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**Research Paper**

# Policy Gaps and Needs Analysis for the Implementation of NDCs on Adaptation and Loss and Damage in Bangladesh, Nepal and Sri Lanka.

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## 2. Abstract

In 2015, the parties to the United Nations Framework Convention on Climate Change (UNFCCC) agreed on a long-term plan to limit global warming to below 2°C or 1.5°C through internationally coordinated, but nationally driven actions. Nationally Determined Contributions or NDCs are country-level commitments to achieve this goal.

Like many other developing countries, Bangladesh has included not only mitigation actions but also adaptation components into its NDCs.

This research aims to identify gaps and needs for the implementation of NDCs in Bangladesh, especially on the policy level, so as to develop recommendations to address them. The research identifies entry points and synergies between National Adaptation Plans (NAPs), Sustainable Development Goals (SDGs) and the Sendai Framework for Disaster Risk Reduction processes, the effective implementation of NDCs on adaptation and loss and damage, and their application in Bangladesh.

Major gaps in the implementation of Bangladesh's NDCs are a lack of institutional capacities and coordination, a lack of policies that directly and concretely

address climate change in the food security, livelihoods, and health protection sectors, the lack of inland flood protection and monsoon protection policies, the lack of disaster management facilities and training in flood-prone areas, the lack in climate change and especially adaptation awareness among ministries and other government institutions, and the lack of a finished NAP. The institutional arrangement for NDC implementation in Bangladesh is not yet operational, and the advisory and coordination committees could have more detailed guidelines and mandates. On the financial side, there is no specific allocation from the national budget for NDC implementation, and the NDC road map should include detailed financial and technical support. Loss and damage has not been integrated into the different institutions yet, although there are national mechanisms to cover some of its aspects.

As Bangladesh is one of the most vulnerable countries to the impacts of climate change, implementing the adaptation and loss and damage components of its NDCs is of great importance. The country has committed itself to implementing NDC adaptation goals through its NAP, but to be successful,

it needs to recognize and address the existing gaps. If Bangladesh can establish more effective coordination and build capacities and awareness among ministries and other government institution, secure financial support for adaptation actions, push forward the formulation of its NAP, promote transparency in administrative and

implementation processes related to the NDCs, develop a detailed monitoring plan, and revamp its institutional and policy landscape, it is on the right track to the successful implementation of the adaptation and loss and damage components of its NDCs.

### 3. Introduction

The Paris Agreement signed in 2015 and ratified by Parties in 2016, builds on the United Nations Framework Convention on Climate Change and is considered “historic” in the global climate regulatory regime due to its close to universal participation. The agreement sets forth an internationally coordinated, but nationally driven, long-term comprehensive action plan<sup>1</sup> to limit global temperature rise to “well below 2°C,” along with strong persuasion to limit it to 1.5°C,<sup>2</sup> and guide the post-2020 climate regime.<sup>3</sup> Compared to the Kyoto Protocol’s top-down, differentiated and rigid approach, the mitigation regime adopted by the Paris Agreement in 2015 is universal, participatory, progressive, bottom-up, and flexible. This bottom-up architecture relies on Parties’ unilateral determination of their

own mitigation pledges and is subject to an international review process conducted every five years.<sup>4</sup>

The Paris Agreement actualized this new pragmatic and discretionary regulatory framework through the Nationally Determined Contributions (hereinafter referred to as NDCs)<sup>5</sup> and intends to catalyse adequate mitigation actions with the highest possible participation and “ratchet” them up over time so that carbon neutrality can be achieved by the second half of the century.<sup>6</sup>

The NDCs are at the heart of the Paris Agreement for GHG reduction;<sup>7</sup> their implementation is critical for the achievement of the global 2°C/1.5°C temperature goal. They also embody the efforts of each country to reduce national emissions and adapt to the impacts of

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<sup>1</sup> Sharaban Zaman, ‘The Paris Agreement and the Challenges for Climate Change Policy Regime’ <

<http://www.dhakatribune.com/climate-change/2016/11/05/paris-agreement-challenges-climate-change-policy-regime/>> accessed 1 January 2019.

