sup>141</sup>

The Kyoto Protocol has led countries and regions to establish their own emission trading schemes and carbon markets. In this context, the initiatives of China and the EU are notable. For example, the EU started its emission trading scheme (ETS) on 1 January 2005; the scheme was extended to industrial sectors as well,<sup>142</sup> encompassing 12,000 installations in energy- and emission-intensive sectors which have thus been brought under the annual limit (cap) for CO<sub>2</sub> emissions. The European ETS was also extended to the aviation sector from 2012.<sup>143</sup> According to one study, the establishment and performance of carbon markets are influenced by a range of economic, political and institutional factors. China is also moving towards adopting an ETS as one of the primary instruments to meet the carbon intensity goal.<sup>144</sup> In the example of China, four key influencing (and interconnected) factors have been identified: inadequate regulatory infrastructure, limited financial involvement, excessive government involvement and inadequate demand. The problem of inadequate demand at the national level can be addressed through the establishment of a regional carbon market; this is what China is trying to do, and is the reason the EU ETS is successful. Another solution is to change the way the market and government interact with each other, such as by increasing governmental support for the market.<sup>46</sup>

As with the other mechanisms, emission trading has some issues and challenges. Emission trading contributes very little to developing countries because of their minimal demand for emission trading allowances. Indeed, engagement in emission trading may come at the cost of

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<sup>141</sup> Douglas R. Bohi and Dallas Burtraw, 'Utility Investment Behavior And The Emission Trading Market' (1992) (14(1–2) *Resources and Energy* 129.

<sup>142</sup> Chuan Wang et al, 'CO<sub>2</sub> Emission Reduction In The Steel Industry By Using Emission Trading Programs' (2007) 4(5) *International Journal of Green Energy* 505.

<sup>143</sup> Hans-Jürgen Nantke, 'Emissions Trading In Aviation' (2011) 2(2) *Carbon Management* 127.

<sup>144</sup> Xiaoyi Jiang, 'The Rise of Carbon Emissions Trading in China: A Panacea for Climate Change?' (2014) 6(2) *Climate and Development* 352.

investment in JI and CDM projects, reducing the beneficial impact of those mechanisms for development in transitioning and developing countries.<sup>145</sup> In short, ET is beneficial for some stakeholders, but may be counterproductive for other stakeholders. As it offers little for developing countries, it is not a relevant mechanism for Bangladesh.

## **2.8 Post-Kyoto Negotiations Prior to the Paris Agreement and Role of Bangladesh**

The ratification of the Kyoto Protocol was a first step, with many processes and developments having occurred since. The term ‘post-Kyoto negotiations’ encompasses all negotiations and conference sessions addressing the issue of emissions and global warming that have taken place since the Kyoto Protocol was officially adopted by the parties in 1997. The core focus of post-Kyoto negotiations has been on discussing and negotiating the matters after the first commitment period of the Kyoto protocol.<sup>146</sup> Significant post-Kyoto negotiations include the sessions discussed below. These sessions have taken some steps towards climate justice that assist developing countries in establishing climate justice in their countries. Bangladesh has also participated those COP sessions and ratified most of the negotiations. Therefore, this chapter will focus on the sessions the importance of these for Bangladesh.

### **2.8.1 COP 13: Bali, Indonesia (CMP3)**

The Thirteenth Conference of the Parties (COP 13) was conducted in Bali, Indonesia, from 3 to 17 December 2007.<sup>147</sup> COP 13 was notable for the development of the Bali Road Map or Bali Action Plan; since the end of the first commitment period (i.e., post-2012), post-Kyoto Protocol negotiations have been about the adoption of the Bali Action Plan. Other topics at COP 13 included an adaptation fund, reduced emissions from deforestation and degradation in developing countries (REDDIT), the CDM, technology transfer, flexibility and financial mechanisms.<sup>148</sup>

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<sup>145</sup> Sonja Butzengeiger and Axel Michaelowa (2017). *The EU Emissions Trading Scheme—Issues And Challenges* (Intereconomics, 2017).

<sup>146</sup> The Kyoto Protocol structured its climate action plan over two commitment periods, the first from 2008 to 2012 and the second from 2013 to 2020.

<sup>147</sup> Peter Christoff, ‘The Bali Roadmap: Climate Change, COP 13 And Beyond’ (2008) 17(3) *Environmental Politics* 466.

<sup>148</sup> Raymond Cléménçon, ‘The Bali Road Map: A First Step on the Difficult Journey to a Post-Kyoto Protocol’ Agreement (2008) 17(1) *The Journal of Environment & Development* 70; Rie Watanabe et al, ‘The Bali

The Bali Action Plan (BAP), the key outcome of COP 13, was an action plan, adopted by the parties, for finalising an agreement to be adopted at UNFCCC Copenhagen conference in 2009. The BAP comprises four pillars and one shared vision.<sup>149</sup>

(a) *Shared Vision*: The overall long-term vision for action on climate change and goals for reduction of GHG emissions.

(b) *Mitigation*: The mitigation pillar enjoins developed countries to achieve their emission reduction targets by employing different mitigation activities and integrating them into their sustainable development projects. Examples of mitigation activities include reduction of emissions from deforestation and degradation (REDD), forest conservation and sustainable management.<sup>150</sup> The scope of mitigation includes the mitigation commitments and mitigation actions supported by technology, capacity building and finances.<sup>151</sup> Mitigation is discussed in detail in Chapter 4 of this thesis.

(c) *Adaptation*: The adaptation pillar calls on the parties to promote the climate-resilient development by employing risk management and risk reduction strategies. Countries all around the world should encourage such development to reduce emissions and combat climate change. The focus of adaptation is primarily on vulnerable countries—such as African countries, islands and least developed countries—that are facing floods, desertification and droughts. In addition, developing countries, especially vulnerable developing countries, are advised to employ risk reduction strategies to minimise loss and damage due to climate change.<sup>152</sup> To support adaptation in developing countries, an Adaptation Fund was established.<sup>153</sup> This paper will discuss adaptation in detail in Chapter 3.

(d) *Technology*: The third building pillar, technology transfer, requires a commitment from all member countries to encourage and facilitate the transmission of environmentally friendly and

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Roadmap For Global Climate Policy—New Horizons And Old Pitfalls’ (2008) 5(2) *Journal for European Environmental & Planning Law* 139.

<sup>149</sup> UNCCC, *Bali Road Map* (UN, 2017), <[http://unfccc.int/key\\_steps/bali\\_road\\_map/items/6072.php](http://unfccc.int/key_steps/bali_road_map/items/6072.php)>.

<sup>150</sup> UN Food and Agriculture Organization, *The Bali Action Plan* (FAO, 2009), <[http://www.fao.org/fileadmin/templates/rome2007initiative/NENA\\_Forum\\_2009/Factsheets/FAO\\_CCFactsheet\\_BaliActionPlan.pdf](http://www.fao.org/fileadmin/templates/rome2007initiative/NENA_Forum_2009/Factsheets/FAO_CCFactsheet_BaliActionPlan.pdf)>.

<sup>151</sup> UNFCCC, *Report of the Conference of the Parties on its thirteenth session, held in Bali from 3 to 15 December 2007, Addendum* (2008), FCCC/CP/2007/6/Add.1 <<https://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf>>.

<sup>152</sup> UN Food and Agriculture Organization, above n 150.

<sup>153</sup> Chad Carpenter, *The Bali Action Plan: Key Issues In The Climate Negotiations: Summary For Policy Makers* (UNDP, 2008).

affordable technology to help in achieving emission reduction goals in developing countries. For this purpose, it requires cooperation among all member countries. Technology transfer to developing countries has been supported through various financial and non-financial incentives to developed countries or other countries.

(e) *Financing*: The final pillar, financial sources, is useful for encouraging investment in green and environmentally friendly projects. Developed countries are advised to mobilise public and private investment in climate-friendly projects. Developing countries are often lacking in investment capital, so the BAP includes additional provisions for creation of new and additional financial resources. Developing countries are also offered incentives for implementing national mitigation strategies and adaptation actions, such as Nationally Appropriate Mitigation Actions (NAMA), which was raised by Bangladesh.<sup>154</sup> In addition, the BAP supports research to assess the cost of financial assistance and adaptation projects to developing countries, especially to vulnerable countries.

The supporters of COP 13 and the BAP consider the Plan to have been successful. They argue that COP 13 and the BAP have produced the outcomes that: (a) develop the understanding of the ground realities among parties regarding current scenarios of climate change, its political and diplomatic realities and the complexities involved; (b) clarify to the parties that action to combat the climate change is inevitable but requires more than ‘quick fix’ solutions; (c) provide directions for the future negotiations along with clear deadlines from a post-2012 perspective; and (d) create an opportunity for the parties to agree on a workable and effective agreement in COP 15 regarding the post-2012 period.<sup>155</sup>

A second achievement of COP 13 was that it led the parties to initiate an ad hoc working group (AWG) on long-term cooperative action (LCA) under the Protocol. In this session, Bangladesh promoted three issues, one being the role of adaptation and mitigation in agriculture, which was a major issue under negotiation.<sup>156</sup> The AWG-LCA was given a mandate to negotiate and bring all parties to an agreement by the end of 2009 in Copenhagen, Denmark (COP 15 /

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<sup>154</sup> UNFCCC, *Report of the Conference of the Parties on its thirteenth session*, above n 151.

<sup>155</sup> C. Spence, K. Kulovesi, M. Gutiérrez and M. Muñoz, ‘Great Expectations: Understanding Bali and the Climate Change Negotiations Process’ (2008) 17(2) *Review of European Community & International Environmental Law* 142.

<sup>156</sup> Ainun Nishat, M. Asaduzzaman and S.M. Munjurul Hannan Khan (eds), *Climate Change issues and Climate Change Negotiations: An Overview From Bangladesh Perspective* (International Union For Conservation of Nature, 2011), <[https://cmsdata.iucn.org/downloads/iucn\\_climate\\_change\\_12.pdf](https://cmsdata.iucn.org/downloads/iucn_climate_change_12.pdf)>.



CMP5). The parties included all existing developed countries, including the USA, and other developing countries.<sup>157</sup> In addition, the Adaptation Fund was established under the Kyoto Protocol in order to support the adaptation projects in developing countries, which directly contributes to the second pillar of the BAP.<sup>158</sup>

A positive aspect of the BAP was that its scope included both developing and developed countries, in line with the Kyoto Protocol's principle of common but differentiated responsibility. However, COP 13 and the BAP have also received criticism. According to one study, the BAP has not lived up to expectations; specifically, it failed to reflect the requirement for urgent action based on current scientific assessments about climate change.<sup>159</sup> A similar study agrees that COP 13 did not produce the outcomes merited by the size and severity of the challenge. Other research has questioned the effectiveness and efficiency of the Bali conference outcomes,<sup>160</sup> which are seen as bureaucratic and lacking in definition and courage.

In addition, it has been argued that while the intentions of COP 13 were strong, the outcomes lacked substance. One important issue is that the Bali conference did not address the issue of the distribution of the emission burden in the future.<sup>161</sup> It is important to reach an agreement on an equitable formula for distributing the burden of emission reductions. Previously, the distribution of emission targets rested on the CBDR principle among developed countries, as set by the Kyoto Protocol in 1997; in future, however, and with the inclusion of developing countries, distribution criteria might be according to the capacity and responsibility of countries. Researchers also argued that climate change requires a global solution involving both Annex 1 (developed) and non-Annex 1 (developing) countries, as they are mutually dependent on one another.<sup>162</sup> The Bali conference did not address this issue, leading to further challenges to be addressed at the Copenhagen conference in 2009. This COP 13 session was an explicit step towards the climate justice principle with wide-ranging outcomes. In particular, it recognised that deep cuts in emissions will be required to achieve climate change objectives. Parties have since been negotiating to reach agreement on a shared vision and how to

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<sup>157</sup> Watanabe et al., above n 148.

<sup>158</sup> Carpenter, above n 153.

<sup>159</sup> Spence et al., above n 155.

<sup>160</sup> Eija-Riitta Korhola, *The Rise and Fall of the Kyoto Protocol: Climate Change as a Political Process*, (Academic Dissertation, Helsinki 2014), <<https://helda.helsinki.fi/bitstream/handle/10138/136507/Therisea.pdf>>

<sup>161</sup> Christoff, above n 147.

<sup>162</sup> Hermann E. Ott, Wolfgang Sterk and Rie Watanabe, 'The Bali Roadmap: New Horizons For Global Climate Policy' (2008) 8(1) *Climate Policy* 91.

substantially scale up actions to from the present situation. In that case, it is also important for Bangladesh because of its four elements and shared vision, which are the subject of continuing intense negotiations. Under the shared vision, Bangladesh has always insisted that the particular vulnerabilities of the LCDs should be recognised and their rights to survival and sustainable development emphasised.<sup>163</sup>

### **2.8.2 COP 14: Poznan, Poland (CMP4)**

The Conference of the Parties (COP 14) was conducted in Poznan, Poland, between 1 and 12 December 2008.<sup>164</sup> The significance of COP 14 is due to the negotiations regarding the Bali Action Plan. A total of 9250 participants attended the conference, including 4500 representatives of non-governmental organisations (NGOs), intergovernmental organisations and UN bodies, along with 4000 government officials and 800 media personnel. Bangladesh also participated in the conference.

COP 14 led to several prominent outcomes. First, the parties acknowledged the urgency of the situation. Second, the parties agreed on the establishment of the Adaptation Fund to support the adoption of new mechanisms under the Kyoto Protocol. To facilitate adoption by developing countries, the Adaptation Fund Board was given the authority to grant direct access to developing countries. The parties also agreed to finance the fund through a two per cent levy on all projects approved under the CDM. The third outcome of COP 14 was the agreement of the parties on the negotiation schedule for the year 2009. Fourth, COP 14 considered the divergence of views of the parties about the challenges and issues regarding funds availability for adaptation funds and improvement in the CDM. Fifth, the issue of technology transfers to developing countries was discussed. Sixth, the parties discussed other matters related to Bali Action Plan (BAP), including adaptation, technology, finance, disaster management and

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<sup>163</sup> Ainun Nishat, M. Asaduzzaman and S.M. Munjurul Hannan Khan (eds), *Climate Change issues and Climate Change Negotiations: An Overview From Bangladesh Perspective* (International Union For Conservation of Nature, 2011), <[https://cmsdata.iucn.org/downloads/iucn\\_climate\\_change\\_12.pdf](https://cmsdata.iucn.org/downloads/iucn_climate_change_12.pdf)>.

<sup>164</sup> Tilman Santarius et al, 'Pit Stop Poznan. An Analysis Of Negotiations On The Bali Action Plan At The Stopover To Copenhagen' (2009) 6(1) *Journal for European Environmental & Planning Law* 139.

REDD (reduction of deforestation).<sup>165</sup> Finally, the parties agreed on the first draft of a deal on global climate change management to be adopted at the COP 15.<sup>166</sup>

COP 14 has been criticised for demonstrating a ‘vision gap’. Developing countries also accused the COP and industrial countries of undermining the talks.<sup>63</sup> The main point of difference was the two per cent levy on CDM projects. The representatives of developing countries were in favour of increasing the levy to three per cent, which they hoped would provide the Adaptation Fund with an additional USD60 million to be used for sustainable developments in developing countries.<sup>167</sup> This proposal was not accepted, leading to the accusation of a gap between the vision and the actions of COP 14. In this conference, Bangladesh observed that adaptation is the key concern for Bangladesh and highlighted the importance of increasing public awareness of this issue. It also proposed to establish an Official Development Assistance (ODA) fund for mitigating climate change in poor countries.<sup>168</sup>

### 2.8.3 COP 15: Copenhagen, Denmark (CMP5)

COP 15 was conducted in Copenhagen, Denmark, from 7 to 18 December 2009. Again, the primary importance of COP 15 related to negotiations regarding the Bali Action Plan. The UNFCCC had held five meetings leading up to COP 15<sup>169</sup> to prepare for the conference and achieve the objectives of planned meetings and working groups.

COP 15 was attended by 40,000 people, including representatives from 115 countries.<sup>170</sup> The biggest success of COP 15 was the introduction of the ‘Copenhagen Accord’, under which the parties agreed on short- and long-term goals for reducing carbon and responding to climate change. As a long-term goal, the countries agreed to restrict the global average temperature increase to 2° Celsius (although this goal was still subject to review by the end of 2015). The

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<sup>165</sup> Anup Shah, *COP14—Poznań Climate Conference – Global Issue* (Globalissues.org, 2009), <<http://www.globalissues.org/article/771/cop14-poznan-climate-conference>>.

<sup>166</sup> UNCC, *Poznań Climate Change Conference—December 2008* (UN, 2017), <[http://unfccc.int/meetings/poznan\\_dec\\_2008/meeting/6314.php](http://unfccc.int/meetings/poznan_dec_2008/meeting/6314.php)>.

<sup>167</sup> Ramesh Jaura, ‘Climate Change: Poznan Produces A “Vision Gap”’, *Inter Press Service* (online), 13 December 2008, <<http://www.ipsnews.net/2008/12/climate-change-poznan-produces-a-vision-gap/>>.

<sup>168</sup> International Institute for Sustainable Development, *Community-Based Adaptation to Climate Change Bulletin 135(2)* (IISD, 2009), <<http://enb.iisd.org/download/pdf/sd/yimbvol135num2e.pdf>>.

<sup>169</sup> These were the Bonn Climate Change Conference in March 2009, June 2009 and August 2009; the Bangkok Climate Change Conference in September 2009; and the Barcelona Climate Change Conference in November 2009.

<sup>170</sup> UNCC. *Copenhagen Climate Change Conference—December 2009* (UN, 2017), <[http://unfccc.int/meetings/copenhagen\\_dec\\_2009/meeting/6295.php](http://unfccc.int/meetings/copenhagen_dec_2009/meeting/6295.php)>.

second success of COP 15 was that the parties from developing countries agreed to funding the Adaptation Fund up to \$30 billion until 2010–2020 and also to mobilise additional funds up to \$100 billion per year by 2020 for adaptation and mitigation. In addition, accountability for adaptation projects was strengthened, with the parties agreeing on improved measurement, reporting and verification of actions by developing countries. The third success of COP 15 was that it led to the establishment four new entities: the REDD-Plus mechanism, the technology mechanism, the high-level plan for implementation and the Copenhagen Green Climate Fund. COP 15 also resulted in progress on ongoing and new issues related to negotiations and climate change.

In this session, Bangladesh played a vital role and presented a voice for developing countries. Although the Copenhagen Accord has been both hailed and rejected (or partly rejected), Bangladesh has associated itself with this Accord.<sup>171</sup> The Danish Government selected a CDM project in the brick industry in Bangladesh to offset the GHG emission produced by COP 15, including travel by delegates to and from Copenhagen.<sup>172</sup> Bangladesh also supported 1.5° Celsius as the preferred objective on behalf of the most vulnerable countries and the LDCs.

According to its critics, however, the COP 15 did not produce the outcome for which it was intended. The primary anticipated outcome had been determining the overall goals, setting targets for the countries and agreeing the performance measures for the post-2012 period. Instead, the conference produced the Copenhagen Accord, a non-binding political agreement among countries.<sup>173</sup> Another problem with COP 15 was that while it set out long-term goals under the Copenhagen Accord, it made no progress towards agreement on how to achieve these goals—there was no road map or implementation framework. In addition, there was a demand by vulnerable developing countries to reduce the 2° Celsius limit to 1.5° so that the negative impacts of climate change could be minimised.

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<sup>171</sup> Nishat, Asaduzzaman and Khan, above n 163.

<sup>172</sup> The Danish Energy Agency, *A Climate Neutral COP15: Energy Efficiency Project at Brick Factories in Bangladesh makes COP 15 Climate Neutral* (Danish Energy Agency, n.d.), <[https://unfccc.int/files/secretariat/environmental\\_responsibilities/application/pdf/a\\_climate\\_neutral\\_cop15\\_brochure.pdf](https://unfccc.int/files/secretariat/environmental_responsibilities/application/pdf/a_climate_neutral_cop15_brochure.pdf)>.

<sup>173</sup> Christoff, above n 147.

#### 2.8.4 COP 16: Cancun, Mexico (CMP6)

COP 16 was conducted in Cancun, Mexico, between 18 November and 10 December 2010.<sup>174</sup> In the lead-up to COP 16, there had been three sessions in Bonn and one in Tianjin in 2010. COP 16 resulted in an agreement that the 2° Celsius increase would be reduced further to 1.5° Celsius. Second, COP 16 has also produced an agreement on the establishment of the Green Climate Fund (GCF) to provide the funding for programmes, projects and policies in developing countries. Another success of COP 16 was agreement on the Cancun Adaptation Framework, which would play its role in implementation of adaptation policies and programmes. Fourth, the parties also agreed upon a technology mechanism, consisting of a climate technology centre and technology executive committee, to facilitate technology development and technology transfer for adaptation and mitigation. Fifth, COP 16 introduced ‘Fast-Start Finance’ to enable developed countries to use new and additional resources for financing the \$30 billion targeted for the period 2010–2012.<sup>175</sup> Bangladesh also played a significant role in this COP. Bangladesh, together with Australia, was assigned by the COP President to resolve differences in financial matters.<sup>176</sup> It also took a seat under LCD constituencies for the newly created 40-member Transitional Committee for the Green Climate Fund.<sup>177</sup>

Similar to previous sessions, COP 16 also showed progress on ongoing programmes such as capacity building in developing countries, REDD, carbon capture and storage in CDMs and dealing with the consequences of climate change in developing countries. In response to previous sessions, developed countries submitted their commitments in the form of targets for emission reduction, agreement on reporting frequency and future plans for the development of low-carbon strategies and programmes. Similarly, developing countries submitted their agreement in the form of implementation of Nationally Appropriate Mitigation Actions (NAMA). However, the developing countries also stated that their NAMAs were subject to technology transfer and finance. In addition, the developing countries have also expressed interest in the development of low-carbon strategies and plans.

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<sup>174</sup> UNCC, *Cancun Climate Change Conference—November 2010: Overview* (UN, 2017), <[http://unfccc.int/meetings/cancun\\_nov\\_2010/meeting/6266.php](http://unfccc.int/meetings/cancun_nov_2010/meeting/6266.php)>.

<sup>175</sup> UNCC, *Fast-Start Finance* (UN, 2017), <[http://unfccc.int/cooperation\\_support/financial\\_mechanism/fast\\_start\\_finance/items/5646.php](http://unfccc.int/cooperation_support/financial_mechanism/fast_start_finance/items/5646.php)>.

<sup>176</sup> Nishat, Asaduzzaman and Khan, above n 163.

<sup>177</sup> Ibid.

The Cancun Adaptation Framework (CAF), an outcome of the Cancun Agreement, was similar to the Bali Action Plan (BAP) and it also had five building blocks.<sup>178</sup> With the objective of enhancing actions on adaptation, the elements of the CAF are helpful to the developing countries for building resilience and reducing vulnerability. The five elements of the CAF were implementation, support, institutions, principles and stakeholder engagement. The implementation element requires parties to plan, prioritise and implement adaptation plans. Developed countries are required to support developing countries in the areas of capacity building, technology, and finance for implementation of adaptation programmes and projects. The institutional element requires the establishment of an adaptation committee supported by global, regional and national-level institutions. The principles element requires parties to ensure compliance with the principles of the conventions during implementation. Finally, the stakeholder engagement element requires all parties to engage direct and indirect stakeholders and seek their support during adaptation.

#### **2.8.5 COP 17: Durban, South Africa (CMP7)**

COP 17 was conducted in Durban, South Africa, from 28 November to 9 December 2011. The major achievement of COP 17 was the adoption of a legal agreement on climate change extending to 2015.<sup>179</sup> COP 17 also made progress on ongoing projects and negotiations regarding implementation of the Bali Action Plan, Cancun Agreement, Kyoto Protocol and Convention. This session made progress on loss and damage. It requested parties to submit work programme on loss and damage before COP 18. Bangladesh played a lead role and raised LCDs' issues and concern during the negotiations, particularly in the high-level segments.<sup>180</sup> It organised two media events and two very high-profile side events, one on loss and damage other on the Climate Vulnerable Forum, which was chaired by Bangladesh<sup>181</sup> from 2011 to 2013.

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<sup>178</sup> UNCC, *Cancun Adaptation Framework* (UN, 2017), <<http://unfccc.int/adaptation/items/5852.php>>.

<sup>179</sup> UNCC, *Durban Climate Change Conference—November/December 2011* (UN, 2017), <[http://unfccc.int/meetings/durban\\_nov\\_2011/meeting/6245.php](http://unfccc.int/meetings/durban_nov_2011/meeting/6245.php)>.

<sup>180</sup> Dr Hassan Mahmud, *Statement by Bangladesh Leaders of Bangladesh Delegation at the High Level Segment in COP 17, 8 December 2011* (UN, n.d.), <[https://unfccc.int/files/meetings/durban\\_nov\\_2011/statements/application/pdf/11208\\_cop17\\_hls\\_bangladesh.pdf](https://unfccc.int/files/meetings/durban_nov_2011/statements/application/pdf/11208_cop17_hls_bangladesh.pdf)>.

<sup>181</sup> Nishat, Asaduzzaman and Khan, above n 163.

### 2.8.6 COP 18: Doha, Qatar (CMP8)

COP 18 was conducted in Doha, Qatar, between 26 November and 7 December 2012.<sup>182</sup> The most notable success of COP 18 was the Doha Climate Gateway and amendments in the Kyoto Protocol. Besides progress on ongoing projects, COP 18 discussed the adverse impacts of climate change and called for a formal institutional mechanism to monitor and address the losses and damage, especially in vulnerable and developing countries. In this session, Bangladesh, along with other LDCs, suggested an ‘international mechanism for loss and damage’ to open an avenue to potential claims against corporations in future for adaptation and climate risk reduction.<sup>183</sup> It also played an important role in the most vulnerable country (MVC) group, demanding higher cuts in carbon emission by the developed countries and greater financial and technological support for climate risk adaptation and mitigation.<sup>184</sup>

In addition, COP 18 made progress on negotiations under an ad hoc working group on an Enhanced Action Plan for the Durban Platform. However, the conference was also met with disappointment due to a lack of ambition from developing countries regarding finance and mitigation actions.<sup>185</sup>

### 2.8.7 COP 19: Warsaw, Poland (CMP9)

COP 19 was conducted in Warsaw, Poland, from 11 to 23 November 2013.<sup>186</sup> COP 19 produced five key decisions. First, the parties reached agreement regarding the Green Climate Fund and Long-Term Finance. Secondly, COP 19 made further progress towards the Durban Platform decided in COP 17. The third success of COP 19 was the Warsaw Framework for REDD-Plus, with the objective of helping developing countries reduce GHG emissions resulting from deforestation and degradation of forests. In order to fund the Warsaw Framework for REDD+, three countries –the UK, Norway and the US pledged USD280 million. Last, but not least, COP 19 also produced an agreement on the Warsaw International Mechanism for Loss and Damage,

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<sup>182</sup> UNCC, *Doha Climate Change Conference—November 2012* (UN, 2017), <[http://unfccc.int/meetings/doha\\_nov\\_2012/meeting/6815.php](http://unfccc.int/meetings/doha_nov_2012/meeting/6815.php)>.

<sup>183</sup> Dr Atiq Rahman, ‘UN Climate Conference in Doha: Challenges and Opportunities’, *The Daily Star* (online), 20 March 2013, <<https://www.thedailystar.net/news/un-climate-conference-in-doha-challenges-and-opportunities>>.

<sup>184</sup> Ibid.

<sup>185</sup> IISD Reporting Services, *Summary of The Doha Climate Change Conference* (IISD, 2012), <<http://enb.iisd.org/vol12/enb12567e.html>>.

<sup>186</sup> UNCC *Warsaw Climate Change Conference—November 2013* (UN, 2017), <[http://unfccc.int/meetings/warsaw\\_nov\\_2013/meeting/7649.php](http://unfccc.int/meetings/warsaw_nov_2013/meeting/7649.php)>.

under which developing countries, especially vulnerable countries, are to be provided with protection against damage and losses caused by rising sea levels and extreme weather. Bangladesh participated in the conference and the negotiating team members played active roles in different streams of negotiation, discussions, meetings and side events.<sup>187</sup> For example, with the loss and damage mechanism facing disagreement from some Annex 1 countries (such as the USA<sup>188</sup>), Bangladesh, along with the G77 and China, turned the issue around.

According to a UNFCCC press release, COP 19 was another step towards a universal climate agreement to be sought in Paris in 2015.<sup>189</sup> In addition, the developed nations arranged over USD100 million for the Adaptation Fund. Regarding technology transfer, another step was taken in the form of the Climate Technology Centre and Network (CTCN), to provide aid to developing countries in the form of assistance and support for technology transfer. Overall, COP 19 was considered successful, especially for developing countries.

### 2.8.7.1 Loss and Damage

The loss and damage mechanism that has been discussed deals with the compensation for impacts that would not have occurred without climate change, that have not been mitigated and cannot be adapted to.<sup>190</sup> Insufficient mitigation and failure to sufficiently support adaptation have resulted in vulnerable communities, and countries, facing increasing loss and damage from the impacts of climate change.<sup>191</sup> However, the IPCC Fifth Assessment Report did not discuss loss and damage in its Working Group II report. The question may arise, why is a separate loss and damage mechanism needed when Kyoto has already hosted three different mechanisms? According to Action Aid, the loss and damage mechanism is necessary as a result of insufficient mitigation on the part of developing countries; barriers, constraints and limits to

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<sup>187</sup> Ministry of Environment and Forestry, *A Summary of Major Outcomes of COP19/CMP9 and Bangladesh's Participation* (Government of Bangladesh, n.d.), <[http://old.moef.gov.bd/COP19CMP9\\_MoEF.pdf](http://old.moef.gov.bd/COP19CMP9_MoEF.pdf)>.

<sup>188</sup> Lisa Vanhala and Cecilie Hestbaek, 'Framing Loss and Damage in the UNFCCC Negotiations: The Struggle over Meaning and the Warsaw International Mechanism' (2016) 16(4) *Global Environmental Politics* 111, <[https://www.mitpressjournals.org/doi/full/10.1162/GLEP\\_a\\_00379](https://www.mitpressjournals.org/doi/full/10.1162/GLEP_a_00379)>.

<sup>189</sup> UNCC, *Press Release: UN Climate Change Conference in Warsaw Keeps Governments on a Track Towards 2015 Climate Agreement* (UN, 2013), <[http://unfccc.int/files/press/news\\_room/press\\_releases\\_and\\_advisories/application/pdf/131123\\_pr\\_closing\\_cop19.pdf](http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/131123_pr_closing_cop19.pdf)>.

<sup>190</sup> ActionAid, *Loss and Damage from Climate Change: The Cost for Poor People in Developing Countries* (ActionAid, n.d.), <[http://www.actionaid.org/sites/files/actionaid/loss\\_and\\_damage\\_-\\_discussion\\_paper\\_by\\_actionaid\\_-\\_nov\\_2010.pdf](http://www.actionaid.org/sites/files/actionaid/loss_and_damage_-_discussion_paper_by_actionaid_-_nov_2010.pdf)>.

<sup>191</sup> Doreen Stabinsky, *Tackling the Climate Reality: A framework for establishing an international mechanism to address loss and damage at COP19* (ActionAid, CARE International and World Wildlife Fund, 2013), <[https://careclimatechange.org/wp-content/uploads/2013/10/tackling\\_the\\_climate\\_reality.pdf](https://careclimatechange.org/wp-content/uploads/2013/10/tackling_the_climate_reality.pdf)>.



adaptation for developing countries; and gaps in existing institutional arrangements<sup>192</sup> that may create injustice. As previously mentioned it is noteworthy that Bangladesh has played a key role in designing and promoting this issue from the outset.

#### **2.8.8 COP 20: Lima, Peru (CMP10)**

COP 20 was conducted in Lima, Peru, from 1 to 12 December 2014.<sup>193</sup> The core focus of COP 20 was the elements and contribution rules for a new agreement to be finalised in Paris in 2015. Progress was also made on ongoing issues, including tracking and boosting adaptation and building resilience among developing countries. Further progress was made towards financing the Green Climate Fund (GCF), with both developing and developed countries making pledges for capitalisation of the GCF to meet the initial target of USD10 billion. The Bangladeshi delegation was very active and demonstrated constructive leadership in discussions. In response to tracking and boosting adaptation goals, the COP 20 introduced Multilateral Assessments (MA) to provide a high level of transparency and confidence-building measures for tracking performance against emission reduction goals among developed countries. COP 20 also called for adding climate change as a subject in educational curricula to help in raising awareness of climate change impacts among the youngest members of society.

### **2.9 The Paris Agreement (COP 21)**

COP 21 was conducted in Paris, France, between 30 November and 12 December 2015.<sup>194</sup> The major success of COP 21 was the Paris Agreement, which has been ratified by 159 countries to date. There a number of key outcomes from COP 21 and the Paris Agreement. Developing countries agreed on the goal of keeping global temperature increases to less than two degrees along with additional efforts to limit the increase to 1.5° Celsius above pre-industrial level. The goal of building climate change resilience was included in the Paris Agreement and the parties agreed to support ambitious initiatives in capacity building, technology transfer, financial support and assistance for developing countries. Under Nationally Determined Contributions (NDCs), the parties were required to take measures and report progress against emission

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<sup>192</sup> Ibid.

<sup>193</sup> UNCC, *Press Release: Lima Call for Climate Action Puts World on Track to Paris 2015* (UN, 2014), <<http://newsroom.unfccc.int/lima/lima-call-for-climate-action-puts-world-on-track-to-paris-2015/>>.

<sup>194</sup> UNCC, *The Paris Agreement* (UN, 2017), <[http://unfccc.int/paris\\_agreement/items/9485.php](http://unfccc.int/paris_agreement/items/9485.php)>.

reduction targets and implementation efforts. Finally, a transparency framework was put into practice to improve accountability for actions and projects. Notably, the Paris Agreement was the first international agreement to directly incorporate the concept of climate justice into its preamble. Upon closer examination, the majority of the Paris Agreement outcomes formalised outcomes already proposed or endorsed at previous COPs—for example, the 2° Celsius goal (first proposed at COP 15), and the goals of capacity building, technology transfer and financial support. However, the Paris Agreement created new momentum for climate change action.

Bangladesh played a vital role in the climate change negotiations and pushed for a legally binding agreement. It has also asserted in its INDC that Bangladesh would reduce GHG emission by five per cent by 2030, and by 15% overall with financing and technology support.

### *2.9.1 Adaptation Under Paris Agreement*

Though adaptation and mitigation are interconnected concepts, prior to the Paris Agreement the international climate change agreement prioritised mitigation over adaptation. The UNFCCC and the Kyoto Protocol prioritised mitigation by establishing GHG emission reduction targets. Under Article 7(1) of the Paris Agreement, parties agreed to establish a global goal for adaptation to increase adaptive capacity, strengthen resilience and reduce vulnerability to climate change with a view to contributing to sustainable development and ensuring an adequate adaptation response in the light of the temperature goal listed in Article 2 of the Agreement. However, as noted above, the Paris Agreement has provided co-benefits under Article 7(4), which states that ‘parties recognize that the current need for adaptation is significant and that greater levels of mitigation can reduce the need for additional adaptation efforts and that greater adaptation needs can involve greater adaptation costs’.



**Figure 2.1: The global goal for adaptation in the context of mitigation and sustainable development<sup>195</sup>**

This global goal for adaptation provides a collective vision for the direction of global adaptation action and creates a bridge between adaptation, mitigation and sustainable development. This goal is also comprehensive and multi-layered, paying attention to climate change adaptation, adaptive capacity, resilience and vulnerability. At the same time, it gives preferences on national circumstances and enhance adaptive capacity across the countries. Article 7 of the agreement explains in detail how to achieve the global goal of adaptation.

### *2.9.2 Adaptation Communication Under Paris Agreement*

Under Article 7(10) of this Agreement, the parties are required to submit and update an appropriate adaptation communication that may include priorities, implementation and support needs, plans and actions concerning adaptation action that does not create additional burdens for developing countries.<sup>196</sup> The adaptation communication is one of the mechanisms important to achieving the temperature goal and the global adaptation goal of the Paris Agreement, and also serves an important role by encouraging good practice in national adaptation policy. For the success of the agreement there is a provision requiring parties to submit an adaptation communication providing information related to climate change impacts and adaptation on a

<sup>195</sup> Ibid.

<sup>196</sup> Paris Agreement, art 7.10.

biennial basis (Art13) so that it can track the progress in all areas and record it in a registry maintained by the secretariat of the UNFCCC. It should be noted, however, that biennial reporting on adaptation under Art 13 and adaptation communications under Art 7 are not mandatory<sup>197</sup> so that developing parties can avoid creating any additional burden. Adaptation communications also provide information on parties' adaptation actions through national and local adaptation planning, National Adaptation Plans and the Nationally Determined Contributions (NDCs) (these will be discussed in detail in Chapter 4). These create a bridge between the NDC and the NAPAs process to lead to more effective adaptation actions.

### *2.9.3 Adaptation Finance Under Paris Agreement*

Article 2(c) of the Paris Agreement introduces a third goal, of making 'finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development'. This agreement provides a mechanism for developed countries to contribute to particularly vulnerable developing countries in meeting the costs of adapting to climate change, and it has established numerous funds to support adaptation exclusively or partially in developing countries.<sup>198</sup> Article 7(13) of the Paris Agreement provided for continued and enhanced international support to developing countries for the implementation of Art 9. However, Art 9 also states that the climate finance should take into account the needs and priorities of developing country parties. But while the agreement called for countries to significantly increase their adaptation finance beyond present levels, no specific global or target for adaptation finance was established to guarantee vulnerable counties the future availability of funds to allow them to reliably plan for satisfactory action.<sup>199</sup> As a result, many developing countries have started to contribute a significant amount from their domestic budgets to their own adaptation, which is very costly and beyond their financial capacity. It is a great challenge for the poorer countries to meet their citizens' basic needs while financing adaptation actions to address climate change. The Paris conference missed the opportunity to set up an adaptation

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<sup>197</sup> Takayoshi Kato and Jane Ellis, *Communicating Progress in National and Global Adaptation to Climate Change*, Climate Change Expert Group Paper No. 2016(1) (OECD, 2016) <[https://www.oecd.org/environment/cc/Adaptation-Communication-CCXG-paper-2016\(1\).pdf](https://www.oecd.org/environment/cc/Adaptation-Communication-CCXG-paper-2016(1).pdf)>.

<sup>198</sup> Suarez and Huang, above n 97.

<sup>199</sup> Oxfam, *Unfinished Business How to Close the Post-Paris Adaptation Finance Gap* (Briefing Note, 16 May 2016), <[https://www.oxfam.org/sites/www.oxfam.org/files/file\\_attachments/bn-unfinished-business-post-paris-adaptation-finance-160516-en\\_0.pdf](https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/bn-unfinished-business-post-paris-adaptation-finance-160516-en_0.pdf)>.

finance goal to close this gap and thus achieve climate justice got most vulnerable people in developing countries, such as Bangladesh.

#### *2.9.4 The Sustainable Development Mechanism (Article 6.4)*

One of the key outcome of the Paris Agreement was the Sustainable Development Mechanism (SDM). The Paris Agreement recognised the link between climate change and human rights, specifying in its preamble that ‘parties should, when taking action to address climate change respect, promote and consider their respective obligations on human rights’. The Paris Agreement also set a new obligation for countries to promote environmental integrity, which included wider social and environmental factors rather than just carbon trading. This formed the basis for the SDM, which is essentially a new mitigation mechanism set out in Article 6 paragraph 4, adding accountability for human rights obligations and replacing the Kyoto Protocol’s CDM with effect from 2020.<sup>200</sup> The CDM board will provide input into the design of the SDM, based on lessons learned from the CDM. The SDM will function in a radically changed world, where all parties have commitments to reach the temperature and de-carbonisation goals by the middle of the century and to the UN sustainable development goals (SDGs) outlined in the 2030 Agenda.<sup>201</sup> SDM is not an offsetting tool, but has the specific goal of producing overall mitigation in global emissions. It was very clear from the overall Paris framework and objectives that offsetting is not an appropriate tool for the climate change challenge. Carbon Watch has provided a diagram of the offsetting mechanism- that is; the potential increase in net carbon emissions.

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<sup>200</sup> Carbon Market Watch, *Lessons for the SDM and Climate Finance* (Carbon Market Watch, 2016), <<https://carbonmarketwatch.org/2016/04/04/watch-this-ngo-newsletter-14-lessons-from-the-cdm-for-the-sdm-and-climate-finance/>>.

<sup>201</sup> Carbon Market Watch, *Policy Brief: Building Blocks for a Robust Sustainable Development Mechanism* (Carbon Market Watch, 2017), <[https://carbonmarketwatch.org/wp-content/uploads/2017/05/BUILDING-BLOCKS-FOR-A-ROBUST-SUSTAINABLE-DEVELOPMENT-MECHANISM\\_WEB-SINGLE\\_FINAL.pdf](https://carbonmarketwatch.org/wp-content/uploads/2017/05/BUILDING-BLOCKS-FOR-A-ROBUST-SUSTAINABLE-DEVELOPMENT-MECHANISM_WEB-SINGLE_FINAL.pdf)>.

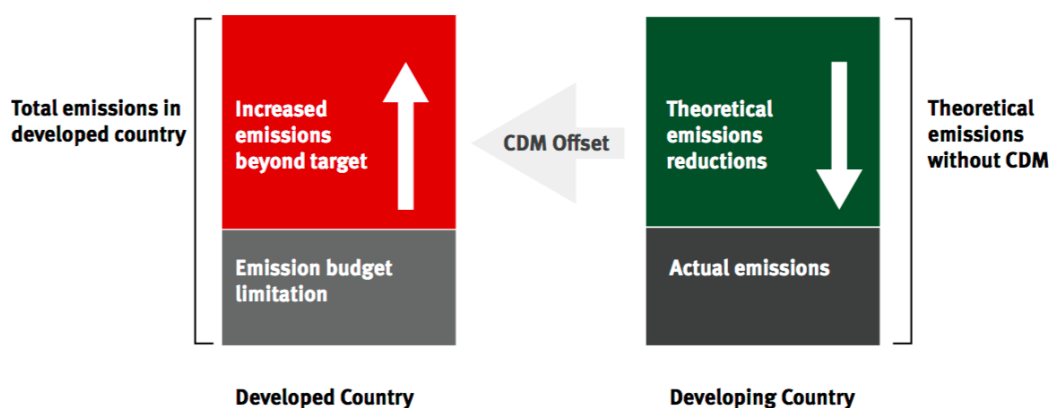


Figure 2.2 Offsetting: No overall reduction<sup>202</sup>

### 2.9.5 Comparative Studies: SDM vs CDM

The CDM was established as a pure offsetting mechanism but the rules, institutional set-up and projects were never clear. Reductions in developing countries produce credits that can be used to offset increased emissions in developed countries, while still meeting their climate targets.<sup>203</sup> According to the NGO Carbon Market Watch, the CDM had several shortcomings, including no overall emission reductions goal, problematic accounting, not implementing climate-friendly policies in developing countries, and producing false assumptions—for example, analysis which shows that about 73% of all potential CDM credits allocated between 2013 and 2020 do not represent real emission reductions—and questionable sustainable development benefits.<sup>204</sup> The transition process from the CDM to the SDM should build on the lessons from the Kyoto Protocol and design the SDM as a new mechanism under the Paris Agreement. However, it is not just a copy-paste exercise from the CDM but, rather, a new mechanism drawing from the success and mistakes of the CDM; the SDM will not follow the offsetting precedence and instead will favour a ‘result-based finance’ approach to promote sustainable development and therefore has more potential to achieve climate justice. Carbon Market Watch has provided a comparison between SDM and CDM which show the difference at a glance.

<sup>202</sup> Carbon Market Watch, *Good-Bye Kyoto: Transitioning Away from Offsetting After 2020* (Carbon Market Watch, 2017), <<https://carbonmarketwatch.org/publications>>.

<sup>203</sup> Ibid.

<sup>204</sup> Carbon Market Watch, above n 200.

Comparing SDM and CDM building blocks	
SDM	CDM
Must contribute to overall emission reductions/net mitigation	Established as a pure offsetting mechanism, shifting, not reducing, emissions
Must account for mitigation targets of all countries under the Paris Agreement, including their progression over time	Based on Kyoto Protocol where developing countries did not have a reduction target and did not take future climate commitments into account
Should promote ambition and encourage implementation of climate friendly policies	Created perverse incentives to continue business as usual practices and in some cases increase emissions beyond business as usual in order to be paid to reduce them
Must reflect and reinforce changing low emission technology and policy landscape	Credited many non-additional projects
Must contribute to real, measurable and long-term mitigation and sustainable development that contributes to overall shift away from fossil fuel lock in	Made questionable contribution to sustainable development, including a lock in of fossil fuels

Figure 2.3: Comparing SDM and CDM building blocks<sup>205</sup>

### 2.9.6 Carbon Dioxide Removal (CDR)

Climate engineering includes technologies that address carbon dioxide removal (CDR) and solar radiation management (SRM). The Paris Agreement aims to limit global average temperature increases to below 2° Celsius above pre-industrial levels, but renewable energy and energy efficiency are not enough to meet this target; it also requires carbon dioxide removal from the atmosphere. Climate change mitigation also needs carbon removal technologies. Though there is no direct provisions under the Paris Agreement, its core objective assumes reliance on CDR. The IPCC Fifth Assessment report has discussed the potential role of CDR, as well as its limitations. CDR refers to human activities aimed deliberately at carbon dioxide removal. It includes negative emissions technologies that aims remove CO<sub>2</sub> from the atmosphere. CDR technologies are considered part of the mitigation measures but are considered too expensive to be cost-effective. These technologies need further improvement, experimentation and development and inclusion of market-based

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<sup>205</sup> Ibid.

mechanisms. As Bangladesh is a developing country and emits less carbon dioxide, this thesis will focus on adaptation and mitigation rather than technology or geoengineering.

## **2.10 Post Paris Agreement: Marrakech, Morocco (COP 22):**

COP 22 was conducted in Marrakech, Morocco, between 7 and 18 November 2016.<sup>206</sup> The primary agenda of COP 22 was to discuss the ongoing performance of the Paris Agreement and multilateral cooperation. The parties discussed the issues of how to operationalise the Paris Agreement, the response of countries to the issues identified in the Paris Agreement and actions to solve those issues. In that meeting, the Prime Minister of Bangladesh highlighted the actions Bangladesh has taken to tackle climate change and reiterated the importance of dealing with migration and displacement at the global level.<sup>207</sup>

## **2.11 Meeting Objectives of UNFCCC and Protocol**

There is a plethora of research, both applauding and criticising the performance of the UNFCCC and the Kyoto Protocol. The greatest achievement of the UNFCCC and the Kyoto Protocol has been their attempt to address the global environmental situation as a multilateral political issue,<sup>208</sup> in which countries from all around the world participate, negotiate and reach agreement. Also important is the proactive approach of the UNFCCC and the Kyoto Protocol; for each session of the COP, the key issue has been identified in advance and preparations made in order to address that issue. In this regard, the regular sessions of the COP, CMP and other initiatives have helped guide the process in a highly organised manner.

The significant success of the UNFCCC and the Kyoto Protocol can be seen in their instruments or methods, such as the Clean Development Mechanism, emission trading and joint implementation. Studies have shown that, while each instrument has its own advantages and disadvantages, they have produced a positive outcome in the form of emissions reduction. It may still be asked, where a country has all three options, which one should it pursue. One study sought to identify the optimum solution for a steel plant needing to meet emission allowances

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<sup>206</sup> UNCC, *Marrakech Climate Change Conference—November 2016* (UN, 2017), <[http://unfccc.int/meetings/marrakech\\_nov\\_2016/meeting/9567.php](http://unfccc.int/meetings/marrakech_nov_2016/meeting/9567.php)>.

<sup>207</sup> Saleemul Huq, 'Bangladesh's Role in the Climate Change Negotiations', *The Daily Star* (online), 17 November 2016, <<https://www.thedailystar.net/opinion/politics-climate-change/bangladeshs-role-the-climate-change-negotiations-1315795>>.

<sup>208</sup> Maxwell T. Boykoff, *The Politics Of Climate Change* (Routledge, 2010).



with a low cost for reduction measures. Of three options evaluated, China has adopted CDM for internal changes in plant as well as the EU ETS. The study found that (a) the adoption of the EU ETS would help in reducing CO<sub>2</sub> emissions,<sup>209</sup> (b) the CDM would help in meeting emission targets at low cost,<sup>210</sup> and (c) changes in the plant were a good solution for abatement cost and emissions reduction.<sup>211</sup> These findings can be useful for practitioners in deciding which mechanism provides better value.

Another success of the UNFCCC and the Kyoto Protocol is that they led countries or regions to start their own initiatives, such as establishing carbon markets, emission trading schemes and long-term environmental plans. For example, the EU started its emission trading scheme (ETS) on 1 January 2005, which has since been extended to the industrial<sup>212</sup> and aviation sectors.<sup>213</sup> Germany is another example, having set a very high target of a 25% reduction in emissions (as compared to the five per cent set by the Kyoto Protocol). To this end, Germany has also implemented an environmental tax linked with non-wage labour costs. The ultimate goal of this policy is not only to reduce CO<sub>2</sub> emissions, but also to help reduce unemployment in the country.<sup>214</sup>

Besides the success stories, there are several issues and challenges that have influenced the performance of the UNFCCC and the Kyoto Protocol in meeting their objectives and achieving climate justice. David G. Victor has criticised the performance of the Kyoto Protocol; according to Victor, the failure of the Protocol is largely caused by the way it has been presented<sup>215</sup> and management issues at events such as the COPs; for example, the agendas are regularly prepared just a few days prior to the COPs.

If the Kyoto Protocol has been criticised for not achieving its objectives, then the role of membership-related issues has also been an important challenge throughout the journey. For

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<sup>209</sup> Edwin Woerdman, *The EU Greenhouse Gas Emissions Trading Scheme* (Chapter 3), (May 2015), Working Paper Series in Law and Economics, <<https://www.rug.nl/about-us/who-are-we/sustainability/greenoffice/cursus/myth5/ssrn-id2654641.pdf>>

<sup>210</sup> United Nations Environment Programme, *Clean Development Mechanism*, <[https://unfccc.int/files/cooperation\\_and\\_support/capacity\\_building/application/pdf/unepcdmintro.pdf](https://unfccc.int/files/cooperation_and_support/capacity_building/application/pdf/unepcdmintro.pdf)>

<sup>211</sup> Lynette Molyneaux, John Foster and Liam Wagner, *Is there a More Effective Way to Reduce Carbon Emissions* (University of Queensland, 2010) <[http://www.uq.edu.au/economics/eemg\\_/pdf/04.pdf](http://www.uq.edu.au/economics/eemg_/pdf/04.pdf)>

<sup>212</sup> Wang et al., above n 142.

<sup>213</sup> Nantke, above n 143.

<sup>214</sup> Christoph Bohringer, Klaus Conrad and Andreas Löschel, 'Carbon Taxes And Joint Implementation' (2003) 24(1) *Environmental and Resource Economics* 49.

<sup>215</sup> David G. Victor, *Global Warming Gridlock* (Cambridge University Press, 2011).

example, the Kyoto Protocol can establish emission reduction obligations only for member countries, who cumulatively produce only 33% of the GHG and CO<sub>2</sub> emissions globally.<sup>216</sup> Thus, the producers of 67% of global emissions have not been covered by the Protocol. The key reason for this is the absence, or withdrawal, of countries who were supposed to be in the list of obligated countries.

The Kyoto Protocol has also been criticised for creating unfair climate action burdens, in placing binding emissions limitations on developed nations while permitting developing countries to participate on a voluntary basis over the period 2008–2012.<sup>217</sup> Most Annex 1 countries could not meet the emission reduction targets set by the Protocol; meanwhile, non-Annex 1 countries (developing countries such as China, India and Brazil) were not required to give any binding commitments to reduce their emissions to meet specific targets.<sup>218</sup> Partly as a result of this, some industrialised countries have withdrawn from the Protocol, including the USA and Canada. As there is no binding commitment for developing countries, it is predictable that carbon emissions by these countries have continued to increase and have become a major issue. For example, while India is considered a developing country, between 1990 and 1998 it experienced a 57% increase in emissions and is now the fifth largest carbon-emitting country in the world.<sup>219</sup> In the case of China, carbon emissions increased 39% during the period 1990–1996, making China the second largest carbon-emitting country behind the United States.<sup>220</sup> China is also focused on establishing heavy chemical industries and transportation as key step towards realising industrialisation.<sup>221</sup> As a country develops, its cities grow and more energy is consumed. If these countries are not bound by commitments, they will eventually overtake the currently industrialised countries as the highest GHG emitters and have a significant impact on the global climate. Moreover, neither the UNFCCC nor the Kyoto Protocol follow a per

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<sup>216</sup> A.Ghezloun, A. Saidane, N. Oucher and S. Chergui, ‘The Post-Kyoto’ (2013) 36 *Energy Procedia* 1.

<sup>217</sup> *Conference of the Parties to the Framework Convention on Climate Change, Kyoto, Japan, Dec. 1–10, 1997, Kyoto Protocol* (Jan.1998), UN Doc FCCC/CP/1997/L.7/Add.I, art 3. Cited in Ann E. Prouty, ‘The Clean Development Mechanism and Its Implications for Climate Justice’ (2009) 34(2) *Columbia Journal of Environmental Law* 513.

<sup>218</sup> T. Hill, ‘UN Climate Change Conference in Durban: Outcomes and Future of the Future of the Kyoto Protocol’ (2011) 7 *Macquarie Journal of International and Comparative Environmental Law* 92. Cited in Nikhil R. Ullal, ‘A Successor For the Kyoto Protocol: Challenges and Options’ (2013) 17 *New Zealand Journal of Environmental Law* 93.

<sup>219</sup> *Ibid.*

<sup>220</sup> *Ibid.*

<sup>221</sup> Shen Longhai, ‘Correct Choices for China: Energy Conservation, a Cyclic economy, and a Conservation-Minded Society’, in Ernesto Zedillo (ed), *Global Warming Looking Beyond Kyoto* (Brooking Institution Press, 2008) 217.

capita carbon emission principle, as the exclusion of India and China from the Annex 1 group, and the inclusion of the Netherlands, Belgium, Luxemburg and other countries with lower per capita carbon emissions indicates. Another significant criticism is the Protocol's failure to bind the United States to reduce carbon emissions, notwithstanding that the United States is the largest emission producer in the world. The United States refused to sign the Kyoto Protocol, pointing to the fact that there was no commitment placed upon the largest developing countries, such as India and China.<sup>222</sup>

The research findings also indicate that the availability of multiple options (mechanisms) influences the level and direction of support for developing countries. As discussed above, the availability of emission trading may discourage countries and companies from engaging in CDMs, which are essential for developing countries. One possible solution is that, as with joint implementation, emission trading should be country-specific or, alternatively, that CDM initiatives should attract more incentives, so that the objective of sustainable development in developing countries can be achieved.

## **2.12 Conclusion**

The central focus of this chapter was to develop an understanding of the UNFCCC and the Kyoto Protocol, their associated tools and mechanisms, and performance of these initiatives in meeting the objectives of achieving climate justice and combating climate change. In response to the serious global challenge of climate change, the United Nations established the UNFCCC in 1992. After a series of sessions and negotiations, the UNFCCC succeeded in getting international approval for its Kyoto Protocol in 1997, under which the Annex 1 (developed) countries were legally bound to reduce their carbon emissions by an average of five per cent from 1990s level. The conferences of the parties to the Kyoto Protocol developed three main tools to achieve emissions reduction: joint implementation, emission trading and the CDMs. In addition, the parties to the Kyoto Protocol and UNFCCC met regularly to identify issues and take action to address those issues. Some of these conference sessions and negotiations, related to the post-Kyoto period, have been discussed above, as have the scope Bali Action Plan, Copenhagen Accord, Cancun Agreement Framework and Paris Agreement.

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<sup>222</sup> Frank Jotzo, *Developing Countries and the Future of the Kyoto Protocol* (Australian National University Economic and Environmental Network, 2014), <[https://een.anu.edu.au/download\\_files/een0406.pdf](https://een.anu.edu.au/download_files/een0406.pdf)>.

Regarding achieving the objectives of the Kyoto Protocol and UNFCCC, research suggests that the willingness and commitment of the UNFCCC are clearly evident in its proactive approach, systematic procedures and range of initiatives and solutions. However, it has been observed that the challenge of climate change is far bigger than the solutions and initiatives hitherto taken to address the issue. One possible reason is that while many projects, initiatives or solutions have been implemented, their optimal level of effectiveness has not yet been reached; thus, it might be too early to declare them as failed. However, in many places initiatives and mechanisms have been accused of focusing on low-level targets that do not address the problems of current times. There is a need to reconsider the scope of the initiatives (solutions) and the targets set to be achieved through those initiatives or solutions. In addition, the severity of the problem requires that existing initiatives or solutions should remain in place and more initiatives should be taken to solve the overall problem.

To summarise Bangladesh's role, it is important to note that at the third session of the Conference of Parties (COP 3), in December 1997, Bangladesh was among the 160 countries to sign the Kyoto Protocol.<sup>223</sup> Bangladesh is also among those countries most vulnerable to climate change and will be heavily impacted by global warming.<sup>224</sup> In 2001, Bangladesh officially ratified the Kyoto Protocol<sup>225</sup> and, at COP 15 in Copenhagen, Bangladesh was declared as the most vulnerable country in the world to climate change.<sup>226</sup> Bangladesh has been selected to be a member of different bodies set up by the UNFCCC, including the Adaptation Fund Board, the Green Climate Fund Board and the Executive Committee of the Warsaw International Mechanism on Loss and Damage.<sup>227</sup> The Bangladesh Government has declared climate change to be one of the biggest challenges to the national economy in the 21<sup>st</sup> century.

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<sup>223</sup> Waste Concern, *CDM And Its Opportunities in Bangladesh* (Waste Concern, 2017), <[http://www.wasteconcern.org/Publication/cdm\\_opportunities\\_in\\_bangladesh.pdf](http://www.wasteconcern.org/Publication/cdm_opportunities_in_bangladesh.pdf)>.

<sup>224</sup> SK Noim Uddin and Roslyn Ellen Taplin, 'A Sustainable Energy Future In Bangladesh: Current Situation And Need For Effective Strategies', in *Proceedings of the Joint International Conference on Sustainable Energy and Environment, Bangkok November 21–23 2006* (Joint Graduate School of Energy and Environment, 2006); Md. Rezaul Karim and Andreas Thiel, 'Role of Community Based Local Institution For Climate Change Adaptation In The Teesta Riverine Area Of Bangladesh' (2017) 17 *Climate Risk Management* 92; S.N. Uddin and Roslyn Taplin, 'A Sustainable Energy Future In Bangladesh: Current Situation And Need For Effective Strategies', in *Proceedings of the Joint International Conference on Sustainable Energy and Environment, Bangkok November 21–23 2006* (Joint Graduate School of Energy and Environment, 2006).

<sup>225</sup> Denise Youngblood Coleman, *Bangladesh Country Review 2015* (CountryWatch, 2017).

<sup>226</sup> Jahidul Islam Razan et al, 'A Comprehensive Study of Micro-Hydropower Plant And Its Potential In Bangladesh' (2012) 2012 *ISRN Renewable Energy*, <<https://www.hindawi.com/journals/isrn/2012/635396/>>.

<sup>227</sup> Huq, above n 207.

The following chapter will turn its lens to Bangladesh, providing a detailed overview of present and future climate change impacts, present governmental structure and role of governmental agencies and departments to address climate change. It will also discuss how the international community approaches adaptation measures and how Bangladesh adopts those measures nationally.

# **Chapter 3. Institutional Arrangements to Deal with Climate Change Impacts in Bangladesh**

## **3.1 Introduction**

As previously stated, climate change is a long-term issue and is one of the main environmental concerns globally. It poses a huge threat to development and, combined with other global changes such as population growth, urbanisation, land degradation and decreasing fresh water resources, has implications for human life and health. Both developed and developing countries are concerned about the impacts of climate change, but developing countries (such as Bangladesh) in particular, which are more vulnerable to climate change, need to understand the impacts of climate change and the scale of the threat in order to take actions at the regional and national level. Different organisations are involved in discussing long-term effects and studying ways to mitigate climate-based harms. In this thesis, Bangladesh has been chosen as a case study because it is one of the countries most vulnerable to climate change, one of the developing countries that contributes little to global carbon emissions and, by its regular participation in international climate change initiatives, has shown a willingness to part in both climate change and environmental awareness, action, law and policy.

In order to better understand the domestic response to climate change within Bangladesh, this chapter will summarise the governmental structure and institutional infrastructure of Bangladesh. This chapter also discusses the present climate change impacts on Bangladesh of sea-level rises, coastal erosion, flooding, tropical cyclones and heat waves, by which the socio-economic situation in Bangladesh has been affected. The present mitigation and adaptation policies of Bangladesh are also discussed, with a focus on adaptation to climate change, which may be more effective and appropriate for Bangladesh than mitigation to establish climate justice principles. Chapter 1 has already discussed the principles of climate justice and importance of climate justice for developing countries. It also addresses how the Bangladesh Government has set out its environmental management systems (which are critical to meeting the challenges of climate change) to help Bangladesh address climate change and ensure climate justice.

### 3.2 Climate Change and Its Impacts on Bangladesh

As has been mentioned in Chapter 1, rising sea levels is one major issue identified by the IPCC Fifth Assessment Report as an impact of climate change. According to the IPCC, global average sea levels rose at an average rate of 1.7mm (range 1.5 to 2.1mm) per year over the period from 1901 to 2010. The greatest rate of increase in this period was during 1993 to 2010, with an average rise of 3.2mm per year.<sup>228</sup> Warm ocean water and melting ice are driving the rise in sea levels. The southern part of Bangladesh is more vulnerable to climate change than other parts of Bangladesh as it adjoins the Bay of Bengal and the North Indian Ocean. The north of Bangladesh is adjacent to the Himalayas. A country of approximately 163 million inhabitants, and the meeting place of major rivers (the Ganges, Brahmaputra and Meghna), Bangladesh is situated across a vast delta of low-lying alluvial plains barely above sea level. Thus, the geography of Bangladesh makes it vulnerable to flooding from multiple sources: sea infiltration and storm surges, seasonal rain and meltwater from the Himalayas. A map of the geography of Bangladesh is at Figure 3.1.

Since the 1980s, the global temperature (average) has increased by 0.8° Celsius. In Bangladesh, between 1950 to 2000, the average temperature increased by 2.6° Celsius, with this being a major contributor to flooding in the country. In fact, the increasing temperature has changed climate patterns in Bangladesh, with warmer seasons, increasing rains, intensified flooding, rising water salinity, drought and riverine flooding all affecting soil fertility and the water supply of millions of residents.<sup>229</sup> The rising sea levels are intensified during monsoon rainfall and tropical cyclones.<sup>230</sup> Flooding due to storm surges created by cyclones mostly occurs along the coastal areas of Bangladesh, and future sea-level rises will increase this risk even further.<sup>231</sup> Sea-level rises lead to land loss, increase floods and greater salinity of coastal land, which is

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<sup>228</sup> IPCC, above n 6.

<sup>229</sup> Ibid.

<sup>230</sup> Pradyumna P. Karan, 'Climate Change In Bangladesh: Confronting Impending Disasters' (2015) 3(2) *The AAG Review of Books* 63.

<sup>231</sup> Edmund C. Penning-Rowsell, Parvin Sultana, Paul M. Thompson, 'The "Last Resort"? Population Movement in Respect to Climate-related Hazards in Bangladesh' (2012) 27(supp 1) *Environmental Science & Policy* S44, <<http://www.sciencedirect.com/science/article/pii/S1462901112000470>>.

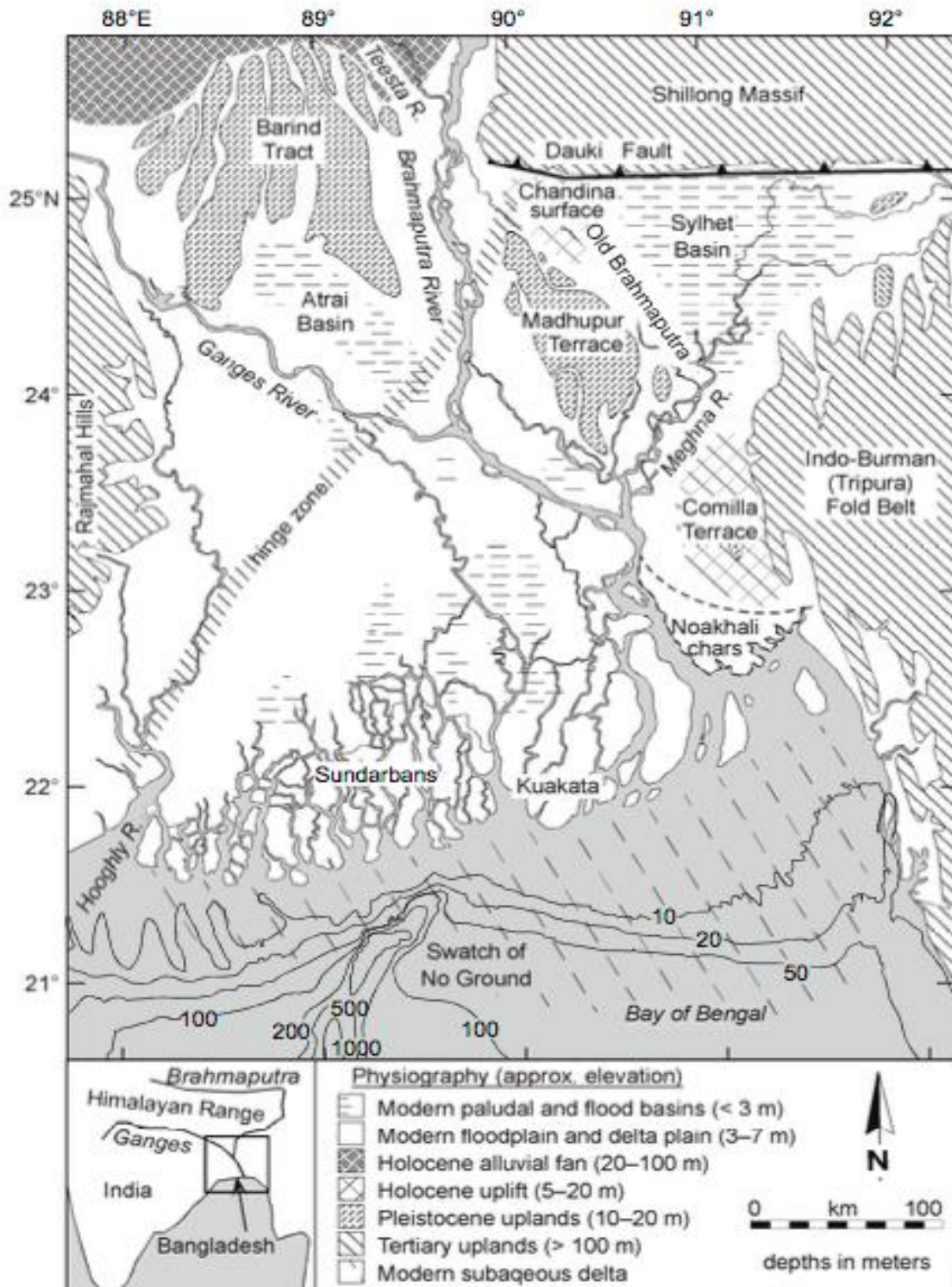


Figure 3.1: Map of the Ganges-Brahmaputra delta<sup>232</sup>

<sup>232</sup> Steven A. Kuehl, Mead A. Allison, Steven L. Goodbred and Hermann Kudrass, 'The Ganges-Brahmaputra Delta', in *River Deltas—Concepts, Models, and Examples*, SEPM Special Publication No. 83 (Society for Sedimentary Geology, 2005) 413, <[http://www.vims.edu/people/kuehl\\_sa/pubs/SEPMG-BDelta.pdf](http://www.vims.edu/people/kuehl_sa/pubs/SEPMG-BDelta.pdf)>.



now one of the main climate change impacts in Bangladesh. According to the National Adaptation Programme of Action 2005 prepared by the Bangladesh Ministry of Environment and Forests, the overall development of Bangladesh is significantly related to challenges in the water sector, including insufficient fresh water, poor drainage, riverbank erosion, frequent flood and prolonged and widespread drought, and soil salinity in the coastal zone. It notes that food security is at risk in future given the agricultural sector's dependency on the climate; agricultural productivity is clearly linked to rainfall patterns, temperatures, water availability and changes in sowing season.<sup>233</sup> Cities and towns that are near the coastline are also exposed to climate change-related impacts and could experience massive damage due to sea-level rises, either directly or indirectly.

On 30 May 2008, the Consortium for Trade and Development (CENTAD), an independent research non-governmental organisation (NGO) of India, published a report showing the expected impacts of climate change on Bangladesh (see Table 3.1).<sup>234</sup>

**Table 3.1: Estimated impacts of climate change in Bangladesh**

Parameters	By 2050	By 2100
<b>1. Rise of Sea Level (Relatively)</b>	153 cm	460 cm
<b>2. Population Displacement</b>	13%	40%
<b>3. Loss of Habitable Land</b>	16 km <sup>2</sup>	34 km <sup>2</sup>
<b>4. Erosions at Shore Lines</b>	1.5 km	3 km
<b>5. Mangrove Area Reduction</b>	79 km <sup>2</sup>	95 km <sup>2</sup>
<b>6. Subsidence of Land</b>	140 cm	240 cm

Source: Climate Brief—3: Bangladesh and Climate Change by CENTAD (2008)

<sup>233</sup> Mathilde Maurel and Michele Tuccio, *Climate Instability and International Migration* (Fondation pour les études et recherches sur le développement international, 2013), <[http://www.ferdi.fr/sites/www.ferdi.fr/files/publication/fichiers/WP78\\_Maurel%20%26%20Tuccio\\_WEB.pdf](http://www.ferdi.fr/sites/www.ferdi.fr/files/publication/fichiers/WP78_Maurel%20%26%20Tuccio_WEB.pdf)>.

<sup>234</sup> Nazamul Huq, *Climate Brief 3—Bangladesh And Climate Change: Need For A Comprehensive Adaptive Strategy* (Center for Trade and Development, 2008), <[http://ngof.org/wdb\\_new/sites/default/files/Env\\_impact.pdf](http://ngof.org/wdb_new/sites/default/files/Env_impact.pdf)>.

The CENTAD Report shows that, by the end of 2050, the sea level will rise by 153 cm compared to 2008, increasing to 460 cm by 2100. Due to rising water levels, the coastal areas will be inundated and submerged and Bangladesh will lose coastal land. This will result in erosion of shorelines, loss of habitable land and population displacement. According to the Bangladesh Government's Climate Change Strategy and Action Plan 2009 and National Adaptation Plan Action 2005, over the last 25 years Bangladesh has experienced six severe floods, with those in 1988 and 1998 displacing as many as 45 million and 30 million people respectively.<sup>235</sup> It is estimated that by 2050, shoreline erosion will be around 1.5 km and will reach up to 3 km by the end of 2100. In particular, the habitable area of Bangladesh will be reduced by up to 16 km<sup>2</sup> by the end of 2050 and up to 34 km<sup>2</sup> by the end of 2100.

This loss of land area will create population challenges. By the end of 2050, up to 13% of the population may be displaced, especially from coastal areas, glob; by 2100, this could reach up to 40%, which would pose extreme challenges for Bangladesh and one suspects, the region more generally. In addition, the Sundarbans—mangrove areas, comprising shrubs and groups of trees near coastal intertidal zones—will be reduced by 75 km<sup>2</sup> by the end of 2050 and up to 95 km<sup>2</sup> by the end of 2100. Finally, the report also discusses land subsidence, which will increase by up to 140 cm by 2050 and up to 240 cm by 2100. Harun Rashid and Bimal Paul, in their book *Climate Change in Bangladesh: Confronting Impending Diseases* (2013), present an even more dramatic snapshot of the impact of climate change, which likewise confirms the devastating impacts of climate change on Bangladesh's economy.<sup>236</sup>

According to the IPCC Fifth Assessment Report, Bangladeshi females are being more affected than males by climate change impacts, due to differences in prevalence of poverty, under-nutrition and exposure to waterlogged environments.<sup>237</sup> Because of environmental changes, including excessive heat, infectious diseases such as malaria, food poisoning infections and influenza are increasing day by day. A recent study shows that the rates of hospital admission have increased due to increasing levels of dengue fever in Bangladesh. The IPCC has reported that cholera epidemics are also associated with increasing temperatures, especially in

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<sup>235</sup> Ministry of Environment and Forests, *Bangladesh Climate Change Strategy and Action Plan* (Government of Bangladesh 2009),

<[https://www.iucn.org/downloads/bangladesh\\_climate\\_change\\_strategy\\_and\\_action\\_plan\\_2009.pdf](https://www.iucn.org/downloads/bangladesh_climate_change_strategy_and_action_plan_2009.pdf)>.

<sup>236</sup> Harun Rashid and Bimal Kanti Paul, *Climate Change in Bangladesh* (Lexington Books, 2014).

<sup>237</sup> Erik R. Smith et al, 'Human Health: Impacts, Adaptation and Co-Benefits', in IPCC, *Fifth Assessment Report* (IPCC, 2013), <[https://www.ipcc.ch/pdf/assessment-report/ar5/wg2/drafts/fd/WGIIAR5-Chap11\\_FGDall.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/wg2/drafts/fd/WGIIAR5-Chap11_FGDall.pdf)>, Chapter 11.

Bangladesh. The hotter summers and cooler winters may have adverse impacts on human health, especially on children. Recently, Bangladeshi people are also suffering more from heat stress, with extreme temperatures increasing the death rate, particularly the child death rate. Additionally, mental disorders and post-traumatic stress syndrome have been observed in disaster-prone areas.<sup>238</sup> Given these circumstances, the adoption of national and international adaptation policies is imperative.

Despite the lack of necessary infrastructure and employment opportunities, the urban poor are at greatest risk from natural disasters. In rural areas, people mainly depend on agriculture and forestry and as their main source of livelihood and employment. However, because of the impact of climatic variations on agriculture, agricultural wages are decreasing, pushing agricultural workers to look for better jobs and relocating to urban areas. On the other hand, families living nearer to the rivers seem to have fewer opportunities to engage in economic activities, which may keep them trapped in a poverty cycle.<sup>239</sup> The disruptions arising from this affect the economic, social and cultural development of the country. Rural people may be forced to move to urban areas, resulting in increasing unemployment. According to United Nations Development Programme (UNDP) Human Development Report 2015, in many developing countries population migration from rural areas to cities is driven at least partly by natural disasters such as floods and increasing land degradation and desertification that make agriculture difficult.<sup>240</sup> In Bangladesh, people are moving to cities or small towns; according to a study by the International Organization for Migration (IOM), between 2011 and 2050, around 9.6 million people in Bangladesh, excluding temporary and seasonal migrants, will migrate internally because of climatic factors.<sup>241</sup>

A recent article in the *Dhaka Tribune* confirms this upcoming challenge as, due to climate change, Bangladesh is losing almost one per cent of its agricultural land every year in the shape of land degradation, droughts and desertification.<sup>242</sup> In other research, it has been stated that

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<sup>238</sup> IPCC, *Climate Change 2014: Impacts, Adaptation and Vulnerability* (Cambridge University Press, 2014) Chapter 24, 21–22.

<sup>239</sup> Roy Brouwer et al. 'Socioeconomic Vulnerability and Adaptation to Environmental Risk: A case Study of Climate change and Flooding in Bangladesh' (2007) 27(2) *Risk Analysis*, 313, 325.

<sup>240</sup> Selim Jahan et al, *UNDP Human Development Report–2015, Work for Human Development*, (UNDP, 2015) <[http://hdr.undp.org/sites/default/files/2015\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf)>.

<sup>241</sup> Daily Star, 'The Climate change fallout in Bangladesh, 9.6m people to migrate by 2050', *The Daily Star* (online), 16 January 2017 <<http://www.thedailystar.net/backpage/climate-change-fallout-bangladesh-96m-people-migrate-2050-1345933>>.

<sup>242</sup> Mohammad Al-Masum Molla, '1% Arable Land Lost Each Year', *Dhaka Tribune* (online), 17 June 2016, <<http://archive.dhakatribune.com/bangladesh/2016/jun/17/1-arable-land-lost-each-year>>.

climate change will bring severe water related challenges such as moisture stress, floods, salinity and waterborne diseases,<sup>243</sup> which will directly influence the overall economy<sup>244</sup>.

The IPCC has stated that human influence on the climate system is clear and recent anthropogenic emissions of greenhouse gases are the highest in history.<sup>245</sup> The worst of the impacts will fall upon the poorest populations of the least developed countries, those with the least capacity to address these impacts.<sup>246</sup> The impacts directly affect low-lying countries such as Bangladesh, for whom the impacts will be exacerbated by the fact that it 'is one of the most populated and poorest countries in the world'.<sup>247</sup>

It is clear from the earlier discussion that climate injustice prevails in Bangladesh, and is not only a legal problem but also creates economic, social and political issues. Climate justice is the way to resolve this climate catastrophe. Government and non-governmental organisations are working hard to find ways to achieve climate justice. According to Helena Kennedy, there are five ways to achieve climate justice: recognise climate change victims, reinforce human rights, hold corporations to account, beef up international institutions and get the trade system right.<sup>248</sup> On the other hand, the Mary Robinson Foundation argues that a zero carbon, zero poverty approach is the way to achieve climate justice. Zero carbon emissions will reduce climate risk by keeping warming as far below 2° Celsius as possible, thus increasing the possibility of effective adaptation to the changes already locked into the climate system; zero poverty will increase resilience to climate impacts, build adaptive capacity and enhance equality.<sup>249</sup> Bangladesh, recognised as one of the most climate-vulnerable countries, has taken some mitigation and adaptation measures to achieve climate justice. As Bangladesh is an agricultural country, at COP 13 Bangladesh raised the role of agriculture in both adaptation

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<sup>243</sup> Annya Chanda Shimi et al, 'Impact and Adaptation to Flood: A Focus on Water Supply, Sanitation and Health Problems of Rural Community In Bangladesh' (2017) 19(3) *Disaster Prevention and Management: An International Journal* 298.

<sup>244</sup> A.M.M. Hossain, Md Maruf, Hasibur Rahman and Kihong Park, 'Manifestations of Climate Change Impacts Affecting Socio-Economy In Bangladesh: Looking Through the Framework of Sustainable Development' (2010) 2(2) *International Journal of Climate Change Strategies and Management* 180.

<sup>245</sup> IPCC, *Climate Change 2014: Synthesis Report Summary for Policy Makers* (IPCC, 2014), <[http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf)>.

<sup>246</sup> Saleemul Huq and Jessica Ayers, *Taking Steps: Mainstreaming National Adaptation* (IIED, 2008), <<http://pubs.iied.org/pdfs/17040IIED.pdf>>.

<sup>247</sup> International Fund for Agricultural Development, *Investing in Rural People in Bangladesh* (IFAD, 2015), <<http://www.ifad.org/operations/projects/regions/pi/factsheets/bd.pdf>>.

<sup>248</sup> Helena Kennedy, 'Five Ways to Achieve Climate Justice', *The Guardian* (online), 12 January 2015), <<https://www.theguardian.com/sustainable-business/2015/jan/12/achieve-climate-justice-human-rights>>.

<sup>249</sup> Mary Robinson Foundation, *Zero Carbon, Zero Poverty the Climate Justice Way* (Mary Robinson Foundation, rev. edn, 2015), <<https://www.mrfcj.org/media/pdf/2014/ZeroCarbontheClimateJusticeWay.pdf>>.

and mitigation, which was the major issue under negotiation. In order to achieve climate justice in Bangladesh, this thesis will focus on environmental protection systems—how does Bangladesh address climate change through reinforcing human rights?

### 3.3 Adaptation and Mitigation Measures in Bangladesh

Domestic, regional and international environmental law is unavoidably central to the goal of achieving climate change justice. As discussed in Chapter 1, the right to development is one of the key climate justice principles. Like other countries, Bangladesh utilises the two approaches of adaptation and mitigation to respond to the climate change challenges and ensure climate justice. The adaptation approach comprises those activities that involve the development of ways and methods for protecting people and places by reducing vulnerability to climate change. Mitigation approaches comprised those activities employed for reducing or slowing the process of climate change by lowering the GHG level in the environment.<sup>250</sup> The CDM is a mitigation process, and has particular benefits in Bangladesh. This will be discussed in Chapter 4.

Chapter 2 discussed the background of adaptation and mitigation to climate change under the international regime. This chapter will focus on the adaptation and mitigation measures Bangladesh has taken to address climate change. It is ironic that those in low-income countries who contribute least to climate change are more at risk from its effects.<sup>251</sup> Bangladesh emits less than 0.35% of global carbon emissions<sup>252</sup> and it has no binding limitation on carbon emissions. Bangladesh has adopted a twofold strategy against climate change, encompassing both adaptation and mitigation policies. It has taken both short- and longer-term actions to manage climate risk in every sector. In the short term, adaptation measures are necessary to reduce the adverse impacts of climate change and unpredictability, which may be costly. In the longer term, mitigation action is planned over two to three decades. Bangladesh focuses on agricultural adaptation, which includes integrating programmes for managing water and irrigation; promoting sustainable agricultural practices and appropriate technologies; innovating to address shorter growing seasons, extreme temperatures, droughts and floods; and strategies for dealing with

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<sup>250</sup> Maqsood Sinha, *Introduction To CDM Opportunities In Bangladesh* (Waste Concern Organization, 2008).

<sup>251</sup> Richard S. J. Tol, 'The Economic Effects of Climate Change' (2009) 23(2), *Journal of Economic Perspectives*, 29–51.

<sup>252</sup> World Resources Institute 'Climate Analysis Indicators Tool (CAIT) Version 2.0' (World Resources Institute, 2014). Cited in Ministry of Environment and Forests, *Intended Nationally Determined Contributions (INDC)* (Government of Bangladesh, 2015), <[http://www4.unfccc.int/ndcregistry/PublishedDocuments/Bangladesh%20First/INDC\\_2015\\_of\\_Bangladesh.pdf](http://www4.unfccc.int/ndcregistry/PublishedDocuments/Bangladesh%20First/INDC_2015_of_Bangladesh.pdf)>.

water shortages, food security and loss of livelihoods.<sup>253</sup> To promote adaptation to climate change, in mid-2002 Bangladesh undertook a project on ‘Reducing Vulnerability to Climate Change’ to increase the capacity of communities to adapt to adverse effects of climate change. Adaptation is dealt with by disaster reduction facilities under the Department of Environment under the Ministry of Environment and Forestry (MoEF), while mitigation activities are coordinated through a separate institutional framework, the two-tier Designated National Authority, with the Principal Secretary to the Prime Minister as head and the second tier organised under the MoEF.<sup>254</sup> The MoEF has prepared the National Adaptation Programme of Action (NAPA) as a response to the COP 7 of the UNFCCC. The GoB has also taken some mitigation strategies in agricultural sectors to reduce food and water insecurities. However, there is a need for climate mitigation strategies to be taken at the international level now to limit the long-term climate change and reduce the disaster risks (this will be discussed more broadly in the next chapter). If mitigation is delayed, adaptation costs will increase.

Richard Tol argues that poor countries’ agricultural income directly depends on weather and climate.<sup>255</sup> In that case, increasing adaptive capacity in developing countries through development aid is more effective. Bangladesh’s primary goals for adaptation are to protect the population, enhance the adaptive capacity and livelihood options and to protect the overall development of the country in step with the economic progress and wellbeing of the people.<sup>256</sup> Given the uncertainty of the international approaches to climate change discussed in Chapter 2, it is imperative that Bangladesh takes steps to deal with climate change risks within its own boundaries.

### **3.4 Institutional Design for the Governance of Climate Issues**

The GoB is a parliamentary democracy, headed by the Prime Minister. The head of the state is a President elected by the members of Parliament in accordance with the law (The Article 48 of the Constitution). Under Article 48(5) of the Constitution, ‘the Prime Minister shall keep the President informed on the matter of domestic and foreign policy, and submit for the

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<sup>253</sup>IPCC, *The IPCC’s Fifth Assessment Report: Executive Summary*, above n 12.

<sup>254</sup> Huq and Ayers, above n 246.

<sup>255</sup> Richard S. J. Tol, ‘Emission Abatement versus Development as Strategies to Reduce Vulnerability to Climate Change: An Application of FUND’ (2005) 10 *Environment and Development Economics* 615.

<sup>256</sup> Ministry of Environment and Forests, *Intended Nationally Determined Contributions (INDC)* (Government of Bangladesh, 2015)

<[http://www4.unfccc.int/ndcregistry/PublishedDocuments/Bangladesh%20First/INDC\\_2015\\_of\\_Bangladesh.pdf](http://www4.unfccc.int/ndcregistry/PublishedDocuments/Bangladesh%20First/INDC_2015_of_Bangladesh.pdf)>.

consideration of the Cabinet any matter which the President may request him to refer to it'. This democratic republic has two levels of government: national and local. The Ministry of Local Government, Rural Development and Co-operatives manages the local government system at the central government level. It is the local government which is particularly when considering environmental protection. Under Article 60 of the Constitution, 'the Parliament shall, by law, confer powers on the local government bodies to impose taxes for local purposes, to prepare their budgets and to maintain funds'. The GoB has declared the union, upazila and zila parishad as administrative units for the purpose of Article 59 of the Constitution.<sup>257</sup> There is also separate legislation empowering local governments to exercise governance powers; this includes:

- *Hill District Local Government Parishad Act 1989*
- *Zila Parishad Act 2000*
- *Local Government (Municipality) Act 2009*
- *Local Government (Union Parishad) Act 2009*
- *Local Government (Upazila Parishad) Act 1998 and Amendment in 2009*
- *Local Government (city Corporation) Act 2009*

According to the acts/ ordinances and rules, each local government parishad is a body corporate and it can sue as well as be sued.<sup>258</sup>

For the purpose of understanding local government structure of Bangladesh, this paper focuses on the tiered system of local government. Bangladesh has several levels of administrative units: the largest are called divisions, which are divided into districts; these are further divided into upazilas, then unions and, finally, wards. There are 64 administrative districts (zila), 489 sub-districts (upazila) and 4552 union parishads and three hill districts parishads under the rural local government system.<sup>259</sup> It has 11 city corporations and 324 municipalities (paurashavas) under the urban local government system.<sup>260</sup> The structure is illustrated in Figure 3.2.

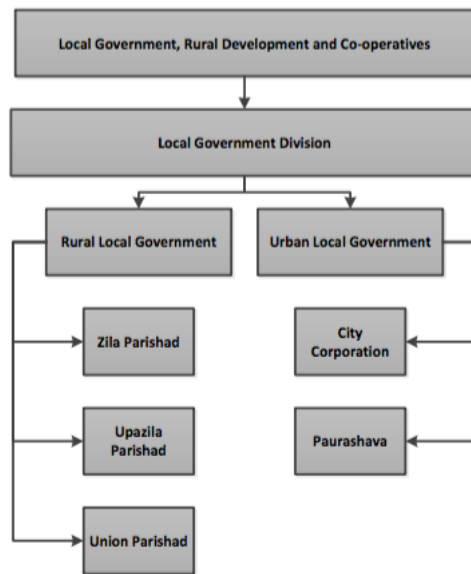
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<sup>257</sup> Kamal Siddiqui, *Local Government in Bangladesh* (The University Press, 3rd edn, 2014) 121.

<sup>258</sup> Ibid.

<sup>259</sup> Commonwealth Local Government Forum, *The Local Government System in Bangladesh: Country Profile: Bangladesh* (CLGF, n.d.), <[http://www.clgf.org.uk/default/assets/File/Country\\_profiles/Bangladesh.pdf](http://www.clgf.org.uk/default/assets/File/Country_profiles/Bangladesh.pdf)>.

<sup>260</sup> Ibid.



**Figure 3.2: Local government structure in Bangladesh**<sup>261</sup>

To ensure environmental protection and conservation and greater public participation, the GoB has enacted the *Upazila Parishad (Re-introduction and Amendment) Act 2009*, with specific provisions for environmental management and conservation. Four committees have been formed under this Act, although in practice—none of those committees have, in fact been established in any upazila parishad council.<sup>262</sup>

### 3.4.1 Local Governance in Bangladesh

In order to ensure effective planning and management of disaster risk reduction and emergency response management, the GoB has provided specific programmes to union parishads (a union council consists of one chairman and twelve members and is formed under the local government) from the central government through relevant agencies. There are some programmes and local action groups at the district/upazila level, such as cyclone preparedness programmes (CPP), concerned project committees, wards, unions, upazila/district committees, upazila/district disaster management committees, upazila/union disaster management committees, and so on. At the same time, there are a number of related national-level organisations, such as the National Disaster Management Council, Inter-Ministerial Disaster

<sup>261</sup> Mark O'Donnell et al, 'Bangladesh Climate Public Expenditure and Institutional Review', in Rajib Shaw, Fuad Mallick and Aminul Islam (eds), *Climate Change Adaptation Actions in Bangladesh* (Springer, 2013) 365.

<sup>262</sup> Golam Rabbani, 'Environmental Governance in Bangladesh: Policy Dynamics, Present State and Challenges', in Sacchidananda Mukherjee and Debashis Chakraborty (eds), *Environmental Challenges and Governance Diverse Perspectives from Asia* (Routledge, 2015) 33.



Management Coordination Committee, National Disaster Management Advisory Committee, National Platform for Disaster Risk Reduction, Earthquake Preparedness and Awareness Committee, Cyclone Preparedness Programme (CPP) Implementation Board, Focal Point Operation Coordination Group of Disaster Management, NGO Coordination Committee on Disaster Management and Committee for Speedy Dissemination of Disaster Related Warning/Signals.<sup>263</sup> Some other senior authorities, upazila nirbahi officers and elected representatives of upazila/union parishads, are also involved with those organisations for reducing vulnerability at local and national levels. The Ministry of Food and Disaster Management also works to reduce the risk to people, especially the poor and deprived. The main goal of the CPP is to reduce loss of life and belongings and to strengthen the disaster preparedness and response capacity through developing the efficiency of volunteers and officers to uphold and improve cyclone-warning systems and to ensure effective responses during cyclones.<sup>264</sup>

The International Institute for Environment and Development, in discussion with government staff from diverse backgrounds, has identified three steps for the successful mainstreaming of climate change measures: first, an enabling environment, which includes the political will (and is evident in the Cabinet Review Committee on Climate Change, led by the Prime Minister of Bangladesh); second, policies and planning that form the policy framework, together with institutional arrangements and financial mechanisms; and, finally, projects and programmes.<sup>265</sup>

In Bangladesh, each ministry has its own information collection system at the local level with local staff, and use that data for national planning. The Meteorological Department generates climate information and data from radar and satellite stations as well as from surface and upper atmosphere observations. The GoB has also established an Implementation, Monitoring and Evolution Division (IMED), which is mandated to monitor projects underline ministries. A draft indicator framework has been developing under the General Economics Division; this framework covers the whole government system and focuses on adaptation. The monitoring cell and planners use information from these sources to design and evaluate adaptation projects.

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<sup>263</sup> Md A F Younus, 'Adapting to Climate Change in the Coastal Regions Of Bangladesh: Proposal for the Formation of Community-Based Adaptation Committees' (2016) 16 *Environmental Hazards*, 21, 49.

<sup>264</sup> Ibid.

<sup>265</sup> Mousumi Pervin, *Mainstreaming Climate Change Resilience into Development Planning in Bangladesh: Climate Change Country Report* (IIED, 2013), <[https://www.unpei.org/sites/default/files/e\\_library\\_documents/Mainstreaming%20Climate%20Change%20Resilience%20into%20development%20planning%20in%20Bangladesh.pdf](https://www.unpei.org/sites/default/files/e_library_documents/Mainstreaming%20Climate%20Change%20Resilience%20into%20development%20planning%20in%20Bangladesh.pdf)>.

In the area of implementing CBA, local government again plays a vital role in Bangladesh with NGOs as partners. This includes preparing, planning and implementing national plans and programmes in local communities within its jurisdiction at the direction of the central government. This, in CBA local government is an organ between the local community and the central government and is involved in the implementation of adaptation through its contact at both levels.<sup>266</sup>

### *3.4.2 The Role of the Central Government of Bangladesh*

To meet the challenges of climate change, the GoB has set out a number of goals, objectives and strategies promoting new environment management systems for mitigation and adaptation. At the same time, it has responded to the Community-Based Adaptation initiatives developed either autonomously or supported by an NGO and/or local partner. To boost private sector investment, the government is developing a public–private partnership (PPP) strategy that stipulates the environment as an investment sector.<sup>267</sup> The GoB has also developed the Bangladesh Green Development Plan, which aims to improve new programmes in environment, energy and climate change to address the climate change adaptation and mitigation, especially in terms of the needs of the poor.

Over the past 50 years, Bangladesh has experienced some of the world’s deadliest storm surges and cyclones, resulting in thousands of deaths. The question may arise as to whether these problems could occur even without climate change. There are various reasons for the disastrous impact of cyclones and storm surges in Bangladesh, but climate change and any consequent sea-level rises undoubtedly exacerbate these impacts.<sup>268</sup> In 2007, prior to the publishing of the updated version of NAPA (2009), Cyclone ‘Sidr’ destroyed a massive area and caused thousands of deaths and other severe damage. Another severe cyclone, ‘Aila’, struck in 2009, destroying cultivated land, crops and houses and killing hundreds of people. Less powerful but still destructive cyclones regularly strike different parts of Bangladesh and cause severe

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<sup>266</sup> Hozuma Sekine et al, *The Effectiveness of Community-based Adaptation (CBA) to Climate Change- From the viewpoint of Social Capital and Indigenous Knowledge* ( Mitsubishi Research Institute and United Nations University – Institute of Sustainability and Peace, 2009), <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.205.9376&rep=rep1&type=pdf>>.

<sup>267</sup> Michael Nachmany et al, *Climate Change Legislation in Bangladesh: The 2015 Global Climate Change Legislation Study* (London School of Economics, 2015), <[www.lse.ac.uk/GranthamInstitute/legislation/](http://www.lse.ac.uk/GranthamInstitute/legislation/)>.

<sup>268</sup> A. Ali, ‘Vulnerability of Bangladesh to Climate Change and Sea Level Rise through Tropical Cyclones and Storm Surges’ in Bolhaefer Lin Erda et al (eds) *Climate Change Vulnerability and Adaptation in Asia and the Pacific* (Springer, 1996) 171.

damage. In addition to the direct damage, land and water sources are contaminated by salt water as a result of the storm surges, with local residents suffering a lack of potable water. In addition, the resulting salinity, and lack of fresh water and monsoon rain for irrigation, means farmers struggle to produce crops, which may affect food security in the future. This clearly demonstrates that it is important to develop legislation to reduce coastal vulnerabilities where impacts will be exacerbated by climate change. In 2005, the GoB formulated a Coastal Zone Policy under the Ministry of Water Resources to ensure that coastal populations can live in a secure and conducive environment. Under this policy, three indicators have been considered for determining the landward boundaries of the coastal zone of Bangladesh: influence of tidal waters, salinity intrusion and cyclone/storm surge. Nineteen districts comprising 48 upazilas are considered directly vulnerable to natural disaster.<sup>269</sup> There is a Coastal Zone Policy to incorporate coastal zone management and consolidate the development efforts of all concerned ministries, agencies, local government institutions, NGOs, private sector and civil society actors;<sup>270</sup> however, that policy contains no specific guidelines to address adaptation issues for the coastal region. The Bangladesh Climate Change Strategy and Action Plan (BCCSAP) (2009), the Second National Communication to UNFCCC, the roadmap for Developing a National Adaptation Plan and the Sixth Five-Year Plan introduce community-based adaptive capacity.

### *3.4.3 Institutional Infrastructure*

Several countries have climate change policies and implementation strategies. Strong institutional arrangements are necessary for both upstream functions, like strategy formulation and knowledge creation, and downstream functions such as coordination and implementation.<sup>271</sup> There is a need to ensure that the country's development and socio-economic growth contributes to achieve the ends of a climate change strategy. The institutional infrastructure of Bangladesh comprises both governmental and public/non-governmental institutions, officially or privately operating in Bangladesh and contributing to the objectives of environmental protection and combating climate change.

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<sup>269</sup> Ministry of Water Resources, *Coastal Zone Policy 2005* (Government of Bangladesh, 2005) <<http://lib.pmo.gov.bd/legalms/pdf/Coastal-Zone-Policy-2005.pdf>>.

<sup>270</sup> Ibid.

<sup>271</sup> Navroz K. Dubash and Neha B. Joseph, 'Evolution of Institutions for Climate Change Policy in India' (2016) 3 *Economic and Political Weekly* 44.

### *3.4.4 Governmental Institutions*

Above the local government level, Bangladesh has several governmental institutions with a role in environmental protection; these comprise both ministries and various public offices and ministries. The Ministry of the Environment and Forest (MoEF) is the primary and dedicated public office for addressing environmental problems, but other public institutions or ministries also provide support, including the:

- Ministry of Water Resources (MWR)
- Ministry of Agriculture (MoA)
- Ministry of Power, Energy and Mineral Resources
- Ministry of Local Government, Rural Development and Cooperatives
- Ministry of Industry
- Ministry of Foreign Affairs (MoFA)
- Ministry of Science, Information and Communication Technology
- Department of Environment (DoE)
- Planning Commission (PC)
- Board of Investment (BOI)
- Economic Relation Division (ERD)
- Local Government Engineering Department (LGED)

#### *3.4.4.1 The Planning Commission*

The GoB has put in place institutional arrangements and a legal framework to mainstream adaptation to climate change in order to establish climate justice. It has also established a steering committee on climate change as well. Under Article 15 of the Constitution, the government is required to provide for the basic needs of all citizens and a higher living standard through planning development. Bangladesh's Planning Commission was established in 1972; it is the central planning organisation and formulates policy measures for achieving planned goals and targets. Once the Planning Commission and the Ministry of Planning approve a climate change project, the MoEF applies for financial assistance from two funds and the Climate Change Cell reviews that application. If the project is below US\$250 million, the Ministry of Planning can approve it without the need to approach the Executive Committee of the National Economic Council. The management of the Bangladesh Climate Change Trust Fund (BCCTF) and Bangladesh Climate Change Resilience Fund (BCCRF) places it in line with other ministries

such as the Ministry of Local Government, Rural Development and Co-operatives. NGOs can also implement some projects through donor funds but the objectives need to be articulated.

#### *3.4.4.2 The Ministry of Environment and Forest (MoEF)*

The Ministry of Environment and Forest (MoEF) is the key government agency responsible for protecting the environment and addressing climate change. The Earth Summit in 1992 focused on Principle 10, the need to provide access to environmental information, public participation in decision-making process and opportunities for remedying justice. States are expected to facilitate and encourage public awareness and participation by making information widely available and effective access to judicial and administrative proceedings, as well as redress and remedy, are to be provided.<sup>272</sup> After the Rio Conference, Bangladesh strengthened the MoEF and its executive arms and enacted a new generation of laws and policies to implement a wide range of activities for the protection of the environment, conservation and sustainable use of natural resources. The MoEF is primarily responsible for environmental management at the national level to ensure sustainable environment and forestry through conservation of ecosystems and biodiversity, controlling environmental pollution, addressing climate change, research and environmental surveys and development of forest resources.<sup>273</sup>

A right of access to the environment involves not only taking and using the resources of the environment but also not ensuring that this use does not pollute the environment. To reduce pollution from industry and transport, the GoB has enacted legislation to improve waste management. It is also looking beyond its borders to find some measures to manage climate change through regional action plans. It is important to mention that the GoB is also planning to develop regional cooperation in water management and regional water policy with its neighbouring countries – India, Nepal and Bhutan. The GoB has established an inter-ministerial committee on climate change under MoEF composed of relevant government ministries and departments as well as a key NGOs and research institutions,<sup>274</sup> and the MoEF itself is monitoring and managing climate change affairs. It formulates and monitors the

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<sup>272</sup>UNESCO, *The Rio Declaration on Environment and Development* (1992), <[http://www.unesco.org/education/pdf/RIO\\_E.PDF](http://www.unesco.org/education/pdf/RIO_E.PDF)>.

<sup>273</sup> Ministry of Environment and Forests, (May14, 2017), <<http://www.moef.gov.bd/>>.

<sup>274</sup> Amreeta K. Rawlani and Benjamin K. Sovacool, 'Building responsiveness to Climate Change through community based adaptation in Bangladesh (2011)16(8) *Mitigation and Adaptation Strategies for Global Change* 845, 863.

environmental policies and laws and is the controlling authority of all executive agencies, including the:

- Department of Environment (DoE)
- Forest Department (FD)
- Bangladesh Forest Research Institute (BFRI)
- Bangladesh Forest Industries Development Corporation (BFID)
- Institute of Forestry and Environmental Sciences (IFESCU)

To strengthen national climate resilience heading towards 2050, Bangladesh will need a huge amount of investment.<sup>275</sup> As a result, the government decided to rename the MoEF the Ministry of Environment, Forest and Climate Change in 2017 and launched the world's first Country Investment Plan (CIP) to tackle challenges to environment, forestry and climate change.<sup>276</sup> A five-year (2016–2021) plan will contribute to national sustainable development through the enhanced provision of ecosystem services, which may help to reduce poverty, improve environmental and human health benefits and increase resilience to climate change.<sup>277</sup> The government has paid more attention to environment and climate change sector in its seventh Five-Year Plan, which will hopefully ensure a developed and healthy environment in Bangladesh and the promotion of climate justice. This new plan says it will create new jobs, control inflation and increase national savings in order to increase GDP growth to eight per cent. In order to secure the GDP growth rates, it is estimated that the investment rate will need to expand from 27.9% in FY2015 to around 34.4% by FY 2020 and actual investment performance fell much shorter than under the former plan.<sup>278</sup> The lead economist of the World Bank's Dhaka office, Zahid Hussain, has stated that the targets are highly ambitious but

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<sup>275</sup> Fazle R.S. Ahmed, *Climate Change Issues in Bangladesh and Need for Adaptation to Climate Change* (Palli Karma Sahayak Foundation, 2012), <[http://www.ilo.org/wcmsp5/groups/public/@asia/@ro-bangkok/@ilo-dhaka/documents/presentation/wcms\\_181127.pdf](http://www.ilo.org/wcmsp5/groups/public/@asia/@ro-bangkok/@ilo-dhaka/documents/presentation/wcms_181127.pdf)>.

<sup>276</sup> Daily Star, 'Govt. to rename environment ministry', *The Daily Star* (online), 6 August 2017, <<https://www.thedailystar.net/country/bangladesh-government-rename-ministry-environment-forest-climate-change-1444495>>.

<sup>277</sup> Ministry of Environment and Forest, *Bangladesh Country Investment Plan for Environment, Forest and Climate Change (2016–2021)* (Government of Bangladesh), <[http://www.fao.org/fileadmin/user\\_upload/FAO-countries/Bangladesh/News/CIP\\_FINAL\\_PRINTED\\_VERSION.pdf](http://www.fao.org/fileadmin/user_upload/FAO-countries/Bangladesh/News/CIP_FINAL_PRINTED_VERSION.pdf)>.

<sup>278</sup> Sadiq Ahmed, *Challenges of Financing Seventh Five-Year Plan* (Policy Research, 2015), <[http://www.pri-bd.org/main/view\\_publication/challenges-of-financing-seventh-five-year-plan\\_302](http://www.pri-bd.org/main/view_publication/challenges-of-financing-seventh-five-year-plan_302)>.

possible to achieve if the organisational capabilities of government-related organisations are increased and irregularities and corruption are prevented.<sup>279</sup>

#### 3.4.4.3 Department of Environment (DoE)

Under the MoEF, the Department of Environment is the primary institution for environmental management. The vision of this department is to create the necessary provisions for human lives by protecting, upgrading and facilitating the quality of the numerous ecosystems essential for healthy living, through conservation of the environment, improvement of environmental standards and controls, and mitigating pollution to make Bangladesh free of pollution and environmental hazards. The ambitious goal of this department is to ensure a healthy, beautiful, safe and pollution-free environment for present and future generations by 2021.<sup>280</sup> The DoE is the authority with the mandate to regulate and enforce environmental management and controls and establish and enforce environmental regulations and pollution controls for water resources. This department also assists other GoB agencies to promote sustainable land use, biodiversity and other natural resources. It has statutory responsibility for implementing the provisions and objectives of the *Environmental Conservation Act 1995*. The DoE is headed by a Director-General who has a authority over this implementation, as well as discretionary authority under the *Environment Conservation Rules 1997* to grant environmental clearance to an applicant exempting the requirement of site or location clearance, provided the circumstances are considered appropriate. Recently, the department has been allocated extensive new powers to control air pollution, protect and conserve soil, water and other natural resources, and control and mitigate pollution of the environment, especially with regard to industrial and vehicular pollution. The Ministry of Planning also has an environmental section to monitor the environmental aspects of the projects of GoB. The aim of this ministry is to mainstream poverty, environment and climate change matters into national-level planning and budgeting processes, as well as integrating climate resilience into national development planning.<sup>281</sup>

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<sup>279</sup> Zafar Ahmad, '7<sup>th</sup> Five-Year Plan on 13 Million Jobs, 8% GDP Growth awaits Clearance', *bdnews24.com* (online), 20 October 2015, <<https://bdnews24.com/economy/2015/10/20/7th-five-year-plan-on13-million-jobs-8-gdp-growth-awaits-clearance->>.

<sup>280</sup> Parliamentary Standing Committee on Ministry of Environment and Forest, *Bangladesh Environment and Climate Resilient Sustainable Development: Vision 2021* (Government of Bangladesh, 2010), <<http://ext.bd.undp.org/CCED/bgdp/BGDP%20Materials/Review%20Documents/Vision-2021.pdf>>.

<sup>281</sup> Pervin, above n 265.

#### 3.4.4.4 Forest Department (FD)

The Forest Policy in Bangladesh is mainly dependent on international donors' projects due to the forest sector not being a viable economic sector in its own right.<sup>282</sup> The Department of Forestry works as an executive agency under MoEF for the protection, control, conservation, expansion and maintenance of the national forest resources.<sup>283</sup> At the 1992 Earth Summit in Rio de Janeiro, Bangladesh accepted certain obligations, such as sustainable development and sustainable forest management (SFM) under that Convention; it has set out some policy objectives under the National Forest Policy promulgated in October 1994 to balance economic development with preservation of the environment. This SFM has harmonised the seven common thematic areas on national and global levels, represented by Giessen and Sarkar and Rahman as follows.<sup>284</sup>



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<sup>282</sup> Lukas Giessen, Pradip K. Sarkar and Md S. Rahman, 'Policies: Distributive Effects on Power Among State Agencies in Bangladesh' (2016) 8(4), *Sustainability* 335.

<sup>283</sup> South Asia Cooperative Environment Program, *Environmental Legislation and Institutions in Bangladesh* (UNEP, 2001), <<http://www.sacep.org/pdf/Reports-Technical/2001-UNEP-SACEP-Law-Handbook-Bangladesh.pdf>> 65.

<sup>284</sup> Giessen, Sarkar and Rahman, above n 282.



### Figure 3.3: Thematic elements of sustainable forest management (SFM) at the global level

The department has changed its traditional custodial role to a more active role in forest management, known as ‘social forestry’, that aims to protect the social and economic benefits of landless, poor, widowed and oppressed rural people. At the same time, this project has created opportunities for investment for local community forestry in government forests. In 2000, the government brought social forestry activities into the legal framework through the incorporation of the *Forest Act of 1927*, which the government introduced as the *Social Forestry Rules* in 2004.<sup>285</sup> Social forestry involves a considerable number of local development organisations as partners in the implementing process and has succeeded in increasing the green coverage of the country, but the governance issue remains unattended.<sup>286</sup> The *Social Forestry Rules 2010* made the 2004 rules more effective, timely and efficient; this is discussed in detail in Chapter 6.

However, national planners often find that local communities are a threat to the forest, rather than potential protectors and managers. Due to poor policy and management, Bangladesh has lost 40,000 ha of natural and manmade forest along the eastern border and coastal areas. In view of these circumstances, the Forest Department has started co-management activities in more than five Protected Areas with the financial assistance of USAID, which helps the local communities contribute in that Protected Area. This has resulted in positive benefits in conserving biodiversity.<sup>287</sup> Under the co-management system, the local inhabitants are involved in managing the Protected Areas; thus, those who were threat to forest resources, for example by extracting illegal resources, instead become protectors of those forests which may also directly or indirectly help to address climate change. Forests and trees are vital storehouses of carbon in the world, absorbing greenhouse gases, regulating water flows and protecting coastal communities from extreme events and sea-level rises.<sup>288</sup>

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<sup>285</sup> Forest Department, Government of the People’s Republic of Bangladesh

<<http://www.bforest.gov.bd/site/page/ee07d788-c409-4fe4-a724-29e0dfe9ef26/Social-Forestry>>.

<sup>286</sup> A.Z.M.Manzoor Rashid, Donna Craig, Sharif A. Mukul, ‘Shifting Paradigm of Governance in the Natural Resources Management of Bangladesh: A Centralist to Pluraistic Approach in the Forest Protected Areas Management’, in S.A.Mukul and A.Z.M. Manzoor Rashid (eds), *Protected Areas: Policies, Management & Future Directions* (Nova Science Publishers, 2017) p. 53.

<sup>287</sup> Ibid.

<sup>288</sup> World Bank, *Forests Combat Climate Change* (World Bank, 2016),

<<http://www.worldbank.org/en/topic/forests/brief/forests-combat-climate-change>>.

#### 3.4.4.5 Climate Change Cell

It has already been noted that climate change impacts pose a great challenge for Bangladesh. A lack of awareness, however, may mean that the general population thinks that these impacts will not affect them personally. The government has taken steps to change the way people think about climate change and their behaviour. In 2004 the Department of Environment established the Climate Change Cell (CCC) under the Comprehensive Disaster Management Programme (CDMP), which acts as secretariat for climate change-related work within the government. The CCC provides the central focus for the climate change-related work of the Government, operating as a unit of the Department of Environment (DoE) under the Ministry of Environment and Forest (MoEF).<sup>289</sup> This organisation has mainly conducted activities such as research on six adaptation programmes; building national capacity to carry out climate change modelling; training; and establishing a climate change database (CCD). In 2010 the CCC started a project under CDMP II, 'Support the Department of Environment's Climate Change Cell, Bangladesh'.<sup>290</sup> It has developed an awareness development programme to address the immediate need of different stakeholder groups and communities and to motivate them to identify risks and search for options to reduce climate change risks and impacts. In order to determine environmental policies, it has established a National Environmental Committee that is chaired by the Prime Minister with representation from members of Parliament as well as government and civil society. The CCC coordinates all the focal points under MoEF that contribute to mainstreaming climate change into national-level planning, and provides secretariat services to the BCCRF and BCCTF.<sup>291</sup> It is important to mention that the BCCRF, a partnership between the GoB, development partners and the World Bank, is a pioneering step to address the impacts of climate change. On the other hand, the BCCTF, the first-ever national climate fund established by LDCs, funds programs and projects from the national budget to help communities recover and become resilient to climate change impacts<sup>292</sup> and is therefore a positive step towards achieving climate justice.

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<sup>289</sup> Climate Change Cell, *Background* (Government of Bangladesh, 2014)  
<<http://www.climatechange.org.bd/background.htm>>.

<sup>290</sup> Ibid.

<sup>291</sup> Pervin, above n 265.

<sup>292</sup> UNDP, *Bangladesh Climate Change Trust Fund* (UN, 2017),  
<[http://www.bd.undp.org/content/bangladesh/en/home/operations/projects/environment\\_and\\_energy/inclusive-budgeting-and-financing-for-climate-resilience1/national-policies-and-strategies/bangladesh-climate-change-trust-fund-.html](http://www.bd.undp.org/content/bangladesh/en/home/operations/projects/environment_and_energy/inclusive-budgeting-and-financing-for-climate-resilience1/national-policies-and-strategies/bangladesh-climate-change-trust-fund-.html)>.

The following section considers institutional arrangements for climate change in India and Pakistan, as a way of benchmarking Bangladesh's institutional arrangements.