<sup>2</sup> The Paris Agreement, Dec. 1/CP.21, Annex, UN Doc. FCCC/CP/2015/10/Add.1, at 21 (Jan. 29, 2016), art 2.1

<sup>3</sup> Sharaban Tahura Zaman, ‘The ‘Bottom-Up Pledge and Review’ Approach of Nationally Determined Contributions (NDCs) In the Paris Agreement: A Historical Breakthrough or A Setback in New

Climate Governance?’ (2018) 5 IALS Student Law Review.

<sup>4</sup> Annalisa Savaresi, ‘A Glimpse into The Future of The Climate Regime: Lessons from The REDD Architecture’ [2016] SSRN Electronic Journal.

<sup>5</sup> Zaman, *supra* note 3.

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

<sup>7</sup> Sharaban Tahura Zaman, ‘Exploring the Legal Nature of Nationally Determined Contributions (NDCs) Under International Law’ (2015) 26 Yearbook of International Environmental Law, Oxford Journal, Volume 26, 1 October 2015, Pages 98–126, published 2017.

climate change. Under Article 4.2 of the Paris Agreement, each Party to the UNFCCC is legally bound to “prepare, communicate, and maintain successive NDCs that it intends to achieve.”<sup>8</sup>

Considering the important role of NDCs in global and national efforts to face climate change, this research aims to identify gaps and needs for the implementation of NDCs in Bangladesh, especially on the policy

level, so as to develop recommendations to address them. The research identifies entry points and synergies between NAPs, Sustainable Development Goals (SDGs) and the Sendai Framework for Disaster Risk Reduction processes, the effective implementation of NDCs on adaptation and loss and damage, and their application in Bangladesh.

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<sup>8</sup> Ibid.

## 4. Methodology

This research paper examines legislation, policies, and strategic documents related to the implementation of NDC submitted by Bangladesh in 2015 to identify and assess the existing gaps and needs for their implementation. The key focus of the research is the NDCs for Adaptation and Loss and Damage, and the study examines the overall mechanisms for the implementation of NDCs of Bangladesh and the institutional mechanism that facilitate this.

The research methodology combines desk research, expert interviews, and consultations for the data collection process of the research. The draft research was presented to key experts, and stakeholders working on climate change and NDCs in

Bangladesh for gaining comments, and inputs.

Following the identification of gaps and needs based on the aforementioned methods, recommendations to address them were developed based on inputs received by experts, and multiple stakeholder consultations were conducted for this purpose.

The research findings were presented for validation by key stakeholders and edited prior to being published. The final findings also contributed to the regional research paper, which provides a comparative study on the implementation of NDCs in Bangladesh, Nepal and Sri Lanka.

## 5. NDCs under the Paris Agreement

Article 3 of the Paris Agreement states that to achieve the purpose of this Agreement through the NDCs, each party is required to undertake and communicate ambitious efforts to contribute to the global response to climate change.<sup>9</sup> All state parties, through their NDCs, will determine their domestic contributions toward achieving the long-term goal of keeping global warming below 2 and ideally below 1.5 degrees Celsius compared to pre-industrial levels.

Furthermore, in light of the principle of “common but differentiated responsibilities and respective capabilities” (CBDR-RC),<sup>10</sup> countries can self-differentiate and contextualize their contributions based on national circumstances and priorities to perform their domestic mitigation pledges and targets. This allows countries to determine their contributions under the NDCs based on their country context.