### **3.5 Case Studies: Institutional Arrangements for Climate Change in India and Pakistan**

#### ***3.5.1 India***

India formulated a National Action Plan on Climate Change in 2008, but the country is growing fast and institutional arrangements are not getting sufficient attention. India needs effective institutional structures and coordination and implementation strategies for policy. According to Navroz K. Dubash and Neha B. Joseph, institutionalisation of climate change has often been ad hoc instead of being designed to suit India's development-focused approach.<sup>293</sup> It also suffers from a lack of stability in institutions; for example, the office of Prime Minister's Special Envoy on Climate Change was disestablished after two years. It would seem that there is little Bangladesh can learn from India's institutional arrangements.

#### ***3.5.2 Pakistan***

However, the Government of Pakistan established three important institutions related to addressing climate change. The Pakistan Climate Change Council (PCCC) was established under section 3 of the *Climate Change Act 2017* as a supreme body for monitoring climate change-related developments, both internationally and nationally, and providing policy guidance. This council is headed by the Prime Minister or such other person as the Prime Minister may nominate. This Council shall hold at least two meetings a year and consider the National Climate Change Report to give appropriate direction. The Pakistan Climate Change Authority and the Pakistan Climate Change Fund were established under section 5 and section 12 of the same Act respectively. Under Amendment 18 to the Constitution of Pakistan, enacted in 2010, the government devolved the Ministry of Environment to the provinces and established a new Ministry of Disaster Management in 2011; in 2012, this was renamed as the Ministry of Climate Change (MCC). Therefore, the environment is now under the jurisdiction of the provincial government and climate change responsibility resides at the federal level. The MCC deals with CDM and Reducing Emissions from Deforestation and Forest Degradation

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<sup>293</sup> Dubash and Joseph, above n 271.

initiatives in Pakistan.<sup>294</sup> Other ministries with policy responsibility for power, energy, food security and research also have some responsibilities for climate change-related policies in the key areas of mitigation and adaptation. Pakistan has also established an autonomous Global Change Impact Studies Centre to conduct climate change-related research. Other initiatives include the Planning Commission's Task Force on Climate Change and the Ministry of Environment's Core Group on Climate Change. The Pakistan government has harmonised institutions between federal and provincial levels and climate change action is—potentially—supported by various bodies.<sup>295</sup>

### 3.5.3 Climate Change Commission in Pakistan

In the case of *Shehla Zia v. WAPDA* (1994),<sup>296</sup> the Supreme Court of Pakistan established a commission in the case for providing and reviewing scientific technical and professional data submitted by the parties in the case. As environmental issues often overlap with various other areas, such as mining, science, economics, health and public safety, the Supreme Court utilised the expert guidance of the Commissions, setting a legal precedent in the superior courts in Pakistan. In the *Salt Mines* case (1994),<sup>297</sup> the Supreme Court constituted a committee of six members to visit the site of extensive mining activity and to recommend remedial measures.<sup>298</sup> In the *Lahore Bank Road* case (2011),<sup>299</sup> the Supreme Court decided to seek the assistance of an expert committee to enable the court to receive technical advice while the judges focused on questions of law; the aim was to reduce the chances of judicial arbitrariness and add legitimacy to the judgment.<sup>300</sup> Pakistan's superior courts have also followed this precedent and adopted the practice of appointing commissions as needed. In the case of *Asghar Leghari v*

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<sup>294</sup> Qamar Uz Zaman Chaudhury, *Climate Change Profile of Pakistan* (Asian Development Bank, 2017) <<https://www.adb.org/sites/default/files/publication/357876/climate-change-profile-pakistan.pdf>>.

<sup>295</sup> Shakeel Ahmad Ramay, Farrukh Iqbal Khan and Sadia Munawar, *Institutional Arrangement for Climate Change in Pakistan* (Sustainable Development Policy Institute, 2011), <<https://www.sdpi.org/publications/files/project%20report%2019.pdf>>.

<sup>296</sup> *Shehla Zia v. WAPDA* [1994] PLD 693(SC).

<sup>297</sup> *General Secretary, West Pakistan Salt Miners Labour Union (CBA) Khewra, Jhelum v. The Director, Industries and Mineral Development, Punjab, Lahore* [1994] SCRM 2061.

<sup>298</sup> Dr Parvez Hassan, *Environmental Jurisprudence from Pakistan: Some Lesson for the SAARC Region*. Paper presented at the South Asia Conference on Environmental Justice organised by the Supreme Court of Pakistan (24–25 March 2012),

<[https://www.iucn.org/sites/dev/files/import/downloads/pk\\_1\\_environmental\\_jurisprudence\\_from\\_pakistan\\_\\_\\_some\\_lessons\\_for\\_the\\_saarc\\_region\\_\\_d.pdf](https://www.iucn.org/sites/dev/files/import/downloads/pk_1_environmental_jurisprudence_from_pakistan___some_lessons_for_the_saarc_region__d.pdf)>.

<sup>299</sup> *Cutting of Trees for Canal Widening Project, Lahore* (2011) SCMR 1743.

<sup>300</sup> *Ibid*, para 54.

*Federation of Pakistan* (2015),<sup>301</sup> the Lahore High Court has followed the *Shehla Zia* (1994)<sup>302</sup> case and constituted a ‘climate change commission’ for the effective implementation of the National Climate Change Policy, 2012 and Framework (2014–2030). The commission consisted of the heads of all important federal and provincial ministries, departments and authorities, members of civil society, academics and media representatives to focus on priority actions. The commission has submitted a report of recommendations to ensure the smooth implementation of the policy and the framework. A similar commission might assist to Bangladesh to further implementing an effective environmental regime. The Pakistani commission also resolves complex environmental issues, promotes dialogue and discussion between stakeholders, and includes those department or ministries of the government that would ultimately be responsible. It has successfully coordinated between the ministries and department, as well recommending an appropriate budgetary allocation for the implementation of the framework, particularly the priority actions and capacity building, including improvement of the national early warning system.<sup>303</sup> The commission also recommended plans for financial allocation to develop dams and the establishment of a separate ministry/national commission on water to deal with water resource management and conservation.<sup>304</sup> It has also recommended strengthening its capacity to access international climate finance to combat climate change and suggested certain projects under budgetary allocations. Bangladesh could benefit from such ‘one-stop shop’ to coordinate responses to climate change and seek to ensure climate justice.

### **3.6 Mainstreaming National Adaptation in Bangladesh**

The German Watch and Climate Vulnerability Monitor (2010) report ‘The State of the Climate Crisis’ notes that Bangladesh is one of the countries most vulnerable to climate change and needs extensive adaptation measures to survive.<sup>305</sup> But Bangladesh has a low capacity to cope with the losses from climate change impacts. There are four steps to building national capacity on climate change: awareness rising, targeted information, piloted activities and

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<sup>301</sup> *Asghar Leghari v. Federation of Pakistan* (Writ Petition No. 25501/2015).

<sup>302</sup> *Shehla Zia v. WAPDA* [1994] PLD 693(SC).

<sup>303</sup> Parvez Hassan, *Judicial Commission on Climate Change in Pakistan*. Paper for the 20<sup>th</sup> APCEL Anniversary Conference Panel on Climate Change Adaptation (2016), <[https://law.nus.edu.sg/apcel/cca/Judicial%20Commission%20on%20Climate%20Change%20in%20Pakistan\\_Parvez%20Hassan.pdf](https://law.nus.edu.sg/apcel/cca/Judicial%20Commission%20on%20Climate%20Change%20in%20Pakistan_Parvez%20Hassan.pdf)>.

<sup>304</sup> *Ibid.*

<sup>305</sup> Ahmed, above n 275.

mainstreaming.<sup>306</sup> ‘Mainstreaming’ is often referred as integrating adaptation into development.<sup>307</sup> According to Dalal-Clayton and Bass, mainstreaming is defined as the informed inclusion of significant environmental concerns into institutional decisions that drive national and sectoral development policy, rules, plans, investment and action.<sup>308</sup> As has been discussed, the Bangladesh Government is also incorporating climate change into sectoral plans and national policies, especially in the agricultural sector, and has started research programmes. The NAPA and the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) are the two de facto policy instruments that provide strategic direction for work on climate change-related issues. The government has taken those as mainstreaming adaptation to climate change. At the same time, it has responded to Community-Based Adaptation are discussed further in Chapter 5.

### *3.6.1 National Adaptation Programme of Action (NAPA)*

The National Adaptation Programmes of Action (NAPAs) provide a process for least developed countries to identify priority activities that address their urgent and immediate needs regarding adaptation to climate change—those for which further delay could increase vulnerability or lead to increased costs at a later stage.<sup>309</sup> Bangladesh was the first of the LDCs to complete a NAPA. In 2005; the NAPA focused on 45 adaptation options that covered six sectors:

1. Forestry, Biodiversity and Land Use
2. Agriculture, Fisheries and Livestock
3. Water, Coastal Areas, Natural Disaster and Health
4. Livelihood, Gender Local Governance and Food Security
5. Industry and Infrastructure
6. Institutional and Policy Issues.

The GoB is taking steps but faces development hurdles due to the impacts of climate change already been felt; as a result, it has put climate change high on its development agenda. It is

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<sup>306</sup> Huq and Ayers, above n 246.

<sup>307</sup> Jessica Ayers et al, ‘Mainstreaming Climate Change adaptation into development in Bangladesh’ (2014) 6(4) *Climate and Development* 293, <<http://rsa.tandfonline.com/loi/tcltd20>>

<sup>308</sup> B. Dalal-Clayton and S. Bass, *A Guide to Environmental Mainstreaming (Rough First Draft)* (IIED, 2009). Cited in Ayers et al, above n 307.

<sup>309</sup> UNCC, *National Adaptation Programmes of Action* (UN, 2016), <[http://unfccc.int/adaptation/workstreams/national\\_adaptation\\_programmes\\_of\\_action/items/7567.php](http://unfccc.int/adaptation/workstreams/national_adaptation_programmes_of_action/items/7567.php)>.

integrating climate change into sectoral plans and national policies.<sup>310</sup> But some scholars feel that the NAPA 2005 final report was insufficient to tackle the intense impacts of climate change faced by Bangladesh.<sup>311</sup> It was not successful in integrating adaptation actions with the national development plan because of investment, monitoring and overall improvements were not satisfactory. As a result, in June 2009, the MoEF published an updated version, in addition to the development of the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) which built upon the NAPA (2005 and 2009) to present tactical actions to combat climate change. The NAPA has identified 45 adaptation measures and 16 short- and medium-term projects have been taken into consideration for further development by various ministries and departments. Bangladesh receives financial assistance from the UNFCCC through the Least Developed Countries Fund (LDCF) for the completion of NAPA. However, because the preparation of full project design documents was not financed through the NAPA process, further funds are required to prepare full project document before implementation can take place.<sup>312</sup>

### *3.6.2 Bangladesh Climate Change Strategy and Action Plan (BCCSAP)*

The BCCSAP—the main national planning document in Bangladesh for climate change—is a ten-year programme (2009–2018) to build capacity and resilience. Over the first five-year period it comprised six pillars for climate change adaptation and mitigation and identified 44 priority programmes, which included:

1. Food security, social protection and health
2. Comprehensive disaster management
3. Infrastructure
4. Research and Knowledge management
5. Mitigation and low-carbon development
6. Capacity building and institutional strengthening.<sup>313</sup>

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<sup>310</sup> Huq and Ayers, above n 246.

<sup>311</sup> Displacement Solutions, *Climate Displacement in Bangladesh* (May 2012), <<http://displacementsolutions.org/wp-content/uploads/DS-Climate-Displacement-in-Bangladesh-Report-LOW-RES-FOR-WEB.pdf>>

<sup>312</sup> Saleemul Huq and Jessica Ayers, *Climate Change Impacts and Responses in Bangladesh* (European Parliament: Policy Department Economic and Scientific Policy, 2008), <<http://www.pedz.uni-mannheim.de/daten/edz-ma/ep/08/EST19195.pdf>>.

<sup>313</sup> Ministry of Environment and Forests, *Bangladesh Climate Change Strategy and Action Plan* (Government of Bangladesh, 2009), <[http://www.climatechange.org.bd/Documents/climate\\_change\\_strategy2009.pdf](http://www.climatechange.org.bd/Documents/climate_change_strategy2009.pdf)>.

Repeated floods and cyclones, which causes massive damage to the country's infrastructure, are one of the biggest hurdles for the GoB. Through the BCCSAP, Bangladesh has set out some ways in which reconstruction efforts can take the future impacts of climate change into consideration for urban planning and economic development. This action plan also supports planning and construction of new designs and repairs of existing infrastructure, which might be the most expensive of all the action plans. It has also built new cyclone shelters and successfully broadcasts early warnings to the population. In order to manage the food security, water security, protection and health needs of the vulnerable population, including woman and children, and hence work towards achieving climate justice, this action plan includes developing Community-Based Adaptation programme, a climate-resilience corps comprising various occupations, and access to safe drinking water in the coastal areas. For health education and social protection, this action plan sets out improved access to basic health and educational services and insurance policies for its population. The plan calls for researchers to update the impacts of climate change as different global climate change models are applied to the country and establish a network of centres to ensure that international researchers can share the latest ideas and technologies with researchers in Bangladesh. The BCCSAP has also taken steps towards further adaptation plans that will be connected to the current disaster management efforts to enhance the long-term nature of preparations, from the community level to the national level.

In addition to its adaptation focus, the BCCSAP programme also incorporated mitigation measures to reduce Bangladesh's (already-low) greenhouse gas emissions. It is important to note that this programme will run through 2018 and a revision of the programme is also planned. It is not only a capacity building and disaster management tool but also has a role in institutional and infrastructure strengthening, and development of research and low-carbon technologies. It positions Bangladesh to address address climate change and, importantly, opened the way for REDD+ activities. The mitigation and low-carbon development pillar of BCCSAP includes a plan to replant the mangrove and forest belt that once covered much of the coastline, and that would help protect the coastline at the same time as offering carbon storage and sequestration and fisheries benefits<sup>314</sup> which is a breakthrough step. This strategy

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<sup>314</sup> Nachmany et al, above n 267.



is one of the tactical actions to combat climate change that could be used in other low-lying deltas, in countries such as Egypt or Vietnam or even in cities like New Orleans.<sup>315</sup>

The Intended Nationally Determined Contributions (INDC) implementation will be carried forward under the framework of updated and meaningful implementation of BCCSAP and other key policies and plans, with coordination being managed by the Climate Change Secretariat in the Ministry of Environment and Forests, reporting to the Advisory Committee and the National Environment Committee.<sup>316</sup> The National Determined Contribution of Bangladesh (2015) has also identified an adaptation goal to ‘protect the population, enhance their adaptive capacity and livelihood options and to protect the overall development of the country in its stride for economic progress and wellbeing for the people’.<sup>317</sup> It identifies more adaptation priorities for Bangladesh.

### 3.6.3 Climate Change Fund in Bangladesh

Bangladesh has established two climate change funds to address the challenges: the BCCTF, which uses government revenue, and the BCCRF, which uses donor funds to support BCCSAP implementation and capacity building of the MoEF and other ministries involved in implementation. The trust fund model draws on national strategies that integrate different sources of funding, bringing together funders and sector-based institutions. The BCCSAP sets out the type of investments needed to address climate change impacts, early warning systems, improved irrigation and water management, improved operation and maintenance, and upgrading of coastal embankments, flood protection embankments and drainage systems.<sup>318</sup> In order to implement identified adaptation measures, Bangladesh will need to invest US\$40 billion between 2015 and 2030.<sup>319</sup> The BCCSAP mainly focuses on mitigation measures and low-carbon development. But Bangladesh should focus on the approach of adaptation.

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<sup>315</sup> Saleemul Huq, ‘Lessons of Climate Change, Stories of Solutions, Bangladesh: Adaptation’ (2011)67(1) *Bulletin of the Atomic Scientists* 56, <<http://journals.sagepub.com/doi/pdf/10.1177/0096340210393925>>.

<sup>316</sup> Ministry of Environment and Forests, *Intended National Determined Contributions (INDC)* (Government of Bangladesh, 2015),

<[http://www4.unfccc.int/ndcregistry/PublishedDocuments/Bangladesh%20First/INDC\\_2015\\_of\\_Bangladesh.pdf](http://www4.unfccc.int/ndcregistry/PublishedDocuments/Bangladesh%20First/INDC_2015_of_Bangladesh.pdf)>.

<sup>317</sup> UNEP, *National Adaptation Plan Process in Focus: Lessons from Bangladesh* (UN, 2017), <[https://reliefweb.int/sites/reliefweb.int/files/resources/bangladesh\\_NAP\\_country\\_briefing.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/bangladesh_NAP_country_briefing.pdf)>.

<sup>318</sup> Ministry of Environment and Forests, above n 313.

<sup>319</sup> Ministry of Environment and Forests, above n 316.

### 3.7 Challenges for the Government of Bangladesh

The central question of this thesis is whether the UNFCCC instruments, such as adaptation, can help Bangladesh to combat climate change impacts and ensure climate justice. Climate change is a serious risk to poverty reduction and development efforts. Adaptation policy is the biggest challenge for the GoB because it needs to mainstream and integrate adaptation to climate change into poverty reduction and development efforts. The main challenge for mainstreaming adaptation is the first step of mainstreaming—that is, awareness. Information systems and knowledge-sharing systems need to be strengthened to increase development. To that end, the Department of Information and Department of Environment can work together to close the gap. Political will also plays a key role in mainstreaming climate resilience into development planning and creating project-based action plans. Bangladesh has limited resources to undertake adaptation measures, so it needs to identify priority-based projects and fund management control between the GoB and international agencies. Institutional arrangements at the national level are very important; this may include technical working groups as well as standing committees for integration at national, regional, sub-national and community level. In Gambia, for example, community-level institutions are responsible for the actual implementation and management of climate change projects.<sup>320</sup> The institutional capacity and human resources quality of national organisations needs substantial improvement for successful and timely implementation of projects. Bangladesh has a high density of population but the NAPA of Bangladesh has not mentioned the close relationship between climate change and population problems. Salination of water and rising temperatures place food production at risk, meaning there is a need to improve agricultural research. In the agricultural sector the government can take initiatives while promoting farmers' training and education so that they help promote food security.

The environmental problems have been made worse by the lack of enforcement of existing rules and regulations and, on the other hand, a history of poverty, high population density and weak political governance. To address this problem, the GoB needs to increase awareness about sound environment, pollution control and conservation of natural resources among the common people, especially in rural areas. Bangladesh has received disaster management and

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<sup>320</sup> Mousumi Pervin et al, *A Framework for Mainstreaming Climate Resilience Into Development Planning* (IIED, 2013), <<http://pubs.iied.org/pdfs/10050IIED.pdf>>.

adaptation support in several sectors from the international community and has itself developed some capacity to deal with the impacts of climate change at the national level.<sup>321</sup> It has mobilised policy response options that deal with reducing vulnerability to climate change.

Awareness of climate change in Bangladesh arose earlier than in other developing countries, but there is a gap between awareness and policy-level action. It has attracted limited attention from policy-makers. One reason might be that international agencies and policy-makers pay more attention to mitigation than adaptation. As a result, the Bangladesh Government carried out more mitigation activities and research than adaptation activities from 1993 to 2002. On the other hand, Bangladesh has several laws and policies governing environmental issues, but these laws need updating and coordination for internal consistency and to address conflicts of management among the public agencies. Increasingly, however, the GoB, scientific and civil societies are aware of climate change and its impacts and are trying to reduce its effects. The GoB has successfully completed the NAPA programme, which offers guidelines to focus more on actions rather than research priorities. As a result, Bangladesh has developed a capacity to deal with climate change vulnerability reduction at the national level and formulated the BCCSAP.

Every ministry has its own systems and publishes reports depending on its own access to information and data; as a result, there is an enormous gap among the ministries. Furthermore, the impacts of climate change have a multi-sectoral nature. Due to lack of coordination, decision-makers are unable to use in-depth information and specific scientific information for effective planning and investment. Lack of sector-specific studies and research, unavailable published information and lack of coordination, communication and information sharing between the sectors are among the greatest challenges for the GoB. As a result, decision-makers are unable to make concrete decisions on adaptation and mitigation. The GoB will have to pay special attention to these gaps and, at the same time, will have to generate a common agenda for monitoring and evaluation of adaptation and mitigation to climate change.

Some South Asian countries have established Environment Ministries and developed the capacity to formulate environmental policies to manage the work of other ministries relating

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<sup>321</sup> Saleemul Huq and Jessica Ayers, *Climate Change Impacts and Responses in Bangladesh* (European Parliament, 2008), <[http://www.europarl.europa.eu/RegData/etudes/etudes/join/2008/400990/IPOL-CLIM\\_ET\(2008\)400990\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2008/400990/IPOL-CLIM_ET(2008)400990_EN.pdf)>.

to the environment. Pakistan has established the Environment Protection Council under the *Pakistan Environmental Protection Act 1997*. It consists of the Prime Minister and all ministers in charge of areas with environmental impacts, as well as at least twenty non-officials including representatives from commerce and industry, medical and legal professions, trade unions and NGOs, and technical/scientific communities.<sup>322</sup> In 2009, the Government of Sri Lanka developed a National Council for Sustainable Development, chaired by the incumbent President, that coordinates key ministries and agencies in an effort to plan the use of resources to meet development demand.<sup>323</sup> In 2012, the Central Environmental Authority established an environmental information database consolidating data received from Wildlife, Forest Conservation, Census and Statistics, Survey and Archaeological Departments, the National Building Research Organization and several other institutions, an important step towards resource-based planning.<sup>324</sup>

It has been found that the GoB lacks the political commitment and skilled human resources to ensure proper enforcement of rules and regulations for conservation and reducing the impacts of climate change.<sup>325</sup> Recently, Bangladesh has experienced a growth in judicial activism (discussed in detail in Chapter 7) and public participation that have enhanced enforcement of the government's environmental laws.<sup>326</sup> At the same time, the government can develop alternatives to private compensation claims by creating potential scope for recovery in the tort of negligence and nuisance. By a successful action in negligence and nuisance for damage caused by the impacts of climate change, it can identify a suitable defendant and establish the wrongful conduct.

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<sup>322</sup> South Asia Cooperative Environment Program, above n 283.

<sup>323</sup> Global Environment Faculty, *Ensuring Global Environmental Concerns and Best Practices Mainstreamed in the Post-Conflict Rapid Development Process of Sri Lanka Through Improved Information Management*. UNDP Project Document (GEF, 2013), <<https://www.thegef.org/project/ensuring-global-environmental-concerns-and-best-practices-mainstreamed-post-conflict-rapid>>.

<sup>324</sup> Ibid.

<sup>325</sup> Atiq Rahman, 'Environmental Governance and Growth', *The Daily Star* (online), 12 March 2015, <<https://www.thedailystar.net/supplements/24th-anniversary-the-daily-star-part-3/environmental-governance-and-growth-71123>>.

<sup>326</sup> Junayed Ahmad Chowdhury and Vertex Chambers, *Public Participation in Bangladesh's Response to Climate Change Issue* (Advocates for International Development, 2012), <<http://workspace.unpan.org/sites/internet/documents/S4BD12%20Public%20Participation%20in%20Bangladesh%27s%20Response%20to%20Climate%20Change%20Issues.pdf>>.

### 3.8 Conclusion

In concluding this chapter, this thesis returns to the question of climate justice. It has been mentioned in Chapter 1 that adaptation is one of the mechanisms of climate justice. It is often found that the discussion of climate justice focuses on the mitigation of climate change, rather than adaptation. The analysis of the current international climate change regime indicates that adaptation has gradually become more important and attracted more attention in the international community. This chapter also focuses on adaptation funding, which may reduce climate risk and inequality and secure climate justice at the local level.

Though this chapter has focused on the governmental structure, climate change policy, adaptation and adaptation finance of Bangladesh, climate justice considerations remain the core concern. As a result, this paper focuses on how Bangladesh has addressed climate change and taken adaptation measures. Adaptation must be taken as seriously as mitigation by policy-makers and a legal framework for adaptation created. These two policies will act as the government's mechanism for reducing the climate change risk.

It has been mentioned that Bangladesh has no separate climate change policy; as a result, efforts are managed under other existing policy which may at time conflict with climate change priorities. The GoB has no plan to make a new policy, instead updating the existing framework, which is a lengthy process. The lack of enforcement of rules and regulations has also increased environmental problems. The GoB has revised its relevant legislation and enacted some rules and regulations for better management of natural resources and conservation. In some cases, the judiciary has made appropriate environmental decisions but court orders have not been implemented.<sup>327</sup> In some cases, it has been found that there is lack of local government capacity; in such cases, the role normally played by the local government is assumed by the central government or NGOs. In many cases, NGOs implement projects directly with communities (discussed in Chapter 5).

The role and value of adaptation has been highlighted in Chapter 2 as well as this chapter. Indeed, this chapter has reinforced that a national adaptation fund and international adaptation funding are the ways in which Bangladesh can best address climate change directly. However, given that mitigation remains a priority of international instruments, such as the Kyoto

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<sup>327</sup> Atiq Rahman, above n 325, part 3.

Protocol, Bangladesh should continue to develop this area part of as a multi-pronged approach to addressing climate change. Mitigation, especially in the form of the CDM, can provide a vulnerable source of revenue for Bangladesh and as such, should be encouraged. Accordingly, Chapter 4 discusses the CDM and how Bangladesh can develop economic conditions and address climate change through mitigation and what lessons can be learned from other developing countries in future implementation.

# Chapter 4. The Application of CDM in Bangladesh

## Sub-Chapter 4A. Status Quo and Reflections

### 4.1 Introduction

Chapter 3 discussed the present and future impacts of climate change in Bangladesh, concluding that it is essential for Bangladesh to focus on adaptation measures to combat climate change and establish climate justice. However, it is also essential to direct attention to mitigation, as doing so can help reduce adaptation costs. Thus, climate justice requires the creation of a framework that encompasses both mitigation and adaptation strategies. This chapter has split into two parts, first part will deal with status quo and reflection of CDM, and second part will deal with the recommendation based on the international experience.

Bangladesh has no option but to take the problem seriously by initiating environmental protection and sustainable development, such as harvesting of rain water, promoting sustainable buildings and creating solar power installations.<sup>328</sup> Experts have also remarked on the need for a quick response in the form of mitigation and adaptation strategies to address the challenge of climate change.<sup>329</sup> To examine Bangladesh's situation, a number of questions must be answered, including how Bangladesh is approaching this problem and what initiatives it is taking to mitigate the future threat of global climate change? As noted in Chapter 2, Bangladesh is a signatory to the Kyoto Protocol, which provides a number of economic instruments that can be utilised by Bangladesh to help combat climate change. The most relevant of these is the CDM, which will contribute to sustainable development in Bangladesh. This chapter analyses the performance of CDM in Bangladesh in terms of its structure, registration process, available opportunities and potential areas of improvement. Thus, this chapter focuses on the mitigation process in Bangladesh, with particular attention to international examples to find the best options for Bangladesh.

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<sup>328</sup> S. N. Mclean and D. R. Moore, 'A Mitigation Strategy for The Natural Disaster of Poverty in Bangladesh' (2005) 14(2) *Disaster Prevention and Management: An International Journal* 223.

<sup>329</sup> A.M.M. Maruf Hossain, MD Hasibur Rahman and Kihong Park, 'Manifestations of Climate Change Impacts Affecting Socio-Economy In Bangladesh: Looking Through The Framework Of Sustainable Development' (2010) 2(2) *International Journal of Climate Change Strategies and Management* 180.

As a member of the Kyoto Protocol, Bangladesh enjoys access to the opportunities offered through the CDM arrangements, and there are many CDM projects which being carried out, nearing completion or fully completed in Bangladesh. As in other countries, the CDM in Bangladesh is a formal process, which involves a systematic structure of designated institutions and supportive institutions at government level. Before discussing the formal structure of the CDM in Bangladesh, a brief overview of the CDM and climate justice is provided.

## 4.2 CDM Overview

### 4.2.1 UNFCCC and Kyoto Protocol

When the third session of the Conference of Parties (COP-3) was held by the UNFCCC in Kyoto in December 1997, the members of COP-3 had agreed upon the establishment of what would become known as the Kyoto Protocol. The primary goal of the Kyoto Protocol was ‘stabilization of greenhouse gas (GHG) concentration in the atmosphere at a level that would prevent dangerous anthropogenic inference with the climate system’. A diagrammatic representation of the Kyoto Protocol is included as Figure 4.1.<sup>330</sup>

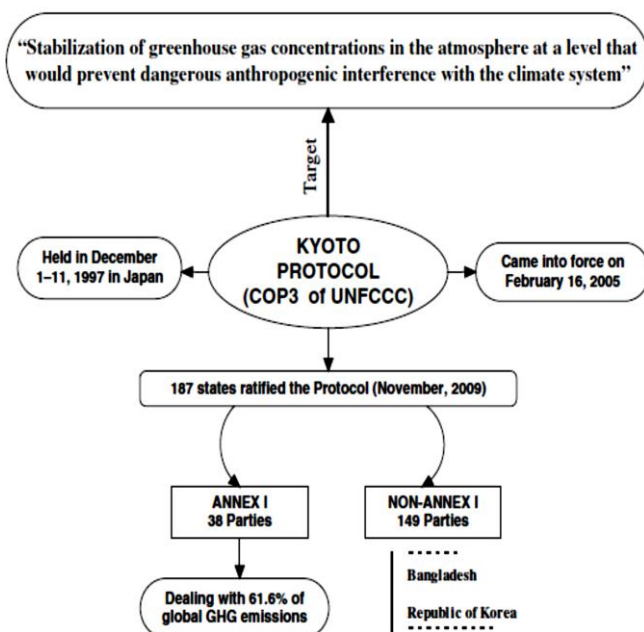


Figure 4.1: Kyoto Protocol framework (Adapted from Main, Shin and Masao, 2017)

<sup>330</sup> Md. Danesh Miah, Man Yong Shin and Koike Masao, *Forests To Climate Change Mitigation: Clean Development Mechanism In Bangladesh* (Springer-Verlag, 2017).



Under the framework of the Kyoto Protocol, member countries have been divided into two categories. The Annex 1 list includes nearly 38 developed countries, while the non-Annex 1 list includes developing countries. According to the principle of ‘common goal, differentiated responsibility’, Annex 1 countries have been allocated responsibility for dealing with 61.6% of global GHG emissions. Non-Annex 1 countries have not been given binding targets, but those countries can also contribute in this regard.

The Kyoto Protocol provides adaptation approaches and mitigation measures for combating climate change. The framework of the Kyoto Protocol provides three mechanisms: the Clean Development Mechanism (CDM), joint implementation (JI) and emission trading (ET). As mentioned in Chapter 2, the CDM is the one that is relevant for Bangladesh so it is important to discuss this in same detail below.

#### *4.2.2 Clean Development Mechanism(CDM)*

The CDM is a mitigation mechanism under Article 12 of the Kyoto Protocol which helps in mitigating the impacts of greenhouse gases.<sup>331</sup> In fact, it allows the industrialised (developed) countries to earn credits through financing GHG mitigation projects in developing countries.<sup>332</sup> Article 12(2) also established a market-based mechanism to promote sustainable development in developing countries. Under CDM, developed countries, and companies in developed countries, are able to offset their GHG reduction liabilities through reducing carbon emissions in developing countries, which is not only a cheaper solution for them but also leads to sustainable development.<sup>333</sup> The CDM has a dual purpose: first, it allows developed countries to put caps on emissions in a cost-effective way; second, it helps promote sustainable development in developing countries. This is an extremely important goal from a climate justice perspective, because sustainable development funding can help vulnerable poor countries prepare for the reality of climate change.<sup>334</sup>

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<sup>331</sup> Ibid.

<sup>332</sup> Renat Heuberger et al, ‘CDM Projects Under the Kyoto Protocol: A Methodology for Sustainability Assessment—Experiences From South Africa And Uruguay’ (2007) 9(1) *Environment, Development and Sustainability* 33.

<sup>333</sup> Asel Doranova, Ionara Costa and Geert Duysters, ‘Knowledge Base Determinants of Technology Sourcing In Clean Development Mechanism Projects’ (2010) 38(10) *Energy Policy* 5550.

<sup>334</sup> Ann E. Prouty, The Clean Development Mechanism and its implications for climate change, (2009) 34(2) *Columbia Journal of Environmental Law* 513.

Following the introduction of the CDM, JI and ET, there was ongoing debate about the nature of the CDM, given that through the CDM, Annex 1 countries can meet their carbon emission reduction targets without actually reducing their domestic emissions. There are three key questions; (1) why the CDM has been taken as a mitigation mechanism? (2) Is the CDM is a long-term solution or does it serve only as a short-term tool? (3) Is the CDM really effective? CDM is a mitigation approach, rather than an adaptation approach, as it helps to reduce the GHG emissions.<sup>335</sup> The original form of the CDM was an offsetting mechanism for industrialised countries to meet their emission targets through sponsoring projects in developing countries.<sup>336</sup> Later, however, the CDM entitled them to certified emission reductions (CERs), which can be used at a later time either for offsetting or to meet their target to contribution for net mitigation.

Regarding the effectiveness of the CDM, the UNFCCC describes the CDM as providing long-term benefits to the environment, because once a project is installed, it mitigates the greenhouse gases continuously for the life of the project. In fact, the definition of CDM projects states that they must provide real, measurable and long-term benefits in terms of mitigation of carbon and greenhouse gases.<sup>337</sup> Regarding the third question, the research findings suggest that the CDM has been the most successful method to the Kyoto Protocol in reducing carbon emissions, having mobilised investments of US\$215 billion in CDM projects.<sup>338</sup> However, this is still not enough; the Paris Agreement declares that the problem of climate change requires approximately \$100 billion in investment every year.

The ultimate objective of the CDM is to reduce greenhouse gases in developing countries while assisting them in environmental protection and sustainable development.<sup>339</sup> Figure 4.2 shows a snapshot of the potential advantages of the CDM for the developing countries, which are

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<sup>335</sup> UNCC, *Introduction To The Clean Development Mechanism* (UN, 2017),

<[https://unfccc.int/files/cooperation\\_and\\_support/capacity\\_building/application/pdf/unepcdmintro.pdf](https://unfccc.int/files/cooperation_and_support/capacity_building/application/pdf/unepcdmintro.pdf)>.

<sup>336</sup> Christiaan Vrolijk and Gareth Philips, *Net Mitigation Through The CDM A Report For The Swedish Energy Agency* (Energimyndigheten.se, 2013).

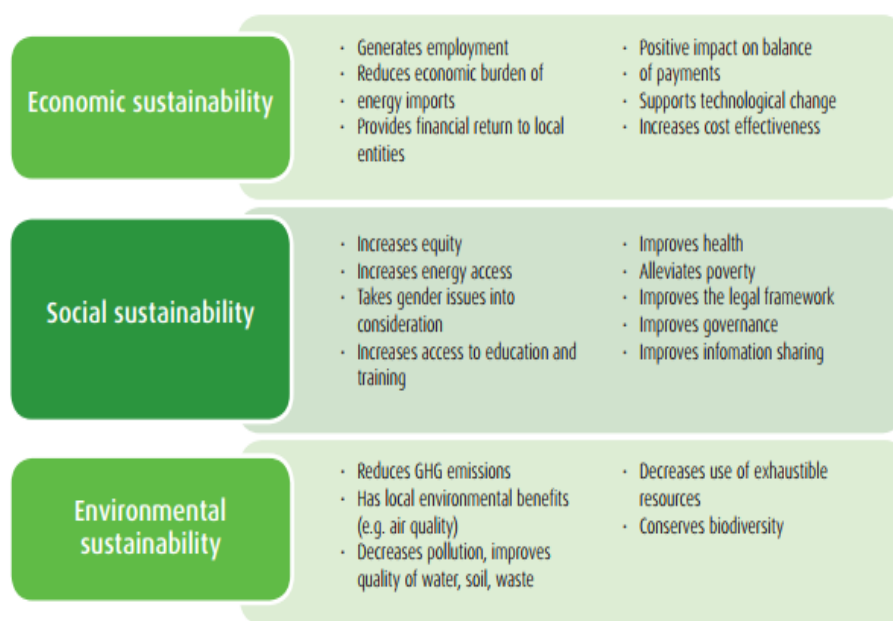
<<https://www.energimyndigheten.se/contentassets/2600659ecfa54ec995b835a4c99d75fb/net-mitigation-through-the-cdm.pdf>>.

<sup>337</sup> UNCC, above n 335.

<sup>338</sup> Vrolijk and Philips, above n 336.

<sup>339</sup> Cyrill Rogger, Francois Beaurain and Tobias S. Schmidt, 'Composting Projects Under The Clean Development Mechanism: Sustainable Contribution To Mitigate Climate Change' (2011) 31(1) *Waste Management* 138.

classified into three categories.<sup>340</sup> First, the CDM leads to economic sustainability benefits, such as generating new employment, improving cost effectiveness, providing a financial return to local entities, reducing the economic burden of energy imports, improving technological change and improving national balance of payments.



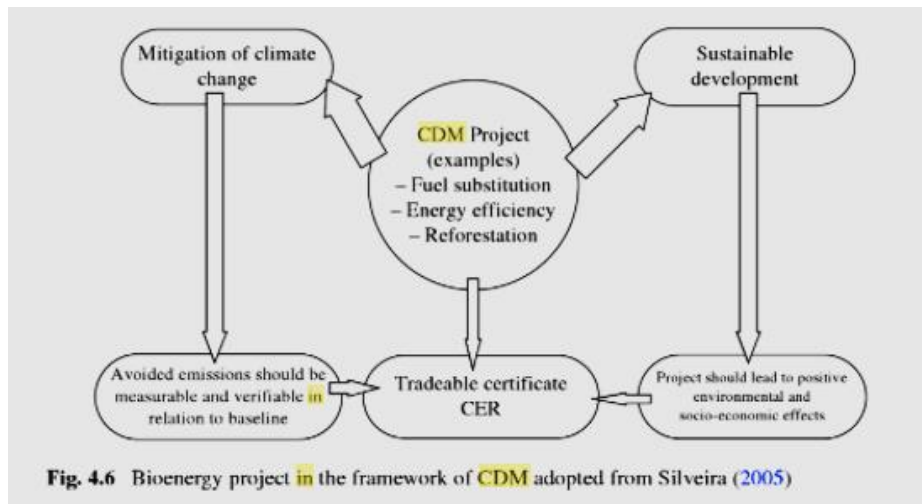
**Figure 4.2: Potential benefits of CDM (Source: MoFA 2010)**

Second, the CDM also provides social sustainability benefits to the economy of developing countries. CDM projects can lead to increased energy resources, alleviate poverty, improve governance, increase equality, improve information sharing, improve the legal framework and increase training and education. Third, the core advantage is that developing countries can get a range of environmental sustainability benefits through CDM projects; these may include the reduction of GHG emissions, improvement of air quality, conservation of biodiversity, decreasing use of exhaustible resources, improvement of water quality, better waste management, pollution reduction and improvement of soil fertility within the country. These benefits can contribute to the overall productivity of the country, reflected in Gross Domestic

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<sup>340</sup> Ministry of Foreign Affairs of Finland, *Gender And The Clean Development Mechanism: Development Communication* (MoFA, Finland, 2010).

Product (GDP). For example, Figure 4.3 shows the implementation of a bioenergy project within the framework of the CDM and its key benefits.<sup>341</sup>



**Figure 4.3: Example of bioenergy project under CDM framework (Source: Danes, Shin and Masao, 2017)**

In the above figure, there are three CDM projects, fuel substitution, energy efficiency and reforestation, under consideration. There are three outcomes of these projects. First, these CDM projects will produce transferable certificates (CERs). If the CDM project is sponsored by an Annex 1 developed country, then that country can use these CERs to meet its GHG emission reduction targets. If the CDM projects are not sponsored by an Annex 1 country, then these certificates can be used to meet GHG emission reduction targets, if any, of the host country or traded in carbon markets in the future. In short, the CDM projects produce tradeable certificates.

Second, these CDM projects will lead to climate change mitigation, by avoiding or reducing GHG emissions. But the CDM framework also requires that the improvement in GHG emissions be measurable and verifiable in relation to a baseline. This is an essential requirement for converting the emissions benefit into transferable certificates. For example, the small hydro power (SHP) projects in India, implemented under the CDM framework, can lead to a reduction of 1.26 million tonnes of certified emission reductions (CERs) every year.<sup>342</sup>

<sup>341</sup> Miah, Shin and Masao, above n 330.

<sup>342</sup> Sachin Mishra, S.K. Singal and D.K. Khatod, 'Sustainable Energy Development By Small Hydropower With CDM Benefits In India' (2011) 32(2) *International Journal of Ambient Energy* 103.

The third outcome of CDM projects is sustainable developments. The Kyoto Protocol explicitly states that every CDM project must contribute to sustainable development in developing countries.<sup>343</sup>

It is worth noting that these outcomes are also used as selection criteria for CDM projects. The planners of these projects must demonstrate that the chosen CDM projects will measurably and verifiably mitigate climate change impacts and promote sustainable developments. If a project cannot fulfil these criteria, then it cannot be accepted as a CDM project and will not receive CDM accreditation or produce tradeable certificates.

From the outset, the CDM has been found to be an effective tool for climate change action. Due to its effectiveness, the CDM has been a vital component of private-firm compliance models and developed-country government models under Article 12 of the Kyoto Protocol.<sup>344</sup> It gives developed countries the opportunity to reduce carbon emissions anywhere in the world, at the lowest cost, and to add these reductions into their own targets.

#### *4.2.3 DNA Structure in Bangladesh*

In Bangladesh, CDM projects are handled by a Designated National Authority (DNA), established according to the framework of the UNFCCC and Kyoto Protocol. Figure 4.4 shows the structure of the DNA in Bangladesh, which includes, a National CDM Board and a National CDM Committee.

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<sup>343</sup> Heuberger et al, above n 332.

<sup>344</sup> UNEP, *Introduction to The Clean Development Mechanism* (UNEP, n.d.), <[https://unfccc.int/files/cooperation\\_and\\_support/capacity\\_building/application/pdf/unepcdmintro.pdf](https://unfccc.int/files/cooperation_and_support/capacity_building/application/pdf/unepcdmintro.pdf)>.

## Structure of DNA Bangladesh

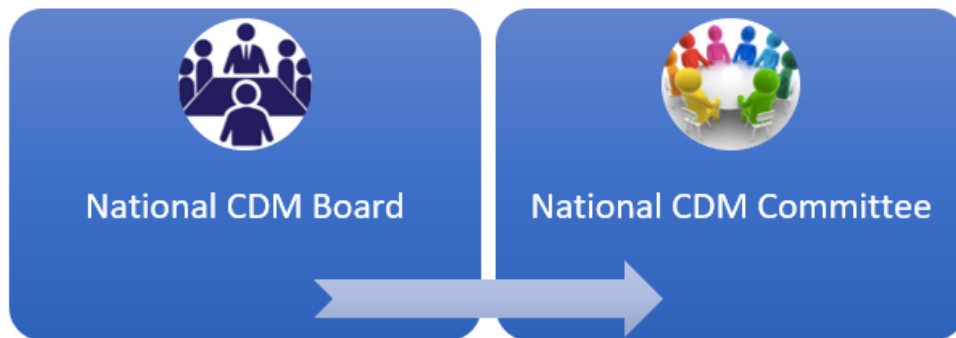


Figure 4.4: Structure of DNA in Bangladesh (Source: Waste Concern, 2008)

The National CDM Board is the top layer in the DNA, also a governing body of DNA. The National CDM Board has three designated positions, board chairman, board member and member-secretary. In Bangladesh, the board chairman position is appointed by the Principal Secretary to the Prime Minister. The members of the board include three seats; these are appointed by the secretary of Ministry of Environment and Forests (MoEF), the secretary of any other relevant ministry and a member of the Planning Commission department. The member-secretary position is appointed by the Director-General (DG) of the Department of Environment (DoE) (see Figure 4.5).



Figure 4.5: Structure of National CDM Board (Source: Waste Concern, 2008)

Like the National CDM Board, the National CDM Committee also has a chairman, members and member-secretary. The position of chairman of the committee is held by the Secretary of the MoEF. The other committee members are drawn from the government sector and NGOs. Members from the government sector include staff from the MoEF, Planning Commission, Ministry of Foreign Affairs, Ministry of Power, Energy & Mineral Resources, Ministry of Communication, Science Information and Communication Technology, Ministry of Industries and Agriculture, Bangladesh Bank, Board of Investment and other relevant departments. From the NGO sector, key environmental NGOs are represented, including Waste Concern, Bangladesh University of Engineering and Technology (BUET), Bangladesh Centre for Advanced Studies (BCAS), Bangladesh Institute of Development Studies (BIDS) and the Federation of Bangladesh Chambers of Commerce and Industries (FBCCI). Finally, the position of member-secretary is held by the Director of Technology from DoE (see Figure 4.6).



**Figure 4.6: Structure of National CDM Committee (Source: Waste Concern, 2008)**

### 4.3 CDM Project Registration and Implementation

Every project that seeks the CDM accreditation needs to pass through a formal process, from registration phase through to implementation phase. A project can be said to be successfully completed, or implemented, when it passes through a formal process and receives certified emission reductions (CERs). Before discussing the registration process for CDMs in Bangladesh, it is important to understand the lifecycle of a CDM.

#### 4.3.1 CDM Life Cycle

In 2001, in the Marrakesh Accord (COP-7), the participants agreed upon a procedure for attaining CERs in host countries under CDM projects.<sup>345</sup> The whole procedure passes through a complete formal process, called a CDM life cycle, as shown in Figure 4.7.<sup>346</sup> However, the CDM life cycle has been criticised due to its length and the time involved, which makes it less attractive compared to the small-scale projects discussed later.

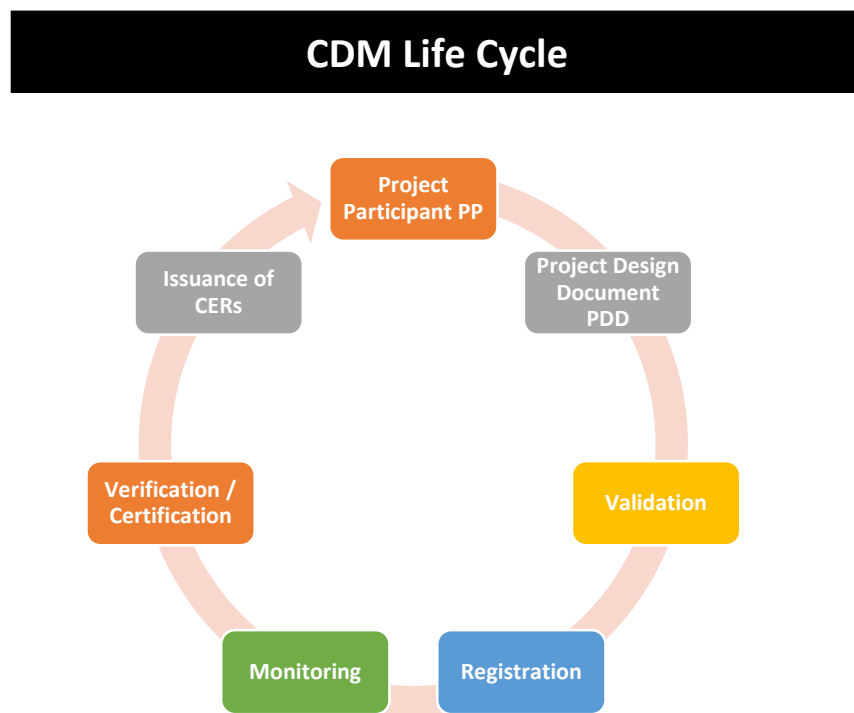


Figure 4.7: Lifecycle of CDM project (Source: Danes, Shin and Masao, 2017)

<sup>345</sup> UNCC, *Kyoto Mechanisms – Background* (UN, 2017), <[http://unfccc.int/kyoto\\_protocol/mechanisms/items/2998.php](http://unfccc.int/kyoto_protocol/mechanisms/items/2998.php)>.

<sup>346</sup> Miah, Shin and Masao, above n 330.



The CDM lifecycle involve multiple parties; the project participants (PP) from the host country), the donor party (the participant from the Annex-1 countries), and regulators such as the Conference of Parties (COP/MOP), the executive body (EB), the designated operational entity (DoE) and Designated National Authority (DNA).

- *Phase 1: Project Participant*—The PP is the applicant from the host country, who is getting sponsorship from a donor party from a ratified Annex-1 country for a project under the CDM framework.
- *Phase 2: Project Design Document*—The PP develops the project design document (PDD), which contains the complete project idea, of country context, project boundary definition, projection of baseline scenario, the definition of credit lifetime, project monitoring plan (performance management), emission reduction (ER) calculation, adjustments and corrections and addressing uncertainty in the ER.
- *Phase 3: Project Validation*—The DoE is responsible for project validation. The validation process involves the application of SD criteria, to verify and clarify the emission reduction. The DNA of each country often does validation in the representative country.
- *Phase 4: Project Registration*—After validation, the project is sent for registration, which is usually done by an Executive Board (EB), the supervisory body working under the Conference of Parties (COP) authority of the UNFCCC.
- *Phase 5: Project Monitoring*—After registration by the EB, the project is started and its performance is monitored. The primary focus of monitoring is to track and measure the actual emission reductions (ERs). The DNA is responsible for the entire monitoring process.
- *Phase 6: Project Verification / Certification*—Upon completion, the DNA verifies the actual ERs and informs the EB about ERs. The EB issues the accreditation for the verified ERs.
- *Phase 7: Issuance of CERs*—The PP receives the certified emission reductions (CERs) in the shape of certificates issued by DNA in each country.

Once the PP receives the CERs, which are later tradeable in the carbon market, the PP sells the CERs to the donor Annex-1 country party, which uses the CERs to meet its emission reduction targets. If the PP initiates another CDM project, then the PP has to pass through all the stages of the CDM project life cycle again.

### 4.3.2 CDM Structure in Bangladesh

Every project in Bangladesh passes through the formal process above as part of meeting the criteria for registering the CDM project in Bangladesh. The following CDM structure provides a visual demonstration of a CDM project design document (PDD) from initiation to clearance (Figure 4.8).<sup>347</sup> It is notable that the scope of the following structure is only up to the DNA of Bangladesh, not the international body of CDM.

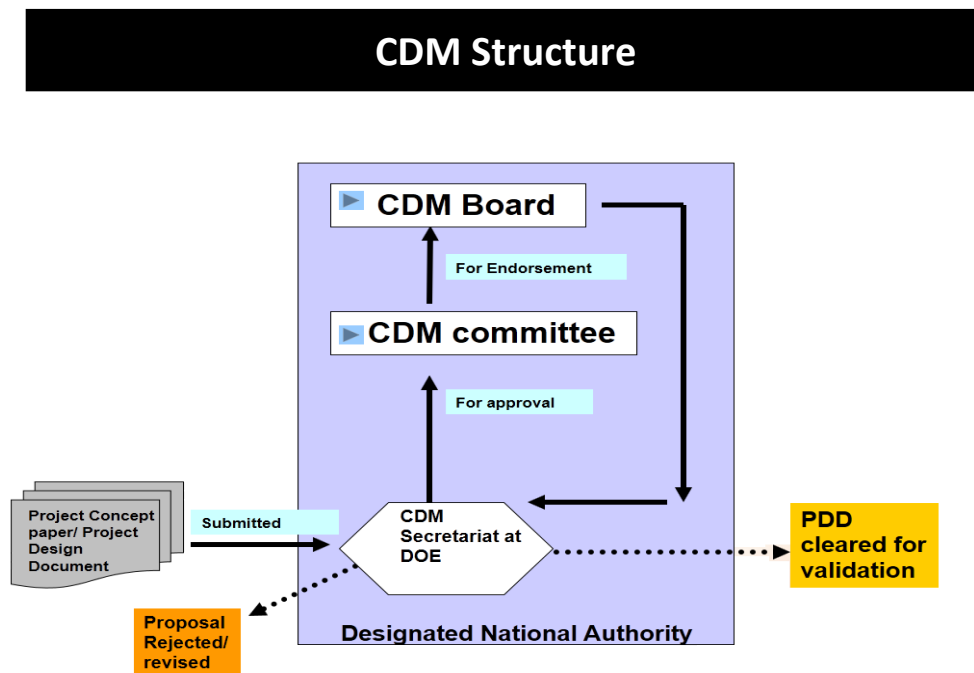


Figure 4.8: Structure of CDM project in Bangladesh (Source: Reazuddin and Sinha, 2003)

Every CDM project starts from a project concept paper, also known as the project design document (PDD). Upon identifying interest in a CDM project, the interested party prepares a PDD, which is like a project proposal, providing complete information about the project, its participants and outcomes. Second, the applicant submits the PDD to the CDM secretariat, situated within the MoEF’s Department of Environment. Third, the PDD goes to a CDM committee of DNA for approval, where the PDD is evaluated. Fourth, if the CDM committee is fine with the evaluation results, then the PDD is sent to the CDM board for endorsement. Fifth, the decision of the CDM board is sent back to the CDM Secretariat. If the board’s decision is negative, then the PDD is returned to the applicant with an explanation of the

<sup>347</sup> Mohammad Reazuddin and Sinha Maqsood, *Structure of DNA and Proposed Sustainable Development Criteria for CDM Projects in Bangladesh* (DoE and GoB, 2003).

grounds for rejection. Where the board’s decision is positive, the PDD is cleared for validation and goes to the international CDM bodies for registration under the UNFCCC. There are no fees for the project proponents.

### 4.3.3 CDM Project Evaluation: Sustainability Development Indicators

When any applicant submits a PDD for a CDM project, the authorities—such as the CDM board and CDM committee—make their evaluation using certain parameters. For example, the following diagram shows the criteria for screening a CDM project at both an international and domestic level (Figure 4.9).

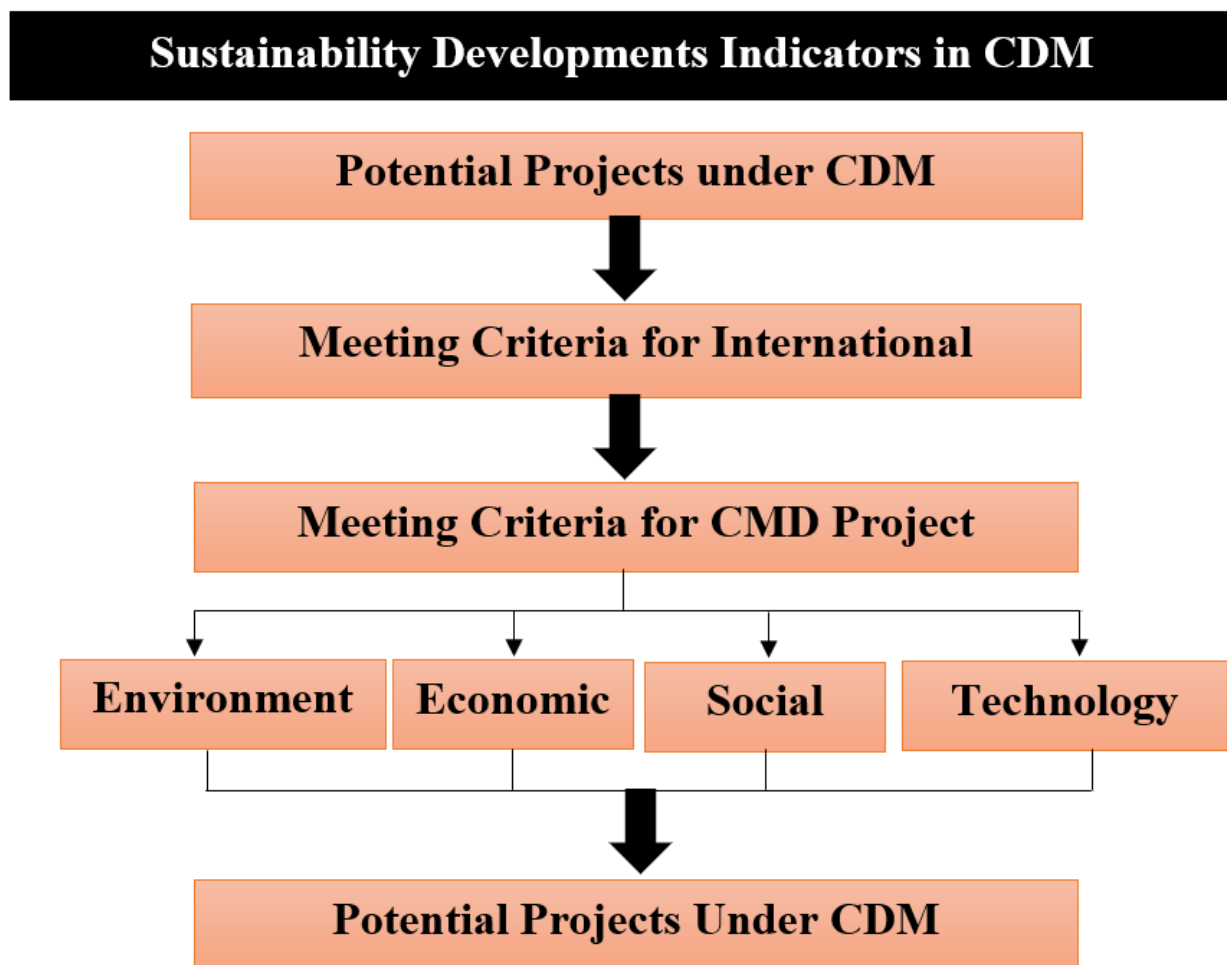


Figure 4.9: Indicators for sustainability development (Source: Waste Concern, 2008)

According to this model, the sustainable development is assessed in four areas: environmental, economic, social and technological. For example, in order to evaluate the environmental sustainability of any CDM project, it will be assessed against certain criteria, such as whether

the project contributes to environmental sustainability or not. A practical demonstration of applying SD criteria is shown, with some other parameters included.

#### 4.3.4 CDM Project Evaluation: Decision Tree

The evaluation of a CDM project can be explained using a decision tree, which explains the different stages of evaluation and possible actions at each stage. In this decision tree, the project evaluation is based on three parameters, environmental, sustainable development and overall objectives (Figure 4.10).

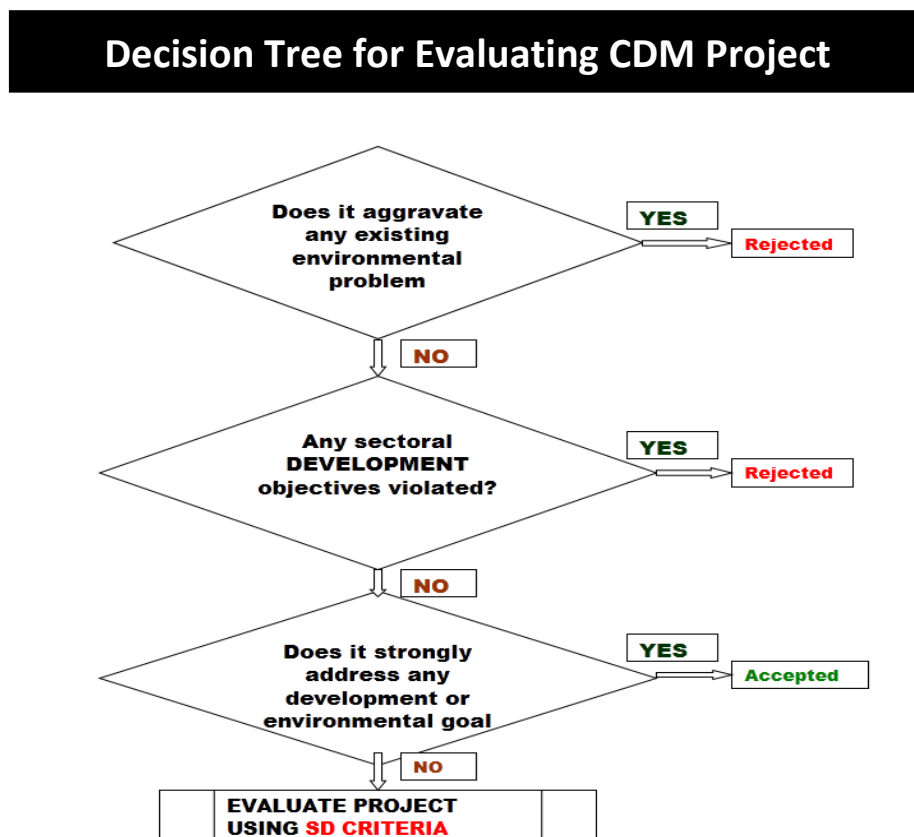


Figure 4.10: Sustainable development criteria for evaluating CDM project

As mentioned above, every proposed CDM project must satisfy sustainable development (SD) criteria. Figure 4.10 shows the decision tree for evaluating the CDM project under SD criteria. First, a proposed CDM project must not exacerbate any existing environmental problem. If a proposed CDM project is found to do so, it is immediately rejected. If it does not, then it passes through to the next stage of the evaluation tree. Second, a proposed project must not violate any objective of sustainable development. If any project is found to do so, then that project is

again rejected; if it does not, then it passes through to the next stage. Third, a proposed CDM project must also strongly address the SD and environmental goals. A project that meets SD and environmental goals is accepted for implementation, while all those projects that fail to do so are rejected.

#### 4.3.5 CDM Project Evaluation: Sustainable Development Matrix

The CDM project is also evaluated with the help of the Sustainability Development Matrix (SDM), which involves the mathematical calculation of project SD performance by using the ranking / weightage given to each project in terms of relative importance, degree of impact and relative impact on the economy. It is notable that it also involves some parameters of SD criteria, which have been used in other evaluation frameworks (Figure 4.11 and Table 4.1).

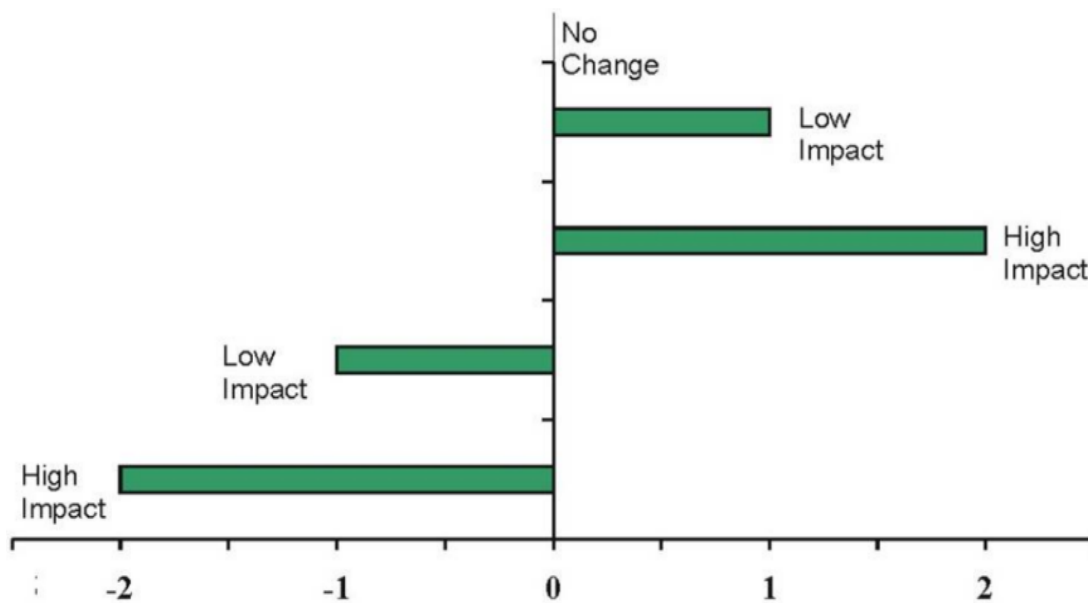


Figure 4.11: Evaluation matrix of sustainable development for CDM projects

## Sustainability Developments Matrix for CDM Projects

**Table 4.1: Sustainability development matrix for CDM**

Sustainable Development Parameters	Relative Importance	Degree of Impact	Relative Impact		n Score [ $\sum_{i=1} (V_i) \times (W_i)$ ( $V_i$ = Degree of Impact $W_i$ = Relative Weight)
			Positive	Negative	
<b>ECONOMIC (25)</b> 1. Balance of Payment 2. Contribution to Growth 3. Cost Effectiveness					
<b>ENVIRONMENTAL (20)</b> 1. Natural Resource Augmentation 2. Reduction of Pollutants					
<b>POVERTY REDUCTION / SOCIAL (20)</b> 1. Employment opportunities 2. Improved quality of life (Health) 3. Take into consideration Gender issue/ Gender equity					
<b>TECHNOLOGY (15)</b> 1. Technology easily adaptable 2. Technology Promotes Sustainable Natural Resources Use 3. Social Acceptance					
<b>CAPACITY BUILDING (20)</b> 1. Programme / Project Planning 2. Project implementation 3. Training 4. Grassroots capacity building					
<p><b>Note:</b> the categorisation of broader and sub-issues is generic. Extension of sub-issues will have to be accommodated within the maximum number for the broader parameter.</p>					
<p><b>Source:</b> Adapted from UNFCCC</p>					

Once the above SDM is used for the evaluation of the CDM project, the outcome will be a value between 2 and -2, which will show the impact of the project. A project rated 2 is likely to have a high positive impact, while a score of 1 indicates a low impact from the CDM project. A result of the means the project is not likely to have any impact. On the other hand, scores of -1 and -2 represent negative impacts.

#### **4.4 Carbon Markets of Asia**

Bangladesh is situated in the Asia region, which includes other developing countries such as Pakistan, India, China and Sri Lanka, among others. In this context, it is relevant to analyse the performance of Bangladesh along with such other countries. In Asia, China and India are playing a significant and active role in reaping the benefits of the CDM and similar tools. In fact, both these countries have a dominant position in the Asian carbon market due to possessing a high volume of CDM projects and CERs. China is still ahead of India in hosting the largest number of CDM projects.<sup>348</sup> However, before moving to a carbon market analysis of Asia, it is necessary to discuss the carbon market mechanism.

When discussing the market-based mechanism, there are two types; the Kyoto Protocol included a market-based mechanism, while the Paris Agreement uses its own mechanism.

The market-based mechanism was a prominent feature of the Kyoto Protocol. It has also been said that the CDM is the first attempt to solve the environmental and sustainability problems through a market-based mechanism.<sup>349</sup> In fact, the CDM establishes a carbon credit market, where sellers from developing countries, which have no binding targets, sell certified emission reduction credits to buyers from developed countries.<sup>350</sup> The sellers generate these credits through CDM projects within their own countries, and these are transferred through an international transfer mechanism provided under Article 6 of the Kyoto Protocol. The buyers of these certificates use them to meet their own emission reduction goals.

The announcement of the Paris Agreement (PA) confirmed that the KP mechanisms may not remain in place in the longer term. However, the market-based mechanism of the PA has not yet been announced, so experts are not yet clear about the future of market-based mechanisms for

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<sup>348</sup> Linna Xie et al, 'Technology Transfer in Clean Development Mechanism (CDM) Projects: Lessons From China' (2013) 19(supp 1) *Technological and Economic Development of Economy* S471.

<sup>349</sup> Ibid.

<sup>350</sup> Michael Wara, *Measuring The Clean Development Mechanism's Performance And Potential* (UCLA, 2008).

climate change. The primary question is whether the PA will include market-based mechanisms or use only non-market-based approaches. Based on the literature, it appears likely that the Paris Agreement will include the market-based mechanism as well.

According to the IAEA (2017), the mechanism of the PA is of interest to nearly 90 countries that use the existing market-based mechanism to meet their emission reduction targets. A major argument for market-based mechanisms is that, as generally agreed by the parties to the PA, the domestic resources of any one country are not enough to mitigate or combat the impacts of climate change, given the estimate of US\$100 billion per annum required for this purpose.<sup>351</sup> For this reason, some form of international cooperation is needed, and the use of market-based mechanisms can help the parties to achieve their targets.

The Paris Agreement is characterised by elements such as Nationally Determined Contributions (NDCs), global transparency mechanisms, international cooperation, direct bilateral cooperation, a new sustainable development mechanism (SDM) and non-market-based approaches. A detailed overview of the PA and its mechanism is provided in section 6.2 of this chapter. While details regarding the existence and functionality of a market-based mechanism under the PA have yet been announced, there are similarities between Article 6, 12, and 17 of the Kyoto Protocol and Article 6 of the Paris Agreement; for example, that participation in the mechanism is voluntary and that the mechanism must contribute to the reduction of carbon emissions and promote sustainable development.

The second question is, if the PA does include a market-based mechanism, will it be sufficiently robust? There is a range of evidence related to this question. First, the PA will be better than the Kyoto Protocol in terms of carbon prices because the newly developed system will likely create strong demand, which will help in development and stability of prices.<sup>352</sup> Second, a closer look at Article 4 and Article 6 of the PA clearly show that it is goal-oriented, as it includes timeframes and temperature goals; this suggests it has potential, at least, to achieve its goals.

Third, Article 4.2 gives countries the freedom to maintain and communicate their own emission reduction goals, known as Nationally Determined Contributions (NDCs). However, the selection

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<sup>351</sup> International Atomic Energy Agency, *Nuclear Power And Market Mechanisms Under The Paris Agreement* (IAEA, 2017), <<https://www.iaea.org/sites/default/files/np-market-mechanisms-under-paris-agreement.pdf>>.

<sup>352</sup> International Bar Association, *The Paris Agreement, The Kyoto Protocol and the Future of the Carbon Market* (International Bar Association, 2016) <<https://www.ibanet.org/Article/Detail.aspx?ArticleUid=7d6e423c-28c2-4128-bf69-99d0d992f7aa>>.



of NDCs is regulated by a global stocktake under Article 14. The purpose of this stocktake is to ensure that NDCs reflect the maximum potential of every country, and new NDCs must set targets higher than those of previously submitted NDCs. This feature shows that the PA intends to increase efforts to overtake the rate of climate change. There is a challenge for the regulatory body in that the PA does not include a compliance mechanism, which will make it difficult to ensure that every country has met the requirements and criteria while setting its goals.

According to the UNEP's database, the statistics about the CDM have been adapted for the total number of CDM projects up to the year 2011 and also for the estimated CERs in the period of 2008–2012, along with their sectoral profile.<sup>353</sup> In 2011, 7883 CDM projects had been implemented around the world. China had the largest share, with 41.5% of CDM projects, while India had second position with 26.3% of CDM projects. The remaining 13.3% share was held by the small developing countries of Asia including Sri Lanka, Pakistan, Bangladesh and others. Regarding sectoral profiles, 67.4% of CDM projects were implemented in the power sector. The waste management sector had 9.6% of CDM projects, the agriculture sector 7.2% CDM project; 3.7% CDM projects were implemented in the cement sector and 3.6% in the Iron & Steel sector. Other projects were implemented in areas such as oil and gas, forestry and other sectors (See Figure 4.14).<sup>354</sup>

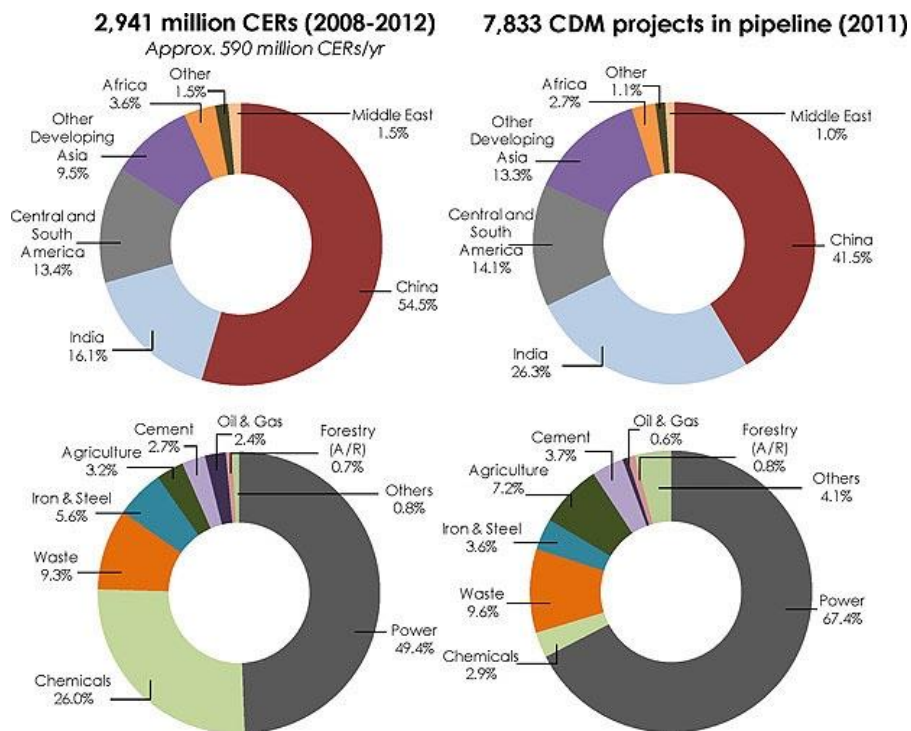
When the statistics about the CERs were analysed, it was found that the 2941 million CERs had been (or will be) issued against registered CDM projects, showing an average of 590 million CERs every year.<sup>355</sup> China again has the leading position, with a 54.5% share in issued CERs. India had 16.1% and other Asian countries hold a 9.5% between them.

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<sup>353</sup> Global CCS Institute, *2.2 Achievements Of The CDM To Date* (Global CCS Institute, 2012), <<https://hub.globalccsinstitute.com/publications/developing-ccs-projects-under-clean-development-mechanism/22-achievements-cdm-date>>.

<sup>354</sup> Ibid.

<sup>355</sup> Ibid.



**Figure 4.12: CDM market statistics (Source: UNEP Database, 2011)**

The sectoral overview found that 49.4% of CERs have been issued for CDM projects in the power generation sector, 26% for the chemical sector, 9.3% for waste management, 5.6% for iron and steel sector-based projects, 3.2% for agriculture-based projects, 2.7% for the cement industry, 2.4% for oil and gas-based CDM projects and 0.7% for CDM projects in the forestry sector. These statistics show which sectors are attractive for CDM projects.

As the above statistical overview shows, Bangladesh does not show any remarkable performance regarding the use of the CDM. China and India dominate both areas, with significant shares in CDM projects and issued CERs. These statistics are useful for Bangladesh, as they can help it understand the trend of CDM projects (sector based) and use this to target those sectors in its own country to attract the CDM investment projects.

#### **4.5 Performance of CDM in Bangladesh**

As discussed above, Bangladesh is actively using the CDM of the Kyoto Protocol through a formal structure and processes. However, for policy planners, management personnel, economic analysts and researchers, it might be interesting to know how the CDM is performing in Bangladesh in terms of benefits (environmental and financial) for Bangladesh and whether the GoB is taking sufficient measures to enhance the effectiveness of CDM.

In Bangladesh, adoption and active engagement with climate-friendly technologies has proven to be a good decision, as these initiatives have worked well. The performance of the CDM in Bangladesh can be measured in a number of ways. The first is the number of CERs issued. According to the UNFCCC database, a total of 5,057,885 have been issued since 2007 (see Table 4.3).<sup>356</sup>

There are certain CDM projects and programme of activities (PoA) in Bangladesh that are likely to produce CERs on an annual basis. For example, the micro-scale solar programme, which is being implemented under PoA, is likely to produce 30,000 carbon credits (CERs) annually, along with an output of 11 mega-watt solar plant installations. Similarly, an energy efficiency project for the brick manufacturing industry is expected to generate 400,000 carbon credits (CERs) every year.<sup>357</sup>

Chapter 2 discussed the role that CDM projects play for developed countries in fulfilling their emission reduction targets. However, there are also many benefits for the host (developing) countries. The case studies below describe some of these projects and their specific benefits for Bangladesh in terms of advancing climate justice.

#### *4.5.1 Case Study: Hybrid Hoffman Kiln Project*

Bangladesh hosted a CDM project, Hybrid Hoffman Kiln (HHK), to replace existing brick kilns with modern kilns. This project was registered as a CDM project by the Community Carbon Development Fund (CCDF) of World Bank Group in 2008. Bangladesh was previously using traditional kiln technology in brick manufacturing, which was emitting an estimated 10 million tons of CO<sub>2</sub> along with other harmful greenhouse gases every year. After the installation of HHKs, which is a German technology, the benefits have been remarkable. HHKs have cut approximately 75,000 tons of CO<sub>2</sub> every year. As of 2016, a total reduction of 53,000 tons of CO<sub>2</sub> was verified and 67,000 CERs issued from HHK, which were later transferred to the CCDF of the World Bank Group.<sup>358</sup> Other benefits of HHK technology include improvement of the environment, improvement of labour working conditions in brick sector, improvement of health care and the money earned from the sale of CERs.

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<sup>356</sup> UNCC. *CDM: Project Activities* (UNFCCC 2017) <<https://cdm.unfccc.int/Projects/projsearch.html>>.

<sup>357</sup> Future Carbon, *Fact Sheet* (FutureCarbon, 2017), <[www.futurecarbon.co.uk/resource/FCL\\_Factsheet\\_2015.pdf](http://www.futurecarbon.co.uk/resource/FCL_Factsheet_2015.pdf)>.

<sup>358</sup> World Bank, *Modern Brick Kilns Yield Development Benefits In Bangladesh* (World Bank, 2016), <[www.worldbank.org/en/news/feature/2016/07/20/modern-brick-kilns-yield-development-benefits-in-bangladesh](http://www.worldbank.org/en/news/feature/2016/07/20/modern-brick-kilns-yield-development-benefits-in-bangladesh)>.

**Table 4.2 Issued CERs for Bangladesh**

CDM Type	Project Registered Title	Project Class	Project Type (UNEP DTU)	Start of First Crediting Period	End of First Crediting Period	Emission Reductions
PA	Improving Kiln Efficiency in the Brick Making Industry in Bangladesh (Bundle-2)	LARGE	Landfill gas	26jun2012	25jun2019	40,104
PA	Energy Efficiency Programme in Rural Bangladesh	LARGE	Landfill gas	19jul2011	18jul2018	55,198
PoA	Programme for Promotion of Access to Domestic Biogas in Rural Bangladesh	SMALL	Solar	13may2011	12may2018	0
PoA	Energy and Water Saving Promotion Programme for Textile Dyeing Process of Bangladesh Textile and Garment Industries	SMALL	EE households	01sep2011	31aug2021	908
PoA	Programme for Promotion of Access to Domestic Biogas in Rural Bangladesh	SMALL	EE households	25nov2013	24nov2023	662
PA	Reducing Gas Leakages within the Titas Gas Distribution Network in Bangladesh	SMALL	EE industry	07jun2013	06jun2020	4,378,506
PA	Akij Particle Biomass Thermal Energy Generation CDM Project	SMALL	EE industry	01mar2014	28feb2021	41,912
PoA	Programmatic CDM project using Municipal Organic Waste of 64 Districts of Bangladesh	SMALL	EE service	01may2014	30apr2021	6,978
PoA	National Programme for Energy Efficiency Improvement in the Brick Manufacturing Sector in Bangladesh	SMALL	Methane avoidance	18jul2014	17jul2021	19,353
PoA	National Programme for Energy Efficiency Improvement in the Brick Manufacturing Sector in Bangladesh	SMALL	EE industry	01apr2015	31mar2025	16,702
PoA	Biogas Utility Programme to Households by Grameen Shakti in Municipalities of Bangladesh	SMALL	Methane avoidance	31dec2014	30dec2024	3,516
PA	Installation of 30,000 Solar Home Systems (SHS) in Rural Households	LARGE	Fugitive	05jan2015	04jan2022	10,980
PA	Greenhouse Gas Abatement from energy-efficient power generation through Gas Engines (195 MW Project)	SMALL	Biomass energy	15mar2017	14mar2024	99,288
PoA	Energy Efficiency in Solid and Hollow Brick Making in Bangladesh	SMALL	Methane avoidance	18jul2016	17jul2023	42,011
PoA	Greenhouse Gas Abatement through waste energy based power generation	SMALL	EE industry	01jul2011	30jun2018	76,129
PoA	Installation of Solar Home Systems in Bangladesh	SMALL	EE industry	01apr2005	31mar2012	21,864
PoA	Improving Kiln Efficiency of the Brick Making Industry in Bangladesh	SMALL	Methane avoidance	01apr2015	31mar2025	58,819
PA	Energy-Efficient Building Materials Production Technologies Development Programme	SMALL	Solar	01jan2013	01jan2023	48,658
PA	Programme for Promotion of Access to Domestic Biogas in Rural Bangladesh	LARGE	Fossil fuel switch	01apr2015	31mar2025	26,810
PA	Bundled Waste Heat Recovery (WHR) CDM Projects in Bangladesh	SMALL	EE industry	01jan2007	31dec2014	59,487
<b>Total Issued CERs</b>						<b>5,057,885</b>

Source: UNFCCC Database for PAs and PoAs

#### 4.5.2 Case Study: Home Solar Power Plants

The installation of home solar power systems under CDM is another success story for Bangladesh. Over 40% of the households in the country do not have access to electricity and use kerosene oil lamps for lighting. An average house in a village uses 7–8 litres of kerosene oil every month. In 2003, the home solar system programme started a drive to install 50,000 solar home systems by 2008. By 2014 this had increased to 2.5 million system installations (2.5% of the country's electricity). Now, the plan is to achieve a target of 4 million solar systems by 2020 (which would account for 5–10% of national electricity capacity).<sup>359</sup>

The Grameen Shakti and Infrastructure Development Company Limited (IDCL) are managing this programme in Bangladesh. The success of this project can be seen in many ways. First, the IDCL project under the CDM programme was completed in 2012. Second, the UNFCCC has issued €3.56 millions of funds and 395,286 carbon credits (182,804 to Grameen Shakti and 212,482 to IDCL). Third, IDCL has an agreement to sell all credits to the World Bank at the price of €9 per credit. Fourth, due to IDCL programme, the 4.88 tonnes of carbon emissions are reduced every year and almost 32 million litres of kerosene oil (2.7 lakh tons annually) is saved. Fifth, Bangladeshi people will not only have access to electricity, which advances climate justice but also will be generating economic activity in the country. In short, the hosting of CDM projects also produce benefits for the host country.

Due to the unavailability of relevant financial data, it is difficult to quantify the overall financial benefits of CDM. But, at an individual level, the benefits can be estimated as discussed above in the case of the HHK project and home solar system project.

#### 4.6 Potential Sectors for CDM in Bangladesh

Research findings (see Chapter 2) suggest many potential areas where CDM projects can be implemented in Bangladesh. According to Rashid and Paul (2013), there are a number of areas that are highly vulnerable to climate change, such as agriculture, energy, water resources, livestock, industry, fisheries and marine resources, forests and biodiversity, industrial areas and

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<sup>359</sup> Pinaki Roy, 'Bangla Lesson For Carbon Polluters', *The Daily Star* (online), 20 August 2015, <<http://www.thedailystar.net/frontpage/bangla-lesson-carbon-polluters-129517>>.

coastal management.<sup>360</sup> Thus, there are various sectors of Bangladesh, which are not only ideal for CDM projects, but also desperately need such projects including:

- Waste
- Transport
- Forestry
- Agriculture
- Energy
- Residential and Commercial building
- Other potential areas (Sinha, 2008).

#### 4.6.1 Waste

Waste management is one of the primary areas that is suitable for CDM projects in Bangladesh. The CDM projects can be installed for urban solid waste composition, waste-to-energy converting activities and recovery of methane gas from landfills.<sup>361</sup>



Figure 4.13: Public-private partnership and decentralised composting approach in Dhaka, Bangladesh<sup>362</sup>

<sup>360</sup> Harun Rashid and Bimal Kanti Paul, *Climate Change In Bangladesh* (Lexington Books, 2014).

<sup>361</sup> Maqsood Sinha, *Introduction To CDM Opportunities In Bangladesh* (Waste Concern Organization, 2008).

<sup>362</sup> Abu Hasnat and Maqsood Sinha, *Public-Private Partnership and Decentralized Composting Approach in Dhaka, Bangladesh, 2012* (Waste Concern Bangladesh, n.d.), <[http://www.uncrd.or.jp/content/documents/04\\_Sinha-Waste%20Concern-Bangladesh.pdf](http://www.uncrd.or.jp/content/documents/04_Sinha-Waste%20Concern-Bangladesh.pdf)>.

The GoB passed the National 3R (Reduce, Reuse, Recycle) Strategy for Waste in 2010 with a vision to achieve complete elimination of waste disposal on open dumps, rivers and flood plains by 2015 and promote recycling of waste through mandatory segregation of waste at source, as well as creating markets for recycled products and providing incentives for recycling of waste.<sup>363</sup> It has also established a programme of activities, such as a project to recover organic matter from municipal solid waste as compost and avoid methane emission through a ‘Municipal Waste Compost Programme’ funded with the support of a CDM.<sup>364</sup> By executing this project, it is suggested that Bangladesh can achieve environmental, economic and social benefits. At present this project is being carried out in the cities and towns of Narayanganj, Mymensingh, Rangpur and Cox’s Bazar.

#### 4.6.2 Transportation

The transportation sector is one of the biggest contributors to air pollution in Bangladesh, so there is also room for CDM projects in this area. For example, the project sponsors could invest in expanding the bus rapid transit (BRT) or developing a mass rapid transit (MRT) transportation systems in Bangladesh, which would reduce traffic congestion while also helping to reduce air pollution and GHGs.<sup>365</sup> In addition, investments could be made in transport-related activities such as urban planning and traffic management systems, improvement of fuel-efficiency measures and the introduction of alternative fuels with lower emissions.<sup>366</sup> Indeed, Bangladesh has taken initiatives to ease congestion; a bus rapid transit (BRT) system has already been started in Dhaka as part of the Greater Dhaka Sustainable Urban Transport Project (BRT Gazipur-Airport), the first initiative by the GoB to address several

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<sup>363</sup> Abul K. Azad, *Programmatic CDM Projects Using Municipal Organic Waste of 64 Districts of Bangladesh*. Regional Workshop on Sustainable Development Benefits of Decentralized Municipal Solid Waste Management in Asia-Pacific Region (2017), <<http://www.unescap.org/sites/default/files/Session3%20-%20Presentation%20BKK-Azad1.pdf>>.

<sup>364</sup> UNCC, *Programme Design Document Form for Small-Scale CDM Programme of Activities*, (UN, n.d.), <[https://cdm.unfccc.int/filestorage/P/1/X/P1X4T3QGZICWFSROV9JHL2Y587ANE0/Organic%20waste%20PoA\\_PoA-DD\\_ver04.pdf?t=SIF8cGExZZZqfDD-XbzsfPMp0fo-3t8oPNPz](https://cdm.unfccc.int/filestorage/P/1/X/P1X4T3QGZICWFSROV9JHL2Y587ANE0/Organic%20waste%20PoA_PoA-DD_ver04.pdf?t=SIF8cGExZZZqfDD-XbzsfPMp0fo-3t8oPNPz)>.

<sup>365</sup> Mansurul Alam, *Introduction To CDM And Status Of CDM Projects In Bangladesh* (Ministry of Environment and Forests, 2014), <[https://www.iges.or.jp/files/research/climate-energy/mm/PDF/20141013/S6\\_G1\\_2\\_Monsurul.pdf](https://www.iges.or.jp/files/research/climate-energy/mm/PDF/20141013/S6_G1_2_Monsurul.pdf)>.

<sup>366</sup> Sinha, above n 361.

sustainable development goals.<sup>367</sup> Dhaka is known as the rickshaw capital of the world<sup>368</sup> and the city's inadequate infrastructure creates a major traffic congestion problem. The Dhaka City Corporation aims to develop a project that would separate motorised vehicles from the non-motorised traffic, such as rickshaws, on major roads.<sup>369</sup>

#### 4.6.3 Forestry

The forestry area of Bangladesh also offers opportunities for CDM projects. For example, investments could be made in the areas of reforestation, afforestation and better management of woodlands in Bangladesh. Experts have recommended Bangladesh pursue afforestation initiatives, because there are areas in which large-scale plantation could create sizeable carbon sinks, which will not only provide investors the opportunity to earn credits but also help directly in combating global warming.<sup>370</sup>

#### 4.6.4 Agriculture

The agricultural sector of Bangladesh is another ideal place for CDM projects. According to one report by the Department of the Environment (DoE) within the MoEF, CDM projects could include installing efficient pumping systems and solar photovoltaic irrigation pumps.<sup>371</sup> With the support of the World Bank, the GoB has successfully started solar irrigation pumps projects and planned to install 1250 solar-powered irrigation pump by 2018.<sup>372</sup> In addition, investments could be made in improving cultivation practices to lower methane emissions, reducing energy consumption during irrigation and increasing the use of agrochemicals with a smaller environmental footprint.<sup>373</sup>

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<sup>367</sup> Ishtiaque Ahmed, Noor-E-Alam and Faizuna Warda, 'A Sustainable Urban Transport Initiative in Dhaka: Introducing Bus Rapid Transit System' (2017) 87 *Transport and Communications Bulletin for Asia and the Pacific* 67, <[http://www.unescap.org/sites/default/files/bulletin87\\_5%20A%20Sustainable%20Urban%20Transport%20Initiative%20in%20Dhaka%20-%20Introducing%20Bus%20Rapid%20Transit%20System.pdf](http://www.unescap.org/sites/default/files/bulletin87_5%20A%20Sustainable%20Urban%20Transport%20Initiative%20in%20Dhaka%20-%20Introducing%20Bus%20Rapid%20Transit%20System.pdf)>.

<sup>368</sup> Khan R. Rahaman, *Bangladesh Better Traffic Management, Successful Practices in Urban Sustainable Development*, (UNDP, n.d.), <<http://unosscl.undp.org/GSSDAcademy/SIE/Docs/Vol20/new/6-Bangladesh.pdf>>.

<sup>369</sup> Ibid.

<sup>370</sup> Man Yong Shin, Md. Danesh Miah and Kyeong Hak Lee, 'Mitigation Options For The Bangladesh Forestry Sector: Implications Of The CDM' (2008) 8(3) *Climate Policy* 243.

<sup>371</sup> Alam, above n 365.

<sup>372</sup> Mehrin Ahmed Mahbub, *Solar Irrigation Pumps: A New Way to Agriculture in Bangladesh* (World Bank, 2016), <<http://blogs.worldbank.org/endpovertyinsouthasia/solar-irrigation-pumps-new-way-agriculture-bangladesh>>.

<sup>373</sup> Sinha, above n 361.



#### 4.6.5 Energy

Mary Robinson states that development is not possible without energy.<sup>374</sup> Bangladesh is one of several Asian countries suffering from energy shortages, so the energy sector would be the ideal place for CDM projects to support energy sustainability in the country.<sup>375</sup> There are a range of potential areas for installing new green energy projects and replacing the existing energy installations with green energy, such as wind energy, hydro energy, solar energy and biomass. Specifically, projects could include installation of energy-efficient lamps, installing renewable energy plants, and fuel substitution energy projects. In addition, investment could be made in improving electricity transmission and distribution networks in order to reduce line losses, switching petrochemical and coal systems to gas projects, reducing leakages during handling and distributing of oil and gas, adopting fuel substitution measures, and clean coal technologies.<sup>376</sup>

#### 4.6.6 Residential and Commercial Buildings

There are numerous areas in the construction and housing sector in which the CDM investments can be made; these include improving building designs to make them more energy efficient, especially for thermal efficiency. Further investments can be made in infrastructure, including installing energy management systems and solar energy systems, reuse of wastewater, energy conservation measures and use of energy-efficient appliances.<sup>377</sup> In addition, the DoE has highlighted three areas in the residential sector that have potential for CDM projects. First, household kerosene lamps could be replaced with solar photovoltaic (PV) lanterns, which are environmentally friendly. Second, residential gas supply could be metered. Third, household gas stoves can be improved to reduce their overall carbon footprint.<sup>378</sup> Bangladesh has already received funding from United Nations for such a CDM and is the first country in the world to promote small solar home panel systems and issue related carbon credits under CDM.<sup>379</sup>

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<sup>374</sup> Mary Robinson, *Climate Justice: Hope, Resilience and the Fight for a Sustainable Future*, (Bloomsbury publishing, 2018) p 134

<sup>375</sup> Sk Noim Uddin and Ros Taplin, 'Toward Sustainable Energy Development In Bangladesh' (2008) 17(3) *The Journal of Environment & Development* 292.

<sup>376</sup> Sinha, above n 361.

<sup>377</sup> Ibid.

<sup>378</sup> Alam, above n 365.

<sup>379</sup> Pinaki Roy, 'Solar Lamps make big money for Bangladesh', *Earth Journalism Network* (online), 23 August 2015, <<https://earthjournalism.net/stories/solar-lamps-make-big-money-for-bangladesh>>.

#### 4.6.7 Other Potential Areas

There are many other areas in which there are opportunities for CDM projects. Primary producers and the industrial and manufacturing sectors are ideal for CDM projects, which could include business process re-engineering or process optimisation for reducing emissions, improving energy efficiency and energy conservation measures, changing feedstock in boilers from oil to gas and co-generation.<sup>380</sup> In the mining sector, CDM projects could be started in the areas of energy efficiency and reduction of CH<sub>4</sub> (methane gases) from coal mines such as Barapukuria coal mine<sup>381</sup>.

The performance of these climate-friendly technologies introduced through CDM projects can be measured through the issuance of CERs, which represent orders by executive boards to the registry administrator to issue the certified emission reductions. According to a UNFCCC database of Project Activity (PA) and programme of activities (PoA), a total of 1,883,692, 633 CERs has been issued so far in both commitment period 1 and period 2 of the Kyoto Protocol.

**Table 4.3: CERs issued per Kyoto Protocol commitment period**

	Commitment Period 1	Commitment Period 2	Total
<b>CERs Issued for PA</b>	1,475,865,650	397,224,783	<b>1,873,090,433</b>
<b>CERs Issued for PoA</b>	1,717,897	8,884,303	<b>10,602,200</b>
<b>Total</b>	<b>1,477,583,547</b>	<b>406,109,086</b>	<b>1,883,692,633</b>

Source: UNFCCC Database for PAs and PoAs

### 4.7 Potential Issues with CDM in Bangladesh

In light of the second research question, it is essential to focus on the potential issues of the CDM to improve performance so that Bangladesh can utilise it to reduce risks and harm arising from climate change and focus on development. As a host country, Bangladesh has achieved very little success in accumulating CDM benefits. It is also facing a number of issues and challenges, which are impeding the performance of CDM in the country. One reason is that it lacks institutional

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<sup>380</sup> Sinha, above n 361.

<sup>381</sup> Ibid.

mechanisms to submit emission reduction projects to the UNFCCC in producing CER. The Waste Concern, an NGO in Bangladesh, has identified six key problems.<sup>382</sup>

#### 4.7.1 Political Factors

Like other Asian countries, Bangladesh is also facing high risks from political factors. The impact of such political factors has been seen as high on its CDM performance. The following CDM volume risk matrix shows the impact of political factors in Asian countries.<sup>383</sup>

**Table 4.4: CDM market statistics (adapted from UNEP database)**

**Table 4.** CDM volume-risk matrix for Asia.<sup>17</sup>

	Low Political Risk	High Political Risk
Low Volume of executable CDM opportunities	Singapore Taiwan Brunei Bhutan	Pakistan Afghanistan North Korea Cambodia Nepal Laos Myanmar
High Volume of executable CDM opportunities	Thailand The Philippines India Malaysia South Korea	China Indonesia Bangladesh Vietnam Sri Lanka

According to the above matrix, Bangladesh is one of those Asian countries that not only have a high level of political risk but also have a high volume of executable opportunities for CDM projects. Other Asian countries- China, Indonesia, Vietnam and Sri Lanka- are in the same category. However, China has a dominant position in CDMs in the Asian region, despite potential political risk. The Nairobi Framework also mentioned that the core problems of poor and corrupt governance in many developing countries is presenting unacceptably high political risks and sovereign risk to foreign investments.<sup>384</sup> If Bangladesh considers political factors its

<sup>382</sup> Sinha, above n 361.

<sup>383</sup> Kheng Lian Koh, Lin Heng Lye and Jolene Lin, *Crucial Issues In Climate Change And The Kyoto Protocol* (World Scientific, 2010).

<sup>384</sup> Promode Kant, *Taking CDM beyond China and India*, (Institute of Green Economy working paper, 2010), <[http://www.igrec.in/taking\\_cdm\\_beyond\\_china\\_and\\_india.pdf](http://www.igrec.in/taking_cdm_beyond_china_and_india.pdf)>.

major challenge, then it must learn from China, which is one of the leading countries in the carbon market while having similar levels of opportunity and risk.

#### *4.7.2 Lack of Awareness*

A lack of awareness of CDM opportunities has been found to be one the biggest issues in Bangladesh. There are many people and businesses in developing countries who lack of awareness of climate change and its mechanisms, being more aware of poverty reduction and job creation measures. COP 7 in Marrakesh focused on strengthening capacity building in developing countries. In this context, the role of government, in enhancing the CDM awareness is very important. In this respect, Bangladesh can take lessons from India. India's Climate Change Centre carries out research on climate change, including the CDM, and works towards raising awareness on climate change and the CDM by organising issue-based events, discussions and policy dialogues, contributing articles in newsletters and journals, and providing consultancy services to the Indian business sector in developing and designing climate change mitigation projects.<sup>385</sup>

#### *4.7.3 Bureaucratic Procedural Issues*

Another important issue is the bureaucratic procedures involved in the whole CDM life cycle. The level of formality in the CDM process is also responsible for this issue. Every project has to pass through all stages of the institutional framework and complete all required documentation and approvals from authorities. This lengthy and bureaucratic process may be frustrating and complex for the parties. Here again, the role of government is foremost, as it can take action to make the process smooth and easy for parties. Bangladesh can learn from India and Vietnam, which recognise institutional capacity as a performance influencer and suggested the need to establish a separate fund for building institutional capacity.<sup>386</sup>

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<sup>385</sup> Kalipada Chatterjee, *Paper on Education, Training and Public Awareness on Climate Change* (Climate Change Centre, 2002), <<https://unfccc.int/sites/default/files/chatterj.pdf>>.

<sup>386</sup> Hitomi Kimura, Ancha Srinivasan and Keisuke Iyadomi, 'Chapter 4: Clean Development Mechanism' in Srinivasan Ancha (ed), *Asian Aspirations for Climate Regime beyond 2012* (Institute for Global Environmental Strategies, 2012).

#### *4.7.4 Lack of Baseline Data*

In modern project management, data has a vital role, providing a baseline to all phases of planning, resource allocation, implementation and performance management. The problem in Bangladesh is that, due to lack of an institutional infrastructure, data is not available in the required quantity and format. In a CDM project, the scope of required data can range from the project details, party's details, relevant institutions, community details (project area, population, society, resources and infrastructure) and other information, which is often required in project planning and project implementation. The GoB is attempting to new address the issue of data availability with the support of NGOs and external parties, who are providing data for CDM and relevant purposes.

#### *4.7.5 Bargaining Power*

It has been found that Bangladesh is also lacking in bargaining power in the CDM market. For example, when Bangladesh has sold carbon credits to the World Bank, it has received only €9 per credit, which could have been higher were Bangladesh in a better position in the CDM market.<sup>387</sup> The primary reason is that Bangladesh has relatively few CDM projects, which has lowered its bargaining power. In addition, the country does not have any price cap and floor system. China is obtaining better prices for its CDM programmes because of its dominant position in the global and Asian CDM market.<sup>388</sup>

#### *4.7.6 High Transactional Cost*

The success of CDM is dependent on its cost effectiveness, the key reason for developed countries to sponsor sustainable development projects in developing countries. If the transaction cost of CDM investment in Bangladesh is high, it would definitely not be an attractive option for developed countries. Sponsoring countries will go for the cheaper option, which means their choice of CDM project will be another developing country such as Sri

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<sup>387</sup> Roy, above n 379.

<sup>388</sup> Ecosystem Marketplace, *China Successfully Uses Market Mechanism For Sustainable Development - Ecosystem Marketplace* (Ecosystem Marketplace, 2017), <<http://www.ecosystemmarketplace.com/articles/china-successfully-uses-market-br-mechanism-for-sustainable-development/>>.

Lanka, Pakistan, India or China. Evidence suggests that the high transactional cost of CDM projects in Bangladesh is a major issue.

#### *4.7.7 Lack of Financial Resources*

For CDM projects themselves, Bangladesh's lack of financial resources is not a big challenge, because the financial resources are provided by sponsors (Annex A) countries. However, lack of financial resources can have an indirect impact by limiting capacity and infrastructure; due to lack of financial resources, the CDM-related institutions in Bangladesh are not able to enhance infrastructural capacity, which affects the overall performance of CDM in Bangladesh.

#### *4.7.8 Corruption*

Like other countries, Bangladesh suffers from the problem of corruption, as discussed in Chapter 3. According to Transparency International (TI), the level of bribery in Bangladesh equates to almost 13.4% of the national budget and 2.4% of GDP.<sup>389</sup> Regarding climate change investment and project implementation, there have been allegations of corruption, money-grabbing and mismanagement of projects in the Ministry of Water Resources in Bangladesh. This could be one reason why Bangladesh has not achieved the hoped-for benefits of the CDM.

#### *4.7.9 Lack of Technological Resources*

Being a developing nation, Bangladesh is also faced with a lack of technological resources, which is affecting the performance of CDM. For example, the unavailability of energy-efficient management systems for buildings will likely reduce the CDM investment opportunities in this area, as this technology is not yet available in Bangladesh.

#### *4.7.10 Lack of Robust Institutional Infrastructure*

Although Bangladesh has put in place CDM institutional structures, this is limited to the basic structure as per the guidelines of UNFCCC and does not include any special features. While China's CDM infrastructure also uses the basic UNFCCC guidelines, it is augmented by characteristics such as the involvement of heavy-hitting government ministries (very important), and the involvement of provisional and local-level Development Reform

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<sup>389</sup> M. Zakir Hossain Khan, Mahfuzul Haque and Mohua Rouf, *An Assessment Of Climate Finance Governance Bangladesh* (Transparency International Bangladesh, 2013).

Commissions (DRCs) and CDM service centres. These specialised features are absent in the CDM model of Bangladesh. This can be overcome by reforming the institutional framework of the CDM in the country.

#### **4.8 Role of Government in Reaping CDM Benefits**

On a positive note, the GoB appears highly committed to understanding the issues that have been discussed and making efforts to addressing these problems. This commitment can be seen in various areas. First, there is an established institutional infrastructure in Bangladesh, comprising relevant ministries, governmental departments, boards of investment, universities and banks, and headed by the Ministry of Environment & Forestry (MoEF). Secondly, the government has announced relevant policies and guidelines for addressing the issue of climate change and environmental protection, with the help of formal instruments such as renewable energy (see Chapter 6). Third, the Bangladeshi government is actively engaged with different accords on biodiversity, climate change and many other related international platforms (see Chapter 2).

The performance of the GoB can be measured in multiple ways. Jang et al. (2015) have provided a framework to measure the performance of government in four areas: policy instruments, economic instruments, legislative instruments and informational instruments.<sup>390</sup>

The UNFCCC and Kyoto Protocol are the largest global level platforms for addressing the challenge of global climate change. Bangladesh is not only a signatory to Kyoto Protocol but also actively uses different instruments of the Kyoto Protocol, such as CDM. For CDM, there is also an established Designated National Authority (DNA) comprising a CDM board and CDM committee. The DNA is linked to the international board of the CDM and there are formal channels that facilitate the CDM life cycle in both host country and donor country. Bangladesh is also a member of the Paris Agreement and its mechanism, which clearly shows the commitment and seriousness of the government in addressing the issue of climate change. However, it cannot be said that these initiatives and efforts are sufficient; the challenge is still ahead, and even greater involvement by the government is needed, especially in addressing the potential challenges and ensuring successful adoption of a new sustainable development

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<sup>390</sup> Enu K. Jang et.al, 'Policy Instruments for Eco-Innovation in Asian Countries' (2015) 7(9) *Sustainability* 12586, <<https://www.mdpi.com/2071-1050/7/9/12586/htm>>.

mechanism (SDM) of the Paris Agreement. For now, the GoB can take lessons from the shortcomings of the CDM and increase awareness among the public, private and financial sectors about SDM opportunities through seminars, symposiums, newsletters and advertisements in the mass media.

## **Sub-Chapter 4B. Recommendation Based on International Experience**

As mentioned in Chapter 2, the Paris Agreement, which is the next step of the UNFCCC after the Kyoto Protocol, is a seminal agreement in the struggle to protect the planet from the impacts of climate change. The Paris Agreement was the outcome of the 21<sup>st</sup> Conference of Parties (COP-21), of the United Nations Framework Convention on Climate Change (UNFCCC), in cooperation with the United Nations Environment Programme (UNEP), held from 30 November to 11 December 2015 in Paris, France.<sup>391</sup> Like previous COP sessions, the focus was on addressing the topic of climate change and environmental protection, but in this session the participants reached an agreement, which was legally binding on the members of the Kyoto Protocol, to keep the long-term increase in global temperature to below 2° Celsius.<sup>392</sup>

The Paris Agreement came into effect from 4 November 2016, binding the 194 member parties to limit the global temperature increases to below 2° Celsius above pre-industrial levels and pursue a limiting of 1.5° Celsius.<sup>393</sup>

### **4.9 Paris Agreement Mechanism**

The Paris Agreement (PA) mechanism comprises multiple elements and techniques, which guide the countries to contribute to the overall objectives. Understanding of the PA mechanism requires the understanding of key elements.

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<sup>391</sup> Climate Stewards *What Is COP21?* (Climate Stewards, 2017), <<https://www.climatestewards.org/resources/cop21/>>.

<sup>392</sup> Conference of the Parties 21, *Paris France Sustainable Innovation Forum 2015 Working With UNEP* (COP, 2016), <<http://www.cop21paris.org/>>; Pierce Nahigyan, ‘What Is COP21 And Why Does It Matter?’, *Huffington Post* (online), 30 November 2016, <[https://www.huffingtonpost.com/pierce-nahigyan/what-is-cop21-and-why-doe\\_b\\_8683312.html](https://www.huffingtonpost.com/pierce-nahigyan/what-is-cop21-and-why-doe_b_8683312.html)>.

<sup>393</sup> Carbon-mechanisms.de, *The Paris Agreement And Article 6 – Carbon Mechanisms* (Carbon-mechanisms.de, 2017), <<http://www.carbon-mechanisms.de/en/introduction/the-paris-agreement-and-article-6/>>.



#### 4.9.1 Nationally Determined Contributions (NDCs)

The compelling feature of the PA mechanism is that member countries have agreed to move forward with legally binding actions for combating climate change. According to Article 4(2) of the Paris Agreement, parties to the agreement shall prepare, communicate and maintain consecutive NDCs. Each party shall provide necessary information for the clarity and transparency and each subsequent NDC will be new, more ambitious and present a progression every five years. The agreement commits the parties to pursue domestic measures with the aim of achieving the objectives of the NDCs but does not legally bind parties to their implementation or achievement of their goals.<sup>394</sup> For this purpose, the countries have been required to submit their national emission reduction targets, also known as NDCs, on a regular basis. In this regard, the countries were given freedom to choose their targets. But the country's ambition must be reflected in their targets, which means every new NDCs must set higher emission reduction targets compared to previously submitted targets.

A survey indicates that 160 NDCs have been submitted as of January 2016 and nearly 80% have adaptation components.<sup>395</sup> Parties can use National Adaptation Plans (NAPs) as a primary national planning tool to achieve the goals set out in the NDCs. The parties are also allowed to prepare NDCs to incorporate mitigation goals. It is to be mentioned that NDCs consist of conditional and unconditional emission reduction goals in mitigation actions, which Bangladesh aims to achieve.

#### 4.9.2 Global Transparency Mechanism

A vital feature of the PA mechanism is that it requires the countries to achieve their NDCs through a global transparency mechanism. This will help them not only in achieving their NDC goals, but also allow the authorities to review their processes of mitigation efforts.<sup>396</sup> In fact, this review process is an accountability mechanism, in which the performance of countries in accomplishing their NDC ambitions will be reviewed. If any country has been failing to achieve their NDC targets, this review process may lead to significant reputational risk. In

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<sup>394</sup> United States Agency for International Development (USAID), *Analysis of Intended Nationally Determined Contributions* (USAID, 2016), <<https://www.climatelinks.org/file/2104/download?token=ICW6yp8i.>>.

<sup>395</sup> Takayoshi Kato and Jane Ellis, *Communicating Progress in National and Global Adaptation to Climate Change*, Climate Change Expert Group Paper No. 2016(1) (CCEG, 2016)

<[>](https://www.oecd.org/environment/cc/Adaptation-Communication-CCXG-paper-2016(1).pdf).

<sup>396</sup> Carbon-mechanisms.de, above n 393.

addition, the PA mechanism also includes a global stocktake, which will review the performance of the whole programme every five years. The purpose of this global stocktake is to check whether this global community has been able to limit annual GHG rises. Similarly, is the global community able to achieve the future target of 1.5° Celsius or not? On the basis of their performance, the UNFCCC and other related authorities can take necessary actions through policy.

#### *4.9.3 International Cooperation*

The PA mechanism also allows participants to enter into cooperation with other countries in order to implement their programmes. Under Article 6, the nature of such international co-operations is “assistive” in nature; one country provides assistance to the other country during the implementation of a sustainable development project and achieving their NDCs. Moreover, the participant countries can also use market-based mitigation mechanisms for achieving their NDC goals. However, there are certain guidelines for developing such international co-operations. First, the cooperation agreements must be voluntary and approved by the governments of both countries. Second, the cooperation must boost the country’s ambitions for climate actions, so the collaboration cannot be to assist in implementing existing climate action plans but must raise future ambitions. Third, the primary goal of such co-operations must be sustainable development emissions and the reduction of GHG emissions. Fourth, these co-operations must ensure environmental integrity. Fifth, the participants can use either one or the combination of approaches as a part of their cooperative mechanism:<sup>397</sup>

1. Direct bilateral co-operations
2. New sustainable development mechanism
3. Non-market-based approaches

#### *4.9.4 Direct Bilateral Cooperation*

The other promising feature of the PA mechanism is bilateral cooperation. Article 6.2 allows the member countries to engage in direct bilateral co-operations, in which it would be possible to transfer the emission reductions targets to another country from the host country where the

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<sup>397</sup> Ibid.

emission reduction measures had been implemented. The receiving country can use these emission reductions for achieving its NDC targets. This process resembles the CDM mechanism of the Kyoto protocol. However, the major challenge is the successful and transparent implementation process, which requires accounting for emission reductions accurately in the emission reduction inventory of both countries, in which the emission reduction activities are being conducted and in which the emission reductions are being transferred. This cooperative approach has been backed by a work programme that lays out the functional guidelines for this process. In addition, it is also possible for such activities to be linked to the different instruments of cross-border carbon market, such as the EU emission trading scheme and other related instruments.

#### *4.9.5 New Sustainable Development Mechanism*

The Paris Agreement also promises a new sustainable development mechanism (SDM), which will lead to achieving the goals of sustainable development and mitigation of GHG. Article 6.4 of the Paris Agreement develops the understanding of the new sustainable development mechanism. It is also notable that, unlike bilateral co-operations, the new SDM will be supervised and controlled directly by the appointed body of the UNFCCC's Conference of Parties, which will control the SDM through establishing and defining the new rules, modalities and procedures for SDM.

Similar to bilateral approaches, the new SDM also offers a market-based mechanism, in which the member countries can transfer emission reductions from one country, in which the credits were produced, to another country, where the credits are used for achieving NDC targets. The system of market-based approaches is described by Article 6.2 of the Paris Agreement. The overall objectives of new SDM are to reduce the absolute level of GHG and sustainable development.

The most compelling feature of the new SDM is that it defines the role of non-governmental members in contributing to climate protection. Article 6.4 allows the private sector, such as investors, to mobilise their investments towards green and sustainable investment projects. The investment goal of has been estimated at nearly US\$100 billion and, for this purpose, private investors and companies can be attracted by offering incentives and policies. In this scenario, the sub-national-level players, such as private sector investors and companies, can also access and directly use the SDM mechanism and contribute to the fight against climate change.

#### *4.9.6 Non-Market-Based Approaches*

Unlike the market-based CDM approach, the PA mechanism also involves non-market-based approaches. Article 6.8 allows member countries to use non-market-based approaches.<sup>398</sup> However, the detailed overview of such non-market-based approaches will not be available for several years as it is still under development, along with a ‘Framework of non-market-based approaches’. Nonetheless, the introduction of non-market-based approaches sounds positive, because it will increase the range of available approaches for sustainable development.