The NDCs of each country primarily reflect the country’s mitigation paths, action plans,

and commitments to limit greenhouse gas (hereinafter referred as GHG) emissions. However, the scope and content of NDCs can vary, depending on the country’s domestic economic conditions, capabilities, priorities, and other circumstances. It is not mandatory for countries to include an adaptation component, but most countries have chosen to do so. According to the NDC Partnership, 131 out of 183 submitted NDCs refer to adaptation, and many of these mention the NAP process.<sup>11</sup>

However, most of these NDCs only set qualitative goals for adaptation, with only a small percentage setting quantitative goals either exclusively or as well. The sectors most frequently mentioned for adaptation are agriculture, water, health, infrastructure and transport, forestry, energy, and disaster risk reduction.<sup>12</sup> Regarding loss and damage, it is only mentioned in a good quarter of NDCs (28%), although the

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<sup>9</sup> Ibid, art 3.

<sup>10</sup> Supranote 2.

<sup>11</sup> Ndcpartnership.org. (2019). Adaptation Actions in NDC Partnership Plans: Opportunities for Alignment with NAP Processes |. [online] Available at: <http://ndcpartnership.org/news/adaptation->

[actions-ndc-partnership-plans-opportunities-alignment-nap-processes](#) [Accessed 4 Oct. 2019].

<sup>12</sup> GiZ (2018). Tool for Assessing Adaptation in the NDCs.

proportion is significantly higher among developing countries.<sup>13</sup>

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<sup>13</sup> Kreienkamp, Julia, and Vanhala, Lisa (2017). *Climate Change Loss and Damage*. Global Governance Institute.

## 6. The Impacts of Climate Change in Bangladesh

Bangladesh is home to 164.7 million people, the majority of which heavily depend on agriculture for their livelihoods and the national economy. Due to Bangladesh's geographic location, the dominance of floodplains, low elevation above sea level, high population density, high levels of poverty, and dependence on natural resources and services, the adverse impacts of climate change pose a crucial threat.<sup>14</sup>

Bangladesh is considered to be one of the most vulnerable nations in the world to climate change in the coming decades, owing to its climate trends, climate variability, and extreme weather events.<sup>15</sup> Devastating floods, droughts, storm surges, tropical cyclones, sea level rise, and salinity intrusion are major hazards caused or exacerbated by climate change. Millions of people as well as their livelihoods, infrastructure, and many sectors of the economy are severely impacted by rising sea levels, extreme weather events, and

slow-onset effects of climate change. Climate change threatens the nation's development efforts as well as human security and prosperity.<sup>16</sup>

Recognizing the gravity of the situation, the Government of Bangladesh has formulated a National Adaptation Programme of Action in 2005 and a Climate Change Strategy Action Plan in 2009 to counter and adapt to the impacts of climate change.

### **National Adaptation Programme of Action (NAPA), 2005**

The NAPA was adopted in 2005 to provide a framework for guiding the coordination and implementation of adaptation initiatives in Bangladesh. It uses a participatory approach and focuses on building synergies with related programs, setting forth coping strategies and mechanisms based on existing processes and practices to address the adverse impacts of climate change. The NAPA identified vulnerable areas and 15 projects as part of

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<sup>14</sup> (Sustainabledevelopment.un.org, 2014)  
<[https://sustainabledevelopment.un.org/content/dsd/resources/res\\_pdfs/ga-64/cc-inputs/Bangladesh\\_CCIS.pdf](https://sustainabledevelopment.un.org/content/dsd/resources/res_pdfs/ga-64/cc-inputs/Bangladesh_CCIS.pdf)> accessed 9 June 2019.

<sup>15</sup> (Bmet.org.bd, 2019)  
<<http://www.bmet.org.bd/BMET/resources/Static%20PDF%20and%20DOC/publication/Brief%20on>

%20Climate%20Change-%20Impact%20on%20Bangladesh.pdf> accessed 9 June 2019.

<sup>16</sup> Ministry of Environment, Forest and Climate Change (2019). Third National Communication of Bangladesh to the United Nations Framework Convention on Climate Change.

its adaptation strategy. The NAPA was updated in 2009 and in this version, 38 adaptation measures were identified. Under NAPA, the adaptation measures that cover the NDC sectors are as follows:

1. Food Security
2. Coastal Zone management
3. Develop Climate Resilient Agriculture, Fisheries and Livestock
4. Conservation of Forestry
5. Community Based Biodiversity Conservation
6. Improving Human Health
7. Building Climate Resilient Infrastructure
8. Disaster Management
9. Livelihood Resilience.