### **4.10 Paris Agreement vs Kyoto Protocol**

The announcement of the Paris Agreement led to comparisons between the Agreement mechanism and the KP mechanism. The discussion above explores the key elements of these mechanisms, but a closer look at the legal (formal) documents of both the Agreement and the Protocol helps to identify similarities and differences. The findings may help in finding what’s new in the PA mechanism. For this purpose, the key similarities and differences between the mechanisms are discussed below.<sup>399</sup>

#### *4.10.1 Key Similarities*

In order to understand the similarities between both mechanisms, there is need to consider Article 6 of the Paris Agreement (PA) and Article 6, Article 12 and Article 17 of the Kyoto Protocol. First, both mechanisms serve the common goal of combating climate change and promoting environmental protection. Second, both mechanisms ask for voluntary participation from the countries for this cause. Third, both mechanisms are focused on development in developing countries through assisting them to mitigate and adapt to climate change. Fourth, both mechanisms emphasise the use of techniques and methods to not only reduce the GHG but also promote sustainable development. Fifth, both mechanisms involve the use of a robust, procedural administrative framework for governing the performance. Sixth, both mechanisms dictate that the expenses should be managed through sharing of proceeds. Seventh, the Kyoto

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<sup>398</sup> Ibid.

<sup>399</sup> Javier de Cendra de Larragán, *IBA – The Paris Agreement, The Kyoto Protocol And The Future Of The Carbon Market* (International Bar Association, 2016), <<https://www.ibanet.org/Article/Detail.aspx?ArticleUid=7d6e423c-28c2-4128-bf69-99d0d992f7aa>>.

Protocol (KP) mechanism is already equipped with the market-based mechanism, and the PA is also likely to involve a market-based mechanism.

#### *4.10.2 Key Differences*

There are three evident differences between the KP mechanism and the PA mechanism. First, there is a difference between the number of tools offered by the both mechanisms. According to Article 6.4 of the Paris Agreement, there is only tool available for parties to use, whereas the KP mechanism offered three tools (Clean Development Mechanism, joint implementation and emission trading). From this perspective, the users of the PA mechanism have only one option, which also confirms that the PA mechanism is less flexible than the KP mechanism.

As the complete details of the PA mechanism have not been announced yet, it is not yet apparent what the key parameters, approaches and functional mechanism of the PA mechanism will be. In this regard, there are a number of questions. Which approaches and mechanisms will be used by the Paris Agreement? Will the PA mechanism be a centrally governed mechanism or it will involve a facilitative or delegated nature (bottom up)? While Article 6.4 of the Paris Agreement indicates that the PA mechanism may not be a centrally governed mechanism, but it has not been established that the PA mechanism has a delegated or facilitative nature. Second, the nature of the PA mechanism is also under question. Will the new PA mechanism be flexible, offering different mitigation approaches, or it will be restricted to just one approach? Third, due to lack of information, it cannot be determined whether the PA mechanism will involve a market-based system or not—but, if it does, how would it work?

Third, the policy-makers of UNFCCC and the Paris Agreement have not specified whether or not the Paris Agreement will be using old approaches, such as baseline method and additionality approach. These approaches were an integral part of the KP mechanism and its tools. Fourth, it has not been confirmed whether the scope of the PA mechanism is narrow (just one sector or industry) or wide (covering many sectors and industries). In similar context, there is still ambiguity over whether the PA mechanism is policy-based, project-based or sector-based.

Overall, regarding performance, it is too early to say whether the PA mechanism will be better than the KP mechanism. Once the parties have implemented the PA mechanism successfully and the outcomes have been received, then it will be time to evaluate both.

## 4.11 Available Options for Bangladesh

The research evidence showed that there are other climate-friendly options available, even under the KP mechanism, which are being used by some neighbouring countries and developed countries. There is also the possibility that, if Bangladesh replaces its CDM model, then those alternatives can perform better than CDM in Bangladesh. However, it is still unclear whether this option can work or not. For this purpose, it is essential to analyse the possible advantages and disadvantages of those alternative options in Bangladesh.

### *4.11.1 Option 1: Keep Using Kyoto Protocol*

The first option is to keep using the Kyoto Protocol (KP) and its tools, especially the CDM. There are two points to discuss. First, if Bangladesh chooses to use the Kyoto Protocol and the CDM, then it has to work on enhancing the effectiveness of the CDM, especially through capacity building, more governmental effort and using a robust model. As discussed above, in the current state, Bangladesh is not getting any remarkable benefits from the CDM and the Kyoto Protocol. Second, in the light of research findings, it can be said that the CDM and Kyoto Protocol are not the long-term solutions for Bangladesh, because these tools might not exist after 2020. In fact, after 2020, the second commitment period of the Kyoto Protocol will be finished and there will not be any third commitment period.<sup>400</sup> For this reason, Bangladesh should not rely on the Kyoto Protocol and the CDM for long-term perspective.

In Bangladesh, small-scale projects are the alternative to standard CDM projects. In fact, the experts recommend that countries like Bangladesh should adopt small-scale projects, which are better in many ways (discussed below). However, Bangladesh is already working with small-scale projects. According to the available statistics, Bangladesh reduces CO<sub>2</sub> emissions by 1,785,802 tonnes annually, which includes 135,013 tonnes under small-scale projects and 1,650,789 tonnes through large CDM projects.

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<sup>400</sup> Cendra de Larragán, above n 399.

**Table 4.5: CDM projects by scale**

<b>Size of CDM Projects</b>	<b>Annual Emission Reductions (t-CO<sub>2</sub>/year) (UNFCCC)</b>	<b>Number of CDM projects</b>	<b>Total Emission reductions by 2012 (t-CO<sub>2</sub>/year)</b>
<b>Small Scale</b>	0—50,000	821	96,354
	50,000—100,000	67	19,089
	100,000—150,000	5	3,274
	150,000—200,000	2	3,596
	200,000—250,000	5	6,967
	250,000—300,000	2	3,518
	350,000—400,000	1	2,214
<b>Small Scale Sub-Total</b>		<b>903</b>	<b>135,013</b>
<b>Large Scale</b>	0—50,000	213	41,564
	50,000—100,000	324	121,192
	100,000—150,000	227	127,748
	150,000—200,000	97	80,899
	200,000—250,000	44	44,891
	250,000—300,000	41	55,838
	300,000—350,000	29	41,813
	350,000—400,000	20	32,245
	400,000—450,000	12	24,122
	450,000—500,000	13	28,458
	500,000—550,000	9	19,889
	550,000—600,000	10	29,874
	600,000—650,000	6	17,413
	650,000—700,000	10	41,986
	700,000—750,000	1	3,125
	750,000—800,000	7	28,141
	800,000—850,000	4	16,732
	850,000—900,000	3	10,335
	900,000—950,000	7	26,822
	950,000—1,000,000	2	10,909
> 1,000,000	47	846,793	
<b>Large Scale Sub-Total</b>		<b>1,126</b>	<b>1,650,789</b>
<b>Total</b>		<b>2,029</b>	<b>1,785,802</b>

#### *4.11.1.1 Possible Advantages*

Small-scale projects have gained popularity due to several advantages and opportunities. The principal benefits of small-scale projects are their cost and time effectiveness.<sup>401</sup> In comparison to standard CDM projects, small-scale projects are cheaper. Regarding time effectiveness, small-scale projects have shorter approval times, which saves time. The major difference between small-scale projects and large-scale CDM project is the baseline methodologies; for small projects the required time for baseline measurement is quite short. Even if the baseline is not available, then a proposed methodology is also acceptable for approval, which reduces the overall time. In addition, small-scale projects save time from correction of leakage and calculation of emission reductions, which reduces the overall cost of project transaction.

#### *4.11.1.2 Potential Issues and Challenges*

Despite these advantages, there are many issues and challenges with small-scale projects. Small-scale projects are not able to earn CERs, which are limited to CDM projects. Successful small-scale projects also require good community involvement and a cooperative venture, which is often not found in rural areas. According to one study in India, small-scale project strategies have failed in delivering promised benefits and development objectives in the rural areas. However, this strategy did work in developed areas of the country.<sup>402</sup> Putting this scenario into the perspective of Bangladesh, with a higher proportion of rural areas, the lack of communication and cooperative ventures can be a barrier in reaping the optimal benefits of small scale CDM projects.

#### *4.11.2 Adopting Paris Agreement over CDM*

The other option for Bangladesh is replacing its CDM programme with the new mechanisms of the Paris Agreement. There is possibility that the PA mechanism will provide better results than CDM. But it is possible that the Paris Agreement is not a good option for Bangladesh. For this purpose, there is need to understand the PA mechanism and its possible benefits and disadvantages for Bangladesh economy.

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<sup>401</sup> Miah, Shin and Masao, above n 330.

<sup>402</sup> Srikanth Subbarao and Bob Lloyd, 'Can The Clean Development Mechanism (CDM) Deliver?' (2011) 39(3) *Energy Policy* 1600.



The UNFCCC press release on 25 September 2015 confirms that Bangladesh has also submitted its new climate action plan as an intended nationally determined contribution (INDC). This initiative gives a clear indication that Bangladesh is going to adopt the PA mechanism, which is will be effective from 2020.<sup>403</sup> After becoming the part of Paris Agreement, Bangladesh will have the option of replacing the CDM with the PA mechanism. This step will not only bring new opportunities but also new challenges for Bangladesh.

#### *4.11.2.1 Possible Advantages*

Although Bangladesh has shown its commitment to the adoption of the PA mechanism, only time will tell whether this decision was right or wrong. But, as promised by its features, the PA mechanism can offer several benefits to Bangladesh. The adoption of the Paris Agreement is beneficial for Bangladesh from a long-term perspective. According to the report of the United Nations Development Programme (UNDP), the PA mechanism is bringing a new global carbon market, with discussions under way to create a global carbon market. According to the plan, the new system will replace the CDM-based carbon market system by the end of 2020.<sup>404</sup> The member countries would not have any other option but to work under the new mechanism of the Paris Agreement. At that time, Bangladesh must replace CDM with the new PA mechanism. If Bangladesh replaces the CDM with a new PA mechanism early, it would not have to face the hardships during the adoption of the Paris Agreement. That is, if Bangladesh acts now to prepare a long-term strategy for the next 4–5 years which replaces CDM with the PA mechanism, both systems can be used in parallel before CDM is phased out and the PA mechanism is adopted completely.

The availability of non-market-based approaches, as mentioned in Article 6.8, will not only provide Bangladesh with another range of sustainable development approaches but will also enable the parties to save procedural time compared to CDM projects. In addition, it is also possible that non-market-based approaches will increase the speed of development and implementation of sustainable development projects, which will likely lead to greater emission reductions in less time.

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<sup>403</sup> UNCC, *Bangladesh Submits Its Climate Action Plan Ahead Of 2015 Paris Agreement* (UN, 2015), <<http://newsroom.unfccc.int/unfccc-newsroom/bangladesh-submits-its-climate-action-plan-ahead-of-2015-paris-agreement/>>.

<sup>404</sup> UNDP, *Climate Credit Mechanisms* (UNDP, 2017), <<http://www.undp.org/content/sdfinance/en/home/solutions/climate-credit-mechanisms.html>>.

#### *4.11.2.2 Potential Issues and Challenges*

Bangladesh's adoption of the Paris Agreement is also subject to several issues and challenges, which can influence performance. Primarily, Bangladesh has to face the opportunity cost of choosing between its existing CDM approach and new sustainable development mechanism (SDM). It is also possible that the combination of both can be continued, but an opportunity cost would exist there also.

The adoption of a new Paris SDM is not an easy decision for a country like Bangladesh, because it will involve many hardships and challenges. These hardships can be categorised in three ways. First, there are many projects being implemented under CDM and these will need to be completed with the old CDM system. Second, in Bangladesh, the existing structure of CDM is purely serving the needs of CDM projects; to serve to the new Paris SDM, the institutional infrastructure will need to be modified. Third, Bangladesh has experience and a knowledge base with the CDM; a new mechanism will face problems related to understanding the system, training the workforce and achieving the required performance level.

It is obvious that both systems have to work in parallel and this will require the management of both systems simultaneously. The complete PA adoption will be in three phases. First, the new SDM has to be introduced in parallel with the CDM. Second, the registration of new projects under CDM has to be stopped and all new projects will be registered under the new mechanism. Third, the new SDM will be implemented; however, the existing projects will be completed under CDM. This process of replacement will require a greater level of planning and management during the adoption process, especially when ensuring the successful achievements of desired goals.

#### *4.11.3 Importing Models from Other Countries*

On the Asian continent, there are many other countries besides Bangladesh, which are using different models. As has been mentioned, China is very active in environmental protection initiatives. This could be another option, if Bangladesh were to import another model from neighbouring countries.

#### 4.11.3.1 China

China is not only one of the top emitters of greenhouse gases but is also very active in climate change forums like the UNFCCC. In Asia, China dominates CDM projects and carbon markets.<sup>405</sup> The key question is how China has assumed this dominant position?

First, the Chinese government is visibly active and assertive in handling the entire CDM mechanism in the country. Achieving CDM success demands time, huge investment, the involvement of state-owned entities (SOE) and a focus on achieving targets or commitments. For this purpose, the Chinese government has involved the heavy-hitting government ministries for this purpose. For example, the National Development and Reform Commission (NDRC) chairs the Chinese CDM DNA (Designated National Authority). The Ministry of Science and Technology (MoST) and Ministry of Finance are also heavily involved. In addition, the provisional and local Development and Reform Commissions (DRC's) along with 28 provisional CDM service centres, are working for the success of CDM in China.

Second, the Chinese government has focused on coordinated capacity building. The two bodies, NDRC and MoST, are actively working on enhancing the capacity of CDM projects in the country. In addition, these two bodies also act as gatekeepers of CDM projects in China, as they not only manage the whole CDM project process with parties but also strongly protect China's interest while negotiating with the donor parties.

Third, the success of CDM in China is largely aided by its CDM fund, which is worth over US\$1 billion and is managed by the Ministry of Finance. The CDM fund fulfils the financial needs of CDM projects and is funded by grants, loans and a levy on CER revenue (of between 2% and 65%).<sup>406</sup>

Fourth, the regulated nature of CDM model is also seen as the contributor to the success of CDM in China. For example, China uses a price cap and floor system for setting the prices of CERs, which deters parties who are looking for CERs at low price. Second, China requires that the CDM project must be implemented only by a Chinese-controlled entity. In case of a joint venture with a foreign company, 51% of ownership must be held by a Chinese entity. As noted

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<sup>405</sup> Linna Xie et al, above n 348.

<sup>406</sup> Belinda Kinhead, *China Successfully Uses Market Mechanism for Sustainable Development* (Ecosystem Marketplace, 2017), <<http://www.ecosystemmarketplace.com/articles/china-successfully-uses-market-br-mechanism-for-sustainable-development/>>.

above, China also charges a levy on the sale of CERs; it also places limits on the sale of CERs by volume to individual buyers. This limit is determined through PDD estimations and is subject to the approval by authorities.<sup>407</sup> For several donor countries, China is unattractive for CDM projects.

Fifth, technology transfer is another success of China's CDM model. A comparative research study found that, except for wind and hydro projects, all other CDM projects are bringing new technology into China, especially in Eastern China.<sup>408</sup> However, the restrictions by the Chinese government noted above have restricted some technology transfer opportunities.

Another success of comes from China's emission trading. Based on the principle of reducing carbon emission at the lowest cost of reduction, the emission trading scheme (ETS) has become one of the most important and universal measures adopted to mitigate climate change.<sup>409</sup> Since 2013, China has focused on the promotion of the ETS, as it has the plan to develop a national-level emission trading scheme. The best of part of ETS for China is that it enables the country to use the credits for meeting its NDC targets, which have been earned by its CDM activities. As a part of its promotion strategy, China is building cooperative relationships with other countries, such as South Korea and some EU countries.<sup>410</sup> It is also expected that China intends to use its ETS for the Paris SDM mechanism.

In the initial years of the CDM, China was considered slow to engage with CDM but the Government of China and international donors recognised the need to increase capacity building. This may be a lesson for Bangladesh to become more involved in carbon markets.

#### *4.11.3.2 India*

After China, India holds the next most dominant role in terms of both number of CDM projects and position in the Asian carbon market. For Bangladesh, India's model may be preferable to China's, because Bangladesh has similarities with India in terms of political system, culture, economy and some problems. In the post-Paris Agreement (PA) context, India is very active in contributing to climate change action. As the PA has not unveiled its market mechanism,

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<sup>407</sup> Ibid.

<sup>408</sup> Linna Xie et al, above n 348.

<sup>409</sup> Jiang, above n 144.

<sup>410</sup> IAEA, above n 351.

India has experimented with the use of its own domestic market mechanism (within the broader PA context), integrated with fiscal instruments and regulatory mechanism.<sup>411</sup>

#### 4.11.3.3 Sri Lanka

Sri Lanka is also a member of the UNFCCC and, like Bangladesh, also established a National CDM authority through replacing its Climate Change Secretariat with an NDA. Unlike Bangladesh, however, Sri Lanka has taken further steps.<sup>412</sup> The key initiatives of Sri Lanka include the development of a national CDM policy and a comprehensive national strategy for CDM. Sri Lanka has also established a national expert committee whose role is to evaluate CDM project proposals and make recommendations to the national CDM authority. In addition, Sri Lanka has also appointed two CDM study centres through collaboration with Peradeniya University and Moratuwa University, to provide a knowledge base for CDM projects. Sri Lanka has also taken steps towards the development of an institutional framework and establishment of a Carbon Trading Exchange (CTx), which will enable parties to trade CERs with one another. In order to hasten this process, the Sri Lanka has also accredited eligible private sector organisations to do the CDM project validation and verifications.

It is true that Bangladesh has also taken some remarkable steps to reaping the benefits of CDM. National-level initiatives such as the National Plan of Disaster Management 2010–2015, the Bangladesh Climate Change Strategy and Action Plan (2009)<sup>413</sup> and the 7<sup>th</sup> Climate Change and Disaster Management Plan (2016–2021)<sup>414</sup> can be seen as the major steps.

## 4.12 Governmental Efforts

Apart from the radical steps discussed above, there are some options in the hands of the Bangladeshi government. Although, the government is taking some initiatives in shape of

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<sup>411</sup> Ibid.

<sup>412</sup> S.P. Nissanka, B. Marambe and B.M.S. Batagoda, *Institutional Framework And National Policy In Sri Lanka For Clean Development Mechanism (CDM) Of The Kyoto Protocol* (AGRIS: International Information System for Agricultural Science and Technology, 2003), <<http://agris.fao.org/agris-search/search.do?recordID=PH2004001478>>.

<sup>413</sup> Ministry of Environment and Forests, *Bangladesh Climate Change Strategy And Action Plan 2009* (Government of Bangladesh, 2009).

<sup>414</sup> Ahsan Uddin Ahmed et al, *Climate Change And Disaster Management – Sectoral Inputs Towards The Formulation Of Seventh Five Year Plan (2016–2021)* (Government of Bangladesh, 2017), <[http://www.plancomm.gov.bd/wp-content/uploads/2015/02/11a\\_Climate-Change-and-Disaster-Management.pdf](http://www.plancomm.gov.bd/wp-content/uploads/2015/02/11a_Climate-Change-and-Disaster-Management.pdf)>.

participation in international accords and the climate change strategy and action plan (BCCSAP 2009), there are other actions that can be taken.

#### *4.12.1 Aligning Country's Policy with the CDM and the Paris Mechanism*

The secondary literature notes that Bangladesh is actively announcing its national-level policies for addressing the issue of global warming and climate change. For example, the announcement of a renewable energy policy was a new milestone in this regard. The government efforts and initiatives are supposed to achieve the targets of national-level policies. On the other hand, after becoming a ratified member of the Paris Agreement, Bangladesh is also legally bound to serve the objectives of the UNFCCC, the Kyoto Protocol and the Paris Agreement. So, the climate protection actions and efforts under such programmes are serving the objectives of these platforms. In this perspective, both kinds of activities and actions are serving different objectives. There is a way in which both kinds of efforts and actions could serve a single objective. This is a situation in which Bangladesh integrated its national policies with the CDM and the PA mechanism. For example, the renewable energy policy of Bangladesh was announced in 2008. If the objectives of renewable energy policy are similar to the objectives of CDM or new SDM (Paris agreement), then all the efforts and actions for renewable energy, either taken by Bangladesh Government or registered under the CDM or new SDM, the outcomes of renewable energy projects and efforts will serve the objectives of both Bangladesh's national policy and CDM or SDM.

There are some case studies available, especially in neighbouring countries. The dominance of China and India is largely because of their national integrated policies. For example, India is mobilising climate finance and sustainable development through integrating the domestic market mechanism with fiscal instruments backed by regulatory interventions under the PA mechanism.<sup>415</sup> Although, this initiative is still at an experimental stage it looks promising, especially when both domestic market mechanisms and governmental fiscal and regulatory instruments are aligned and being implemented in a controlled way. Until the results are out, it would be too early to say that it is a good approach. However, Bangladesh can integrate its climate change plan with fiscal instruments, because its domestic market is not as large as India's.

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<sup>415</sup> IAEA, above n 351.

The primary advantage of this initiative is that all activities and actions will serve a single objective. In this way, performance measurement will be not only extremely easy, but also according to standards which are internationally recognised. The integration of both national policies with CDM and SDM will also reduce the efforts to measure the performance from both separate mechanisms.

Although the integration of energy policy with CDM is feasible for Bangladesh economy, there are some issues and barriers. First, there is a difference between the government as an institution and UNFCCC as an institution, which serves entirely different objectives. But on the issue of climate change, if both institutions are developing instruments—policy tools by the government and CDM and SDM tools by UNFCCC—then the scope, objectives and structures of both institutions will be different. At this point, the Bangladesh Government will be bound to retreat and modify its policies according to the UNFCCC, because the UNFCCC has made global objectives while Bangladesh is making objectives only for its own country. Thus, Bangladesh has no option but to work closely with UNFCCC and the COPs that are controlling the CDM and new SDM. Although it is a difficult task, it is not impossible, and the outcomes are promising.

#### *4.12.2 Country-Level Agreements*

The GoB can enter into country-level bilateral or cooperative agreements, which can enhance the CDM opportunities for Bangladesh. For example, Bangladesh can join the emission trading scheme (ETS) of China, as China has made cooperative agreements with Korea and EU countries as a part of its ETS.<sup>416</sup> The major advantage of this option is that Bangladesh would reach a level at which can it trade its credits directly in an international market. As China is using a price cap system for setting the prices of credits, there is possibility that Bangladesh can get a better price for its credits.

In addition, bilateral agreements can be made with Japan, as Japan has already such agreements as a part of its joint credit mechanism (JCM).<sup>417</sup> This will depend upon the eligibility of Bangladesh to join such agreements but, if successful, Bangladesh can also get sustainable development projects. Otherwise, the GoB can create similar platforms at local level with its

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<sup>416</sup> Ibid.

<sup>417</sup> Ibid.

neighbouring countries, such as Sri Lanka, India and Pakistan. This would require lobbying with neighbouring countries.

#### *4.12.3 Involve the State-Owned Organisations*

In the case of China, it has been seen that the state-owned organisations are dominant in getting CDM projects compared to the non-state-owned organisations.<sup>418</sup> The primary benefit is that the state-owned organisations are easy to control and working under the government. If the Bangladeshi government can involve state-owned organisations in applying for CDM projects, there will be more chances of getting more projects. In the event that the state-owned organisations are lacking in terms of resources (financial, technical or human), then the government can easily play its role in supplying these resources, which will increase the chances of getting CDM projects. In addition, the role of non-state-owned organisations is also positive and should be encouraged for mobilising investments from private investors, as directed by the PA mechanism.

#### *4.12.4 Focus on Capacity Building*

The one possible reason for Bangladesh getting fewer CDM projects is that no one has worked on capacity building—noting that the success of Chinese CDM model is largely derived from the coordinated capacity building through the NDRC and MoST.<sup>419</sup> The Bangladeshi government can establish or outsource services from consultancy bodies to focus on identifying the needs of donor countries, identifying the CDM potential and assisting the parties and working as a gatekeeper for the CDM projects. This would help the government attract donor countries, portraying the image of Bangladesh as a suitable country for CDM in the international market and enhancing Bangladesh's share of the Asian CDM market.

#### *4.12.5 Establishment of CDM Fund*

It has been empirically established that Bangladesh is one of those countries most vulnerable to climate change. The possible damage can be seen in the form of erosion of shorelines, population displacement, disturbance of tropical and monsoon seasons, extreme levels of flooding, loss of habitable and coastal land and many others. Bangladesh has no option but to

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<sup>418</sup> Linna Xie et al, above n 348.

<sup>419</sup> Kinkead, above n 406.



respond to climate change and engage in global climate protection initiatives. The findings of secondary analysis have shown that climate change is a serious concern of the GoB. The seriousness and commitment of Bangladesh on the climate change issue have been demonstrated in various areas. There is an established institutional infrastructure, comprising governmental and non-governmental institutions working together to address the issue of climate change. The GoB is also actively contributing through a wide range of policy measures. Moreover, Bangladesh has also engaged with several international accords and environmental protection platforms, which are fighting against climate change.

But the absence of a national CDM fund may be a reason for Bangladesh attracting fewer CDM projects. The Bangladeshi government could, like China, establish a national-level fund which can meet the financial needs of CDM projects. With a poorer bargaining position than China, Bangladesh could not charge a levy on CERs, but a CDM fund could be funded by grants and loans from the government and international bodies.

The discussion above has analysed the CDM structure, performance of CDM and alternative options for Bangladesh. The purpose of this research is to provide policy-makers with information to help them in choosing the mechanism that will provide optimal benefits to the Bangladesh economy. Based on the critical evaluation of three available options, it is recommended that Bangladesh should use a combination of strategies for combating the impact of climate change.

First, Bangladesh must replace its CDM with the new PA mechanism. This recommendation is backed by several points. First, the Paris Agreement is a new and improved mechanism, which responds to new challenges and needs. Second, the new agreement not only offers the old market -mechanism but is also equipped with new tools such as bilateral cooperation, new sustainable development mechanisms and non-market-based approaches. It offers Bangladesh a wider range of tools and techniques for contributing to climate change action. Third, the PA mechanism is a long-term mechanism; the UNFCCC has planned replace the CDM with the new mechanism and Bangladesh will therefore have to replace its system also.

Second, the GoB must play its role in increasing the capacity and potential of CDM projects. In this context, several initiatives can be taken. Bangladesh must align and integrate its national policies with the new PA mechanism, which will produce outcomes that serve not only national objectives, but also the objectives of the UNFCCC, the Kyoto Protocol and the Paris

Agreement. Although this strategy leads to some practical difficulties, the outcomes of integration are fruitful. In addition, adopting elements from other country's strategies can also increase the potential for a national CDM strategy. For example, Bangladesh can adopt some strategies from the Chinese CDM model and/or Sri Lanka's model, such as development of a national-level CDM policy, establishment of CDM policy framework, increasing the capacity of CDM projects, increasing the role of state-owned-organisations, and including the national-level support bodies.

Third, Bangladesh should focus more on small-scale projects, instead of large-scale projects. This initiative will not only save the time and procedural effort but will help in implementing more and more sustainable development projects with less time and fewer resources.

#### **4.13 Conclusion**

One of the aims of this thesis is to critically analyse the performance of Bangladesh regarding its contribution to the fight against global climate change. For this purpose, this chapter has been split into two parts – Chapter 4(1), status quo and reflection, and Chapter 4(2), recommendations based on international experience. The first part deals with the scope of literary research and covers a detailed overview of the climate problem in Bangladesh, the response of Bangladesh towards combating climate change, and the CDM structure and its performance in Bangladesh. The second part deals with the available options for Bangladesh other than CDM, and makes recommendations for Bangladesh in this regard. These can be summarised as follows.

First, Bangladesh has participated in the UNFCCC and Kyoto Protocol processes from the outset and is also actively using a CDM under the Kyoto Protocol for hosting sustainable development projects from donors. CDM projects pass through a complete life cycle from registration to the issuance of certified emission reductions (CERs). There is a formal and authorised body, known as Designated National Authority (DNA), that is comprised of a CDM board and CDM committee. Every CDM project first passes through approval from DNA and then it goes to the international CDM body under the UNFCCC. The approval of CDM projects is subject to several evaluation tests and sustainability criteria.

Second, the research showed that Bangladesh is ideal for CDM projects. There is a significant number of opportunities for CDM projects in waste management, energy, forestry, mining,

agriculture, transportation, residential and commercial buildings and other industrial areas. The UNFCCC project database confirms that, since 2007, Bangladesh is not only hosting several CDM projects, but it has also earned 5,057,885 emission reduction credits. Due to gaps in financial data, the financial benefits of such CDM projects cannot be measured in Bangladesh. Overall, however, the role of these CDM projects has been found to be positive in terms of economic sustainability, social sustainability and environmental sustainability. But the research findings also indicate that the true potential of the CDM has not been achieved due to several issues and challenges. The performance of CDM in Bangladesh is being impeded by lack of public awareness, bureaucratic procedural issues, a lack of baseline data, high transaction costs, lack of financial resources, corruption, and lack of technological resources. The government is playing an active role, but there is much more to be done.

In this context, GoB could involve the heavy-hitting government ministries—as China did by involving its two leading agencies—for this purpose. Bangladesh could focus on formulating and implementing climate policy and capacity building projects that focus on needs at the national and local level. One of the main reasons CDM has been successful in China is strong governmental institutions taking a leading role in developing and implementing climate policy. Though Bangladesh has taken some steps to gain the benefits of CDM, it could learn legislative lessons from Sri Lanka and adopt or borrow from Sri Lanka's model. Comprehensive and national-level approaches should be developed, including a national-level CDM policy and framework.

Third, the findings have shown that there are several options for Bangladesh. First, Bangladesh can focus more on small-scale projects, which require less time and resources, but do not produce CERs. Bangladesh can replace CDM with new sustainable development mechanism (SDM) under the Paris Agreement. Bangladesh can align its national policies with UNFCCC, the Kyoto Protocol and the Paris Agreement. Bangladesh can adopt a model or elements of a model from neighbouring countries, or at least import some strategies from China, India or Sri Lanka. In this context, India may be preferable to China and Sri Lanka because it has similar culture, economy, political system and some other features. Additionally, India is very active in contributing to climate change action in the post-Paris Agreement environment. It is notable that each option has its own opportunities and issues, but the combination of all options is another approach available in Bangladesh.

Based on the critical evaluation of available options, the findings suggest that Bangladesh must adopt a combination of strategies, which include replacing the existing CDM strategy with the complete adoption of a PA mechanism. In addition, government efforts to align national policies with the UNFCCC, Kyoto Protocol and Paris Agreement are helpful in enhancing the performance of existing climate protection efforts. In the end, while developing the CDM or related policies and strategies, a comprehensive and national-level approach should be adopted instead.

# Chapter 5. Role of Non-Governmental Organisations (NGOs) to Address Climate Change in Bangladesh

## 5.1 Introduction

It has been already discussed in Chapter 3 how climate change impacts affect Bangladesh and its vulnerable people. The GoB is trying to fulfil its constitutional responsibility to protect the population from disaster. In that context, effective disaster preparedness is essential. NGOs are playing an important role in improving adaptation and mitigation measures—such as CDM projects, food security, resilience, living conditions of the most vulnerable people—and are acting at different levels. They share the goal of reducing vulnerability and protecting and supporting affected people, working as a bridge between international and national efforts. For example, CARE Bangladesh has poverty-fighting as its core mission and pursues its objectives through the strategic theme of global policy engagement, adaptation, making carbon finance for the poor and organisational change.<sup>420</sup> NGOs provide training, education and knowledge to the local communities to improve adaptive capacities to address climate change. In addition, NGOs have an important role in advocating for development, encouraging and assisting positive initiatives and holding the GoB to account for performing its role, and this role will be discussed further in this chapter.

There are many NGOs in Bangladesh, working either independently or in collaboration with governmental and international institutions to address the issue of climate change to ensure climate justice. Environmental NGOs work together with government sectors on the National CDM Board (see Chapter 4). These NGOs include:

- **Waste Concern Org:** Waste Concern is solving three major problems- waste management in the urban areas of Bangladesh, depletion of organic matter from the soil in rural areas and GHG emission from landfill sites- with a single solution of covering organic waste into compost.<sup>421</sup> It also turns household waste into bio-fertilisers which

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<sup>420</sup> Climate Action Network International, CARE Bangladesh, <<http://www.climatenetwork.org/profile/member/care-bangladesh>>.

<sup>421</sup> Waste Concern, *Waste Concern Honoured* (WasteConcern, 2018), <<http://wasteconcern.org/service/waste-concern-honored-by-the-purpose-economy/>>.

are sold nationally. This development model is also used in Sri Lanka, Cambodia, Nepal and Vietnam.<sup>422</sup>

- **The Federation of Bangladesh Chamber of Commerce and Industry (FBCCI):** The private sector is the key driver of economic growth. The government has developed strong partnerships with business associations, such as the FBCCI, to integrate climate risk considerations into their lending strategies and portfolios so that the private sector is equally exposed to climate risks and can provide the innovation, technology and risk management capabilities to develop solutions.<sup>423</sup>
- **Bangladesh Centre for Advanced Studies (BCAS):** The BCAS is an independent, non-profit, non-government policy, research and implementation institute that works on sustainable development at local, national, regional and international levels. It works on environment and development, renewable and conventional energy, social and economic issues, adaptation and resilience building strategies. It is also conducting research to determine the needs associated with assessing the risk of loss and damage.<sup>424</sup>
- **Bangladesh Institute of Development Studies (BIDS):** This is a multidisciplinary public research organisation that conducts policy research on development issues for Bangladesh. Priority issues include environment and climate change, infrastructure and energy and power.
- **Bangladesh University of Engineering and Technology (BUET):** A Climate Change Study Cell was established at BUET in 2007 with the aim of providing education and training and conducting research on climate-related disasters.

While Bangladesh is one of the lowest carbon emitters it is one of the most vulnerable countries of the world, and the issue of adaptation must be a clear priority for Bangladesh, including implementing Community-Based Adaptation with the help of NGOs, as discussed below.

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<sup>422</sup> Ibid.

<sup>423</sup> IIED, *Acclimatise Building Climate Resilience* (IIED, 2016), <<https://cdkn.org/wp-content/uploads/2016/06/Private-sector-engagement-in-climate-change-action-in-Bangladesh-creating-an-enabling-environment.pdf>>.

<sup>424</sup> Bangladesh Centre for Advanced Studies (BCAS) and International Centre for Climate Change and Development, *Joint Submission on the Work Programme on Loss and Damage on Behalf of a Consortium of Regional and Global Partners* (UNCC, 2012) <[https://unfccc.int/sites/default/files/bcas\\_and\\_supporting\\_organizations\\_submission\\_on\\_loss\\_and\\_damage\\_co\\_p\\_18.pdf](https://unfccc.int/sites/default/files/bcas_and_supporting_organizations_submission_on_loss_and_damage_co_p_18.pdf)>.

## 5.2 Community-Based Adaptation

Bangladesh is one of the most adaptive countries; Dr Saleemul Huq, senior Fellow at International Institute for Environment and Development, referred to Bangladesh as the adaptation capital of the world at the seventh International Conference on Community-Based Adaptation to Climate Change. This means that Bangladesh is helping itself, with the support of NGOs.<sup>425</sup> NGOs have been trying to strengthen the adaptive capacities and resilience of vulnerable people through small-scale adaptation measures; ‘Reducing Vulnerability to Climate Change’ was the first adaptation project implemented by NGOs.<sup>426</sup> It has wide-ranging involvement in implementing adaptation projects and it is a global developer in Community-Based Adaptation (CBA). The aim of CBA is to support the adaptation needs of ‘those most vulnerable’—the vast number of poor and marginalised peoples living in high-risk environments, mainly in developing countries.<sup>427</sup> Rather than relying on government action, community-based adaptation to climate change is a community-led process, based on communities’ priorities, needs, knowledge and capacities and empowering people to plan for and cope with the impacts of climate change.<sup>428</sup> It is based on the principle that local communities have the skills, experience, local knowledge and networks to undertake locally appropriate activities that increase resilience and reduce vulnerability to a range of factors, including climate change.<sup>429</sup> It is a very recent development, which identifies the most vulnerable to climate change communities in the developing world. Proponents of CBA are often driven by concerns over the social injustice of climate change, as ‘those most vulnerable tend to contribute the least greenhouse gas emissions’.<sup>430</sup> CBA aims to develop initiatives built on the knowledge and decision of affected peoples, with participatory approach together with local initiatives and empowerment to make them more resilient. CBA practitioners also take local adaptation strategies and actions and local cultural contexts into consideration to preserve

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<sup>425</sup> IIED, *Climate Change Experts Head to Adaptation Capital of the World* (IIED, 2013) <<https://www.iied.org/climate-change-experts-head-adaptation-capital-world>>.

<sup>426</sup> Care Bangladesh, *The Reducing Vulnerability to Climate Change (RVCC) Project: Reflecting on Lessons Learned*, (Care Bangladesh, 2005) <[http://www.carebangladesh.org/publication/Publication\\_5261518.pdf](http://www.carebangladesh.org/publication/Publication_5261518.pdf)>.

<sup>427</sup> Patrick Kirkby, Casey Williams and Saleemul Huq, *A Brief Overview of Community-Based Adaptation* (International Centre for Climate Change and Development, 2015), <<http://www.icccad.net/wp-content/uploads/2015/12/A-brief-overview-of-Community-Based-Adaptation.pdf>>.

<sup>428</sup> Hannah Reid et al, *Community-based Adaptation to Climate Change* (IIED, 2009) 11.

<sup>429</sup> David Doman and Diana Mitlin, ‘Challenges for Community based Adaptation: Discovering the Potential for Transformation’ (2013) 25(3) *Journal of International Development* 640, <<http://onlinelibrary.wiley.com/doi/10.1002/jid.1772/epdf>>.

<sup>430</sup> Kirkby, Williams and Huq, above n 427.

local autonomy. In developing countries, rural people do not live in close proximity to support systems and have minimal integration with government services. As a result, it helps to raise awareness among local people about climate change and future climate risk. Considering all these elements, CBA can be divided into the following categories:

- Resilient livelihoods development
- Resilient community wellbeing, disaster risk reduction and health care
- Women's self-reliance
- Youth Development
- Self-learning, including peer-to-peer sharing
- Policy advocacy, and
- Engagement in establishing good governance.<sup>431</sup>

However, most NGOs are facilitating CBAs in the communities to address food security, particularly by increasing farm-level crop production.<sup>432</sup>

### *5.2.1 Climate Justice Through Community-Based Adaptation*

Climate justice research is often, at the international level, focused on justice principles, but this research needs to reach down further to assess climate risk reduction strategies for poor and vulnerable communities as the primary and defining actors in climate justice analysis.<sup>433</sup> According to Sam Barrett, recent justice and equity debates do not focus on vulnerable communities at the local level.<sup>434</sup> CBA helps directly address the needs of local poor and vulnerable communities. In order to establish climate justice and strengthen the voice of the most vulnerable communities, CBA can play an important role in promoting awareness that climate change is affecting human rights and equity. Because this programme frames the risks posed by climate change to vulnerable local communities, it creates links with developments that address poverty and risk reduction from climate change. CBA projects combine local knowledge with scientific knowledge and inform local, regional, national and international

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<sup>431</sup> Ahsan Uddin Ahmed, *Community-Based Adaptation An Analysis of best practices in The South-Western Region of Bangladesh* (CARE, 2017), <<https://careclimatechange.org/wp-content/uploads/2018/10/Community-Based-Adaptation-An-Analysis-of-Best-Practices-in-the-South-Western-Region-of-Bangladesh.pdf>>.

<sup>432</sup> Ibid.

<sup>433</sup> Sam Barrett, 'Local Level Climate Justice? Adaptation Finance and Vulnerability Reduction' (2013) 23, *Global Environmental Change* 1819,

<[https://www.climatelearningplatform.org/sites/default/files/resources/local\\_level\\_effectiveness.pdf](https://www.climatelearningplatform.org/sites/default/files/resources/local_level_effectiveness.pdf)>.

<sup>434</sup> Ibid.



policy. The theory and practice of CBA are in their infancy but are likely to grow very fast.<sup>435</sup> NGOs are also playing an interesting role through setting up CBA projects to help out less-developed countries to adapt to climate change.

### *5.2.2 CBA in Bangladesh*

The CBA programme in Bangladesh is trying to build community-level adaptive capacity, to reduce climate change risks faced by the local people, and in turn to influence policy and institutional arenas to facilitate sustainable community management of natural resources in the face of predicted climate impacts.<sup>436</sup> The CBA projects in Bangladesh focus on drought, floodwater, lack of fresh water and agriculture as well as community-level natural resource management activities. The objective of the Bangladesh national CBA strategy is to improve natural resource management practices to reduce vulnerability to climate change impacts and increase the capacity of communities and key ecosystems to adapt to climate change.<sup>437</sup> CBA projects from NGOs in rural areas also improve the degree of community resilience.

### *5.2.3 Role of Non-Governmental Organisations (NGOs)*

International development NGOs and donors funding CBA generally work through local partners, such as local NGOs or community groups, that already have the trust of local communities.<sup>438</sup> Bangladesh has been a pioneer in CBA, as well as having a flourishing NGO sector supporting pilot initiatives at various stage throughout the country, for example, eleven international NGOs, together with local and international research partners, have joined forces to carry out a long-term research programme called ‘Action Research on CBA in Bangladesh’ (ARCAB).<sup>439</sup> The international NGO Practical Action is working with local farmers in the flood-prone north to use innovative technology such as floating gardens, or hydroponics. In the south, where the increasing salinity of agricultural land makes it difficult to grow crops, the

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<sup>435</sup> Saleemul Huq and Hannah Reid, *A Vital Approach to the Threat Climate Change Poses to the Poor* (IIED, 2007) IIED, <<http://pubs.iied.org/pdfs/17005IIED.pdf>>.

<sup>436</sup> UNDP, *Climate Change Adaptation: CBA Bangladesh—Country Programme Strategy* (UNDP, 2017), <<http://www.adaptation-undp.org/resources/prodocs/cba-bangladesh-country-programme-strategy>>.

<sup>437</sup> Ibid.

<sup>438</sup> Reid et al., above n 428.

<sup>439</sup> Elizabeth Gogoi et al, *How to Scale out Community-Based Adaptation to Climate Change* (CDKN Working Paper, 2014), <[https://cdkn.org/wp-content/uploads/2014/03/CDKN\\_Working\\_Paper\\_community\\_adaption\\_Final\\_web-res.pdf](https://cdkn.org/wp-content/uploads/2014/03/CDKN_Working_Paper_community_adaption_Final_web-res.pdf)>.

International Union Conservation of Nature (IUCN) is working with local communities to increase adaptive capacity at the community level.

CBA is based on two forms of analysis: a combination of participatory approaches to development that seek to understand how local people experience climate risk and vulnerability, and a deliberative interaction with development workers and/or climate scientists in order to seek ways of integrating local needs with projections about future climate change.<sup>440</sup> An integrated Disaster Risk Reduction (DRR)/CBA approach combines traditional local knowledge with innovative strategies adopted to address current vulnerability, while also building adaptive capacity to face new and dynamic challenges.<sup>441</sup>

There are five NGOs in Bangladesh working on projects that focus on climate change and resilience for the local communities. They are CARE Bangladesh, Unnayan Shohajogy Team (UST), Rangpur Dinajpur Rural Service (RDRS), Eco-Social Development Organization (ESDO) and the World Food Programme (WFP).<sup>442</sup> Given that NGOs are important in the achievement of climate justice, these groups and activities will be discussed below.

### 5.2.3.1 CARE Bangladesh

CARE Bangladesh has implemented *The Reducing Vulnerability to Climate Change Project*, which identified priority areas such as waterlogging, salinity, flood and drought that are connected to climate change and affecting the vulnerable communities.<sup>443</sup> This project incorporated vulnerability reduction, raising awareness of climate change and associated vulnerability areas, promoting concrete actions by households and communities to reduce their vulnerability and advocating to government at multiple levels for appropriate action to reduce

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<sup>440</sup> Tim Forsyth, 'Community-Based Adaptation to Climate Change', in *Oxford Research Encyclopedia of Climate Science* (Oxford University Press, 2017), <<http://climatescience.oxfordre.com/view/10.1093/acrefore/9780190228620.001.0001/acrefore-9780190228620-e-602>>.

<sup>441</sup> CARE, *Community-Based Adaptation in Practice: A Global Overview of CARE International's Practice of Community-Based Adaptation (CBA) to Climate Change* (CARE, 2014), <<https://www.care.org.au/wp-content/uploads/2014/12/Vietnam-community-based-adaptation-in-practice-report.pdf>>.

<sup>442</sup> Mathilde Twelkemijer, *Community Resilience to Climate Change in Bangladesh* (MSc thesis, Wageningen University, 2014), <<http://edepot.wur.nl/317863>>.

<sup>443</sup> CARE Bangladesh, *The Reducing Vulnerability to Climate Change (RVCC) Project: Final Report* (CARE Bangladesh, 2006), <[http://www.carebangladesh.org/publication/Publication\\_4406527.pdf](http://www.carebangladesh.org/publication/Publication_4406527.pdf)>.

vulnerability to climate change.<sup>444</sup> Through this project, local governments have developed capacity and plans to address climate change and implement Community-Based Adaptation.

#### *5.2.3.2 Unnayan Shohajogy Team (UST)*

This NGO believes that people's development is in their own hands. It has contributed to improvement in lives and livelihoods, empowerment and poverty mitigation.<sup>445</sup> It helps women to manage their community's development, provides food security programmes to support food production, installs climate-resilient latrines and contributes to climate change and disaster management for sustainable development.<sup>446</sup>

#### *5.2.3.3 Rangpur Dinajpur Rural Service (RDRS)*

RDRS works with landless and marginal farmers, with the aim of increasing development.<sup>447</sup> It focuses more on climate change and disaster preparedness and plans its activities in accordance with the UN's sustainable development goals. It provides knowledge and access to skills and resources to mitigate and respond to climate change. It does this by encouraging poor rural people to set up Village Disaster Management Committees (VDMCs) and Climate Change Adaptation Groups (CCAGs) which are associated with a policy trend that increasingly uses the knowledge and capacities of local people.<sup>448</sup> It also formulates coping and adaptation strategies at the local level and influences planning at regional and national areas.

#### *5.2.3.4 Eco-Social Development Organization (ESDO)*

The strategy of this NGO is to reduce income poverty and human poverty through integrated development programmes for poor and marginalised communities using service delivery and rights-based approaches. This NGO has implemented four strategic plan to build capacity in vulnerable communities and local institutions on disaster risk reduction and climate change adaptation. Its Enhance Resilience Programme<sup>449</sup> is enhancing the resilience and livelihood protection of extreme marginalised communities from flood hazards through an integrated

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<sup>444</sup> Ibid.

<sup>445</sup> Unnayan Shohajogy Team (UST) <<http://www.ustbd.org/index.php/13-others/26-1>>.

<sup>446</sup> Ibid.

<sup>447</sup> Rangpur Dinajpur Rural Service (RDRS) Bangladesh, *In Brief* (RDRS Bangladesh, 2001) <<http://www.rdrsbangla.net/FrontEnd/RDRSInBrief.html>>.

<sup>448</sup> RDRS Bangladesh, *Annual Report 2015* (RDRS Bangladesh 2015), <<http://www.rdrsbangla.net/uploads/2016/06/Annual-Report-2015.pdf>>.

<sup>449</sup> Twelkemijer, above n 442.

community-based approach as well as supporting North West Bangladesh through the United Nations Joint Programme.<sup>450</sup>

#### 5.2.3.5 World Food Programme (WFP)

WFP has worked with the GoB on climate change adaptation. It assists the poor to ensure food security and helps communities to reduce the risks associated with climate change and strengthen government safety nets.<sup>451</sup> It engages communities and individuals in the planning and building of community assets as well as providing training in disaster risk reduction and climate change adaptation. It works closely with local stakeholders, including local government agencies, community-based organisations and NGOs, as well as union and upazila disaster management committees to develop their disaster preparedness and response capabilities through workshops, close consultation and regular feedback.<sup>452</sup>

#### 5.2.3.6 Gram Unnayan Karma (GUK)

Gram Unnayan Karma (GUK) has also started implementing Enhancing Resilience to Natural disaster and the Effects of Climate Change Programme funded by the GoB and United Nations World Food Programme to provide service for the Disaster Risk Reduction under Enhance Resilience guidelines. It has also instigated a Community Climate Change Project, which is an adaptation project that aims at enhancing the capacity of selected communities to increase their resilience to the adverse impacts of climate change.<sup>453</sup> Through this process, the NGO has worked with local government representatives and communities to increase their awareness of climate change and adopt some adaptation plans and activities. GUK provides training and workshops and promotes food security and building community assets. It created a guide to the field-testing of community-prioritised activities as best practice in adaptation and DRR.

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<sup>450</sup> Eco Social Development Organization (ESDO), *Annual Report 2016–2017* (ESDO, 2017), <<http://web.esdo.net.bd/attachments/Annual%20Report%202016-2017.pdf>>.

<sup>451</sup> World Food Programme, *Countries: Bangladesh* (WFP, 2018), <<https://www.wfp.org/node/3398>>.

<sup>452</sup> World Food Programme, *Building Resilience: Bridging Food Security, Climate Change Adaptation and Disaster Risk Reduction* (WFP, 2011), <[https://www.preventionweb.net/files/24163\\_workshopbuildingresiliencecasestudi.pdf](https://www.preventionweb.net/files/24163_workshopbuildingresiliencecasestudi.pdf)>.

<sup>453</sup> Gram Unnayan Karma (GUK), *Community Climate Change Project (CCCP)* (PKSF, 2014), <<http://gukbd.com/community-based-climate-change-risk-reduction-project/>>.

### 5.3 Finance for Community-Based Adaptation

The importance of the CBA is recognised by the United Nations Development Programme (UNDP), with a five-year UNDP global initiative funded by the Global Environmental Facility (GEF) within the Small Grants Programme (SGP) delivery mechanism.<sup>454</sup> This programme is currently being implemented in ten countries with grants of up to US\$50,000 available to community-based and non-governmental organisations (CBOs and NGOs) to incorporate resilience to the impacts of climate change into natural resource-based livelihoods, all within the framework of each country's CBA Country Programme Strategy and national strategies on adaptation priorities.<sup>455</sup>

The Community Climate Change Project (CCCP), established under the Bangladesh Climate Change Resilience Fund (BCCRF), is a climate change adaptation project aimed at enhancing the capacity of selected communities to increase their resilience to the adverse impacts of climate change. The BCCRF has attracted around US\$188.2 million from bilateral development partners, with ten per cent channelled through NGOs for community-level climate actions.<sup>456</sup> The governing council of the BCCRF and NGO, the Palli Karma Sahayak Foundation, are implementing Community-Based Adaptation activities through the CCCP.

The eighth International Conference on Community-Based Adaptation focused on financing for local adaptation, with presenters noting the deficiencies of adaptation funding at a local level.<sup>457</sup> According to the IPCC Fifth Assessment Report, the lack of mitigation actions is increasing adaptation costs in vulnerable developing countries. As a result, Dr Saleemul Huq<sup>458</sup> introduced the Kathmandu Declaration, which combined the urgency of mitigation and adaptation action. It is designed to provide guidance to intergovernmental, national and local funding bodies to direct adaptation funding to those most vulnerable.<sup>459</sup> It includes the key features that:

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<sup>454</sup> UNDP, *Community-Based Adaptation Fast Facts, Bangladesh Strengthening resilience of communities impacted by climate change induced factors in the southwestern coastal area of Bangladesh* (UNDP, n.d.), <[http://www.adaptation-undp.org/sites/default/files/downloads/practical\\_action\\_bangladesh\\_fast\\_fact\\_final.pdf](http://www.adaptation-undp.org/sites/default/files/downloads/practical_action_bangladesh_fast_fact_final.pdf)>.

<sup>455</sup> UNDP, Gender, *Climate Change and Community Based Adaptation* (UNDP, 2010), <[www.undp.org](http://www.undp.org)>.

<sup>456</sup> Palli Karma Sahayak Foundation, *Community Climate Change Project* (PKSF, 2014), <<http://pkssf-bd.org/web/wp-content/uploads/2014/05/Communique-2.pdf>>.

<sup>457</sup> Reid et al. above n 428.

<sup>458</sup> Dr Saleemul Huq is a Bangladeshi Scientist based in London. He is a Senior Fellow in the International Institute for Environment and Development.

<sup>459</sup> Reid et al. above n 428.

- funding must reach local communities and target the most vulnerable<sup>460</sup>
- the needs and priorities of the most vulnerable and disadvantaged community groups should be programmatically prioritised.<sup>461</sup>
- stakeholders must be able to access information about availability, deployment and utilisation of adaptation funding to ensure mutual accountability and transparency, including tracking financial flows at all stages.<sup>462</sup>
- there is a need to guard against maladaptation.<sup>463</sup>

The declaration noted that the global community—especially developed countries—must scale up public financing and the Climate Change Fund must deliver on promises of a 50/50 funding split between mitigation and adaptation, including CBA. It also mentioned the need for the national government to ensure coordination with public sector adaptation and engage non-state actors in local finance.

## 5.4 Community-Based Adaptation Through Mitigation

While researchers and policy-makers have focused mostly on adaptation initiatives, CBA pilots are also creating subsidiary mitigation co-benefits. For example, in Fiji, leaders of national initiatives to improve climate resilience through more sustainable forest and land use management have recognised the potential for reducing greenhouse gases through these activities, which in turn has enabled them to attract climate mitigation funding.<sup>464</sup> The GoB has also taken some Community-Based Adaptation initiatives, which may have potential benefits for mitigation. It has investigated the ‘Community-Based Adaptation to Climate Change through Coastal Afforestation Programme’, a five-year US\$5 million adaptation scheme being funded and implemented in part by the GoB, UNDP and Global Environment Facility.<sup>465</sup> The aim of this programme is to reduce the vulnerability of coastal communities by re-afforestation. It has targeted four upazilas in the coastal district, selected based on extreme vulnerability and

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<sup>460</sup> IIED, *Kathmandu Declaration: Financing Local Adaptation to Climate Change* (IIED, 2014), <<http://pubs.iied.org/pdfs/G03787.pdf>>.

<sup>461</sup> Ibid.

<sup>462</sup> Ibid.

<sup>463</sup> Ibid.

<sup>464</sup> M. Ward, ‘The case for Evergreen Agriculture in Africa: Enhancing food security with climate change adaptation and mitigation in Zambia’, *CDKN Inside Story* (Climate and Development Knowledge Network, 2011). Cited in Gogoi et al, above n 439.

<sup>465</sup> Rawlani and Sovacool, above n 274, 863.

public participation. The Forest Department, Bangladesh Forest Research Institute, Department of Agricultural Extension, Ministry of Fisheries and Livestock, and Ministry of Land are working as an implementing partner with the MoEF, which is the executing agency of this programme.

At the eighth CBA international conference, the parties also explored ecosystem-based adaptation, noting that CBA provides a wide range of ecosystem services to help vulnerable people to adapt to climate change by providing services including food, clean water and shelter as well as income for communities and playing an important role in climate change

## **5.5 Challenges for the Community-Based Adaptation**

Community-Based Adaptation also provides training to government planners at national and local levels to improve institutional capacity, but difficult challenges surround the project. Climate change impacts are increasingly rapid, and adaptation has its limits. The challenge Bangladesh is now facing is to tackle changes already being faced; as a result, local populations often feel a race against time. If the impacts exacerbate over time, the only solution for local populations is migration and relocation. However, the government can ensure the successful and timely implementation of projects at the institutional level, it can reduce such vulnerability. Poor organisational capacity and delays in the approval of the project proposal by the government are other problems experienced in the implementation of Community-Based Adaptation. If the government wishes to reap adaptation benefits and integrate climate change risk into development and poverty reduction, it may need to rapidly develop a long-term sustainable project, form a well-planned strategy and build organisational capacity and institutional mechanisms.

CBA's focus on small-scale, local and project-based adaptation may limit its potential to provide adaptation support to larger environmentally vulnerable populations in developing countries. Sometimes CBA intervenes in the development actions of a country while addressing vulnerability through strengthening adaptive capacities. It should focus on elevating local needs to higher levels of decision-making and integrating into broader adaptation and development schemes that can attract donor funding and line up projects with adaptation requirements.