### **Bangladesh Climate Change Strategy Action Plan, 2009**

The NAPA process has been advanced through the adoption of the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) of 2008 (reviewed in 2009), which provides the climatic context, analyses socio-economic realities, outlines policies for promoting the well-being of vulnerable groups, and elaborates a set of programmes based upon broad areas of intervention. Under the overall guidance of

the National Environmental Committee chaired by the Prime Minister, BCCSAP is implemented by the MoEFCC. It is an overarching strategic document that sets the strategic direction for climate policy, with special focus on adaptation and low carbon development. In fact, the foundation of the NDCs submitted by Bangladesh is based on and aligned with BCCSAP, which identifies 44 adaptation and mitigation programmes under the following six pillars that correspond to the NDCs' adaptation sectors:

#### **1. Food security, social protection and health**

The objectives of this theme are mainly to amplify the resilience of vulnerable groups through livelihood diversification, better access to basic services, and social protection (e.g. safety nets, insurance); enhance food security at the local and national level by developing climate change resilient crop, fisheries and livestock systems; gear up the health systems and surveillance systems to meet future demands; and implement drinking water and sanitation programs in climate vulnerable areas.

#### **2. Comprehensive disaster management**

This is to strengthen the country's proven disaster management systems to deal with increasingly frequent and severe natural calamities. The Comprehensive Disaster Management programme comprised only four programs and ten actions to deal with the severe natural catastrophes as a result of climate change. Under this pillar, the Government of Bangladesh has begun to strengthen its capacity, along with that of civil society and communities, to manage natural disasters by modifying policies, laws and regulations that are already in place.

### **3. Infrastructure**

The infrastructure theme comprises three objectives; these are

- a) Repair and rehabilitate existing infrastructure,
- b) Plan, design and construct urgently needed new infrastructure and
- c) Strategically plan future infrastructure.

This ensures that existing assets (e.g., coastal and river embankments) are well-maintained and fit-for-purpose and that urgently needed infrastructure (e.g. cyclone shelters and urban drainage) is put in place to deal with the likely impacts of climate change. These

initiatives seem to fall into two categories; actions that are immediate and directly focus on humans vs. programs that focus on physical improvements over a longer timeframe.

### **4. Research and knowledge management**

BCCSAP (2009) has planned this pillar to provide and predict a wide range of research to estimate the scale and timing of likely climate change impacts on different sectors of the economy and socio-economic groups in various scales and timing to develop future investment strategies. This workplan also ensures that Bangladesh is networked into the latest global thinking on science and best practices in climate change management.

### **5. Mitigation and low-carbon development**

Despite low levels of development and negligible historic responsibility for climate change, many countries have recognized that they should not only adapt to but also work to mitigate climate change themselves. This can set an example for other countries and also increase the chance of global warming being halted substantially below 2°C. Bangladesh is one of the vanguards amongst these vulnerable countries who

wish to play their part in reducing emissions now and in the future (BCCSAP, 2009. P-23). To make this vision applicable BCCSAP (2009) has planned a further ten programs under this pillar.

#### **6. Capacity building and institutional strengthening**

Under this pillar is the intention to enhance the capacity of government

ministries and agencies, civil society, and the private sector to meet the challenge of climate change and mainstream them as part of development actions. The sixth pillar in the BCCSAP comprises six programs and eighteen actions under this theme.

The BCCSAP is currently being reviewed and updated, and the new version is due to be published in 2019.

## 7. The NDCs of Bangladesh

In 2015, Bangladesh communicated its first NDCs for the period up to 2030. They primarily consist of four key components which include mitigation, adaptation, NDC implementation, and support for NDC implementation.

The mitigation section of the NDCs includes the country's pledge to reduce its GHG emissions by 5% to 15% (subject to appropriate international support) by 2030 from the power, transport and industry sectors,<sup>17</sup> while the adaptation NDCs of Bangladesh outline existing contributions

from adaptation, future plans to support adaptation, and synergies with mitigation measures.

In addition to mitigation and adaptation NDCs, the two other components of Bangladesh's NDCs provide elements related to NDC implementation such as governance and coordination at the national level, and support for NDC implementation needed for the implementation of mitigation and adaptation NDCs, including outline plans to further quantify them.

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<sup>17</sup> Intended Nationally Determined Contributions (INDC), September 2015, Ministry of Environment

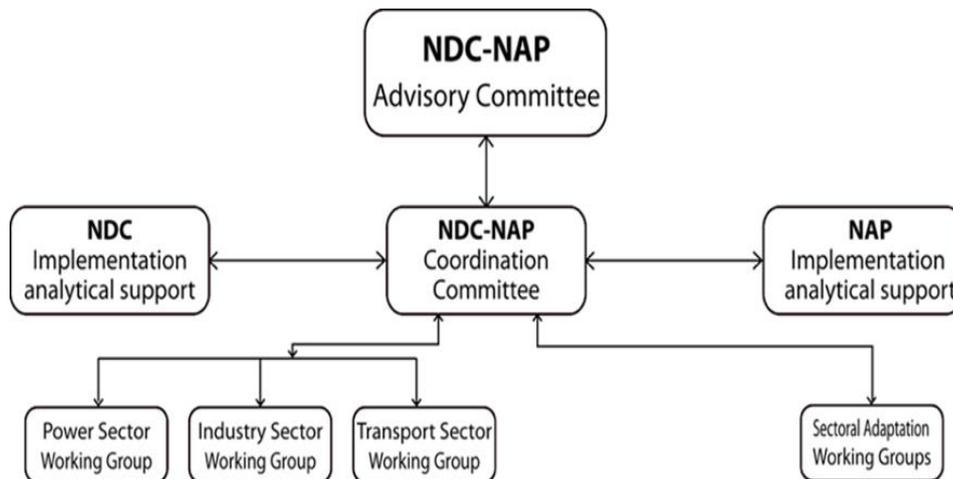
and Forests (MOEF) Government of the People's Republic of Bangladesh

## 8. Institutional Mechanisms for NDC Implementation in Bangladesh

Key to successful NDC implementation is good governance and coordination among sectors, different stakeholders, government, and civil society, to ensure that activities at the local level are appropriately aligned with the NDC. For governance and coordination of NDC implementation, an institutional arrangement is established under the “NDC Implementation Roadmap 2018.”<sup>18</sup> However, the arrangements

mainly aim to include and integrate NAP implementation side by side to NDC implementation under one single framework. The institutional arrangements are constituted by four committees, namely the NDC-NAP Advisory Committee, the NDC-NAP Coordination Committee, the NDC-NAP Implementation Analytical Support; and the NDC Sectoral Working Group.

### Governance arrangements for NDC-NAP



#### NDC-NAP Advisory Committee

The NDC-NAP Advisory Committee will be chaired by the Secretary of the Ministry

of Environment, Forest and Climate Change (MoEFCC) and will be the most senior decision-making body on NDC and NAP implementation in Bangladesh.

<sup>18</sup> Bangladesh NDC Implementation: Roadmap 2018, Chapter 1.3.

Senior representatives from the organisations listed below will be members of the Committee and give a final sign-off for proposed policies to be introduced, progress reports and other NDC and NAP implementation reports, before they are published and/or sent to their respective domestic or international audiences. The Committee will give strategic advice on cross-cutting issues regarding NDC implementation and will also regularly review progress on overall NDC implementation.