Some scholars suggest that mainstreaming CBA into national development planning can be difficult, particularly in developing countries.<sup>466</sup> According to Transparency International, Bangladesh is one of the most corrupt countries in the world.<sup>467</sup> In 2016, Bangladesh was ranked as the fifteenth most corrupt country in the world.<sup>468</sup> Corrupt political systems and lack of political will, along with lack of coordination and collaboration between and within government agencies, presents significant difficulties for planning and development.<sup>469</sup> International and national NGOs working in the development sector have little engagement with the problem of climate change and the potentially adverse impacts it will have on their target group.<sup>470</sup> It has been found that some NGOs are not formed with a legitimate purpose of supporting communities and are associated with mid-level corruption and absence of regulatory control.<sup>471</sup> As a result, some NGOs are more corrupt than the government institutions, as the government officials are accountable to the people through elections, whereas NGOs are not. NGOs should help with mechanisms for local adaptation and support people at local level with the necessary scientific and technical knowledge. In this way, they can be an important resource to assist in the development of climate justice.

## 5.6 Conclusion

This chapter examined how CBA projects of NGOs in Bangladesh help the community to address climate change and ensure climate justice. RDRS, UST and WFP has organised committees which discuss disaster related problems which higher policy levels such as; district-upazila and union committees and NGOs and they together improve their ability and responses to climate change and help implementing projects.<sup>472</sup> This chapter found that NGOs are playing

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<sup>466</sup> Jonathan Ensor, Rachel Berger and Saleemul Huq, *Community-Based Adaptation to Climate Change: Emerging Lessons* (Practical Action Publishing, 2014). Cited in Kirkby, Williams and Huq, above n 427.

<sup>467</sup> Rafikul Islam, 'Bangladesh Ranks 143rd in Corruption Index', *Dhaka Tribune*, 22 February 2018, <<https://www.dhakatribune.com/bangladesh/2018/02/22/tib-bangladesh-progresses-two-positions-corruption-perceptions-index>>

<sup>468</sup> Iftekharuzzaman, 'Bangladesh in Corruption Ranking: It Could Have Been Better', *The Daily Star*, 23 February 2018, <<https://www.thedailystar.net/opinion/perspective/it-could-have-been-better-1538722>>

<sup>469</sup> Ishtiaq Jamil and Pranab Panday, 'Inter-Organizational Coordination and Corruption in Urban Policy Implementation in Bangladesh: A Case of Rajshahi City Corporation' (2012) 35 *International Journal of Public Administration* 352, <<http://www.tandfonline.com/loi/lpad20>>

<sup>470</sup> Hannah Reid, Saleemul Huq and L. Murray, 'Adaptation Day at COP 9'. Cited in Saleemul Huq and Hannah Reid, *Mainstreaming Adaptation in Development*, (Institute of Development Studies Bulletin, 2004), <<http://onlinelibrary.wiley.com/doi/10.1111/j.1759-5436.2004.tb00129.x/epdf>>.

<sup>471</sup> Muhammad Zamir, 'NGOs in Bangladesh and Their Accountability', *The Daily Star* (online), 10 October 2007, <<https://www.thedailystar.net/news-detail-7284>>.

<sup>472</sup> Twelkemijer, above n 442.



an important role in improving understanding of the concept of resilience through CBA projects. It also creates awareness of climate change and its impacts where the rates of literacy in the local community are low. It is important to use local information and knowledge, rather than formal presentations. In some cases, local residents may lack formal training and education but have a strong understanding of their local environment. If there is an absence of historic scientific information and data, they can use the memories and experience of older community members as a source of information. As a result, community engagement and awareness building is essential to success. At the same time, the UNDP is also helping national policy-makers better understand local vulnerabilities and needs, field-test initiatives and learn valuable lessons that can improve the effectiveness of national adaptation policies.<sup>473</sup>

At the same time, it focuses on CBA, a new field of adaptation, how the GoB is dealing with this, and how could they make it more effective. CBA has also received attention at an international level, including at UNFCCC conferences of the parties. The Paris Agreement calls for adaptation action to be participatory and fully transparent and gender responsive and focused on vulnerable groups, such as small-scale farmers, communities and ecosystems.<sup>474</sup> but due to inadequate reporting systems it is difficult to determine how much climate finance is directed to CBAs. In that case, the GoB needs to create a policy specially for the CBA projects, together with NGOs, to receive more attention which may develop climate justice at a community level.

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<sup>473</sup> UNDP, *Thematic Area: Scaling up Local and Community-based Actions* (UN, 2009), <[https://unfccc.int/files/adaptation/application/pdf/undp\\_ap\\_update\\_sep\\_09\\_cba\\_1\\_sp.pdf](https://unfccc.int/files/adaptation/application/pdf/undp_ap_update_sep_09_cba_1_sp.pdf)>.

<sup>474</sup>Climate Action Network International, *Koronivia Joint Work on Agriculture (KJWA)* (CAN International, 2018), <[http://www.climatenetwork.org/sites/default/files/can\\_submission\\_koronivia\\_joint\\_work\\_on\\_agriculture\\_oct\\_2018\\_.pdf](http://www.climatenetwork.org/sites/default/files/can_submission_koronivia_joint_work_on_agriculture_oct_2018_.pdf)>.

# Chapter 6. Law and Policies in Bangladesh to Address Climate Change

## 6.1 Introduction

As has been mentioned throughout this thesis, climate change is a major challenge for developing countries. It may be mitigated but cannot be prevented permanently; therefore, developing countries must integrate adaptation strategies into policy and practice to best deal with climate change. However, governments have traditionally approached climate change as an ecological problem or as an economic problem but social and human rights implications of climate change have received comparatively less attention.<sup>475</sup> The GoB also has endeavoured to implement a legislative and institutional system to address these issues. It has enacted some law and policies, which express specific intentions to address environmental concerns in the region. There are 23 laws that contain provisions specifically regarding the conservation of the environment and control of environmental pollution,<sup>476</sup> and more than 200 other laws that have some bearing on environmental and resource preservation and environmental management. Environmental justice concerns associated with climate change which is defined as the “fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws and policies”.<sup>477</sup> However, most of these laws and policies in Bangladesh were developed before the rise of international political concerns about climate change. As a result, general principles of environmental justice—such as the precautionary principle or the polluter-pays principle—are not for the most part reflected in Bangladesh’s environmental laws and policies. However, these laws can still provide a legal basis and supportive environment to facilitate adaptation to and mitigation of

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<sup>475</sup> Donna G. Craig, *Legal Strategies to Expand Indigenous Governance in Climate Change Adaptation: Opportunities and Barriers*, IUCN Academy of Environmental Law Colloquium, University of Waikato (June 2013), <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2593012](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2593012)>

<sup>476</sup> South Asia Cooperative Environment Programme, *Environmental Legislation and Institutions in Bangladesh* (SACEP, 2001), <<http://www.sacep.org/pdf/Reports-Technical/2001-UNEP-SACEP-Law-Handbook-Bangladesh.pdf>>.

<sup>477</sup> State of California, *Government Code*, Section 65040.12, <[https://leginfo.legislature.ca.gov/faces/codes\\_displaySection.xhtml?lawCode=GOV&sectionNum=65040.12.>](https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV&sectionNum=65040.12.>)

climate change but cannot provide environmental justice to the poor and vulnerable communities.

Bangladesh has signed and ratified or agreed to different international conventions, treaties and protocols relevant to environment and climate change to ensure climate justice globally. It has also committed to enacting domestic laws and policies to give effect to those international obligations. The GoB has implemented a number of laws and policies related to environmental and climate change to ensure climate justice. It is also considering international relationships to focus on justice and rights for its citizens. Over the last two decades, it has made substantial progress in progressing legislation and institutional structures for environmental management, natural resource conservation and sustainable use. It is clear from previous chapters that climate justice is necessary and it is possible if the needs of climate change policy agenda are prioritised.

This chapter will analyse the environmental laws and policies of Bangladesh. It will address whether the laws and policies are capable of furnishing an effective environmental instrument to deal with climate change. The discussion explores how Bangladesh's constitutional provisions can be used to create real and enforceable environmental rights as well as referring to cases from various countries to benchmark Bangladesh's laws. At the same time, this chapter will also analyse the implementation and judicial enforcement of those laws and policies by comparing Bangladesh with India, Pakistan, the Philippines, Sri Lanka and Kenya.

## **6.2 Significance of Constitutional Provision in Relation to Climate Change**

*'A foundation for environmental justice may be sought and found in the links between environmental protection and human rights, both being ways of maximizing human dignity and wellbeing'.<sup>478</sup>*

Climate change poses both direct and indirect threats to human rights, including the right to food, right to water and sanitation, access to affordable commercial energy and the broader

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<sup>478</sup> D. Sheldon, 'Environmental justice in the postmodern world', in K. Bosselmann and B. J. Richardson (eds) *Environmental Justice and Market Mechanism* (Kluwer Law, 1999). Cited in Amado S. Tolentino Jr. and Ana Maria E. Tolentino, 'Environmental Law and Justice: Developments and Reforms' (2011) 42(3), *Environmental Policy and Law* 152.

right to development.<sup>479</sup> Climate change also affects the right to health and livelihood, and thus by implication the rights to life and dignity. In 2008 the United Nations Human Rights Council passed Resolution 7/23, which stated that climate change poses an immediate and far-reaching threat to people and communities around the world and that this threat has implications for the full enjoyment of human rights.<sup>480</sup> The Council emphasised that ‘human rights obligations and standards and principles have the potential to inform and strengthen international, regional and national policy-making in the area of climate change, promoting policy coherence, legitimacy and sustainable outcomes’.<sup>481</sup> Climate justice also requires climate action that is consistent with existing human rights agreements, principles and obligations.

This chapter focuses, first, on national constitutions in their role as the most fundamental guarantee of rights in many nations. Because of increasing awareness and political priority of environmental rights, some nations—for example, Finland, Germany, Greece and the Netherlands—have inserted express provisions creating a right to a healthy environment.<sup>482</sup> The constitutional environmental protection provisions are important because these maintain the balance between the rights of the government and the citizens. It can be used both defensively or restrictively, to protect against actions that violate citizen’s constitutional rights, and affirmatively, to compel the government to guarantee certain rights.<sup>483</sup> It also includes an intergenerational dimension by protecting the rights of future generations.<sup>484</sup> Almost every constitution also has a provision that if any laws, regulations or policies are inconsistent with the constitution they will automatically be invalid, which may restrict the power of the government. Thus, it implements the procedural rights necessary to enforce the substantive rights. Some constitutional law scholars have noted that environmental rights have developed

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<sup>479</sup> Samir Saran and Vidisha Mishra, *Climate Change and Human Rights: Securing the Right to Life* (Global Policy, 2015), <<http://www.globalpolicyjournal.com/blog/17/11/2015/climate-change-and-human-rights-securing-right-life>>.

<sup>480</sup> Human Rights Council, *41st meeting, 28 March 2008. Resolution 7/23. Human Rights and Climate Change*, (UN, 2008), <[http://ap.ohchr.org/documents/E/HRC/resolutions/A\\_HRC\\_RES\\_7\\_23.pdf](http://ap.ohchr.org/documents/E/HRC/resolutions/A_HRC_RES_7_23.pdf)>.

<sup>481</sup> Office of the High Commissioner for Human Rights, *Understanding Human Rights and Climate Change: Submission of the Office of the High Commissioner for Human Rights to the 21<sup>st</sup> Conference of the Parties to The United Nations Framework Convention on Climate Change* (OHCHR, 2015), <<http://www.ohchr.org/Documents/Issues/ClimateChange/COP21.pdf>>.

<sup>482</sup> Tim Hayward, ‘Constitutional Environmental Rights: A Case for Political Analysis’ (2000) 48 *Political Studies* 558.

<sup>483</sup> Carl Bruch, Wole Coker and Chris VanArsdale, *Breathing Life into Fundamental Principles: Implementing Constitutional Environmental Protection in Africa*. Environmental Governance in Africa, Working Paper 2 (World Resources Institute, 2001), <[https://www.wri.org/sites/default/files/eea\\_bruch.pdf](https://www.wri.org/sites/default/files/eea_bruch.pdf)>.

<sup>484</sup> Joshua J. Bruckerhoff, ‘Giving Nature Constitutional Protection: A Less Anthropocentric Interpretation of Environmental Rights’ (2008) 86(646) *Texas Law Review* 615, 646.

more rapidly than any other human rights.<sup>485</sup> Constitutional environmental rights facilitate stronger environmental laws, improve implementation and enforcement, strengthen accountability, address environmental justice, and increase environmental performance,<sup>486</sup> which is also helping to guarantee climate justice to the communities most affected by climate vulnerabilities.

As noted, the constitutions of various countries contain provisions to protect the environment; these provisions can be in different forms, such as fundamental rights, which are enforceable, or as directive principles or fundamental state policy, which are not enforceable. Even where there is no fundamental or explicit environmental right expressed, in some cases it can be read into other provisions—such as the right to life, right to health or other specific rights—as implied, and courts have the power of judicial review to hold the government responsible for fulfilling even implied constitutional obligations.<sup>487</sup> For instance, there is no provision in the Constitution of Pakistan regarding environmental protection. However, in the landmark case *Ms. Shehla Zia v. WAPDA* (1994)<sup>488</sup> the courts extended the fundamental rights to life and dignity by interpreting these rights to encompass the right to a healthy environment based on the precautionary principle set out in the 1992 Rio Declaration on the Environment and Development.

### 6.2.1 Constitutional Provisions: Bangladesh

There was no explicit provision before the fifteenth amendment was made in 2011, for the right to a healthy environment as a fundamental right or directive principle in the Constitution of Bangladesh. However, the Bangladeshi courts, like those in India and Pakistan, have interpreted the right to life as a constitutional environmental right. Under Article 31, the Constitution states that every citizen has the right to enjoy the protection of the law and to be treated in accordance with law and that no action detrimental to the life, liberty, body, reputation or property of any person shall be taken except in accordance with the law. In addition, Article 32 provides that no person shall be deprived of life or personal liberty save in

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<sup>485</sup> D.S. Law and M. Versteeg, 'The Declining Influence of the United States Constitution' (2012) 87(3) *New York University Law Review* 762. Cited in David R. Boyd, *The Effectiveness of Constitutional Rights* (Yale UNITAR Workshop, 2013), <<https://environment.yale.edu/>>.

<sup>486</sup> Boyd, above n 485.

<sup>487</sup> Erin Daly, 'Constitutional Protection for Environmental Rights: The Benefits of Environmental Process' (2012)17(2) *International Journal of Peace Studies* 71, 80.

<sup>488</sup> *Ms. Shehla v. WAPDA*, PLD 1994 SC 693.

accordance with the law. In the case of *Dr Mohiuddin Farooque v. Bangladesh*,<sup>489</sup> it was held by the Appellate Division of the Supreme Court<sup>490</sup> that the right to life under Articles 31 and 32 included the rights to personal liberty, livelihood and a healthy environment. As for procedural rights—an essential component for safeguarding substantive right—according to Junayed Ahmed Chowdhury, Article 31 of the Bangladesh Constitution implicitly endorses the citizens’ procedural right to participate in the government’s decision-making process where decisions affect the citizens’ substantive rights such as the right to life (and, therefore, the implied rights) under Article 32 of the Constitution.<sup>491</sup>

In addition, in 2011, the fifteenth amendment of the Constitution enacted Article 18A, which stated that it is the duty of the state to take initiatives to protect and improve the environment for present and future citizens of the country.<sup>492</sup> Article 15 of the constitution also indirectly deals with sustainable development, as it states that ‘it shall be a fundamental responsibility of the State to attain, through planned economic growth, a constant increase of productive forces and a steady improvement in the material and cultural standard of living of the people’.<sup>493</sup> Under this article, Bangladesh has been able to plan economic growth and increase material standards of living according to the principles of sustainable development.

### 6.2.2 Constitutional Provisions: India

The Constitution of India, Bangladesh’s neighbour, consciously reflects the principles of the Stockholm Declaration, including environmental rights.<sup>494</sup> Thus, the Constitution states it is the basic human right of every Indian citizen to live in a healthy environment,<sup>495</sup> and it is the obligation of everyone to protect the environment.<sup>496</sup> As a result, there are numerous constitutional provisions—in addition to other statutory provisions contained in various laws—

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<sup>489</sup> *Dr. Mohiuddin Farooque V. Bangladesh* [1997] BDL, P.1 (AD) January Vol. 17

<sup>490</sup> The Supreme Court of Bangladesh is divided into two benches: the High Court and the Appeals court. The High Court can issue essential orders or writs to enforce fundamental rights and can move petitions on the application of an aggrieved person. See art 102(1) of the *Constitution of the People’s Republic of Bangladesh*.

<sup>491</sup> Chowdhury and Chambers, above n 326.

<sup>492</sup> *Constitution of the People’s Republic of Bangladesh*, art 18A.

<sup>493</sup> *Ibid*, art 15.

<sup>494</sup> Principle 1 of the Stockholm Declaration of 1972 affirms that, ‘Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being and he bears a solemn responsibility to protect and improve the environment for present and future generation’. See the *Declaration of the United Nations Conference on the Human Environment*, 1972.

<sup>495</sup> The right to live in a healthy environment under Article 21 of the Constitution of India was first recognised in *Rural Litigation and Entitlement Kendra V. State* AIR 1988 SC 2187.

<sup>496</sup> *The Constitution of India (Forty- Second Amendment) Act of 1976*, Article 51A(g).

relating to environment protection. At the same time, the judiciary has exercised their power to interpret and uphold these constitutional obligations. For example, in the case of *Vellore Citizens Welfare Forum v Union of India (1996)*,<sup>497</sup> the Indian Supreme Court held that the ‘precautionary principle’ and the ‘polluter-pays principle’ are important features of ‘sustainable development’ and thus part of the environmental law of India.

The Constitution of India contains specific provisions for the preservation and protection of the environment under the chapters on Directive Principles of the State Policy and Fundamental Duties. Based on the concepts of the Stockholm Declaration, the Indian government enacted an amendment in 1976 to insert a new article, Article 48-A, into the Constitution that stated, ‘The state shall endeavour to protect and improve the environment and safeguard the forests and wild life of the country’.<sup>498</sup> At the same time, a similar responsibility was imposed upon every citizen as a fundamental duty under Article 51A(g), which stated, ‘It shall be the duty of the every Indian citizen to protect and improve the natural environment including forest, lakes, rivers and wildlife and to have compassion for living creatures’.<sup>499</sup> Justice Mishra, in the case of *Rural Litigation and Environment Kendra v. State of UP (1987)*<sup>500</sup> stated that it is the task of the government and every citizen to preserve the environment and keep the ecological balance unaffected. Consequently, the Indian Constitution obligates the state and every citizen to protect and improve the environment. Article 48-A, utilises word ‘environment’ in a wider sense in order to cover the life of the citizens as well as the ecosystem.<sup>501</sup>

Article 21 of the Constitution of India deals with the right to life and has been the subject of interpretation from the Supreme Court. In terms of whether the right to life has environmental implications, the courts have made clear that it does. In the case of *M.C. Mehta v. Union of India*,<sup>502</sup> the Supreme Court of India implied that the right to live in a pollution-free environment is part of the fundamental right to life under Art 21. In another relevant case, *T Damodhar Rao v S.O. Municipal Corporation, Hyderabad*,<sup>503</sup> the Andhra Pradesh High Court stated that, ‘the slow poisoning by the polluted atmosphere caused by environmental

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<sup>497</sup>*Vellore Citizens Welfare Forum v Union of India* [1996] 5 SCC 647.

<sup>498</sup> *Constitution of India*, Article 48-A.

<sup>499</sup> *Ibid*, Article 51A(g).

<sup>500</sup> *Rural Litigation and Environment Kendra v. State of UP AIR* [1997] SC 359.

<sup>501</sup> Mohammad Naseem, *Environmental Law in India* (2011, KluwerLaw International) 47.

<sup>502</sup> *M.C Mehta v. Union of India AIR* (1987) SC 1087 ( popularly known as *Oleum Gas Leakage Case*).

<sup>503</sup> *T. Damodhar Rao v S.O. Municipal Corporation, Hyderabad AIR* 1087 AP 171.

pollution and spoliation should also be regarded as amounting to violation of Article 21 of the Constitution'.<sup>504</sup>

The Constitution of India also guarantees the right to expression under Article 19(1)(a). In the case *PA Jacob v. The Superintendent of Police Kottayam*,<sup>505</sup> the Kerala High Court held that freedom of expression under Article 19(1)(a) did not include the right to use loudspeakers and that the state can regulate the use of loudspeakers or any other instruments that create noise pollution. Article 19(1)(a) also contains an implied right to knowledge, which has a close link with Article 21. Access to information is a basic right for the citizen and can strengthen participatory democracy; it is also a very important constitutional right in environmental matters. In the case of *R.P. Ltd v. Proprietors, Indian Express Newspapers, Bombay Pvt. Ltd (1989)*,<sup>506</sup> the Supreme Court held that the people have the right to information as part of the participatory development of industrial life and democracy.

Article 14 of the Indian Constitution guarantees the right to equality to all citizens without any discrimination. The judicial interpretations of fundamental rights have broadened the scope and promoted environmental justice in India. In the case of *Ivory Traders and Manufacturers Association v. Union of India (1997)*,<sup>507</sup> the Delhi High Court held that the prohibition on trade in imported ivory and articles made therefrom does not infringe Article 14. The judiciary can also challenge the government if the court finds a violation of Article 14 where permission for mining or other activities with high environmental impact is granted capriciously.<sup>508</sup> The government has found it is a growing problem of balancing the freedom of trade and commerce and the right to a clean healthy environment. Article 19(1)(g) of the Constitution provides for freedom of trade and commerce but, at the same time, it takes Article 19(6) into consideration, which states that freedom of trade and commerce is subject to reasonable restriction. In the case of *M.C. Mehta v. Kamal Nath (2000)*,<sup>509</sup> the Supreme Court held that any business or trade that is offensive to the environment or human beings cannot be allowed to be carried on in the name of fundamental rights.

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<sup>504</sup> *T. Damodhar Rao v S.O. Municipal Corporation, Hyderabad* AIR 1087 AP 171.

<sup>505</sup> *PA Jacob v. The Superintendent of Police Kottayam* AIR 1993 Ker 1.

<sup>506</sup> *R.P. Ltd v. Proprietors, Indian Express Newspapers, Bombay Pvt. Ltd.* AIR [1989] SC 190.

<sup>507</sup> *Ivory Traders and Manufacturers Association v. Union of India* AIR [1997] Del 267.

<sup>508</sup> *Kinkri Devi v. State of H.P* AIR 1988 HP 4 at 9.

<sup>509</sup> *M.C. Mehta v. Kamal Nath* AIR [2000] SCI 1997.



The Constitution of India is quite exceptional in the region since it encompasses specific provisions on environmental protection and it implicitly includes the national obligation to protect and improve the environment. At the same time, the judiciary also plays an important role in interpreting the scope of fundamental rights and directive policies on environmental matters.

### *6.2.3 Constitutional Provisions: Pakistan*

Pakistan has the weakest response to environmental challenges in its 1973 Constitution, but it has improved its institutional arrangements, as discussed in Chapter 3. There is no direct provision in the Constitution of Pakistan to provide direct protection of the environment,<sup>510</sup> but the Supreme Court of Pakistan has recognised that the right to a healthy environment is implicit in the right to life.<sup>511</sup> The Article 9 of the Constitution of Pakistan states that no person shall be deprived of life or liberty save in accordance with law. The Supreme Court has enlarged the scope of Article 9 of the Constitution and explained the provision related to the right to liberty and right to life as indirectly involving the right to a protected environment.<sup>512</sup> This case also established the precautionary principle (defined in Principle 15 of the Rio Declaration 1992) should be evoked where there is threat to right to life. It has developed a similar view as, and shared experiences from, the Indian courts; as noted in Chapter 3, it has also set up a commission of experts to study and report on the technical dimension of cases. In another encouraging development, the court in Pakistan regularly appoints a commission with technical members and representatives of civic society to consider environmental issues. In the case of *General Secretary West Pakistan Salt Miner Labor Union v. Director Industries and Mineral Development (1994)*,<sup>513</sup> the Supreme Court held that the right to have clean and contamination-free water is the right of every person wherever they live.

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<sup>510</sup> Nour Mohammad, 'Environment and Sustainable Development in Bangladesh: A Legal Study in the Context of International Trends' (2011) 53(2) *International Journal of Law and Management* 89.

<sup>511</sup> David R. Boyd, 'The Implicit Constitutional Right to Live in a Healthy Environment' (2011) 20(2) *Review of European Community & International Environmental Law* 171.

<sup>512</sup> *Shehla Zia v. WAPDA* [1994] PLD 693(SC).

<sup>513</sup> *General Secretary West Pakistan Salt Miner Labour Union v Director Industries and Mineral Development* [1994] SCMR 2061 (SC).

#### 6.2.4 Constitutional Provisions: The Philippines

The Constitution of the Philippines, which became effective in 1987, declares the national priorities for future legislative policies and executive actions as well as guaranteeing citizens' rights. Article 16(ii) states that 'the state shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature'.<sup>514</sup> By using the world's 'ecology and nature', rather than just 'environment', this provision incorporates biodiversity objectives more explicitly than the other jurisdictions examined in this chapter.<sup>515</sup> In the case of *Oposa v. Factoran*,<sup>516</sup> a group of minors brought suit against the Philippine Government for encroachment upon their right to live in a healthy environment. The Supreme Court of the Philippines took note of the principle of intergenerational equity and clearly expressed that the right of the unborn to protection of their future environment was not dependent on any specific provision of the Constitution or legal system. The Supreme Court stated that such rights 'concern nothing less than the right to self-preservation and self-perpetuation, the advancement of which may even be said to predate all government and constitutions'.<sup>517</sup> This right is linked to the constitutional right to health, which is a 'fundamental',<sup>518</sup> 'actionable'<sup>519</sup> and 'judicially enforceable' right that imposes the correlated duty to abstain from impairing the environment.<sup>520</sup> This Constitution also contains other environment-related provisions under Article II s 23 (State Policy), Article XII s 2 (para 2) (National Economy and Patrimony) and Article XIII ss 4 and 7 (Agrarian and Natural Resources Reform). These provisions also deal with ecological protection, conservation and development.

The Supreme Court of the Philippines has made a significant decision indicating that the right to a balanced and healthy ecology is guaranteed by the Constitution; although it is not written in the fundamental law of the land, it is inherent in the conception of humanity. In the case of

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<sup>514</sup> *Constitution of the Philippines*, art ii, s 16.

<sup>515</sup> Bruckerhoff, above n 484.

<sup>516</sup> *Oposa v. Factoran* [1993] G.R. No. 101083.

<sup>517</sup> *Ibid.*

<sup>518</sup> *Oposa et al. v. Fulgencio S. Factoran Jr. et al.* ESCR-Net <<https://www.escr-net.org/caselaw/2006/oposa-et-al-v-fulgencio-s-factoran-jr-et-al-gr-no-101083>>.

<sup>519</sup> Jona Razzaque, *Human Rights and the Environmental: The National Experience in South Asia and Africa* (OHCHR and UNEP, 2002), <<http://eprints.uwe.ac.uk/18403>>.

<sup>520</sup> *Oposa et al. v. Fulgencio S. Factoran Jr. et al.* ESCR-Net <<https://www.escr-net.org/caselaw/2006/oposa-et-al-v-fulgencio-s-factoran-jr-et-al-gr-no-101083>>.

*Metro Manila Development Authority et al. v. Concerned Citizens of Manila Bay et al.*,<sup>521</sup> the Supreme Court played a significant role and, for first time in an environmental context, issued a writ of mandamus compelling the Metro Manila Development Authority to perform its duties in cleaning and preserving the polluted Manila Bay and to submit periodical progress reports to the court for monitoring purposes.<sup>522</sup> Under new judgments, citizens are allowed to bring a public interest suit to the court even where they did not experience any injury, as long as they could participate in the protection, conservation and restoration of the environment and hold the public authority accountable for implementation.<sup>523</sup>

### 6.2.5. *Constitutional Provisions: Sri Lanka*

The Sri Lankan Constitution has no recognised provision of a right to life (though there is some case law that suggests an implied right) the most basic of rights that guards against not merely the arbitrary deprivation of life but the inviolable value of human dignity.<sup>524</sup> But a large body of Sri Lankan law has interpreted and extended the specific rights that are contained in the Constitution, including principles of environmental justice. In Sri Lanka, there is a liberal constitutional body that permits the representative to establish fundamental rights litigation on environmental issues, but there is a restriction on filing fundamental rights petitions under the Sri Lankan Constitution, Article 126(2), in that only an aggrieved party may sue for violation of rights.<sup>525</sup>

As the Constitution of Sri Lanka has no right to life provision, the question may arise whether there are any fundamental constitutional rights that can ensure the environmental rights of citizens. Sri Lanka has developed its fundamental rights jurisprudence over the last three decades in relation to environmental rights and development. The Supreme Court of Sri Lanka has played a vital role in developing these rights. It interpreted Article 12 of the Constitution—

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<sup>521</sup> *Metro Manila Development Authority et al. v. Concerned Citizens of Manila Bay Et.al.* (GR 171947-48 December 18, 2008).

<sup>522</sup> UNEP, *The Gateway to Environmental Law* (UNEP, 2011), <<https://www.ecolex.org/details/court-decision/metropolitan-manila-bay-development-authority-v-concerned-residents-of-manila-bay-5270141f-f775-458b-895e-7089ec879947/>>.

<sup>523</sup> Tolentino Jr. and Tolentino, above n 478.

<sup>524</sup> Rohan Edrisinha and Asanga Welikala, *Civil and Political Rights in the Sri Lankan Constitution and Law: Making the New Constitution in Compliance with the ICCPR*. CPA Working papers on Constitutional Reform No. 8 (Centre for Policy Alternatives, 2016), <<http://constitutionalreforms.org/wp-content/uploads/2016/06/Working-Paper-8.pdf>>.

<sup>525</sup> *Constitution of Sri Lanka*, art 126(2): ‘any person who alleges that his or her fundamental rights have been infringed or are about to be infringed by executive or administrative action, must himself or by an Attorney-at-Law on his behalf file an action’.

the equality provision—and defined human rights as including environmental rights and development policies.<sup>526</sup> In the case of *Eppawela* (2000),<sup>527</sup> the Supreme Court gave an expansive interpretation of the Article 12 right to equity and equal protection under the law on the principle of *locus standi*. The Supreme Court stated that the petitioners, as individual citizens, had a constitutional right under Art 17, read with Arts 12, 14 and 126, to be heard before court and were not disqualified because their rights are linked to the collective rights.<sup>528</sup> The Sri Lankan Supreme Court has followed the concepts of equity and equality before law from the USA<sup>529</sup> and linked it to Article 12 of their own Constitution, extending the concept of the ‘aggrieved party’ who has standing on environmental and developmental justice issues.

While the fundamental rights provisions of the Sri Lankan Constitution are limited in terms of environmental rights, both substantively and procedurally, the Sri Lankan government has the capacity to address environmental issues under their domestic legislation and policy, in a similar fashion to the Pakistani National Environmental Law.

### **6.3 Significance of Environmental and Forest Law and Policy in Relation to Climate Change**

This thesis is concerned with the ability of the climate change laws and policies of Bangladesh to address climate change, and the third research question relates to possible legislative and policy responses by Bangladesh to address climate change. The major environmental laws of Bangladesh are:

- *Constitution of Bangladesh* (Articles 15,18A,23,24,31 and 32,102) relates to different features of environment
- *The Forest Act 1927*
- *The Environment Conservation Act, 1995* (Amendment Act 2010)
- *The Environment Conservation Rules, 1997*
- *The National Environmental Policy, 1992*
- *The National Water Policy, 1999*

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<sup>526</sup> Camena Guneratne, ‘Using Constitutional Provisions to Advance Environmental Justice: Some Reflections on Sri Lanka’ (2015) 11(2) *Law, Environment and Development Journal* 74.

<sup>527</sup> *Bulankulama v The Secretary, Ministry of Industrial Development and Others* (‘Eppawela Case’) [2000] 3 Sri L R 243.

<sup>528</sup> *Ibid.*

<sup>529</sup> Guneratne, above n 526.

- The *Environment Court Act, 2000* (Amendment Act 2010)
- The *Water Act, 2013*
- The *Brick Manufacturing and Brick Kilns Establishment (Control) Act, 2013*.

Therefore, the question arises as to whether there is any significant role for environmental and forestry laws and policies to address climate change impacts.

Most of Bangladesh's conservation laws and policies were developed before the development of international political concern about climate change, and as a result the general principles of environmental justice, such as the precautionary principle or the polluter-pays principle, are not broadly discussed in Bangladesh's environmental laws and policies. But there is no specific law on climate change to ensure climate justice. However, existing legislation can still provide a legal basis for, and facilitate, adaptation and mitigation to climate change to establish climate justice. For instance, the *Forest Act 1927* is the key legislation regulating forest resources and, as a result, has implications for land use policies, such as the National Land Use Policy 2002, and specifically for mitigation through REDD+. Moreover, all industries and projects must obtain Environmental Clearance Certificates from the DoE under Bangladesh's *Environmental Conservation Act 1995*, and the 1997 rules under that Act set environmental quality standards to control environmental quality, which may also impliedly support mitigation of carbon emissions. Though the thesis focuses of the climate change law, it is also relevant to discuss Bangladesh's environmental and forest laws that help to adapt to and mitigate climate change.

#### **6.4 Policy responses to climate change in Bangladesh**

Policy reform is one of the important approaches to implement appropriate responses to climate change. If the government sets the key policies and goals, the private sector will be the major engine to implement them. Bangladesh has no separate policy for climate change issues; rather, the existing policy framework manages the climate change that encompasses the National Environment Policy (1992), National Forest Policy (1994), National Water Policy (1999) National Land Use Policy (2001), National Fisheries Policy (1998) and the Environmental Management Action Plan (1995).<sup>530</sup> There are also some sectoral adaptation policies and plans that the GoB has developed but that do not make any direct reference to climate change. As a

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<sup>530</sup> Pervin, above n 265.

result, some policies can conflict with climate change concerns in areas such as export and industry, or expanding shrimp cultivation in coastal areas without land use planning.

## 6.5 General Legislative Responses to Climate Change and the Environment

In every country, environmental policy reflects the government's deliberate actions for managing activities in pursuit of controlling, reducing and preventing the adverse impacts of climate change on nature and natural resources. For example, the Emission Trading Programme of USA, introduced by the US Environmental Protection Agency (EPA), has the goal of regulating air quality by setting pollution limits under the emission trading certificate's entitlements.<sup>531</sup>

But a lack of enforcement rules and regulations, and of political commitment, has aggravated the problem. The GoB has revised and amended its relevant policies, and enacted new laws and regulations to address environmental problems. In Bangladesh, the evolution of environmental law started before independence, when, in 1970, the Government of Pakistan, in its *East Pakistan Ordinance V*, officially announced the *East Pakistan Water Pollution Control Ordinance*.<sup>532</sup> Under this ordinance, the East Pakistan Water Pollution Control Board was established and given the responsibility of implementing the policy. However, since independence from Pakistan in 1971, successive Bangladeshi governments have not paid much attention to environmental issues. In 1977, the *Environmental Pollution Control Ordinance* was passed, which suspended the 1970 *East Pakistan Water Pollution Control Ordinance* and replaced it with the Environmental Pollution Control Board. The responsibility of the board was also expanded to cover air, water and soil pollution. In 1992, the first National Environmental Policy was announced. However, the evolution of environmental policy continued to pass through different stages afterwards (this is illustrated in Figure 6.1).

Bangladesh announced its first environmental management plan in 1995, providing a governmental commitment to the environment and environmental protection. In that same period Bangladesh was becoming involved in the UNFCCC and the Kyoto Protocol. The outcomes of this involvement, in a legal context, were seen in 1995, when the government

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<sup>531</sup> William J. Baumol and Wallace E. Oates, *The Theory of Environmental Policy* (Cambridge University Press, 2nd edn, 1988).

<sup>532</sup> Alexandra Clement, *A Review of Environmental Policy And Legislation In Bangladesh: Final Report* (UK Government, 2001), <<https://assets.publishing.service.gov.uk/media/57a08c2fe5274a31e0001058/R8161-Section2.pdf>>.

passed the *Environmental Conservation Act* (ECA). In 1997, the environmental quality standards and ECA rules were introduced to standardise guidelines for environmental protection. Subsequent initiatives included declaration of ecological critical areas in 1997, a national water policy in 1999 and the *Environment Court Act* in 2000.<sup>533</sup> The announcement of a renewable energy policy was another milestone achieved in this journey.<sup>534</sup>



**Figure 6.1: Evolution of environmental protection regime in Bangladesh (Source: Baumol and Oates 1988)**

### *6.5.1 Bangladesh Environmental Conservation Act 1995 and Rules*

The right to life is one of the basic provisions of the Fundamental State Principles of the Bangladesh Constitution. To ensure that right, the primary objective under the Bangladesh Environmental Conservation Act 1995 is to provide for conservation of the environment, improvement of environmental standards and control and mitigation of environmental

<sup>533</sup> Ibid.

<sup>534</sup> Razan, Jahidul Islam et al, *A Comprehensive Study of Micro-Hydropower Plant And Its Potential In Bangladesh* (ISRN Renewable Energy, 2012).

pollution. The *Environmental Conservation Rules 1997*, made in accordance with the *Environmental Conservation Act 1995*, provide additional guidance for specific provisions of the Act. Under this Act, the Department of Environment (DoE) is empowered to investigate, test, examine and seize, industrial plants, equipment, records, registers, documents or other significant objects as well as to search places if it believes that an offence has occurred in violation of the Act.<sup>535</sup> Section 7(1) of this Act states that if it appears to the Director-General that any act or omission of a person is causing or has caused, directly or indirectly, injury to the ecosystem or to a person or group of persons, the Director-General may determine compensation and direct that it be paid and also, in appropriate cases, direct that corrective measures be taken. Subsection 7(2) also prescribes penalties under section 15 for violation of the directions of subsection 1, but the Act fails to explain the procedure by which to calculate damage for the purpose of paying compensation. The DoE has the right to enforce the Act by closure, prohibition or regulation of industries and to initiate public hearings. All industries and projects must obtain an Environmental Clearance Certificate from the DoE under this Act and its rules set environmental quality standards. Section 12 of the Act imposes restriction upon the establishment of industrial units or projects, requiring that the application be attached with no objection certificate from the local government authority under section 7 of the Rules 1997. However, neither the Act nor the Rules offer any guidance to the local government authority on issuing objection certificates. This Act also emphasises the control and mitigation of environmental pollution. The *Environment Court Act 2000 (amended in 2010)*, discussed in detail in Chapter 7, also supports this Act and the Rules 1997 in relation to offences relating to environmental pollution.

### ***6.5.2 Forest Policy and Forest Law***

The *Forest Act 1927* is the main forestry law in Bangladesh; however, this was formulated to serve the needs of the timber industry and contains only weak forest management powers. The following sections discuss the forest policy and law of Bangladesh and compare them that with the *Forest Rights Act 2006* in India, in order to highlight where Bangladesh's laws could be strengthened.

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<sup>535</sup> Clement, above n 532.



### 6.5.2.1 Forest Regulation in Bangladesh

Bangladesh is one of the countries with the least forest resources, at only 2.56 million hectares for a population of nearly 150 million.<sup>536</sup> Increasing population pressure, encroachment on forest land for agriculture and settlement, and the overexploitation of forest products creates deforestation, which is a major issue in the Bangladesh forest sector.<sup>537</sup> In order to reduce deforestation, the Bangladesh Government has adopted four supplementary policies addressing forest protection, conservation, and development issues since 1894,<sup>538</sup> of which the present Forest Policy 1994 is the most developed. The Bangladesh Forest Department also has undertaken some forestry programmes to fulfil sectoral policy objectives; the Forestry Master Plan (1995–2015) is one of these 20-year plans. The main goals of the Forestry Master Plan and the National Forestry Policy are to promote production-oriented and participatory forestry development to bring at least 20% of land under afforestation programmes through the coordination of the government, NGOs, the private sector and the local people.<sup>539</sup> The afforestation programme covers major areas including hills, *Khas*<sup>540</sup> land, tree plantations in rural areas on private land and along roadsides, railway tracks, embankments and courtyards of rural organisations. It includes community participation from the poor, especially woman, and encourages planting of fruits trees along with timber, fuel wood and non-wood forest products.<sup>541</sup>

In 1865, the British colonial rulers enacted the first Forest Law on the Indian subcontinent, which was subsequently amended in 1878 and in 1927. The *Forest Act 1927* and the current National Forest Policy 1994 are the key regulatory structures. In 1989 the Act was amended to strengthen forest protection by providing strict penalties and restricting the discretionary powers of forest officials and local magistrates; in the *Forestry (Amendment) Act 2000*, the

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<sup>536</sup> Climate Resilient Participatory Afforestation and Reforestation Project, *Forestry Master Plan and National Forestry Policy* (CRPARP, n.d.) <<http://crparp-bfd.org/project-activities/forestry-master-plan/>>.

<sup>537</sup> Md. N. Sadath and Max Kortt, 'Identifying Policy Change—Analytical Program Analysis: An Example of Two Decades of Forest Policy in Bangladesh' (2012) 25 *Forest Policy and Economics* 93.

<sup>538</sup> The first Forest Policy adopted by British Colonial Government in 1894 aimed at a custodial and timber-oriented management.

<sup>539</sup> International Monetary Fund, *Bangladesh Poverty Reduction Strategy Paper* (IMF, 2005) 95.

<sup>540</sup> Section 2(15) of the *State Acquisition Tenancy Act 1950* (East Bengal Act No. XXVII of 1951) defines *khas* as 'land or land in possession in relation to any person, includes any land let out together with any building standing thereon and necessary adjuncts thereto, otherwise than in perpetuity'.

<sup>541</sup> Government of Bangladesh, *National Forest Policy*, Statement (29).

government introduced a new concept of social forestry.<sup>542</sup> The important goals of the forest policies of Bangladesh are ensuring sustainable management of forest resources, poverty reduction and environmental protection. The GoB's emphasis is on social forestry, which has an important role in protection and conservation of the environment. The GoB also formulated the *Social Forestry Rules 2004*, which incorporated provision for community forestry and created scope for people to participate in the conservation, protection and development of forests in Bangladesh. It launched initiatives for development of social forestry around six main factors: permanent tenure of land; profit maximisation; team or group work; training; saving programmes; and a gross profit sharing system for building up a green society.<sup>543</sup> It mentioned different types of social forestry including community forestry, urban forestry, homestead forestry and agroforestry, with the objective of increasing public participation and improving the socio-economic conditions of the poor. It is a participatory programme that has gained momentum across the country, but social forestry in Bangladesh still suffers from numerous institutional deficiencies in organisation, skilled manpower, legitimate usufructuary rights, peoples' participation (from policy to implementation) and no clear budgetary arrangements.<sup>544</sup>

#### 6.5.2.2 *Forest Regulation in India*

The India's main guiding forest legislation is the *Indian Forest Act of 1927*, established to consolidate and preserve areas, wildlife and forest products. The central government also enacted the *Forest (Conservation) Act 1980* and the *Forest (Conservation) Rules 1981* and updated these rules in 2003. The following discussion, however, focuses on the *Forest Dwellers Act (Recognized as Forest Rights Act) 2006*, which aims to restore the rights of forest-dwelling communities and addresses issues of forest and wildlife conservation and management. Since this is the most relevant legislation to addressing environmental justice. According to the World Bank, forest products play a vital role in the rural economy of India and the tribal groups depend on forests for sustenance; income generation is also significant,

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<sup>542</sup> Tapan.K. Nath et al., *Community-Based Forest Management (CBFM) in Bangladesh* (Springer, 2016), <<http://www.springer.com/in/book/9783319423869>>.

<sup>543</sup> Noor Mohammad, 'Empirical findings on the Forest Law and Policy in Bangladesh' (2013) 2(2) *Agriculture, Forestry and Fisheries* 49.

<sup>544</sup> Nur Muhammad, Masao Koike, Mohammad Sajjaduzzaman and Kim Sophanrith, 'Reckoning Social Forestry in Bangladesh: Policy and Plan versus Implementation' (2005) 78(4) *Forestry: An International Journal of Forest Research* 373.

depending on the community and religion.<sup>545</sup> To be a forest dweller for the purposes of this Act, one must be a member of a scheduled tribe that has, for a minimum of 75 years, resided in the forest or on forest land and who depends on the forest and forest land for its livelihood. Such individuals have special rights to land and land use and to protect and conserve the forest. They may also own, collect, dispose of and use minor forestry products, which includes non-timber products of plant origin as well as products of animal origin from the forest. The Act also gives rights to development facilities to be provided by the central government. It also deals with the rights and duties of the forest dwellers in protecting the wildlife and diversity of the forest and ecological areas, and chapter IV covers the procedures for enforcement of those rights. Section 6 of the Act provides a three-level process for vesting of forest rights, which is a unique way to decentralise governance. It starts from the *Gram Sabha*,<sup>546</sup> which primarily receives, consolidates and physically verifies claims on individual and community forest rights at the village level; a sub-district and district committee examines and maintains records of the claims; and the state level is responsible for monitoring implementation.<sup>547</sup> The *Gram Sabha* holds the final decision on diverting forest land to any other purposes and is also responsible for deciding upon the community rights and those of the individuals in the areas marked as forest areas.<sup>548</sup> Under this Act, millions of people get secure tenure and access to the forest to secure their livelihood; as a result, they invest their time and effort into long-term conservation, protection and development of the forest. Bangladesh can also learn from this legislation and provide rights and duties of the forest dwellers to protect wildlife and diversity of the forest, as well as investing time and effort in long-term conservation, protection and development of the forest.

## 6.6 Climate Change Legislation

There are hundreds of laws relevant to climate change around the world, but relatively few countries have climate change legislation; those that do include the United Kingdom, Mexico,

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<sup>545</sup> World Bank, *India: Unlocking Opportunities for Forest-Department People* (World Bank Agriculture and Rural Development Sector Unit, 2006). Cited in Debnarayan Sarker, 'The Implementation of the *Forest Rights Act* in India: Critical Issues' (2011) 31(2) *The Institute of Economic Affairs* 25.

<sup>546</sup> Under Section 2(g) of the *Forest Rights Act 2006*, 'Gram Sabha' is defined as 'a village assembly which shall consist of village and in case of state having no Panchayats, Padas Tolas and other traditional village institution and elected committee, with full and unrestricted participation of women'.

<sup>547</sup> Just Conservation, *Forest Rights and Conservation in India* (Just Conservation, 2013), <<http://www.justconservation.org/chapter-eight>>.

<sup>548</sup> Amisha Jain and Rama Sharma, 'The Indian *Forest Rights Act, 2006*: Salient features, scope and 2012 Amendment Rule' (2015) 4(2) *International Journal of Social Science and Humanities* 95.

New Zealand, the Philippines, Pakistan and Kenya. As has been mentioned throughout this thesis, while Bangladesh contributes very low amounts of global carbon emissions, it is highly vulnerable to climate change impacts. Nevertheless, other low-emitting but highly vulnerable countries, such as the Philippines, Pakistan and Kenya, do have specific climate change legislation and, accordingly, it is useful to consider their laws as a potential model for Bangladesh.

### *6.6.1 Climate Change Act 2009 in the Philippines*

According to the United Nations Special Envoy, the law on climate change adaptation and disaster risk reduction is one of the leading global campaigns to mitigate the risk from climate change in the Philippines.<sup>549</sup> Because of its geographic location, the Philippines, like Bangladesh, is at high risk from climate change. However, the Philippines enacted the *Climate Change Act 2009* to increase resilience to climate change, and to mainstream climate-friendly development into local planning and empower local governments. Apart from this, the Act prioritised the input of gender-sensitive, pro-child and pro-poor perspectives to climate change efforts, plans and programmes.<sup>550</sup> The Act established a climate change commission under s 4 as the special policy-making authority; it also replaced the overlapping mandates of the Inter-Agency Committee on Climate Change and the Presidential Task Force on Global Warming and Climate Change<sup>551</sup> to coordinate, formulate, monitor and evaluate the programmes as well as produce action plans on climate change. This commission is an autonomous body chaired by the President of the Philippines and three commissioners appointed by the President. It covers 27 government agencies,<sup>552</sup> local government units and representatives from academia, the business sector and NGOs, with at least one representative from the disaster risk reduction

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<sup>549</sup> Tierney Smith, *Is the Philippines Climate Law the Best in the World?* (Climate Change News, 2012), <<http://www.climatechangenews.com/2012/05/05/is-the-philippines-climate-law-the-best-in-the-world/>>.

<sup>550</sup> Albert P. Aquino, Christian L. Abeleda, and Princess Alma B. Ani, *The Climate Change Act of 2009: Philippines' Response to the World's Changing Condition* (FFTC Agricultural Policy Platform, 2014), <[http://ap.ffc.agnet.org/ap\\_db.php?id=213](http://ap.ffc.agnet.org/ap_db.php?id=213)>.

<sup>551</sup> Climate & Development Knowledge Network, *Mainstreaming Climate Resilience into Government: The Philippines' Climate Change Act* (CDKN, 2012), <[https://cdkn.org/wp-content/uploads/2012/07/Philippines-InsideStory\\_6pp\\_WEB3.pdf](https://cdkn.org/wp-content/uploads/2012/07/Philippines-InsideStory_6pp_WEB3.pdf)>.

<sup>552</sup> In July 2011, the *Climate Change Act 2009* was amended by RA 10174 titled 'An Act Establishing the People's Survival Fund to Provide Long-term Finance Systems to enable the Government to Effectively Address the Problem of Climate Change'. The law amended the 23 members that initially composed the CCC advisory board. From 23, four more advisory board members were added, namely the Secretaries of the Department of Budget and Management and the Department of Finance, the Chairperson of the National Youth Commission, and the President of the Sangguniang Kabataan National Federation; see Aquino, Abeleda, and Ani, above n 550.

community. This commission meets four times in a year or more regularly if the chairperson<sup>553</sup> decides and must submit annual progress reports.

The committee established a National Framework Strategy on Climate Change in 2010 and a National Climate Change Action Plan in 2011 to serve as roadmaps for national programmes and plans to increase the social and economic adaptive capacity and resilience of ecosystems and mitigation and make the best use of funds towards sustainable development. The Action Plan provides guidelines for the local government units to serve as frontline agencies to formulate and implement Local Climate Change Action Plans.<sup>554</sup> The Act established action plans to fulfil its objectives of economic targets, social development and environmental integrity and adaptation and mitigation strategies to build a more climate risk-resilient Philippines. It also provides for funding and governance on utilising funds at a local level (under section 14). In July 2011, the Act was amended to create the People’s Survival Fund (PSF),<sup>555</sup> which supports local governments and communities with adaptation activities; the commission evaluates and reviews project proposals for funding and makes recommendations to the PSF board.

The Philippines’ *Climate Change Act* offers lessons on how to coordinate responses to climate change and how to reorient other development policies in a more sustainable way. This is one of the more successful pieces of legislation in achieving climate-compatible development and integrating legislation and policies in related sectors.<sup>556</sup>

### 6.6.2 Climate Change Act 2016 in Kenya

Kenya is one of the most climate-vulnerable countries in Africa, with widespread poverty, recurrent droughts, floods, inequitable land distribution, overdependence on rain-fed agriculture and relatively few coping mechanisms, which all serve to increase the country’s vulnerability to climate change.<sup>557</sup> In order to address climate change impacts, Kenya has developed a number of legislative and policy measures, including the National Climate Change

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<sup>553</sup> *Climate Change Act 2009*, s 6.

<sup>554</sup> Climate & Development Knowledge Network, above n 551.

<sup>555</sup> Aquino, Abeleda, and Ani, above n 550.

<sup>556</sup> Tierney Smith, ‘Is the Philippines’ Climate Law the Best in the World?’, *Climate Home News* (5 May 2012), <<https://www.climatechangenews.com/2012/05/05/is-the-philippines-climate-law-the-best-in-the-world/>>

<sup>557</sup> Suswatch Kenya, *Promoting the Implementation of the Paris Agreement in East Africa: PIPA Project—Kenya National Baseline Study* (Suswatch Kenya, 2017), <[http://www.inforse.org/africa/pdfs/PIPA\\_Kenya\\_Baseline\\_Report\\_May\\_8\\_2017.pdf](http://www.inforse.org/africa/pdfs/PIPA_Kenya_Baseline_Report_May_8_2017.pdf)>.

Response Strategy (NCCRS 2010), National Climate Change Action Plan (NCCAP 2013), *Climate Change Act (2016)* and a National Adaptation Plan (NAP), which provide a way towards low-carbon and climate-resilient development. The *Climate Change Act 2016* provides the binding regulatory framework for enhancing the national response to climate change. This Act has provisions for adaptation and mitigation measures, institutional arrangements for national and county governments as well as for financing and a unique provision for enforcement of rights relating to climate change under section 23. Section 3 deals with the objectives and purposes of this Act, which are to guide the development, management, implementation and regulation of mechanisms to enhance climate change resilience and low-carbon development for the sustainable development of Kenya.<sup>558</sup> It gives priority to mainstream intergenerational and gender equity in all aspect of climate change responses in accordance with the principles of the Paris Agreement, which includes gender equality and empowerment of woman and intergenerational equality. This Act is a guideline to ensure equality and social inclusion in distribution of effort, costs and benefits in response to climate change.

To enhance coordination and oversight, the Act establishes a Climate Change Council as an unincorporated body and a Directorate to serve as the secretariat of the council (s 5). The council is chaired by the President and comprises a maximum of nine members; the cabinet secretary is secretary of the council and responsible for environment and climate change affairs. The cabinet secretary coordinates the preparation of climate change action plans, strategies and policies in accordance with the Constitution of Kenya, the Act and through public consultation. A National Climate Change Action Plan has been developed by various stakeholders who include scientists, financiers, lawyers and indigenous interests.<sup>559</sup> This council also identifies priority strategies and actions for disaster risk reduction and vulnerability assessments related to climate change annually. The Act also establishes a climate change fund for those priority strategies and actions.

The most important provision of this Act is for the enforcement of rights relating to climate change (s 23), with citizens able to apply to the Environment and Land Court on the basis that a person has acted in a manner that has or is likely to adversely affect efforts towards mitigation

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<sup>558</sup> *Climate Change Act 2016*, s 3.

<sup>559</sup> *Ibid*, s 13.

and adaptation to the effects of climate change.<sup>560</sup> It is not necessary that the applicant has to establish that a he/she has incurred loss or suffered injury. This step can reduce carbon emissions and assist domestic courts to hold government and corporations accountable. This Act allows citizens to sue private and public entities, if they believe that they are not doing enough to address climate change, without having to also demonstrate that a person has suffered loss and injury.<sup>561</sup> This is a potentially powerful legislative tool and it would be interesting to see if the GoB would have the political will to adopt such legislation. The Climate Change Council is a powerful council that reports to the President and has powers to impose climate change obligations on corporations, including regulations on the nature and procedure for reporting on performance.<sup>562</sup> Any company failing to comply with the regulations may incur a fine up to one million Kenyan Shillings and imprisonment of five years for the officers of that entity. The Act thus creates a liability for the corporation under climate change law and policy.

### *6.6.3 Climate Change Act 2017 in Pakistan*

Pakistan has established a separate Ministry of Climate Change, a dedicated national institution to combat climate change. It has also enacted a separate law, the *Climate Change Act 2017*, to battle the growing impacts of climate-related disaster. This Act formulated three new climate-related institutions—the Pakistan Climate Change Authority (s 5), the Climate Change Council (s 3) and the Pakistan Climate Change Fund (s 12)—in order to prepare and supervise the implementation of adaptation and mitigation projects. The Climate Change Council is the decision-making body on climate change and energy. It consists of a chairperson—either the Prime Minister or a person nominated by the Prime Minister<sup>563</sup>—and government-appointed federal ministers of the divisions, chief minister of the provinces, ministers-in-charge and other persons, to a total of between twenty and thirty members.<sup>564</sup> Such ‘other persons’ are non-officials, including scientists, researchers, technical experts and educationalists, representatives of the chamber of commerce and industry and NGOs.<sup>565</sup> This council can

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<sup>560</sup> Ibid, s 23.

<sup>561</sup> Edna Odhiambo, ‘In Kenya, companies now liable for climate change damages’, *Reuters* (online), 1 July 2016, <<http://news.trust.org/item/20160701145000-qju48/?source=hpMostPopularBlogs>>.

<sup>562</sup> Stephen Mallowah, ‘Kenya’s Green Agenda: Implementation of the Paris Accord on Climate Change, and a Ban on Plastic Bags’, *LinkedIn* (online), 21 August 2017, <<https://www.linkedin.com/pulse/kenyas-green-agenda-implementation-paris-accord-climate-mallowah>>.