#### **NDC-NAP Coordination Committee**

The NDC-NAP Coordination Committee will be the main focal point for the UNFCCC and also act as the secretariat to the NDC Advisory Committee. It will be based within the MoEFCC as part of the ministry's lead role in the Government of Bangladesh on climate change and liaising with the UNFCCC. The key responsibilities of the committee are as follows:

- Responsibility for implementation of the Paris Agreement (PA) decisions within Bangladesh, reviewing the PA for key milestones and requirements, and ensuring that action is taken within the Government;
- Coordinating the regular update of NDCs and contributions to the Global Stocktake;

- Reporting to the UNFCCC on NDC and NAP issues through the Advisory Committee;
- Liaison with NDC Sectoral Working Groups;
- Managing of analytical support on NDC and NAP implementation (e.g. constituting the appropriate group(s), developing terms of reference for the analytical work and considering the need for external analytical work (e.g. consultancy projects) where limited capacity exists within government);
- Coordination of stakeholder engagement on NDC and NAP implementation;
- Making recommendations to the Advisory Committee on cross-cutting issues;
- Making recommendations to the Advisory Committee on new policies.

#### **NDC-NAP Implementation Analytical Support Team**

The NDC-NAP Implementation Analytical Support Team will provide regular and ad-hoc support for analysis and data, both to the NDC-NAP Coordination Committee and to Sectoral Working Groups. The key responsibility of the team are as follows:

- Agreement on consistent methodologies for analysing mitigation potential (e.g. common

- discount rates, common assumptions on technological uptake rates);
- Agreement on common parameters for MRV, e.g. data on population and GDP;
  - Ex-ante and ex-post reports on GHG savings from policies and measures;
  - Peer review of analysis carried out by others in the analytical pool;
  - Collection of data, both domestic data and international benchmarks that could be used in the absence of robust domestic data;
  - Review of international reports that might provide relevant information;
  - Feedback to NDC-NAP Coordination Committee on areas for improvement in the evidence base (e.g. suggestions for technical assistance projects that could help improve the robustness of data in each area).

The Department of Environment will manage the analytical support and put requests for analysis to the appropriate analysts. They will also coordinate strategic priorities on data, liaising with the NDC-NAP Coordination Committee in the MoEFCC, and the analysts as mentioned will identify the areas in need of further development to ensure that appropriate

resources and capacity building is targeted in these areas.

### **NDC Sectoral Working Group**

Three NDC Sectoral Working Groups are proposed, covering power, transport and industry, the three sectors with quantified GHG reduction commitments in Bangladesh's NDCs. Sectoral working groups will closely liaise with the NDC Implementation Coordination Team and other institutional structures. The Sustainable and Renewable Energy Development Authority (SREDA) will chair the Power Sector Working Group; The Road Transport and Highways Division (RTHD) will chair the Transport Sector Working Group; and the Ministry of Industries will chair the Industry Sector Working Group. Key responsibilities of the sectoral working groups are as follows:

- Track progress of sector level targets;
- Report to the respective implementation technical committee;
- Liaise with the NDC Implementation Coordination Team in the MoEFCC;
- Monitoring implementation of NDCs in the respective sector.

Under the NDC Sectoral Working Groups, the Sectoral Adaptation Working Groups are established.<sup>19</sup> The proposed Adaptation

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<sup>19</sup> Ibid.

Working Groups are put forward without prejudice to any institutional arrangements that would be set up to develop and implement the forthcoming NAP.<sup>20</sup> The Power, Industry and Transport Sectors Working Groups are expected to call on the Adaptation Working Group to provide support and possibly even to carry out studies to develop adaptation policy for the respective sectors.<sup>21</sup>

It is worth noting that the Coordination Committee will be headed by the Additional Secretary from the MoEFCC and the NDC-NAP Implementation Coordination Committee will liaise regularly with the NAP process to discuss synergies and ensure a joined-up approach. The inputs from the NAP process will essentially feed the adaptation component of the NDCs in due course while updating the existing or submitting the next NDCs.<sup>22</sup>

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<sup>20</sup> Ibid.

<sup>21</sup> Ibid.

<sup>22</sup> Ibid.

## 9. Adaptation and Loss & Damage in the NDCs of Bangladesh

As a country vulnerable to climate change, adaptation remains a top priority for Bangladesh in its NDCs. However, despite the increasing costs of climate hazards, loss and damage is not explicitly addressed in Bangladesh's NDCs but only included in different components of adaptation NDCs. Bangladesh has already undertaken initiatives to mainstream adaptation into national development processes, and the NDCs have identified key areas of intervention and actions as part of adaptation. The following sections elaborate the adaptation and loss and damage NDCs of Bangladesh.

### 9.1 Adaptation

Under the NDCs of Bangladesh, the primary goals for adaptation are to protect the population, to enhance their adaptive capacity and livelihood options, and to protect the overall development of the country in its quest for economic progress and wellbeing of the people<sup>23</sup>. Soon, Bangladesh will develop, adopt and implement its NAP to achieve these

adaptation goals and facilitate the integration of climate change adaptation action into the national development process.<sup>24</sup>

According to the Bangladesh NDC Implementation Roadmap 2018, the NAP will be the fundamental adaptation implementation policy, making it the means for realizing the priorities set out in the NDC.<sup>25</sup> However, the Roadmap depends upon the decisions of subsequent COPs regarding adaptation issues.<sup>26</sup>

It is worth noting that in order to support the NAP process and to enhance long term adaptation investment, UNDP has prepared a readiness support proposal for effective formulation and advancement of the NAP process in Bangladesh. The NAP formulation process was scheduled to start in April 2019, but it is still to be initiated by the relevant ministry as of October 2019.

The key areas of focus under Bangladesh's adaptation NDCs are food security, disaster management, coastal zone management, food control, rural electrification,

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<sup>23</sup> Ibid.

<sup>24</sup> Bangladesh NDC Implementation: Roadmap and Sectoral Mitigation Action Plans for Power, Transport and Industry Sectors.

<sup>25</sup> Ibid, Page 3.

<sup>26</sup> Ibid.

infrastructure, urban resilience, ecosystems, community-based conservation; and capacity building.

1. The key actions prioritised under the adaptation NDCs of Bangladesh include an improved Early Warning System for tropical cyclones, floods, flash floods, and droughts.
2. Disaster preparedness and construction of flood and cyclone shelters.
3. Tropical cyclones and storm surge protection.
4. Inland monsoon flood-proofing and protection.
5. Climate resilient infrastructure and communication.
6. Climate resilient housing.
7. Improvement of urban resilience through improvement of drainage system to address urban flooding
8. River training and dredging (including excavation of water bodies, canals and drains)
9. Stress tolerant (salinity, drought and flood) variety improvement and cultivation (including livestock and fisheries).
10. Research and knowledge management.
11. Adaptation on local-level perspectives etc.
12. Adaptation to climate change impacts on health.

13. Biodiversity and ecosystem conservation.

14. Capacity building at individual and institutional level to plan and implement adaptation programmes and projects in the country.

## 9.2 Loss & Damage

Bangladesh's NDCs do not contain a separate section on loss and damage. However, they provide aspects relevant to loss and damage under the sections related to adaptation NDCs. Among these are sectors such as disaster management, flood control, infrastructure, community-based conservation, and capacity building.

Actions under the adaptation NDCs of Bangladesh such as improved early warning system for tropical cyclones, floods, flash floods and droughts; disaster preparedness and construction of flood and cyclone shelters; tropical cyclones and storm surge protection; inland monsoon flood-proofing and protection; climate resilient infrastructure and communication; and climate resilient housing; river training and dredging; stress tolerant variety improvement and cultivation; capacity building at individual and institutional level overlap with areas to which loss and damage concept applies.

## 10. Fundamental Policy Directions and Sectoral Laws for NDC Implementation

Bangladesh has adopted various policies and strategic plans to address the adverse impacts of climate change. Among these are:

### **The Seventh Five Year Plan (2016-2020)**

The Seventh Five Year Plan (2016-2021) articulates new strategies, institutions, and policies that aim to create employment and skill development opportunities, supply credit for SME development, and empower people in many other ways. Along with growth, the Seventh Five Year Plan emphasizes social protection, urban transition, and a sustainable development pathway that is resilient to disaster and climate change.