<sup>563</sup> *Climate Change Act 2017*, s 3.

<sup>564</sup> Ibid.

<sup>565</sup> Ibid.

arrange meetings whenever necessary but not less than twice in a year, which creates an accountability for the members of the council. It can also constitute committees and delegate some functions to them. The Act empowers the council or its committees to ask assistance from any technical expert or representative of any governmental agency or such other person who has specialised knowledge on that subject. The council coordinates and supervises enforcement of the provision of the Act as well as monitoring the implementation of international agreements. Thus, the council is not only a decision-making body but also a body of monitoring and supervision.

On the other hand, the Climate Change Authority (s 5) is an autonomous governmental body led by scientists, academics, professionals, serving or retired government servants, and industrialists or other technocrats who have at least fifteen years' experience in a climate change-related field, with a chairperson appointed by the Prime Minister. This institution prepares national adaptation and mitigation plans, policies, strategies and prepares the designs for projects to meet the obligations of Pakistan under international conventions and agreements related to climate change. Thus, this Act has established two separate bodies to assist the government in adapting to climate change impacts and controlling carbon emissions.

The Climate Change Fund, established under section 12 of this Act and managed by the Climate Change Authority, is provided through donations, endowments, grants and gifts. The authority manages the fund, provides financial assistance in accordance with the guidelines framed by the council, and can constitute committees to monitor the projects financed from the fund. Together, these three institutions increase international confidence in Pakistan's seriousness in addressing the impacts of climate change within its borders, as well as creating opportunities for international investment.<sup>566</sup> Such a mechanism could be used to increase investment opportunities for adaptive technologies in Bangladesh.

#### *6.6.4 Climate Change Trust Fund Act 2010 and Climate Fiscal Framework of Bangladesh*

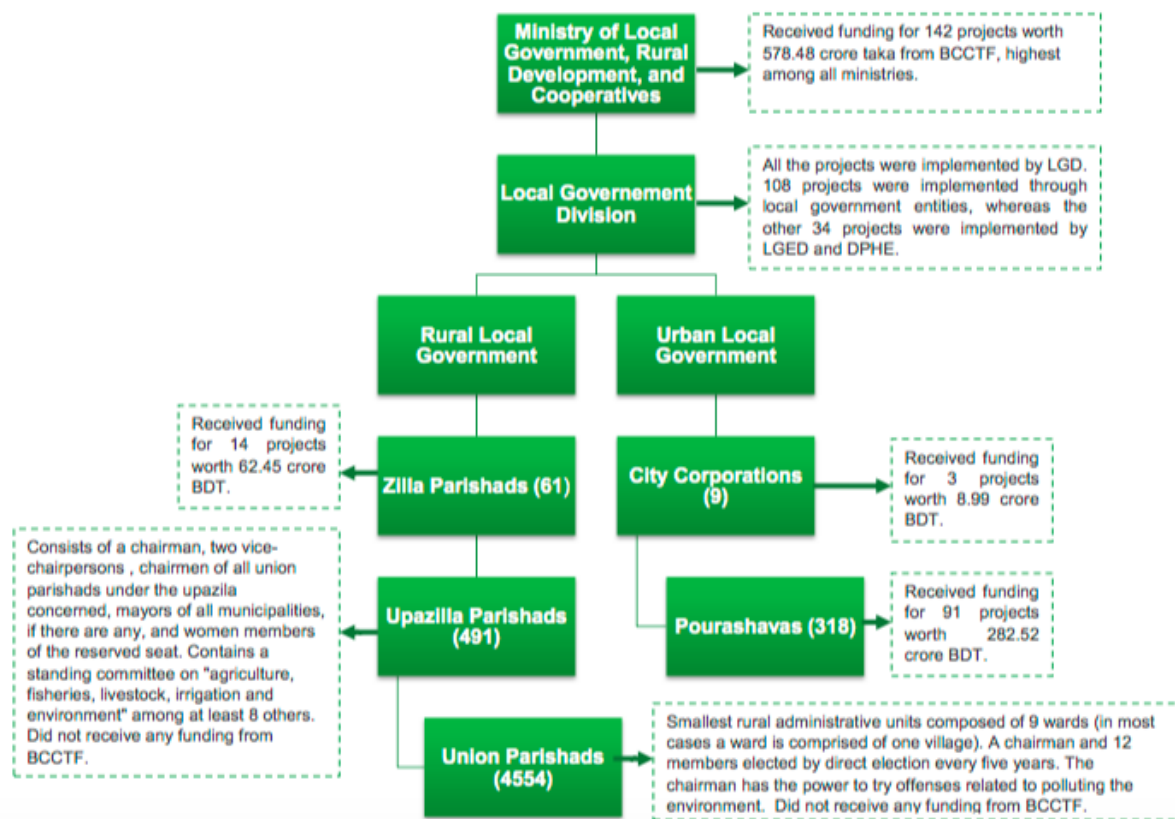
As mentioned in Chapter 3, while Bangladesh does not have specific climate change legislation, it has established the Climate Change Trust Fund (CCCTF) in 2009 to implement

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<sup>566</sup>Adeel M. Mirza, *Pakistan Climate Change Act: A Fillip to Climate Change* (South Asian Voices, 2017) <<https://southasianvoices.org/pakistan-climate-change-act-fillip-climate-action/>>.



Bangladesh Climate Change Strategy and Action Plan (BCCSAP 2009) and it enacted the *Climate Change Trust Fund Act* in 2010. The aim is to reduce climate change vulnerability. The framework integrates various ministries, departments and agencies which jointly are now implementing 207 climate change-related projects, with NGOs implementing a further 63 projects under BCCTF.<sup>567</sup> The *Climate Change Trust Fund Act* stipulated that 66% of this fund will be used for the implementation of projects prioritised in the BCCSAP and the rest is maintained as a fixed deposit for emergencies, with the interest accrued on that 34% also to be spent on the implementation of projects(see Figure 6.2).<sup>568</sup> Note that the figure shows that the poorer people in rural areas are at the most risk but are the most ignored in receiving climate change funding.



**Figure 6.2: Administrative structure of the local government institutions in Bangladesh and allocation of funding received from BCCTF at different levels<sup>569</sup>**

<sup>567</sup> Ministry of Finance, *Bangladesh: Climate Fiscal Framework* (Government of Bangladesh, 2014), <[https://info.undp.org/docs/pdc/Documents/BGD/1695%20ClimateChange\\_FullLayout%20290914.pdf](https://info.undp.org/docs/pdc/Documents/BGD/1695%20ClimateChange_FullLayout%20290914.pdf)>.

<sup>568</sup> *Bangladesh Climate Change Trust Fund Act 2010*, s 10.

<sup>569</sup> Bushra F. Khan and Adam Smith, *Governance for Green Growth in Bangladesh: Policies, Institutions, and Political Economy* (Green Growth Knowledge, 2017),

This Act created a trustee board (s 8), chaired by the Minister of the Environment and Forest (MoEF), as the highest decision-making body for the trust fund. It also established a technical committee (s 12) to assist the trustee board; this committee, comprising 13 members and headed by the Secretary of the MoEF, is responsible for reviewing proposals and advising the trustee board, as well as helping the board to develop policies. The technical committee can formulate sub-committees with the permission of the board to review the technical feasibility of proposals submitted by NGOs and CSOs.<sup>570</sup> The Act also established the Climate Change Unit under the MoEF which is responsible for ensuring effective implementation of the activities funded under the BCCTF. It is very clear that there is no explicit audit system that includes climate change; as a result, the Act created a provision (s 18) requiring the Audit Directorate to prepare a plan to audit projects/programmes implemented under the BCCTF.

#### *6.6.5 NAPA and BCCSAP: The de Facto Policy Documents*

Bangladesh has no separate policy to address climate change and ensure climate justice. NAPA and BCCSAP (discussed in Chapter 3) are the de facto policy documents and can provide action plans and strategy, but they do not provide direction as overarching policy of climate change does. It has already been mentioned that climate change is a multi-sectoral issue; therefore, it would seem to require integrating climate change into other related sectoral policies to achieve overall policy coherence.<sup>571</sup> The Planning Commission has no plan to make a new policy for climate change; instead it is reviewing all existing policies to identify and resolve conflicts with climate change priorities. However, developing countries should have a plan based on national strategies, build strong institutions and ensure coordination and stakeholders' engagement to access adaptation funding. In that context, Bangladesh could learn from the climate change policies of India and Pakistan to build a national climate change strategy.

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<[http://www.greengrowthknowledge.org/sites/default/files/downloads/resource/Governance%20for%20Green%20Growth%20in%20Bangladesh\\_Policies%2C%20Institutions%2C%20and%20Political%20Economy\\_0.pdf](http://www.greengrowthknowledge.org/sites/default/files/downloads/resource/Governance%20for%20Green%20Growth%20in%20Bangladesh_Policies%2C%20Institutions%2C%20and%20Political%20Economy_0.pdf)>.

<sup>570</sup> S. M. Munjurul Hannan Khan, Saleemul Huq and Md. Shamsuddin, *The Bangladesh National Climate Change Fund* (IIED, n.d.) <<http://ldccc.org/ldc/documents/bangladeshnationalfund.pdf>>.

<sup>571</sup> The Asia Foundation, *A Situation Analysis of Climate Change Adaptation Initiatives in Bangladesh* (Asia Foundation, 2012), <<https://asiafoundation.org/resources/pdfs/SituationAnalysisofCCinitiatives.pdf>>.

### 6.6.6 Case Study: Climate Change Policy in India

The government of India enacted its first comprehensive climate change action plan in 2008, which outlined eight missions to progress its development and climate change-related objectives. It contains four mitigation missions and includes the Nation Solar Mission and the National Mission for Enhanced Energy Efficiency (NMEEE). It also acknowledges the need to understand climate change and develop technologies to address adaptation and mitigation.<sup>572</sup> However, it has no separate implementation framework. Responsibility for each mission rests with different ministries, who are directed to develop objectives, implementation strategies, timelines, and monitoring and evaluation criteria to be submitted to the Prime Minister's Council on Climate Change, which is also responsible for periodical reviewing, and monitoring on each mission's progress.<sup>573</sup> India's Climate Change Action Plan has a focus on a low-carbon energy path but lacks a future economic growth strategy, which indicates a weak plan. Bangladesh can also learn how to develop appreciate technologies for adaptation and mitigation and create linkage including with civil society and local government institutions and public-private partnership from this climate change policy.

### 6.6.7 Case Study: The National Climate Change Policy 2012 in Pakistan (NCCP)

The National Climate Change Policy 2012 identifies Pakistan's vulnerability to climate change in water resources, agriculture, forestry, coastal zone biodiversity and vulnerable ecosystems and explains in detail the appropriate adaptation measures Pakistan can adopt. It provides a widespread framework for the National Action Plan for adaptation and mitigation to track sustainable economic growth to address climate change. It keeps ahead of appropriate measures concerning disaster preparedness, capacity building, institutional strengthening, technology transfer and international cooperation.<sup>574</sup> Its objectives include incorporating climate change policy into other national policies and guaranteeing water, food and energy security. Its goal is to guarantee that climate change is mainstreamed in the economically and socially vulnerable sectors of the economy and to steer Pakistan in the direction of climate-resilient development.<sup>575</sup> It is to be reviewed and updated every five years by the Climate Change Policy

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<sup>572</sup> Sudhir Sharma, Ursula Hagen and Rixa Schwarz, *Climate Change Policy? For a Better Understanding of India's and Germany's Approaches and Positions* (Germanwatch, 2016), <[www.germanwatch.org](http://www.germanwatch.org)>.

<sup>573</sup> Harshal T. Pandve, 'India's National Action Plan on Climate Change' (2009) 13(1) *Indian Journal of Occupational and Environmental Medicine* 17.

<sup>574</sup> Nachmany et al, above n 267.

<sup>575</sup> Ibid.

Implementation Committee and aims to develop a path to achieve the goals set out in the Planning Commission's Vision 2025. The NCCP established a Committee to ensure effective implementation of the climate change policy and to supervise development in this regard. The framework for implementation of the Climate Change Policy 2013 provides course of action for the implementation of the NCCP by considering present and future predicted climate change dangers for Pakistan. It also includes building high-level political support, as well as enhancing donor community interest and attracting international climate financing.<sup>576</sup> In addition, the Government of Pakistan also formulated the National Disaster Risk Reduction Policy 2013 with the aim of building the country's resilience in a participatory process and involving a multitude of stakeholders from across the government sectors, the private sector, NGOs, CBOs and communities.<sup>577</sup> Bangladesh can learn how to build high-level political support and enhance donor community interest and attract international climate finance from the National Climate Change Policy 2012.

## 6.7 Challenges for the Government of Bangladesh

A lack of constitutional provisions, serious implementation issues and deficient environmental law enforcement are the main obstacles faced by Bangladesh. Bangladesh has a range of international agreements, national law and policies that are impressive on paper, yet the country still suffers from serious environmental degradation.<sup>578</sup> One of the main reasons for this is lack of effective enforcement of these various laws.<sup>579</sup> There is also lack of proper and timely action by the courts.<sup>580</sup>

Bangladesh should revise its national environmental law and climate change policies and initiate a second generation of law reform that can establish a proper understanding of the role and function of the government's environmental/climate change bodies, so that the laws and

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<sup>576</sup> Qamar Uz Zaman Chaudhury, *Climate Change Profile of Pakistan* (Asian Development Bank, 2017), <<https://www.adb.org/sites/default/files/publication/357876/climate-change-profile-pakistan.pdf>>.

<sup>577</sup> Government of Pakistan, *National Disaster Risk Reduction Policy 2013* (National Disaster Management Authority, 2013), <<http://www.ndma.gov.pk/plans/drrpolicy2013.pdf>>.

<sup>578</sup> Matthew Walsham, *Assessing the Environment, Climate Change and Migration in Bangladesh* (International Organization for Migration, 2010), <[https://www.iom.int/jahia/webdav/site/myjahiasite/shared/shared/mainsite/events/docs/Assessing\\_the\\_Evidence\\_Bangladesh.pdf](https://www.iom.int/jahia/webdav/site/myjahiasite/shared/shared/mainsite/events/docs/Assessing_the_Evidence_Bangladesh.pdf)>

<sup>579</sup> Nabil Haque, 'Exploratory Analysis of Fines for Water Pollution in Bangladesh' (2017) 18 *Water Resources and Industry*, <<https://reader.elsevier.com/reader/sd/pii/S2212371716301135?token=46120A59D9DD2809DD925CAAC4DA838F573536B6A88F943AA47FFB2B0691214AD6CA746B1895F50616FA6394E4CD0379>> P 1

<sup>580</sup> Atiq Rahman, above n 325.

regulations reflect the value of the environment and provide clear guidance to the executive organs. Bangladesh also needs a strong framework of environmental laws and regulations, and a strong contribution from the courts and tribunals to protect the environment and adapt to the impacts of climate change.

The first two forest policies, in 1894 and 1955, were exploitative in nature, and most of the regulatory documents were developed during the first policy period, 1894.<sup>581</sup> On the other hand, some recent national policies have had direct and indirect impacts on the forestry sector. The National Environmental Policy 1992 provided for direct activities, with wider scope for plantation, conservation of wildlife and biodiversity as well as activities on erosion control. The National Agricultural Policy 1997, National Water Policy and National Industrial Policy 1991 did not provide for any direct activities; however, they did not conflict with the Forest Policy. There is some conflict between the National Industrial Policy 1991 and the Forest Policy, in that the former makes no provisions regarding industrial land use, and forestry and industry are both primarily land-oriented. In 2001, the Bangladesh Government formulated a national land use policy, which has had an important effect on forestry and forests in Bangladesh. Bangladesh has enacted the *Social Forestry Rules 2004* to improve the environment and protect agriculture from the adverse effect of climate change by increasing opportunities for local communities, changing Forest Department officials' approach to forestry activities and increasing the transparency of the Forest Department's operations. However, there is still a lack organisational capabilities and lack of relevant actors. The *Social Forestry Rules* has no clear direction on legitimate usufructuary rights and offers no meaningful path from planning to implementation.<sup>582</sup> There is a lack of institutional coordination, which often obstructs the smooth development of forestry and implementation of forest laws and policies. The lack of policies, together with a lack of coordination between local government and the Forest Department, is also a great hindrance to enforcement. The Forest Department lacks a monitoring system, which is critical to accountability. According to the Food and Agriculture Organization, while there is routine hierarchical supervision, the existing institutional mechanism does not have positions for systematic and regular monitoring

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<sup>581</sup> Muhammad, Koike, Sajjaduzzaman and Sophanrith, above n 544.

<sup>582</sup> Ibid.

of the Forest Department's activities, especially at the field level.<sup>583</sup> Additionally, corruption is a very common problem in developing countries, and Bangladesh's Forest Department is no exception.<sup>584</sup> Bangladesh also lacks integration at the policy level, which creates contradictions, conflict and confusion during implementation of forestry policy. On the other hand, there are no social forestry management plans in some forest divisions and, as a result, there is no long-term vision. The leadership of the Forest Department is too weak to tackle policy problems and issues, given that the chief of the directorate is rarely confirmed in his position due to political interests.<sup>585</sup>

Most of the landless people live below the poverty line and struggle to survive; as a result, they lack awareness of, and education about, forest preservation and conservation. If the forest officials and other minor government agents educated them about the environment and the importance of forestry and ecology, they could take part in the conservation and development of forest.

The GoB has established Environment Courts in two main divisions under the *Environment Court Act 2000* (discussed in Chapter 7), which is insufficient for management of the forestry, agriculture and fisheries related environmental law issues in Bangladesh. A few civil courts are dealing with forestry and fisheries issues, but are overburdened with other litigations, which may delay proceedings.

The GoB has implemented various development plans but those are not always in accordance with the provisions of the *Bangladesh Environmental Law 1995* or its *Rules 1997*, which are formulated and designed by the bureaucracy.<sup>586</sup> The government does not always consider environmental guidelines in formulating such plans and, as a result, there is a lack of sustainable development of environment.

The question may arise whether Bangladesh needs a Climate Change Act, given it has already enacted an Environmental Policy 1992, the *Environmental Conservation Act 1995* and its Rules, and the *Bangladesh Climate Change Trust Fund Act 2010*. To answer this question, it

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<sup>583</sup> Junaid K. Choudhury and Abdullah Abraham Hossain, *Bangladesh Forestry Outlook Study* (Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific, 2011), <<http://www.fao.org/3/a-am628e.pdf>>.

<sup>584</sup> Ibid.

<sup>585</sup> Ibid.

<sup>586</sup> Noor Mohammad, above n 543.

is necessary to discuss the shortcomings of the *Environmental Conservation Act 1995* and its Rules. As previously mentioned, the state had no duty to take initiatives to protect and improve the environment as a constitutional requirement prior to the fifteenth amendment to the Constitution. Similarly, the Environmental Conservation Act contains no provision requiring the state to conserve the environment; it merely extends the constitutional ‘right to life’ to include a right to a ‘safe and healthy environment’. This Act is silent on the duty of the state to protect and conserve the environment.

The Act gives power to the government to appoint a Director-General, but it has not provided any specific qualification for this role, leaving it entirely within the government’s discretionary power. In contrast, the Climate Change Acts of the Philippines, Kenya and Pakistan explicitly specify the qualifications of members and who will be the chair. This Act also gives vague and unlimited power to the Director-General (DG) in the DoE; section 4 empowers the DG on matters relating to closure, prohibition or regulation of any industry, undertakings or process and the concerned person shall be bound to comply with the direction<sup>587</sup> but it has not allowed that concerned person to join in the examination or any process of the DG that may create room for DG to be corrupted.

In 2010, this Act was amended to insert a new provision under section 6C, which stated that, in order to protect the environment, the government had powers to restrict production, import, storage, loading, supply, transportation, export, disposal, dumping etc. of hazardous waste;<sup>588</sup> however, it did not create any provision for recycling, reuse or reduction of waste. It also introduced the Environmental Impact Assessment, but left the scope of this measure ambiguous and unclear; there are no clear guidelines spelling out the procedure and steps of EIA legislation and no specific project list.<sup>589</sup> The Bangladesh Government should improve the legislation regarding EIAs and improve coordination to contribute to state efforts to move towards sustainable development and achieve climate justice.

Transparency International has found that different sectors involved in environmental policy in Bangladesh suffer from serious corruption problems, with the government failing to ensure

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<sup>587</sup> *Environmental Conservation Act 1995*, s 4.

<sup>588</sup> *Ibid*, s 6C.

<sup>589</sup> Rafique Ahammed and Nick Harvey, ‘Evaluation of Environmental Impact Assessment Procedure and Practice in Bangladesh’ (2012) 22(1) *Impact Assessment and Project Appraisal* 63 <<http://www.tandfonline.com/doi/pdf/10.3152/147154604781766102>>.

compliance with environmental laws because of close relationships between the polluters and politicians or administrators.<sup>590</sup> This also indicates that the Bangladesh Government has poor institutional arrangements, and a lack of coordination and legal framework, which is another reason for its weak environmental governance.

Some experts and government officers have identified further obstacles to the Environmental Policy of Bangladesh, including that regulation and enforcement of industrial development is very weak and that the policy has insufficient capacity for awareness raising, promoting law compliance and development of effective policy instruments.<sup>591</sup> It has also insufficient capacity to monitor environmental performance and link environmental information to policy decision-making, and has received little political attention compared with attention to economic growth.<sup>592</sup> Though the *Environment Conservation Act 1995* was based on the ‘Polluter-Pays’ principle, there is lack of standards setting out potential and actual damages.

The upazila parishad is the local governmental body of Bangladesh and acts as a decision-making body for environmental governance, with help from various departments. To ensure environmental protection and conservation and promote greater public participation, the GoB enacted the *Upazila Parishad (Re-introduction and Amendment) Act 2009*, with some specific provisions for environmental management and conservation. Four committees have been formed under this Act, but these appear to exist only on paper; none of those committees has been found in any upazila parishad council.<sup>593</sup>

This legislation also suffers from a lack of institutional capacity and resources to inspect industries being developed in different divisions and can take little action due to that lack of capacity. Even though it discusses environmental protection, there is no clear provision for climate change adaptation and mitigation measures and there is no separate body to support climate change policy implementation by coordinating with all the departments involved.

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<sup>590</sup> Golam Rabbani, ‘Environmental Governance in Bangladesh: Policy Dynamics, Present State and Challenges’, in Sacchidananda Mukherjee and Debashis Chakraborty (eds) *Environmental Challenges and Governance: Diverse Perspectives from Asia* (Routledge, 2015) 33.

<sup>591</sup> Food and Agricultural Organization, *Bangladesh Environment, Forestry and Climate Change Country Investment Plan (2<sup>nd</sup> Draft)* (FAO, 2016) <[http://www.fao.org/fileadmin/user\\_upload/FAO-countries/Bangladesh/News/CIP\\_Draft\\_27\\_May\\_2016.pdf](http://www.fao.org/fileadmin/user_upload/FAO-countries/Bangladesh/News/CIP_Draft_27_May_2016.pdf)>.

<sup>592</sup> Ibid.

<sup>593</sup> Rabbani, above n 590.



It is remarkable that Bangladesh, through the *Bangladesh Climate Change Trust Fund Act*, has created a financial mechanism to assist Bangladesh in addressing climate change impacts, and has established institutional arrangements to utilise this fund to implement the BCCSAP. As a result, Bangladesh has attracted attention and started to receive funds from national and international sources. However, there are still gaps that undermine sustainable development and implementation of the BCCSAP. First of all, the BCCSAP is a complete action plan with six thematic areas (discussed in Chapter 3 of this thesis). This plan is clearly a ‘knowledge strategy’ that needs to be converted into an implementation strategy by the respective ministries and departments.<sup>594</sup> It identifies six thematic areas, but it does not prioritise or categorise action on the basis of climate change risk. There is no institution or technical commission or committee to observe the climate change risk and prioritise on the basis of climate change vulnerability. At the same time, the action plan does not reflect the importance of mainstreaming adaptation and mitigation measures, and the planning and fiscal processes are not well organised or coordinated. As a result, it is difficult for the trustee board to distribute resources to deal with immediate and urgent needs.

The role of audit institutions is to assess the conduct of government activities and provide the information to the Parliament so that it can examine expenditures and evaluate outcomes. Effective auditing would also help the GoB to create a financial management system to deal with climate change. Under section 18 of the Act, it is stated that the comptroller and Auditor-General of Bangladesh shall audit the trust account every year and submit the assessment report to the government and the board.<sup>595</sup> However, according to the Bangladesh Climate Fiscal Framework 2014, climate change has yet to establish itself as an issue in the audit system of Bangladesh, although the Directorate recently has prepared a plan to conduct audit activities. There are still obstacles to including climate change in the audit policy. These obstacles include a lack of clear policy and guidelines, capacity restrictions, lack of climate change markers in the Ministry Budget Framework, lack of information on climate change-related activities and spending, and a lack of demand from the stakeholders.<sup>596</sup>

The government has established the trustee board and technical committee to administer the BCCTF, but this is not an autonomous body. The question may arise of whether funds are

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<sup>594</sup> Khan, Huq and Shamsuddin, above n 570.

<sup>595</sup> *Bangladesh Climate Change Trust Fund Act 2010*, s 18.

<sup>596</sup> Ministry of Finance, above n 567.

genuinely distributed on the basis of vulnerability of climate change or not, particularly as the fund is authorised only for national climate action uses, not for other national priorities such as poverty reduction. The government should ensure that these institutions are accountable and transparent and that they allocate this fund effectively, prioritising the needs of the most vulnerable areas and communities. The board of trustee should also ensure that the decisions of the board are not prejudiced or biased by the political parties or political interests, as most of the members are from government ministries. The members should have the political will, and use their political commitments, to combat climate change.

At present, there is no legally binding obligation to implement the BCCSAP. The government needs to enact a new Climate Change Act and a Policy Framework to enforce this action plan. Another problem is the centralised governmental arrangements for dealing with climate change issues, with no specific role for local authorities in terms of climate change issues. And even among countries with similarly centralised arrangements, with committees at the prime-ministerial and cabinet level, Bangladesh is flagging behind because of a lack of coordination. Of course, this problem is not unique to Bangladesh; Cambodia, for example, has identified agriculture and water resources management as key sectors for climate change adaptation measures, and there are five ministries working with these sectors, but there is a lack of coordination across these ministries at the national level, as there is in Bangladesh.<sup>597</sup> Nor is this happening only in Bangladesh and Cambodia; it is a common problem in most developing countries. To address this, local governments could work with the central government to address climate change via local planning or regulations. They could also deliver goods or services to address climate change or climate resilience, collect local fiscal revenues. They would be responsible to line ministries, which can support projects with sufficient assets to adjust to future climate events.

## **6.8 Lessons for Bangladesh**

Bangladesh can learn several lessons from Pakistan's experience to establish a more effective environmental regime. The establishment of the advisory technical commission by the judiciary in Pakistan was an exceptional and pioneering step to combat climate change. The climate change commission model is very useful for those countries where environmental

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<sup>597</sup> UNDP, *Local Governance and Climate Change: A Discussion Note: December 2010* (UNDP, 2010), <<https://www.unpei.org/sites/default/files/publications/LocalGovernanceAndClimateChangeDiscussionNote.pdf>>.

protection is a low priority for the political establishment, as are constitutional mechanisms, which the courts can be called upon to enforce and guarantee the fundamental rights under the Constitution. Bangladesh—which has no policy framework for addressing climate change—can also learn from Pakistan and enforce a National Climate Change Policy. It can also recognise the appropriate adaptation measures in different sectors and, at the same time, promote appropriate measures for disaster preparedness, capacity building, technology transfer and institutional arrangements. It could also establish a committee under the policy to update climate change policy, ensure effective implementation and supervise development in this area.

As noted, the Sri Lankan Constitution has no explicit provision for the right to life to include the right to live in a healthy environment. However, it does contain some constitutional provisions relevant to environmental protection. The Sri Lankan government has also improved its institutional arrangements (as discussed in Chapter 3). It has also developed its laws and policies in relation to climate change. Sri Lanka (like Bangladesh) is a low carbon emitter but a climate-vulnerable developing country. As a result, it has a focus on adaptation strategies. It has formulated a National Climate Change Adaptation Strategy (2011–2016)<sup>598</sup> that is structured into five strategies, each with intervention and performance indicators. It has also developed the National Climate Change Adaptation Plan (2015–2024), which is led by the Climate Change Secretariat. The government is also trying to develop awareness among stakeholders and include climate change in its health master plan. Bangladesh, like Sri Lanka, could focus on climate change risk factors, prioritise the adaptive sectors and formulate a strategic plan to combat climate change impacts.

Some studies suggest that Bangladesh's laws and policies in the forest are being only partially implemented—around 40–50%<sup>599</sup> of total implementation—due to a range of causes discussed above. Policy-makers have also shown little inclination to improve coordination between the local governments and the Forest Department in implementing those laws and policies. In order to create a better future for the forestry sector, Bangladesh could learn from India's *Forest Rights Act 2006*, which could improve institutional arrangements and provide legitimate usufructuary rights to the poor, improving their socio-economic condition and contributing to climate justice. The Forest Department is highly centralised, leading to delays in decision-

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<sup>598</sup> World Health Organization, *Review of Climate Change and Healthy Activities in SEARO Member States* (WHO, 2015), <[http://www.searo.who.int/entity/water\\_sanitation/review-of-cc.pdf?ua=1](http://www.searo.who.int/entity/water_sanitation/review-of-cc.pdf?ua=1)>.

<sup>599</sup> Noor Mohammad, above n 543.

making and undermining the sustainability of forests and forestry in Bangladesh;<sup>600</sup> section 6 of the *Forest Rights Act 2006* provides a clear example of decentralisation in practice.

The Forest Department also needs to build the capacity of its personnel to handle technical issues and to collect and record data. The Bangladesh Government is focusing on creating a ‘digital Bangladesh’, but the environmental database is still empty because of lack of adequate training. The GoB can promote regular training programmes, at home and abroad, to increase the technical capacities of the Forest Department staff and offer them promotion to higher rank on the basis of the result of their training programme. At the same time, the government can provide education and training to the policy-makers so that they can formulate proper laws and policies, including inserting ‘polluter-pays’ principles into environmental laws and developing policies on the enforcement of legal requirements. The *Forest Act* of India has found a balance between the livelihood needs of forest-dependent tribal and non-tribal communities and governmental development programmes, bringing harmony and democratisation to the field of forest governance.<sup>601</sup>

In order to study and map out the expenditure for climate change and estimate the budget for the BCCSAP, the government proposed a Climate Fiscal Framework in 2014. The objectives of this Climate Fiscal Framework are to promote an updateable country system to cost and prioritise climate actions, to access international and national sources for climate finance, to deliver climate finances and track climate spending, and make climate change finance and spending accountable.<sup>602</sup> This framework is still awaiting approval from the Planning Commission, but the main aim should be to set out the climate change markers which can successfully track spending and existing finance and improve policy and guidelines.

The Philippines *Climate Change Act 2009* contains provisions to increase climate change resilience and to mainstream climate-friendly development into local planning and empower local governments. It has an independent autonomous body chaired by the country’s President and three commissioners appointed by the President and consisting of 27 government agencies, local government units as well as representatives from non-government sectors. The GoB should focus on establishing an independent commission, improving the local governance

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<sup>600</sup> Choudhury and Hossain, above n 583.

<sup>601</sup> Jain and Sharma, above n 548.

<sup>602</sup> Ministry of Finance, above n 567.

system and involving local government in reducing the risks of climate change. Local governments are the institutions mandated to deliver services for the public at the local level, and are a type of 'local state' in that sense. The GoB can create a model on the basis of climate change issues, one in which local government is still accountable to the commission for their climate change decisions and actions.

Climate change policy in Bangladesh depends on the ability of national-level public bureaucracies to establish and implement effective measures of adaptation and mitigation. But the structure of the GoB bureaucracy is weak and complex, not oriented towards popular participation, which is a significant obstacle to the implementation of policies and laws. The national-level departments do not always consider environmental impacts or requirements before taking development action, investing millions, or billions, without taking sustainable development or environmental priorities into account.

Bangladesh does not have sufficient experience of its own to draw upon; as a result, before formulating a policy the GoB should set clear goals and find the solution to achieve those goals within the political process. At the same time, policy-makers need sound, up-to-date knowledge of the subject matter to formulate policy. As mentioned above, the Environmental Policy does not set out actual damages; therefore, the government needs to set out a broad-based standard so that it can take proper action for the damages.

## **6.9 Conclusion**

The relationship between climate justice and environmental justice has already been discussed in Chapter 1. This chapter has discussed environmental justice, which has emerged as a major movement over the last 30 years, with climate justice itself emerging from this wider movement. As climate justice is a new development, these two movements still share many core principles. But environmental justice is not the only way to climate justice. That is why previous chapters focus on adaptation and mitigation to climate change to ensure climate justice in Bangladesh. Only a few countries have enforced climate change laws and relevant regulations; most countries have no specific climate change laws (like Bangladesh), but have enacted environmental laws and policies to address climate change through an environmental law lens. As a result, this thesis also discusses environmental justice in this chapter as the combined strategy and approach to enhance climate justice in Bangladesh.

Climate change is a transborder threat; thus, it is necessary to take initiatives nationally, regionally and internationally. Pakistan and Sri Lanka, like Bangladesh, have no constitutional environmental rights, but they have taken climate change impacts into consideration and launched initiatives for future generations.

Lack of constitutional provisions, lack of serious implementation and lack of environmental law enforcement are the main obstacles that Bangladesh is facing now. A healthy environment is a human right, but lack of awareness about environmental rights among citizen's is depriving them of their rights. In Bangladesh, there is lack of institutional arrangements and lack of competent officers who can advise individuals or organisations on how to comply with national and international laws and regulations. As a result, it is necessary to improve environmental laws and introduce specific climate change laws in Bangladesh. Because Bangladesh has no specific law that addresses climate change issues this chapter has focused on climate change law and policy—in the Philippines, Pakistan, Sri Lanka, India and Kenya—which can help policy-makers and legislators reform the climate change law and policy of Bangladesh.

But it is not possible to enforce a law simply by enacting them; there is also a requirement for new and different institutions, for citizen awareness and encouragement to change behaviours while at the same time improving accountability and transparency in government. The government should be more responsive and progressive about its role in relation to environmental law and its enforcement, and it can achieve that by good governance, by increasing environmental education and by continuing development and updating of its citizens' right to live a healthy life and have access to relevant information. In these ways, the government can arrange annual nationwide environmental programmes as well as specific climate change programmes to increase public awareness.

# Chapter 7. Implementation and Enforcement of Law and Policies in Bangladesh and Relevant Case Studies

## 7.1 Introduction

Bangladesh is experiencing increasing economic growth and development in urban areas but it is a concern of this thesis that climate change impacts and environmental degradation are a growing problem that Bangladesh cannot disregard. As discussed in Chapter 6, Bangladesh has passed some timely environmental laws and policies and is working to build a comprehensive legal system for the protection of the environment. However, as discussed throughout this thesis, Bangladesh has inadequate institutional arrangements and suffers from poor implementation and enforcement of those laws and policies. This chapter will discuss the implementation and enforcement of environmental laws in Bangladesh and how to address these enormous challenges.

The judiciary, local government, civil society and the international community all have a role to play in ensuring climate justice. The judiciary's role is to ensure delivery of environmental and climate justice; local government supports the central government in implementing laws and regulations to protect the environment and reduce climate change impacts; civil society can provide public advocacy for climate justice; and the international community can provide technical support to the government. Local government has a key role to play in implementation and enforcement through planning the economic and social development of their cities in a sustainable manner. As noted previously, Bangladesh is losing almost one per cent of its arable land every year as a result of land degradation, drought and desertification.<sup>603</sup> China and Bangladesh face similar problems in regards to climate change, with China also losing nearly 0.5% of its agricultural land annually.<sup>604</sup> Research has found that local

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<sup>603</sup> Molla, above n 242.

<sup>604</sup> Na Li, 'Improving Environmental Protection in China: The Role of Green GDP in Encouraging Local Government Heads to Implement Environmental Law' in LeRoy Paddock et al (eds) *Compliance and Enforcement in Environmental Law* (IUCN Academy of Environmental Law Series, 2011) 377.

government plays a key role in implementing environmental law and achieving sustainable development, and, therefore, is largely responsible for this environmental degradation.<sup>605</sup>

In terms of enforcement, it is instructive to consider the structure of Bangladesh's judiciary. Bangladesh has established a separate environmental court under the *Environment Court Act 2000* and, following that Act's repeal in 2010, under the new *Environment Court Act 2010*, to resolve environmental disputes. As environmental litigation is a relatively new concept in Bangladesh, it is useful to examine the institutional framework, and obstacles to the effective functioning of the Dhaka Divisional Environment Court and the Chittagong Divisional Environmental Court of Bangladesh. Comparisons will be made with other developing countries' environmental courts and tribunals in order to inform recommendations for possible reforms in Bangladesh.

Constitutional systems have given powers of judicial review to courts to hold the government accountable for fulfilling its constitutional obligations. These courts have wide powers to enforce constitutional environmental rights through 'public interest litigation'. Through this power, the people can uphold their environmental rights against the authority and the government of the state. This chapter also will focus on the use of 'public interest environmental litigation' and, more broadly, the new role of citizen lawsuits and domestic courts in challenging developments that would have impacts on climate change. For the last 25 years, the UNFCCC has tried to reduce carbon emissions by formulating treaties and conventions, but states have consistently failed to comply with their responsibilities and greenhouse gas emissions have continued to increase. As a result, frustrated citizens are increasingly looking to the courts to bind governments to climate change mitigation and take adaptive measures.

## **7.2 Role of Local Government**

Chapter 3 discussed the local government structure of Bangladesh. Local government comprises the key institutions that reflect the will of the people at the local level and links to government institutions at other levels. It can support both mitigation and adaptation measures to reduce climate change risk, assisting local communities to build assets to cope with climate change impacts while at the same time helping to reduce carbon emissions and improve forest

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<sup>605</sup> Ibid.



management. Research has found that local government can interface with climate change through three main tools: local planning and regulation, delivering goods and services, and local fiscal revenues.<sup>606</sup> Local government plays a dual role, as a developer and provider of policies and programmes to address local circumstances, and as a representation to other levels of government of the local voice<sup>607</sup> of the community.

Article 18A of the Constitution of Bangladesh states that ‘the state shall endeavour to protect and improve the environment and to preserve and safeguard the natural resources, biodiversity, wetlands, forest and wildlife for the present and future citizen’.<sup>608</sup> In order to protect the environment for present and future generations, the government has formulated the Sixth Five-Year Plan (FYP6) to create policies, strategies and institutions directed to public investment. The FYP6 strategy for capacity building is centred on strengthening the civil service, decentralisation of power to local governments, strengthening public–private partnerships and reforming planning and financial processes.<sup>609</sup> However, local governments generally have inadequate revenue bases and rely on central government grants to finance even their day-to-day operations. By June 2016, the BCCTF had provided funding of USD 107.11 Million (BDT 578.4 crore) for 142 projects to the Ministry of Local Government, Rural Development and Co-operative (MoLGRDC); of these projects, 108 projects were in zila parishad, paurashava and city corporations (i.e. in major districts or urban areas), while projects at the upazila parishad and union parishad levels were largely ignored.<sup>610</sup> Despite poor people in rural areas being the most vulnerable to climate change, they are mostly ignored in the funding allocated to local government. At the same time, local government are often incapable of exercising their administrative functions due to inadequate allocation of trained personnel.<sup>611</sup> The local government level also needs capacity development for grassroots-level planning and

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<sup>606</sup> United Nations, *Local Governance and Climate Change: A Discussion Note: December 2010* (UNDP/UNCDF/UNEP, 2010), <<https://www.unpei.org/sites/default/files/publications/LocalGovernanceAndClimateChangeDiscussionNote.pdf>>.

<sup>607</sup> B. E. Dollery, L. Crase and J. Byrnes, *Overall Local Council Sustainability in Australia* (University of New England Local Government Working Paper Series 002-2006, 2006), <<http://www.une.edu.au/clg/working-papers/>>. Cited in Judith Preston and Jennifer Scott, *Meeting the Climate Change Challenge in Local Government Decision-making with the Use of Sustainable Climate Change Adaptation Modelling* (The Local Government Law Journal, 2012).

<sup>608</sup> *Constitution of the People’s Republic of Bangladesh*, art 18A.

<sup>609</sup> UNDP, *Bangladesh, Rio+20: National Report on Sustainable Development* (UN, 2012), <<https://sustainabledevelopment.un.org/content/documents/981bangladesh.pdf>>.

<sup>610</sup> Sharmin Nahid et al, *Climate Finance and Local Government Institutions: Governance in Project Implementation* (Transparency International Bangladesh, 2017). Cited in Khan and Smith, above n 569.

<sup>611</sup> Khan and Smith, above n 569.

implementation as well as increased awareness of, and advocacy on, issues related to climate change; in many cases, local government officers prioritise economic growth as a political achievement and ignore environmental protection.

Thus, Bangladesh local governments have poor capacity, a funding crisis, lack of knowledge and lack of authority in climate change adaptation. Though the union and upazila parishads (see Chapter 3) functionaries are knowledgeable and willing to work on climate change, they lack funds and capacity; on the other hand, the urban local governments suffer from a lack of knowledge.<sup>612</sup> The union parishads are the lowest tier of the local government and thus directly engaged with local communities, but they lack the capacity to make decisions on policy issues; indeed, they are not even able to submit project proposals.

Bangladesh has developed a Community-Based Adaptation approach that focuses on empowering local communities to take action based on their own decision-making processes. In this context, local government has a vital role in increasing the attention of local people and supporting innovative ways to achieve goals. Local government can accept responsibility for climate change adaptation responsibilities and take additional actions to respond to climate change risks, such as policy development, drafting of adaptation plans, research, and obtaining grants for the implementation of adaptation projects and solutions.<sup>613</sup> One study has identified that a lack of information and understanding regarding the provisions of the BCCSAP is one of the key barriers to effective BCCSAP implementation,<sup>614</sup> a significant gap between national and local levels of government on climate change issues. In 2013, the Bangladesh Government enacted the *Union Parishad Development Planning Rules 2013*, which may make the various programmes related to climate change to become more transparent. It may also help bridge the gap and integrate national and local governance systems, improving Bangladesh's capacity to develop and apply an integrated climate change and sustainable development plan and hence achieve climate justice.

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<sup>612</sup> Nilufar Ahmad, *Gender and Climate Change in Bangladesh: The Role of Institutions in Reducing Gender Gaps in Adaptation Program* (World Bank Social Development Papers, 2012), <<http://documents.worldbank.org/curated/en/559391468340182699/pdf/678200NWP0P1250C0in0Bangladesh0web2.pdf>>.

<sup>613</sup> National Climate Change Adaptation Research Facility, *Policy Guidance Brief 5: Challenges of Adaptation for Local Government*, (NCCARF, n.d.), <[https://www.nccarf.edu.au/sites/default/files/attached\\_files\\_publications/GOVERNMENT\\_070313\\_A4.pdf](https://www.nccarf.edu.au/sites/default/files/attached_files_publications/GOVERNMENT_070313_A4.pdf)>.

<sup>614</sup> The Asia Foundation, *A Situation Analysis of Climate Change Adaptation Initiatives in Bangladesh* (Asia Foundation, 2012), <<https://asiafoundation.org/resources/pdfs/SituationAnalysisofCCinitiatives.pdf>>.

### **7.3 Recommendations for Bangladesh Government**

The Bangladesh Government can strengthen its capacity by engaging all members of the administration, bureaucracy and local government with other leading experts from civil society and academia to build good governance. Because the local governments work directly with communities in highly vulnerable areas, they can provide information to support better informed development plans.

Local governments have their own duty to protect the environment of local areas, including through the collection and disposal of refuse, planting of trees on roadsides, regulation of unsanitary buildings, maintenance of drainage, parks, gardens and playgrounds, establishment of public toilets, supply of water, and the maintenance of graveyards under Bangladesh's *Paurashava Ordinance* of 1977. Such activities may also contribute to mitigating climate change. They have their own income sources, such as taxes, rates, fees and other charges, rents and profits, which can contribute to climate change funding. In performing this role, the government also needs robust accountability and planning systems. To this end, local governments could also conduct integrated community climate risk assessments with local communities to identify location-specific adaptation plans and ensure transparency.<sup>615</sup> The government can also use local and national media to ensure accountability and transparency.

Systems would be further strengthened if the government established a climate change commission to coordinate between the central and local government. The government could also establish research-based knowledge centre to evaluate other countries' systems and help Bangladesh develop its existing knowledge base and knowledge-sharing mechanisms. For example, Sri Lanka has established its Centre for Climate Change Studies in 1999 under the Department of Meteorology; the Centre is responsible for research, monitoring and creating awareness of climate change.<sup>616</sup>

### **7.4 Environmental Courts and Tribunal**

Historically, Australia and New Zealand have been leaders in environmental court and tribunal creation. Asian countries, such as India, Bangladesh and China, have recently also set up

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<sup>615</sup> Ibid.

<sup>616</sup> World Health Organization, *Review of Climate Change and Healthy Activities in SEARO Member States* (WHO, 2015), <[http://www.searo.who.int/entity/water\\_sanitation/review-of-cc.pdf?ua=1](http://www.searo.who.int/entity/water_sanitation/review-of-cc.pdf?ua=1)>.

environmental specific courts and tribunals.<sup>617</sup> George and Catherine Pring have defined national and sub-national environmental courts and tribunals (ECTs) as ‘judicial or administrative bodies of government empowered to specialize in resolving environmental, natural resources, land use development and related disputes’; within their definition, ‘court’ is used to indicate a body in the judicial branch of government and ‘tribunal’ to indicate all non-judicial government dispute-resolution bodies.<sup>618</sup> In order to achieve good governance and sustainable development, Principle 10 of the Rio Declaration<sup>619</sup> calls for the creation and use of ECTs to increase access to environmental justice. This concept is expressed even more robustly in the Aarhus Convention, which is widely recognised as the leading instrument on environmental rights.<sup>620</sup> Article 9 of this Convention requires adequate review procedures that defend the rights identified in the pillars of the Convention under national environmental law and imposes an obligation to implement judicial review.<sup>621</sup> Access to justice is one of the main drivers of ECT establishment; ECTs aim to facilitate access to jurisprudence and interpret the increasing complexity of environmental law.

The question may arise whether the establishment of ECTs can assist developing countries in addressing climate change. The Justice of the High Court of Brazil, Antonio Herman Benjamin, has emphasised the importance of ECTs for adjudicating environmental lawsuits. He stated that ‘environmental conflicts require a quick action or response, which is incompatible with the slow pace of the court system that, due to its bureaucracy and technical rituals, eventually

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<sup>617</sup> George Pring and Catherine Pring, ‘Specialized Environmental Courts and Tribunals: The Explosion of New Institutions to Adjudicate Climate Change and Other Complex Environmental Issues’. Paper presented at *Strengthening Institutions to Address Climate Change and Advance a Green Economy: 2<sup>nd</sup> Global Conference on Environmental Governance and Democracy (2010)*, <<https://static1.squarespace.com/static/56c0ae80ab48de4417bd17fa/t/56d8661ee32140c576556844/1457022504944/ECTs-and-Climate-Change+-2010.pdf>>.

<sup>618</sup> George Pring and Catherine Pring, *Greening Justice: Creating and Improving Environmental Courts and Tribunals* (World Resources Institution, 2009), <<http://www.law.du.edu/documents/ect-study/greening-justice-book.pdf>>.

<sup>619</sup> The *Rio Declaration on Environment and Development 1992*, Principle 10, states: ‘Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. State shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.’

<sup>620</sup> United Nations Economic Commission for Europe (UNECE), *Public Participation* (UNECE, n.d.), <<http://www.unece.org/env/pp/welcome.html>>.

<sup>621</sup> UNECE, *The Aarhus Convention: An Implementation Guide* (UNECE, 2nd edn, 2014), <[http://www.unece.org/fileadmin/DAM/env/pp/Publications/Aarhus\\_Implementation\\_Guide\\_interactive\\_eng.pdf](http://www.unece.org/fileadmin/DAM/env/pp/Publications/Aarhus_Implementation_Guide_interactive_eng.pdf)>.

becomes an obstacle to effective protection of the environment and to economic progress'.<sup>622</sup> The judiciary plays a vital role in interpreting, explaining and enforcing laws and regulations. Thus, the establishment of ECTs is important in developing countries given the special expertise they bring to their role in environmental matters, as citizens lack of awareness of their human rights, particularly in relation to the right to live in a clean and healthy environment. Judges also can make judicial decisions in climate change litigation, discussed later in this chapter. ECTs can also develop and articulate how to apply international environmental law principles on climate change action, which in many cases exist only in conventions and treaties and are not found in domestic legislation.

#### *7.4.1 Features of Environmental Courts and Tribunals (ECTs)*

The main role of this specialised judiciary is to interpret, explain and enforce the laws and regulations related to environmental and climate change issues. George and Catherine Pring state that implementation strategies and best practices can and should be planned to avoid potential downsides and to maximise access to justice and gain the benefits of specialisation.<sup>623</sup> Thus, it is important to design independent ECTs that are free from political intervention in, or pressure on, the decision-making process. Independent ECTs should have substantial administrative, fiscal and legal freedom and are not supervised by any agency or ministry whose decisions they review. Examples, such as the Environmental Review Tribunal of Ontario, the National Green Tribunal of India and the environmental courts of Brazil, are thus less likely to be influenced by politics or lobbyists.<sup>624</sup> In some cases, however, ECTs lack judicial and political independence; unfortunately, one example is the Environment Court of Dhaka (further discussed below) which is completely controlled by the Department of Environment as a 'gatekeeper'.<sup>625</sup>

ECTs also can play a vital role in promoting environmental policy and action through their role in the field of climate lawsuits. According to Erik Solheim, head of the UN Environment

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<sup>622</sup> Antonio Herman Benjamin, 'We, The Judges and the Environment' (2012) 29(2), *Pace Environmental Law Review* 582, <<http://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1698&context=pehr>>.

<sup>623</sup> George Pring and Katherine Pring, *Environmental Courts and Tribunals: A Guide for Policy Makers* (UNEP, 2016), <<http://wedocs.unep.org/bitstream/handle/20.500.11822/10001/environmental-courts-tribunals.pdf?sequence=1>>.

<sup>624</sup> Ibid.

<sup>625</sup> Ibid.

Programme (UNEP), ‘the science can stand up in a court of law and governments need to make sure their responses to the problem do too’.<sup>626</sup>

#### 7.4.2 *Environmental Courts in Bangladesh*

There are already over 1200 ECTs, across at least 44 countries, existing at the national, state/provincial and local/municipal levels. Given that, as discussed in Chapters 3 and 4, organisational arrangements and institutional frameworks for enforcement are very weak in Bangladesh, the traditional judiciary is not equipped to address environmental issues and is largely unable to offer appropriate remedies or ensure environmental justice. ECTs are seen as one way to concentrate expertise and ensure that judges deciding on environmental and natural resource cases fairly and transparently balance the conflicts between protecting the environment and promoting development; manage environmental and natural resource cases efficiently and effectively; and support more public information, participation and access to justice and for achieving informed and equitable decision.<sup>627</sup> Bangladesh has established four ECs in Bangladesh, three trial ECs (Dhaka, Chittagong and a ‘joint’ District Court/EC in Sylhet) and one appellate EC in Dhaka; a further 60 ECs have been authorised but not established yet in each of the country’s 64 districts<sup>628</sup> under section 4 of the *Environment Court Act 2010*. But it is not likely to be possible to establish Environment Court without establishing office and manpower of DoE as because establishment and smooth functioning of Environment Courts depend on DoE.<sup>629</sup> Because The GoB not only established the Environment Court but also appointed one or more special magistrates courts in each district to try offences under environmental laws. Section 5 of the *Environment Court Act 2010* details the jurisdiction of the environmental courts.

Although Bangladesh passed the *Environment Court Act 2010* to ensure speedy hearings of environmental offences, the system is still not functioning effectively. for the following reasons.

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<sup>626</sup> Oliver Milman, ‘More People Heading to Court to Spur Action on Climate Change, Study Finds’, *The Guardian* (online), 24 May 2017, <<https://www.theguardian.com/environment/2017/may/23/climate-change-government-court-cases-study>>.

<sup>627</sup> Pring and Pring, *Greening Justice*, above n 618.

<sup>628</sup> Pring and Pring, *Environmental Courts and Tribunals: A Guide for Policy Makers*, above n 623.

<sup>629</sup> Imtiaz A. Sajal, ‘Feasibility of Brick Kiln Control Act’, *The Daily Star*, 17 May 2016), <<https://www.thedailystar.net/law-our-rights/feasibility-brick-kiln-control-act-1225177>>

- Lack of expert knowledge and scientific and technical implications
- Lack of timeframe for investigations
- Lack of access to common people
- Lack of independence
- Lack of application of substantive and procedural principles of international environmental law
- Limitations in exercising its jurisdiction.<sup>630</sup>

BD Law Digest have researched the numbers of cases filed in each of three Environment Courts and the Environment Appellate Court in Bangladesh (see Table 7.1).<sup>631</sup>

**Table 7.1 Disposition of cases in environmental courts**

Name of the Court	Time Period	Filed Cases	Pending cases
Dhaka Divisional Environment Court	2003 to June 2015	467 cases	117 cases
Chittagong Divisional Environment Court	2002 to June 2015	350 cases	250 cases
Sylhet Joint District Judge's Court	2005 to June 2015	467 cases	300 cases
The Environment Appellate Court	2005 to June 2015	43 cases	No cases has been finalised

Source: Bangladesh Law Digest, July 2015

On average, only 100 cases are filed in these courts every year; this compares to 700,000 cases filed with the Environment Control Board of New York city.<sup>632</sup> One reason for this is that people are less likely to seek redress through the Environment Courts because of the complicated procedure under the *Environment Court Act 2010*; according to the Chief

<sup>630</sup> Md. Khaled Miah, 'Effective Functioning of Environment Court', *The Daily Star*, 25 August 2015, <<https://www.thedailystar.net/law-our-rights/effective-functioning-environment-court-131956>>

<sup>631</sup> Imtiaz A. Sazal, 'Common People's Access to the Environment Courts of Bangladesh: An Appraisal', *Bangladesh Law Digest* (online), 16 July 2015, <<http://bdlawdigest.org/environment-court-act-2010.html>>.

<sup>632</sup> Ibid.

Executive of the Bangladesh Environment Lawyers' Association (BELA) Rizwana Hasan, it is essential to make the Environment Courts people-oriented.<sup>633</sup> The procedure of seeking justice in the Environment Courts of Bangladesh is very complex. The plaintiff needs a written report issued by the DoE to file a case. To obtain this, the plaintiff has to register a complaint with the DoE, which then assigns an investigator to examine the case. If the complaint is found to be valid, the DoE may issue a fine or proceed to the Environment Court. The Environment Courts have authority to recognise complaints from a plaintiff only if the plaintiff has filed a written complaint with the DoE and the DoE has not been able to take any action against the complaint within 60 days.<sup>634</sup> In addition, these courts have no writ jurisdiction, which means they cannot provide an immediate remedy for actual or threatened violations of the constitutional environmental rights. Rizwana Hasan stated that even if the plaintiffs win in the Environment Courts, three other courts (before the appellate division) remain open for defendants to appeal to; this can make it very difficult for plaintiffs, who must sustain a prolonged legal combat against often-powerful defendants.<sup>635</sup> The *Environment Court Act 2010* is undoubtedly a milestone in the legal protection of the environment in Bangladesh, but it fails to ensure speedy and effective environmental protection due to such defects.<sup>636</sup>

### 7.4.3 Case Studies: National Green Tribunal in India

There is no provision in the *Bangladesh Environment Conservation Act 1995* that deals with environmental technical experts who can scientifically assess environmental violations in the presence of experts in the environmental adjudication panel. India, however, has a provision under section 5(2) of the *National Green Tribunal Act 2010* that a non-lawyer can be appointed as an expert member to assess environmental violations. Furthermore, the court can ask for help from any other governmental or non-governmental organisation and can appoint an expert on the subject matter forming the basis of the case.

The jurisdiction of the Environment Courts in Bangladesh is very limited and complicated. This Act empowers the courts to try only cases involving violations of the *Environmental*

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<sup>633</sup> The Independent, 'Environment Court Asleep at the Wheel when Crisis Escalates', *The Independent* (online), 26 June 2016, <<http://www.theindependentbd.com/printversion/details/49193>>.

<sup>634</sup> Khan and Smith, above n 569.

<sup>635</sup> Financial Express, 'Legal Notion of Green Industrialization: Non-Environment Cases Dominate the Business of Environment Courts' *The Financial Express* (online), 23 July 2014, <<http://print.thefinancialexpress-bd.com/2014/07/23/46808/print>>. Cited in Khan and Smith, above n 569.

<sup>636</sup> Md. Khaled Miah, 'Effective Functioning of Environment Court', *The Daily Star* (online), 25 August 2015, , <<https://www.thedailystar.net/law-our-rights/effective-functioning-environment-court-131956>>.



*Conservation Act 1995* and that Rules 1997, which thus excludes cases involving environmental regulations stipulated in other Acts and Rules. This provision may be inconsistent with environmental justice, given the Environment Court has no jurisdiction to try cases relating to forestry and forest resources, wildlife/biodiversity, fisheries, water resources and other natural resources.<sup>637</sup> The government has not gazetted any notification to include any other legislation under its jurisdiction, although the *Brick Manufacturing and Brick Kilns Establishment (Control) Act 2013* specifically mentions in section 19(2) that only Environment Courts or Special Magistrate's Courts are empowered to take cognisance of any offence punishable under that Act.<sup>638</sup> In contrast, the National Green Tribunal is vested with three forms of jurisdiction, original, appellate and special.<sup>639</sup> The original jurisdiction deals with section 14 of the *National Green Tribunal Act 2010*, which is exercised in civil cases in relation to substantive questions relating to the environment. Substantive questions relating to the environment are classified under two heads in section 2(m): (i) where there is a direct violation of a statutory duty or environmental obligation which is likely to affect the community or the gravity of damage to the environment or property is substantial or the damage to public health is broadly measurable, and (ii) where the environmental consequences are related to a specific activity or to particular sources of pollution. This includes the enforcement of any legal rights relating to the environment and such questions as arise out of the implementation of the enactments specified in Schedule 1 of the Act,<sup>640</sup> which includes the *Water (Prevention and Control of Pollution Act 1974)*; the *Water (Prevention and Control of Pollution) Cess Act 1977*; the *Forest (Conservation) Act 1980*; the *Air (Prevention and Control of Pollution Act 1981)*; the *Environment Protection Act 1986*; the *Public Liability Insurance Act 1981*; and the *Biological Diversity Act 2002*. Section 16 of the Act empowers the Tribunal as the appellate authority competent to decide questions of law and facts against orders and decisions passed by the authorities under the enactments specified in Schedule 1.<sup>641</sup> Section 15 provides the Tribunal with special jurisdiction to order relief and compensation to the victims of pollution and other environmental damage arising under the enactments specified in Schedule 1, for restitution of damaged property and for restitution of the environment in such areas as the Tribunal

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<sup>637</sup> Sazal, above n 599.

<sup>638</sup> Ibid.

<sup>639</sup> *Wilfred J. v. Ministry of Environment and Forests*, NGT Judgement, 17 July 2014.

<sup>640</sup> Gitanjali N. Gill, 'Environmental Justice in India: the National Green Tribunal and Expert Members' (2016) 5(1) *Transnational Environmental Law* 175,

<<https://pdfs.semanticscholar.org/034b/c0ed84d7ebee66fc26dfc23305b03e601f49.pdf>>.

<sup>641</sup> Ibid.

may think fit. These three sections have widened the jurisdiction of the tribunal.<sup>642</sup> Section 20 of the Act establishes certain principles for the tribunal in making orders, decisions and awards in compliance with sustainable development, and the precautionary and ‘polluter-pays’ principles.

In order to make the Environment Courts effective, Bangladesh’s *Environment Court Act* needs to be revised to give people direct access to the court without first having to register their complaints with the DoE.<sup>643</sup> The GoB can learn from India’s legislation and amend the *Environment Court Act 2010* to extend the jurisdiction of the court, which will facilitate access to environmental justice.

## 7.5 Recommendation for the Government and Policy-Makers

A UNEP report on environmental courts and tribunals outlines an ideal model for ECT legislation,<sup>644</sup> some of which points to changes that are needed for Bangladesh, ECTs.

1. Mission: the *Environment Court Act 2010* should insert a clear mission statement to ensure access to justice in dealing with all environment-related issues.
2. Just, quick and cheap: the *Environment Court Act 2010* should provide explicit timeframes for investigations and require access to justice which is fair, efficient and affordable.
3. Independence: the Act should be amended to ensure independence from the DoE and from other government bodies that may influence the decision of the court.
4. Expertise: the Act should include provision for both law-trained judges and science/technical decision-makers trained and experienced in environmental issues who are competent, diverse, unbiased, ethical and committed to service and justice.<sup>645</sup>
5. Integrated Jurisdiction: the Act should provide comprehensive, integrated jurisdiction over all environment-related laws and climate change laws.
6. Prosecutor: the Act should authorise the appointment of trained, specialised environmental prosecutors.

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<sup>642</sup> *The National Green Tribunal Act 2010*, s 16

<sup>643</sup> Khan and Smith, above n 569.

<sup>644</sup> Pring and Pring, *Environmental Courts and Tribunals: A Guide for Policy Makers*, above n 623.

<sup>645</sup> *Ibid.*

7. Public Interest Litigation: the Act should provide authority for lawsuits against public and private parties for actions and inactions harmful to public health or the environment.<sup>646</sup>

The Government of Bangladesh should amend the present law and include these elements for the best practice of environmental justice in Bangladesh which may lead to climate justice.

## 7.6 Public Interest Litigation

Public interest litigation (PIL) is a recent development in South Asia generally and Bangladesh specifically. PIL refers to legal action that is initiated for the protection of public interests, or for the enforcement of fundamental rights of the public at large or of a class of society, particularly the poor and disadvantaged.<sup>647</sup> PIL was viewed as a solution to the problem of ‘access to justice’ in developing countries where large sections of the population are illiterate and have no knowledge of how to use the legal system to redress wrongs arising from violations of their fundamental rights.<sup>648</sup> In Bangladesh, PIL, a writ petition is filed by the aggravated person under Article 102 of the Constitution as a form of writ petition.

The right-based PILs involved the field of Environmental justice, which seemingly attracted the court’s spontaneous and relatively assertive intervention.<sup>649</sup> In this type of lawsuit, the aggrieved person/ party need not be the plaintiff; this type of litigation can be introduced by any member of the public, or, indeed, by the court itself.<sup>650</sup> The aim of PIL is to provide an opportunity for any member of society to use judicial channels to obtain redress for any activities injurious to public welfare.<sup>651</sup> In the case *Dr Mohiuddin Farooque v. Bangladesh* (1997)<sup>652</sup> (also known as the ‘FAP 20 case’), one central issue was to determine the *locus standi* of the petitioner. The decision established a clear relationship between the right to life in a pollution-free environment

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<sup>646</sup> Ibid.

<sup>647</sup> Fahim Mahmud, *Public Interest Environmental Litigation in Bangladesh: Effectiveness, Abuse and Solutions* (Law Help BD, 2018), <<https://lawhelpbd.com/international-law/environmental-law/public-interest-environmental-litigation-in-bangladesh/>>.

<sup>648</sup> Michael G. Faure and A.V. Raja, ‘Effectiveness of Environmental Public Interest Litigation in India: Determining the Key’ (2010) 21(2), *Fordham Environmental Law Review* 239.

<sup>649</sup> Ridwanul Hoque, ‘Taking Justice Seriously: Judicial Public Interest and Constitutional Activism in Bangladesh’ (2006) 15(4), *Contemporary South Asia*, <<https://www.tandfonline.com/doi/abs/10.1080/09584930701330006>> 399.

<sup>650</sup> Md. Saiful Karim, Okechukwu B. Vincents and Mia M. Rahim, ‘Legal Activism for Ensuring Environment Justice’ (2012) 7(1) *Asian Journal of Comparative Law* 1.

<sup>651</sup> Ibid.

<sup>652</sup> *Dr. Mohiuddin Farooque v. Bangladesh* 49 (1997) DLR (AD) 438.

and *locus standi*; the appellate division decided to extend *locus standi* under Article 102 of the Constitution beyond the persons directly aggrieved.

PIL—more specifically, public interest environmental litigation (PIEL)—is a tool to hold the state responsible for environmental degradation and climate change. While Bangladesh has developed a framework for PIL and PIEL to protect the environment, such litigation is a recent development, and the following discussion of PIEL and climate litigation therefore draws on examples from other countries in addition to Bangladesh.

### *7.6.1 Public Interest Environment Litigation (PIEL)*

India’s judiciary has played a vital role in developing public interest litigation. In the case of *SP Gupta v Union of India* (1982)<sup>653</sup> India developed the concept of PIL and the court has explicitly used and developed this concept, with it subsequently playing an important role in protecting and conserving the environment and upholding constitutional environmental rights.

As discussed in Chapter 6, there is no express right to a healthy environment in the Constitution of Bangladesh and it was through public interest litigation before the Supreme Court in 1994 that the constitutional ‘right to life’ was extended to include the right to a safe and healthy environment. The question may arise, can PIL/PIEL guarantee the human rights of the deprived and vulnerable? And, why is PIEL important for developing countries like Bangladesh when there is already specific environmental legislation such as the *Environmental Conservation Act 1995*?

To answer the first question, it is essential to refer to the judgment of Justice Bhagwati of the Indian Supreme Court in the case of *Bandhua Mukti Morcha v. Union of India* (1984).<sup>654</sup> His Honour stated that ‘PIL is not in the nature of adversary litigation but it is a challenge and an opportunity to the government and its officers to make basic human rights meaningful to the deprived and vulnerable sections of the community’. In a Bangladeshi case, *Dr M. Farooque v. Bangladesh* (1997),<sup>655</sup> Justice Chowdhury stated that ‘Article 31 and 32 of our constitution protect [the] right to life as a fundamental right. It encompasses within its ambit, the protection and preservation of environment, ecological balance free from pollution of air and water, sanitation without which life can hardly be enjoyed. Any act or omission contrary thereto will

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<sup>653</sup> *SP Gupta v Union of India* (1982) 2 S.C.R. 365.

<sup>654</sup> *Bandhua Mukti Morcha v. Union of India* (1984) S.C 802.

<sup>655</sup> *Dr. M. Farooque v. Bangladesh* (1997) 49 DLR (AD) 1.

be violative of the said right to life'. It is clear from these cases that PIL/PIEL has played an active role in developing human rights issues and addressing environmental degradation.

Any citizen can bring an action in the courts to protect the environment. A PIL action can be brought in relation to:

- environmental degradation,<sup>656</sup>
- violation of the basic human rights of vulnerable community or group of people,
- the content or conduct of government policy,<sup>657</sup> or
- to compel local authorities to perform a public duty.

Jona Razzaque has researched PIEL extensively and explores the topic in detail in her book *Public Interest Environmental Litigation in India, Pakistan and Bangladesh*. She notes three reasons why PIEL is important in developing countries like Bangladesh, India and Pakistan:

1. Public officials and agencies are not capable of policing the environmental system due to insufficient funds, inadequate staffing and lack of expertise.<sup>658</sup>
2. Public agencies may be unwilling to bring action against offenders due to political pressure, or the agencies themselves may be promoting the activity that they should be regulating.<sup>659</sup>
3. PIEL reduces the government's burden in enforcing laws and regulations.<sup>660</sup>

As PIEL is not an act for personal gain or a financial stake but, instead, aims to extend community environmental values and is motivated by the public good, the court disposed of the matter without any order regarding costs in two environmental cases<sup>661</sup> in Bangladesh.<sup>662</sup> Jona Razzaque has also suggested that Bangladesh can set up a PIEL fund to address cost issues. Bangladesh can follow the same model as the Environment Relief Fund in India (*Public Liability Insurance Act 1991*) or the Sustainable Development Fund in Pakistan (*Pakistan*

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<sup>656</sup> Ruth Nzioka, 'Public Interest Environment Litigation, Institute For Law & Environmental Governance', *Institute for Law and Environmental Governance Kenya* (blog post), 02 July 2015, <<https://ilegkenya1.wordpress.com/2015/07/02/public-interest-environment-litigation/>>.

<sup>657</sup> Ibid.

<sup>658</sup> Razzaque, above n 64, 11.

<sup>659</sup> Ibid.

<sup>660</sup> Ibid.

<sup>661</sup> *Mohiuddin Farooque v. Bangladesh and Others* (48 DLR 1996) and *Bangladesh Environmental Lawyers' Association v. Election Commission and Others* (46 DLR 1994).

<sup>662</sup> Razzaque, above n 64, 252.

*Environmental Protection Act 1997*) to be used to pay all or part of the costs of one or more of the parties in the PIEL, which may encourage more environmental litigation.<sup>663</sup>

In Bangladesh, the first PIEL case was based on sound pollution created by election canvassing.<sup>664</sup> But the most prominent case is the FAP 20 case, which established the relationship between fundamental rights and *locus standi*. This case concerned the Flood Action Programme, a foreign aid-funded development project, and its harmful effect on the environment.<sup>665</sup> There have also been PIEL cases in relation to industrial and urban development, human health and environment, unplanned rural development, oil and exploration planning, leases of open rivers, urban pollution and the need for the government to oppose unchecked pollution.<sup>666</sup> Faced with the lack of effective common access to, and limited jurisdiction of, the Environment Court, PIEL can provide access to environmental justice. Given Bangladesh suffers from a lack of climate change policy and legislation; serious consideration should be given to climate litigation in the public interest.

While some scholars have identified climate litigation as one tool that can be used to shape climate policy and to seek redress for climate-related injuries,<sup>667</sup> most PIEL has had no explicit link to climate change, inasmuch as it has not mentioned protecting the environment to combat climate change. In the recent case of *Mehta v Union of India* (2002),<sup>668</sup> for example, the Indian Supreme Court ordered the Government to replace the entire bus fleet of Delhi. The Court held that ‘Government vehicles and public undertaking vehicles including public transport vehicles could be equipped with more environmental friendly compressed natural gas (CNG) cylinders with necessary modification in the vehicles to avoid pollution, which is hazardous to the health of the people living in highly polluted cities like Delhi and the other metros in the country’.<sup>669</sup> Obviously this is an issue relevant to climate change, but the Court made no mention of how PIEL can be used indirectly as a tool for climate change mitigation.<sup>670</sup> The next section will

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<sup>663</sup> *Ibid*, 253.

<sup>664</sup> *Bangladesh Environmental Lawyer Associations v. the Election Commission and Others* (1995) 47 DLR.

<sup>665</sup> *Dr. Mohiuddin Farooque v. Bangladesh* 49 (1997) DLR (AD) 438.

<sup>666</sup> Razzaque, above n 519, 58.

<sup>667</sup> Marilyn Averill, ‘Linking Climate Litigation and Human Rights’ (2009) 18(2), *Review of European Comparative & International Environmental Law* 139.

<sup>668</sup> *Mehta v Union of India* (2002) (2) S.C.R. 963.

<sup>669</sup> *Ibid*.

<sup>670</sup> Olivier V. Geel, ‘Urgenda and Beyond: The Past, Present and Future of Climate Change Public Interest Litigation’ (2017) 3 *Maastricht University Journal of Sustainability Studies*, <<http://openjournals.maastrichtuniversity.nl/SustainabilityStudies/article/view/508/370>>.

focus on climate change litigation, whereby courts can directly and indirectly use this legal mechanism as a tool for climate change mitigation.

### 7.6.2 *Climate Change Litigation*

Climate change litigation is a subset of public interest litigation, defined by the Climate & Development Knowledge Network as, ‘when claimants appeal to a court to enforce or clarify existing climate change laws’.<sup>671</sup> Through such lawsuits, the citizen can seek to fill the gap left by the legislative and regulatory bodies and compel them to meet their legal obligations to reduce carbon emissions. Climate litigation also involves actions against governments seeking to challenge the legitimacy of laws passed to address climate change, such as legal challenges to solar power plants and wind farms; for example, the USA successfully challenged the legitimacy of India’s solar energy laws via the World Trade Organization due to domestic content requirements.<sup>672</sup> Climate litigation may be based on traditional tort law- negligence and public nuisance but is more usually based on civil law traditions or common law. The claimant may seek compensation for climate changes and the development and implementation of comprehensive climate recovery plans to achieve more ambitious, science-based targets for climate mitigation, or better implementation of existing laws.<sup>673</sup>

This section focuses on the climate litigation and how Bangladesh can develop a climate litigation process to pursue sustainable economic growth and ensure climate justice. The question may, therefore, arise of whether Bangladesh should follow the trend in climate litigation, given that it already promotes access to public interest environmental litigation.

### 7.6.3 *Objectives of Climate Change Litigation*

The Grantham Research Institute on Climate Change and the Environment and Columbia Law School have conducted research on global trends in climate change legislation and litigation in all countries for the period 1994–2017. This research identified some core objectives forming

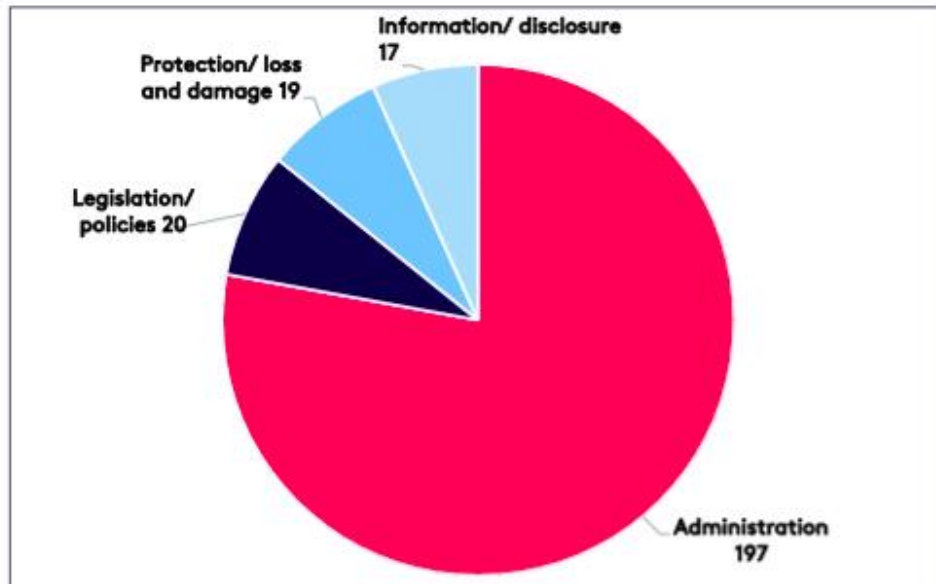
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<sup>671</sup> Climate & Development Knowledge Network, *Feature: Climate Change Litigation—A Rising Tide?* (CDKN, 2012), <[https://cdkn.org/2012/05/postcard-from-london-rising-tide-of-climate-change-litigation/?loclang=en\\_gb](https://cdkn.org/2012/05/postcard-from-london-rising-tide-of-climate-change-litigation/?loclang=en_gb)>.

<sup>672</sup> World Trade Organization, *India—Certain Measures Relating to Solar Cells and Solar Modules* (WTO Report, circulated 24 February 2016), <[https://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds456\\_e.htm](https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds456_e.htm)>. Cited in Keely Boom, Julie-Anne Richards and Stephen Leonard, *Climate Justice the International Momentum towards Climate Litigation* (Heinrich Boell Foundation, 2016), <<https://www.boell.de/sites/default/files/report-climate-justice-2016.pdf>>.

<sup>673</sup> Boom, Richards and Leonard, above n 672.

the rationale for climate-related litigation, grouped as administration, information/ disclosure, legislation/policies, and protection/loss and damages. The majority of cases were concerned with administrative issues, that is, appealing administrative decisions (see Figure 7.2).<sup>674</sup>



Source: *Climate Change Litigation of the World*. Note: The categorisation follows the literature on dominant litigation prototypes (Markell and Ruhl 2012; Wilensky 2015), with some adjustments.

Figure 7.1 Number of cases by core objective

This paper focuses on the climate change litigation, where litigants may bring cases calling for new laws and policies, or for a freeze on existing legislation, against the government to drive the course of climate change legislation. For example, in the case of *Ashgar Leghari v. Federation of Pakistan* (2015), the national government was ruled to be failing to carry out its climate policy.<sup>675</sup>

#### 7.6.4 Climate Litigation and Adaptation

Mitigation and adaptation measures taken by Bangladesh have been discussed in Chapters 3 and 4. Again in Pakistan, some climate litigation cases have concerned mitigation and adaptation to climate change risks; for example, in the case *Ashgar Leghari v. Federation of Pakistan*, the Lahore High Court ordered the Government of Pakistan to implement its climate adaptation plan.

<sup>674</sup> Nachmany et al, above n 267.

<sup>675</sup> Ibid.



### 7.6.5 Importance of Climate Change Litigation

Climate change is a new topic which has generated new rights and duties, thus creating new challenges for legislators and policy-makers. While they are eager to apply this approach, climate change adaptation and mitigation policies have developed more slowly than climate change cause and effect and have often left gaps between the politically achievable and the scientifically advisable. Litigation is one way of filling the gaps left by the legislators and policy-makers to stabilise the climate. The Paris Agreement was the first international instrument to deal thoroughly with the problem of coordinating international action on GHG emissions.<sup>676</sup> However, in doing so it raised governments' concerns about the gap between current law and policy and that needed to achieve mitigation and adaptation objectives. This gap is being increasingly exposed as litigants have begun to make use of the Paris Agreement's codifications in arguments about the adequacy and inadequacy of efforts by national governments vis-à-vis climate change and its impacts.<sup>677</sup>

Climate litigation can help to resolve many of the legal, social, economic and other complex issues related to climate change impacts. On the other hand, climate litigation necessarily focuses on specific injuries, harms or losses; for example, in the case of *Connecticut v. American Electric Power* (2005)<sup>678</sup> the New England states in the USA documented the impacts of climate change including increased loss of life, public health threats from heat-related illnesses and pollution impacts on coastal resources from storm surges and permanent sea-level rises, among others.<sup>679</sup> In the case of *Massachusetts v. EPA* (2007),<sup>680</sup> the Supreme Court of USA held that 'potential damages from climate change are serious and well recognised, rising ocean temperatures may contribute to the strength of hurricanes and unchallenged affidavits showed that global sea levels had risen during the twentieth centuries

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<sup>676</sup> UNEP, *The Status of Climate Change Litigation* (UNEP, 2017), <<http://columbiaclimatelaw.com/files/2017/05/Burger-Gundlach-2017-05-UN-Envr-CC-Litigation.pdf>>.

<sup>677</sup> Ibid.

<sup>678</sup> *Connecticut v. American Electric Power Co.* 406 F. sup. 2d 265 (S.D.N.Y. 2005).

<sup>679</sup> Ibid, paras. 112–17, 121–27, 132–35, cited in David B. Hunter, *The Implications of Climate Change Litigation for International Environmental Law-Making* (American University Washington College of Law, 2007),

<[http://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1005&context=fac\\_works\\_papers](http://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1005&context=fac_works_papers)>.

<sup>680</sup> *Massachusetts v. EPA* (2007) 549 US 497.

as a result of global warming'.<sup>681</sup> Similarly, the courts can create awareness in people and influence social decisions about climate change in developing countries like Bangladesh.

David B. Hunter states that climate litigation strategies not only rely on evolving science but also will influence the development of climate science, both directly and indirectly.<sup>682</sup> Other scholars have highlighted the possibility that principles developed through litigation could serve as the basis for law and policy reforms to address climate change at the domestic and international levels.<sup>683</sup>

### *7.6.6 Case Study of Pakistan*

In Pakistan, a farmer filed a PIL case asserting that government inaction and delay in implementing the National Climate Change Policy violated the fundamental constitutional rights to life and dignity. In 2015, a farmer petitioned the Lahore High Court to seek the enforcement of the National Climate Change Policy and Framework, contending that his fundamental rights under Articles 9 and 14 were breached and that climate change had affected the socio-economic conditions of the petitioner.<sup>684</sup> *Asghar Leghari v. Federation of Pakistan* (2015) was the first case in Pakistan in which the court found that inaction by the Government of Pakistan breached fundamental rights. This case recognised the principle of climate justice and directed each ministry and department to work with the Ministry of Climate Change to ensure the implementation of the policy. Though Pakistan is not a major carbon emitter, it is a real victim of climate change with an urgent requirement for remedial adaptation measures to cope with disruptive climate patterns. In *Asghar Leghari v. Federation of Pakistan* (2015)<sup>685</sup> the Lahore High Court stated that the existing environmental jurisprudence has to be fashioned to meet the needs of something more urgent and overpowering i.e., climate change. By this decision, Pakistan moved from environmental justice to climate justice, extending fundamental rights like the right to life to include the right to a healthy and clean environment and the right to human dignity. These fundamental constitutional rights, read with the constitutional values

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<sup>681</sup> Ronald G. Peresich, 'Climate Change Litigation' (2016) 45(4) *Brief* 28–33.

<sup>682</sup> Hunter, above n 679.

<sup>683</sup> Jacqueline Peel, 'Issues in Climate Change Litigation' (2011) 15(1), *Carbon and Climate Law Review* 15.

<sup>684</sup> *Asghar Leghari vs. Federation of Pakistan* (writ Petition No. 25501/2015).

<sup>685</sup> *Asghar Leghari v. Federation of Pakistan* (2015) W.P.No. 25501/2015.

of political, economic and social justice, provide the essential judicial toolkit to address and monitor the government's response to climate change.<sup>686</sup>

### 7.6.7 Case Study in India

India has a rich history of public interest environmental litigation, beginning in the 1980s and focused on environmental justice. Few cases in the Indian courts have referred to climate change risks and action to mitigate climate change. While the court has decided that there is a right to enjoy pollution-free air and water under Article 21 of the Indian Constitution (as discussed in Chapter 6), no climate-related claim has been launched on the basis of this article. The case *in re Court on its own motion v State of Himachal Pradesh and others* (2013),<sup>687</sup> dealing with climate-related litigation, noted that GHG emissions caused global warming and highlighted the need to take protective measures. The court affirmed the applicability of the 'polluter-pays' principle to the Himachal Pradesh, but did not assign responsibility for mitigating global warming. The court created a monitoring committee to report quarterly to the National Green Tribunal.

### 7.6.8 Case Study in Philippines

Since 2010, when the Procedural Rules for Environmental Cases came into effect, the Supreme Court of the Philippines has focused on promoting PIL in the quest for environmental justice.<sup>688</sup> The objectives of these rules are 'to protect and advance the constitutional right of the people to a balanced and health ecology' and 'to provide simplified, speedy and inexpensive procedure for the enforcement of environmental rights and duties recognised under the Constitution, existing laws, rules and regulations and international agreement'.<sup>689</sup> In the Philippines, the first climate change-related lawsuit, *Global Legal Action on Climate Change v. The Philippine Government* (2010), was filed using the Writ of Kalikasan,<sup>690</sup> which is a unique innovation.

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<sup>686</sup> Ibid, para 7.

<sup>687</sup> *in re Court on its own motion v State of Himachal Pradesh and others* (2013) 237(THC)2013 (CWPIIL No. 15 of 2010).

<sup>688</sup> Jolene Lin, 'Litigating Climate Change in Asia' (2014) 4 *Climate Law* 140.

<sup>689</sup> Supreme Court of the Republic of the Philippines, *Rules of Procedure for Environmental Cases (2010)*, A.M. No. 09-6-8-SC, Pt 1, S 3, General Provision, <[http://www.lawphil.net/courts/supreme/am/am\\_09-6-8-sc\\_2010.html](http://www.lawphil.net/courts/supreme/am/am_09-6-8-sc_2010.html)>.

<sup>690</sup> Ibid, Rule 7, s 1, provides the nature of the Writ: 'the Writ is a remedy available to a natural judicial person, entity authorized by law, people's organization, non-governmental organization, or any public interest group accredited by or registered with any government agency, on behalf of persons whose constitutional right to a balanced and healthful ecology is violated, or threatened with violation by an unlawful act or omission of a

The plaintiff in this case, filed in 2010, was advocating for effective climate change adaptation by pursuing enforcement of an existing law. Eventually, the government fulfilled its obligations and the Supreme Court dismissed the case on the basis that there was no remaining controversy between the parties.<sup>691</sup>

### *7.6.9 Challenges of Public Interest Litigation*

In some cases, excessive judicial activism may undermine the democracy by shifting power from elected politicians to unelected judges.<sup>692</sup> For example, the Supreme Court of India has been accused of exceeding its power by involving itself in cases concerning motor vehicles in Delhi and pollution of the Ganges River. In 1985, the Chief Justice sought to involve the Supreme Court in a debate regarding cleaning the Ganga and sewage treatment.<sup>693</sup>

In some cases, courts are not always ready to fill legislative and regulatory gaps. For example, the Supreme Court of the Philippines, notwithstanding that it agreed that air pollution from motor vehicles was a threat to health, declined to order the government to convert all of its vehicles to compressed natural gas as it believed that this would have interfered with legislative and executive responsibilities.<sup>694</sup>

Climate change litigation also lacks a clear pathway to follow, which raises decision-making challenges including how to respond to scientific uncertainty, how to resolve issues of global versus local responsibility for the problem of global warming, and how far to go in reforming conventional legal governance approaches in responding to situations with cumulative, long-term and often indirect environmental impacts.<sup>695</sup>

## **7.7 Conclusion**

For effective local government, the government should increase people's participation, engage in capacity building and improve local-level services related to climate change issues. The

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public official or employee or private individual or entity, involving environmental damage of such magnitude as to prejudice the life, health or property of inhabitants in two or more cities or provinces.'

<sup>691</sup> Lin, above n 688.

<sup>692</sup> Boyd, above n 511.

<sup>693</sup> Harish V. Nair, 'Supreme Court Passes Buck to NGT Over Cleaning Up River Ganga', *India Today* (online), 25 January 2017, <<https://www.indiatoday.in/mail-today/story/supreme-court-ngt-river-ganga-cji-khekar-modi-government-956941-2017-01-25>>.

<sup>694</sup> *H.M. Henares, Jr. et al. v Land Transportation Franchising and Regulatory Board et al.*, (2006), G.R. No. 158290.

<sup>695</sup> Peel, above n 683.

government can carry out reform in relation to funding capacity building at local level, establish accountability mechanisms and build effective monitoring and evaluation systems.

As noted earlier in this chapter, climate justice is a relatively new concept and shares core principles with the concept of environmental justice; however, as a vulnerable developing country, Bangladesh needs to move from environmental justice to climate justice, as Pakistan has done. Building awareness of climate litigation may lead to new directions in climate change law and policies. However, there are many issues that are not addressed through public interest litigation or by the courts, such as reform of environmental law and planning of adaptive actions; these areas remain the province of the government. While Bangladesh has enacted some environmental laws and regulations, there is a lack of environmental awareness and enforcement. On the other hand, climate consciousness in Bangladesh has increased, but there is no comprehensive legislation to address climate change mitigation and adaptation. In these circumstances, public interest litigation and the courts can work together to ensure that current laws are, at least enforced, because it is clear that far-thinking judgments issued in climate change litigation cases can make, and have made, a significant contribution to the development of climate change law and governance.<sup>696</sup>

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<sup>696</sup> Ibid.

# Chapter 8. Conclusion

## 8.1 Introduction

In order to improve access to climate justice, the environmental rule of law, sustainable development, a green economy and climate change laws are being promoted around the world. The focus of this thesis is on access to climate justice for the protection and conservation of the environment of Bangladesh and to improve climate change laws and policies. Ibrahim Thiaw<sup>697</sup> mentions three pillars of the environmental rule of law that can ensure the citizens' environmental rights: access to information, public participation in decision-making processes and access to justice in environmental matters.<sup>698</sup>

The topics of this thesis are whether the post-Kyoto negotiations can meet the target of the Kyoto Protocol and help Bangladesh combat climate change impacts, and whether Bangladesh has taken appropriate policy responses to address climate change and improve climate justice. This thesis makes a real and significant contribution to addressing the gaps in Bangladesh's Policies and Laws and in suggesting legal and economic reforms for adaptation and mitigation to climate change in Bangladesh.

This chapter will synthesise the discussion in Chapters 2, 3, 4, 5, 6 and 7. In doing so, it will consider whether Bangladesh has taken any action to ensure that climate justice in Bangladesh is derived from the various international conventions and treaties. This chapter will summarise the findings of this thesis as to whether those laws and policies of Bangladesh are sufficient to combat climate change impacts.

## 8.2 Human Rights and Climate Justice

Based on the previous discussions, this thesis comes to the conclusion that climate change is far bigger problem than its solutions. Climate change is not only an environmental issue but also a major challenge for human rights. The main purpose of this thesis is to apply the

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<sup>697</sup> Ibrahim Thiaw, the Deputy Executive Director of United Nations Environment Programme (UNEP).

<sup>698</sup> TRALAC (Trade Law Center), 'Environmental Rule of Law Critical to Achieving Inclusive, Sustainable Development in Africa, Concludes Regional Colloquium, *TRALAC* (online), 20 October 2015, <<https://www.tralac.org/news/article/8302-environmental-rule-of-law-critical-to-achieving-inclusive-sustainable-development-in-africa-concludes-regional-colloquium.html>>.

principles of climate justice, a very recent concept to the situation in Bangladesh. The principles underpinning climate justice and the climate change law can be synthesised into climate justice principles. This thesis mainly focused on two key climate justice principles: respect for and protection of human rights, and support for the right to development (mitigation and adaptation). These issues are urgent for the present and future generations, who are already experiencing climate harms and will suffer increasing loss and damage. Different international bodies, including the UNFCCC, UN Human Rights Council and other scientific bodies, are already concerned about climate change impacts and are driving responses to address climate change, but urgent action is required at all levels to ensure that the solutions developed protect human rights. The Office of the High Commissioner for Human Rights issued a statement at the Bali Climate Change Conference (COP 13) acknowledging that ‘climate change can adversely affect the fundamental human rights of present and future generations’.<sup>699</sup> The International Bar Association has also recommended some objectives based on the human rights and recently released a report providing policy recommendations for integrating human rights into climate change regimes.<sup>700</sup> A number of recommendations reflect concerns central to this thesis, including:

- the need to adopt urgent and ambitious mitigation action and provide scaled-up support and resources as a means of preventing the most catastrophic impacts of climate change;<sup>701</sup>
- recognising that human rights obligations apply in the context of climate change and must be integrated into the development and implementation of climate policies and solutions;<sup>702</sup> and
- providing access to information, full and effective participation, and justice in decision-making processes at all levels.<sup>703</sup>

The United Nations Environment Programme and the Columbia Law School have published a report on climate change and human rights which also contained some recommendations how UNFCCC parties and other actors can better integrate human rights considerations into their

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<sup>699</sup> Office of the High Commissioner for Human Rights, *United Nations Joint Press Kit for Bali Climate Change Conference: The Human Rights Impacts of Climate Change* (OHCHR, 2007), <<https://www.ohchr.org/Documents/Press/HumanRightsImpactClimateChange.pdf>>.

<sup>700</sup> Centre for International Environmental Law, above n 54.

<sup>701</sup> Ibid.

<sup>702</sup> Ibid.

<sup>703</sup> Ibid.

mitigation and adaptation activities.<sup>704</sup> It also recommended that the COP should expressly refer to both the effects of climate change on the exercise of human rights and the need for parties to respect, protect, promote and fulfil human rights in all climate-related activities.<sup>705</sup> It further suggested that developed countries increase financial assistance to developing countries, especially the LDCs and countries most vulnerable to climate change,<sup>706</sup> and recommended that national and local governments should ensure that adaptation responses are non-discriminatory, consider integrating climate change adaptation and DRR programmes and practice adaptation measures with environmental and social co-benefits.<sup>707</sup>

A human rights-based approach to climate justice provides a valuable lens for ensuring that climate change mitigation and adaptation strategies are both equitable and fair.<sup>708</sup> There are three key areas for the GoB to consider in its efforts to adopt a human rights-based approach.

- First, it should recognise the climate change risk and prioritise, on the basis of climate change vulnerability, both measures to prevent or mitigate climate change impacts and developing the nation's adaptive capacity, formulating a strategic plan (which will, inevitably, affect the human rights of its citizen and communities).
- Second, the GoB should uphold all constitutional and other applicable human rights standards, in an equitable and sustainable way, so that those affected by climate change measures continue to enjoy those rights to their fullest extent. To this end, citizens should have the opportunity to participate in fair, accountable, open and corruption-free decision-making processes, which are essential to the growth of a culture of climate justice.
- Finally, the government should facilitate adequate judicial avenues, and any other dispute-resolution mechanisms, for the accessible and just adjudication of climate change policy matters in the event of any dispute arising.

This thesis has focused mainly on the climate justice principles that may assist the GoB to ensure a rights-based approach to climate change in Bangladesh more broadly.

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<sup>704</sup> UNEP and Columbia Law School, *Climate Change and Human Rights* (UNEP, 2015), <[http://web.law.columbia.edu/sites/default/files/microsites/climate-change/climate\\_change\\_and\\_human\\_rights.pdf](http://web.law.columbia.edu/sites/default/files/microsites/climate-change/climate_change_and_human_rights.pdf)>.

<sup>705</sup> Ibid.

<sup>706</sup> Ibid.

<sup>707</sup> Ibid.

<sup>708</sup> Huntjens and Zhang, above n 24.



### 8.3 A Principled Approach to Climate Justice: Climate Justice Mechanisms

As climate change is a transnational threat; it is necessary to take initiatives nationally, regionally and internationally. It is clear that climate change is a development issue and it needs high-level response to reduce the risk; capacity and investment are needed to support effective and sustainable development implementation, but any plan needs to prioritise actions on the basis of social and economic needs and to ensure all stakeholders play their part and build partnerships to achieve the goal.

Bangladesh has enacted a number of environmental laws and regulations but there are distinctions between environmental law and climate change law. While this thesis does not address these distinctions in detail, it does seek to emphasise the importance of enforcing climate change laws and policies, which would require fewer environmental statutes to protect endangered species<sup>709</sup> and promote climate justice. Climate change legislation would cover areas including energy, transport, land use, resilience, knowledge, capacity building and mitigation of climate change impacts. To that end, this thesis has explored the current environmental law and climate change-related laws and policies of Bangladesh.

Chapter 1 introduced three climate justice mechanisms,

- adaptation
- mitigation, and
- joint adaptation and mitigation, for sustainable management.

Bangladesh has signed and ratified international conventions and protocols and has taken adaptation and mitigation measures to combat climate change. While the need for adaptation springs from a global cause, the remedy will provide local benefits. Adaptation is costly but in some developing countries mitigation opportunities are few (for example, due to being minor contributors to global GHG emissions) while adaptation measures are in high demand; Bangladesh is one such country. In these situations, the technical aspects of adaptation need to be more flexible and incorporate a development-based approach. There needs to be an emphasis on capacity building and institutional strengthening, and a focus on low-carbon technologies. There should also be an emphasis on long-term adaptation action planning to

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<sup>709</sup> James Salzman and J.B.Ruhl, 'Currencies and Commodification of Environmental Law' (2000) 53 *Stanford Law Review* 607, <[https://scholarship.law.duke.edu/faculty\\_scholarship/1074/](https://scholarship.law.duke.edu/faculty_scholarship/1074/)>.

avoid the worst climate impacts, such as those from rising temperatures and rising sea levels. Research on adaptation has been quite sparse compared to that on mitigation, particularly for developing countries like Bangladesh. The GoB can bring together donors, policy-makers, researchers, and those working at the community level to collaborate on priority actions. However, it has created its own strategies, such as CBA, to integrate local communities. It has established some CDM projects to reduce carbon emissions and has enacted some laws and policies to address climate change.

## **8.4 Outcomes from Previous Chapters**

It is critical to create awareness of the impacts—current and future—of climate change. More effective systems are needed, locally and regionally, to support implementation. This thesis has focused on the historical background of climate change law and how it has been addressed globally, as well as examining the major international regimes in Chapter 2. The objective of the Kyoto Protocol is to stabilise GHGs at certain levels and control global warming. In order to reach those goals, the Protocol introduced some market-based mechanisms to reduce carbon emissions and lead to sustainable development. But the UNFCCC has mainly focused on mitigation at the expense of adaptation. Since the Kyoto Protocol has adopted other protocols, but the emphasis in this thesis has mainly been on the major treaties that deal with adaptation, mitigation and finance.

Like other countries, Bangladesh also has adopted both adaptation and mitigation approaches. Bangladesh has been very responsive to international regimes; it was the first country to complete its NAPA and determined priority actions; when this proved insufficient to tackle adverse climate change impacts it developed the BCCSAP, which is an updated version of NAPA.

Bangladesh has utilised CBA in the field of adaptation, focusing on empowering communities to take action based on their local knowledge, needs and decision-making processes. UNDP CBA projects include raising awareness of climate change risk at the local and national levels, which can help communities better understand and prepare for climate change. In order to make CBA programmes more effective, the GoB could use children as effective communicators of climate change causes and effects. It could create awareness of climate change and its impacts where rates of literacy in the local community are low. CBA also seeks to involve the poorer and most vulnerable people and allow them to identify responses to the risk posed by climate

change. The GoB could integrate climate change adaptation into national and regional level planning and programming of CBA projects. It could also develop some knowledge-based CBA and link it to national-level adaptation planning and policies. At the same time, policy-makers should have access to that information, metrics for the effectiveness of national adaptation policies, and better knowledge of local vulnerability and needs so that they can steer improvements. Effective CBA also requires reliable information on climate change, such as scientific information and local knowledge about trends and changes, to incorporate into the planning process. The GoB should ensure that data is available and that communities are able to access that data.

Bangladesh has signed and ratified a number of international and regional conventions and treaties and protocols related to environment and climate change, and has enacted 200 related laws and policies in Bangladesh. It is the duty of the state to carry out those responsibilities and international commitments. It is true that Bangladesh has a number of good policies and other legal instruments to tackle environmental degradation, but as a result of overlapping responsibilities, and poor coordination, implementation remains weak. At the same time, decision-making bodies within the government have a tendency to make controversial policy decisions without examining the environmental impacts.

The GoB should also establish climate change-specific ministries and better integrate all ministries so that they can share climate-related information and data. It should establish an environmental council, as Sri Lanka and Pakistan have done, to provide dedicated, centralised decision-making on effective planning, investment, adaptation and mitigation.

Adaptation funding in developing countries is a major issue. While there is increasing donor funding for adaptation initiatives, most climate finance is used for mitigation projects; further, it has been found that 75% of climate finance does not leave national boundaries.<sup>710</sup> At the Eighth CBA International Conference, Mousumi Pervin articulated four main challenges in Bangladesh in mainstreaming climate finance at the national and sub-national level: leadership, coordination, scaling up from the local level and engaging the private sector.<sup>711</sup> Because better leadership and better coordination can improve available resources, the GoB should create

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<sup>710</sup> Reid et al, above n 428.

<sup>711</sup> Ibid.

public–private partnerships and collaborate with private companies who are interested in investing in the carbon market. The government of Gambia, for example, collaborates with private companies who are investing in tree plantation, which could be a good model for Bangladesh. In this regard, the question may arise as to whether adaptation finance is heading in the right direction. Nepal has established separate forums, called the Citizens’ Awareness Centres and Ward Citizens’ Forum, to inform the level of funding and assess whether it is spent appropriately. Bangladesh has adopted a separate Climate Fiscal Framework (which has yet to come into force) to ensure transparency and track adaptation finance. The GoB should also focus on creating a monitoring system so that it can track adaptation activity at national and local levels. At the same time, it needs to create an accountability framework to manage both funding agencies and the recipient parties.

On the other hand, as already noted, most international climate change funding is allocated to mitigation activities, and much of the funding remains in the country of origin. Therefore, many LDCs and developing countries have established national financial mechanisms and created their own financial systems rather than wait for international funding. Bangladesh, for example, has established the BCCTF. In order to access international funding, the GoB needs to ensure that funds are properly allocated and reach the most vulnerable communities. As noted in Chapter 5, the poorer rural communities at greatest risk from climate change impacts are receiving less funding for adaptation, while the lower tier of local governments is largely ignored as well. There is a need for a low-cost strategy and mechanism to trace adaptation funding to determine that it is allocated effectively. In this context, CBA is a more effective adaptation approach because it directly targets the communities that are most vulnerable. It is also based on specific social, economic and political contexts and is participatory in nature. The GoB can utilise the principle of the Kathmandu Declaration and put more effort into bringing together donors, policy-makers, researchers and those working at the community level and create networks among them to combat climate change in Bangladesh.

According to Simon Caney, there are two ways of thinking about climate justice: burden-sharing and harm avoidance. Bangladesh is one of the lowest GHG emitters in the world and it follows the harm avoidance approach. This thesis focused on CDM—one of the KP mechanisms—and its performance in Bangladesh. Though CDM was designed to promote sustainable development in developing countries and to enable emission reductions in the most cost-effective way, numerous CDM project have caused harm to life, health, food, water,

sanitation, housing and culture.<sup>712</sup> CDM is still failing to ensure high standards of stakeholder consultation, public participation and providing sustainable development benefits.<sup>713</sup>

CDM can help developing countries reach sustainable goals in the future, but Article 12 needs significant adjustment to protect them from being victimised by the market-based decisions of developed countries. An Institute of Green Economy working paper has suggested that the high political and sovereign risk associated with CDM can be reduced significantly by creating partnerships with host country governments and influential multilateral bodies like the World Bank, along with private investors from developed countries for CDM investments in public–private partnership mode.

In this regard, the GoB also needs to find available options for Bangladesh to participate in the PA mechanisms and small-scales project for sustainable development. The research shows that Bangladesh is perfect for CDM projects, despite some issues and challenges such as lack of awareness, lack of baseline data, corruption and lack of technical resources. Bangladesh can avail itself of the new opportunities offered by sustainable development mechanisms under the Paris Agreement, which will provide real, measurable and long-term mitigation benefits. Bangladesh has extensive experience of CDM which it can apply to SDM. With carbon offsetting to be abolished under the Paris Agreement and with the cut-off date for the use of CDM credits being 2023, the stage is set for Bangladesh to adopt SDM over CDM.

This thesis has also analysed relevant laws and policies of Bangladesh. Bangladesh has no constitutional environmental rights, as Pakistan and Sri Lanka do, but it has taken climate change impacts into consideration by developing relevant laws and policies and is continually upgrading its institutional arrangements and climate change funding to attract international stakeholder investment.

The BCCSAP can assist Bangladesh in taking the necessary steps to reduce vulnerability to climate change, and to promote more sustainable development by adopting a low-carbon development pathway. In order to implement this action plan, Bangladesh needs strong commitment from the government and leadership in the effort to fight climate change and enable Bangladesh to meet the global obligations under the UNFCCC. This will also attract

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<sup>712</sup> Carbon Market Watch, above n 200.

<sup>713</sup> Ibid.

international stakeholder investment in innovation, together with technology development and transfer. Bangladesh needs new climate change legislation to implement this action plan. In order to take appropriate initiatives Bangladesh needs to improve management systems across all sectors and involve local governments as well as communities.

Bangladesh has formulated an environmental policy incorporating the principle of ‘polluter pays’, but this is rarely applied in practice. This thesis notes that the *Environmental Conservation Act* and its Rules are based on the ‘polluter-pays’ principle rather than the precautionary principle, despite the latter being stated as the objective in the preamble. Legislators should consider the precautionary principle and an exemplary punishment system to prevent harm to the environment as well as improving environmental standards, control and mitigation of environmental pollution. At the same time, the GoB should pass new forest legislation to guide forest management planning, which should be based on ecosystem development and preservation and promoting sustainable development. Such a law will also improve the social welfare of the poor without compromising conservation.

The GoB also needs to ensure public participation is incorporated into its decision-making processes on climate change issues. For example, the government formulated the BCCSAP 2009 but has not enacted any provisions to amend and update existing environmental laws to incorporate climate change issues. As noted throughout this thesis, climate change legislation in other developing countries has incorporated provisions for public participation in decision-making processes; the *Bangladesh Climate Change Trust Fund Act 2010* is silent on this matter, establishing a trustee board that includes representative only from governmental agencies, not from civil society. Policy-makers must take public participation into consideration at the policy-making stage, because without public participation, lesson from other jurisdictions suggest that the government cannot ensure effective results from climate change planning. For example, Kenya enables citizens to apply to the court on the basis that a person has acted in a manner that has, or is likely to, adversely affect efforts towards mitigation and adaptation to the effects of climate change. The applicant has no need to establish that loss or injury has actually been incurred. This step can assist domestic courts to hold government and corporations accountable. Public Interest Environmental Litigation similarly opens a door for citizens to access the courts, while still requiring that claims demonstrate direct or future harm. Not only the GoB but also many international and national NGOs are working together as partners to address climate change in Bangladesh. They are creating new fields of adaptation

through CBA to ensure food security and reduce poverty, and are playing a vital role in disaster management to ensure climate justice at community level. These groups would be further assisted by the introduction of third party standing to challenge ‘inappropriate’ development.

## 8.5 Proposals for the Government

As already mentioned, Bangladesh is a party to most major international conventions and has participated in all conferences of the parties, yet it has not enacted domestic laws to implement these treaties.<sup>714</sup> The GoB needs to formulate a high-level national climate change policy that prioritises adaptation measures with long-term objectives as a first step to introducing climate change-specific legislation.

The government should review the scope of local government engagement in the Environmental Clearance Certificate issuance process, train local government representatives and increase capacity building in adopting sustainable development goals through the National Institute of Local Government, as well as creating a master plan for environmental conservation to decrease future climate change. The government should review the *Environment Conservation Act 1995* and Environment Conservation Rules 1997 to (a) impose adequate monetary penalties for violation of environmental regulations, (b) make the procedures for conducting Environmental Impact Assessments and issuing ECCs more accurate, and (c) strengthen public participation in the environmental decision-making process.<sup>715</sup>

The government should amend the *Environment Court Act 2010* to (a) provide citizens with direct access to the Environment Courts without first having to register their complaints with the DoE, (b) create positions for technically competent experts in the courts’ adjudication panel, and (c) give it authority to try cases involving environmental regulations stipulated in all Acts and Rules of the land.<sup>716</sup>

Bangladesh should increase the involvement across governmental agencies and ministries, given that climate change will have both social and economic impacts. It should also improve integration between government departments to build a cross-departmental approach so that the government can monitor projects and achieve the best result. Ministries and governmental

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<sup>714</sup> Karim, Vincents and Rahim, above n 650.

<sup>715</sup> Ibid.

<sup>716</sup> Khan and Smith, above n 569.

agencies can play a leading role in building capacity at national and local levels. They can also establish local mitigation and sustainable development service centres to identify opportunities and provide assistance to project developers and other governmental officials. Sam Barrett has emphasised community involvement but notes that differences within communities can lead to injustices even when adaptation interventions have net benefits overall. In such cases, the government should intervene to distribute benefits equitably, create networks between local community leaders and integrate projects with the community to ensure climate justice.

## **8.6 Options for Policy-Makers: Prioritise Adaptation**

It has observed that adaptation has never been on an equal footing with mitigation.<sup>717</sup> While adaptation has received less attention than mitigation, now is the time for policy-makers to focus on adaptation measures to mitigate present future climate change impacts—otherwise, the impacts of climate change will force future investment in more expensive adaptation measures. The scale of adaptation required is also associated with the degree of mitigation, meaning that if policy-makers do not take decisions to limit emissions, the eventual cost of adaptation may be beyond the capacity of local economies, particularly those of the least developed and developing countries. For example, Bangladesh is a low-lying and ‘most climate-vulnerable’ developing country. For this reason, policy-makers need to focus on adaptation measures rather than mitigation. On the other hand, as a developing country Bangladesh has a lack of adaptation finance and depends on international adaptation funds. Litigation therefore has a role to play through CDM projects and SDM projects to reduce poverty and contribute to carbon reduction, and hence increase its national climate adaptation fund.

With the Paris Agreement putting more emphasis on adaptation, policy-makers can make adaptation policy a priority for the least developed and developing countries and change national adaptation laws and policies accordingly. Policy-makers can also develop a separate adaptation protocol under the UNFCCC based on the specific definition of achievable targets and specific sources of funding, separate from the voluntary fund. At the same time, policy-makers at district, national and international levels need to know how communities are being affected by climate change and to understand and respond to communities’ priorities and

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<sup>717</sup> E. L. F. Schipper, ‘Conceptual History of Adaptation in the UNFCCC Process’ (2006) 15 *Review of European Community and International Environmental Law* 82.



needs.<sup>718</sup> Bangladesh aims to undertake a gap analysis of its current institutional framework and strengthen institutions to enable effective access to international climate change funding, including the Green Climate Fund.<sup>719</sup> Policy-makers must focus on making development planning processes resilient to climate change, in order to deliver climate-resilient developmental outcomes.<sup>720</sup>

## 8.7 Legal Redress for Victims of Climate Change

Climate litigation is a new concept of a way to develop laws and involve government in addressing climate change. Christoph Schwarte, Executive Director of the Legal Response Initiative, states that

the adverse effects of climate change will drive litigation and other legal action. If compensation and liability had been addressed comprehensively in a fair and equitable manner, providing prompt, equitable and easy access to adequate compensation future litigation in the courts would be less of an issue—legally and in practice but since the international community has failed to address the matter of fundamental global environmental injustice (the inequitable use of atmospheric space) people, groups maybe even states will seek other remedies—including litigation.<sup>721</sup>

## 8.8 Issues for Further Research

There are alternatives to litigation that governments can explore, including the loss and damage mechanism discussed at COP 19. Bangladesh has played a leading role in designing and promoting this mechanism, under which developing countries are to be provided with protection against loss and damage caused by climate change impacts. This mechanism deals with the compensation associated with adverse effects of climate change. In the context of climate negotiations, loss and damage mechanisms offer an opportunity for the international community to establish a means for communities to access equitable and adequate compensation for the impacts of climate change.<sup>722</sup> Because climate change impacts are rapidly

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<sup>718</sup> Reid et al, above n 428.

<sup>719</sup> Janet A. Amponin and James W. Evans, *Assessing the Intended National Determined Contributions of ADB Developing Members* (Asian Development Bank, 2016), <<https://www.adb.org/sites/default/files/publication/189882/sdwp-044.pdf>>.

<sup>720</sup> Pervin et al, above n 320.

<sup>721</sup> Boom, Richards and Leonard, above n 672.

<sup>722</sup> M. Khan et al, *Compensation for Loss and Damage: Law and Justice Perspective* (Climate Justice Brief, 2013) cited in Boom, Richards and Leonard, above n 672.

increasing, loss and damage from climate change will impose social environmental and psychological harms that cannot be adequately addressed through adaptation and mitigation.

COP 21 also recognised the importance of loss and damage and has been integrated as an independent third pillar of the climate regime, but it has been highly controversial from the beginning. There is no international agreement on this mechanism and it remains an ambiguous concept that involves difficult issues, legal, political, scientific and ethical. In the absence of international involvement, many governments have started developing their own mechanism for loss and damage; Bangladesh is already establishing contingency funds for climate-related disasters (that is, developing a dedicated loss and damage mechanism).<sup>723</sup> This is an area of ripe for further research for Bangladesh has an urgent need for international compensation for climate change impacts.

Climate justice may thus be better promoted through compensation for loss and damage. The principle of climate justice should be mandatory in international agreements, not only for humanitarian assistance but also for environmental protection. Rapid and extensive mitigation may reduce the need for adaptation in future, and may also limit loss and damage. That is why the Paris Agreement encouraged parties to pursue domestic GHG reduction targets necessary to safeguard the human rights of all citizens.

Finally, this thesis concludes that climate justice could be promoted through a focus on respecting and protecting human rights and supporting the rights to development. International bodies such as United Nations have taken action by introducing various mechanisms to combat climate change. Bangladesh itself has taken actions as a climate-vulnerable developing country, such as adaptation to address climate change. It has focused on empowering local communities by utilising CBA and has also experienced some CDM projects aimed at achieving sustainable development goals. This thesis identifies further options for Bangladesh, through SDM and small-scale projects to reduce risk and harm from climate change while focusing on sustainable development. First and foremost, however, Bangladesh should take urgent legal action by enacting internal law and policies to address climate change and to ensure climate justice.

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<sup>723</sup> Julia Kreienkamp and Lisa Vanhala, *Climate Change Loss and Damage* (Global Governance Institute, 2017) < <https://www.ucl.ac.uk/global-governance/sites/global-governance/files/policy-brief-loss-and-damage.pdf>>



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