The following gaps have been identified in the Seventh Five Year Plan:

- Tropical cyclones and storm surge protections, and inland monsoon flood proofing and protection are not addressed explicitly. However, the Five Year Plan broadly integrates the activities of investing in disaster risk reduction for resilience and enhance disaster preparedness for effective response.
- There is an apparent lack of communication in coordination and in development of both activities and expertise existing between national government and local level institutions.
- Climate resilience communication has not been incorporated into climate change adaptation.
- There is an effort to develop community-based adaptation that includes local level participation, but specific actions are not mentioned.
- Capacity building within governmental institutions as well as on an individual level is not comprehensively addressed in climate change capacity building. A capacity enhancement mechanisms is required to bridge the gaps.

### **Bangladesh NDC Implementation Roadmap, 2018**

The NDC Implementation Roadmap was prepared to secure the effective implementation of Bangladesh's NDCs under the Paris Agreement to manage growing emissions without compromising required development and to allow Bangladesh to play its role in global efforts to limit temperature rise to 2°C (preferably 1.5°C) above pre-industrial levels. The

NDC implementation roadmap covers the period from 2016 to 2025 and focuses principally on mitigation actions to reduce GHG emissions from the transport, power, and industry sectors.

The Roadmap declares that the adaptation component of the NDCs will be implemented, regulated and governed under the future NAP, which will be the major national document to steer adaptation activities in Bangladesh. The Roadmap also acknowledges that the NDC implementation process, via the NDC-NAP Implementation Coordination Committee, will liaise regularly with the NAP process to discuss synergies and ensure a joined-up approach. The inputs from the NAP process will feed the adaptation component of the NDCs during the review and new submission processes.

### **National Adaptation Plan (NAP)**

For adaptation, the NAP will be the principal policy document. Bangladesh is currently formulating the NAP under the NAP Readiness Proposal with a focus on long term adaptation investment and enhancing the national capacity for integrating climate change adaptation into planning, budgeting, and financial tracking processes. The NAP process is expected to be built on existing experience of formulation and implementation of NAPA,

BCCSAP, the Seventh Five Year Plan (2016-2020), the 2015 NDCs, the 2015 NAP Roadmap for Bangladesh, and other programme and project activities of the MoEFCC and other sectoral ministries.

## **10.1 Relevant Laws, Policies, Regulations and Gap Analysis by Sector**

In addition to these fundamental policy instruments, Bangladesh has a number of sectorial laws and policies that can support the effective implementation of NDC. The following section examines in detail all thirteen NDC sectors, their prioritized actions, institutional setup, relevant policies and legislation, and the gaps identified by this research.

### **NDC Sector 1: Food Security**

**Prioritized Actions:** Improvement and cultivation of stress tolerant (salinity, drought and flood) varieties (including livestock and fisheries)

**Implementing Ministry:** Ministry of Food; Food Planning and Monitoring Unit

#### **Relevant Laws, Policies and Regulations:**

##### **Policies, Strategies & Plans**

National Food Policy Plan of Action 2008-2015; Country

Investment Plan for Food Security 2011; Bangladesh Second Country Investment Plan: Nutrition Sensitive Food System (2016-2020); National Food Policy of 2006

### **Legislation**

The Food Safety Act 2013; the Food Safety Rules 2014; Food Safety Regulation 2017

### **Identified Gaps for Implementing Bangladesh's NDCs:**

- In the Food Safety Act 2013, the Food Safety Rules 2014, and the Food Safety Regulation 2017, no reference to climate change is made.
- The Country Investment Plan for Food Security assesses the needs for additional financial resources to achieve some of the key Sustainable Development Goals and to create a nutrition-sensitive food system that works to ensure food and nutrition security in a coordinated way. It prioritizes investments to integrate and coordinate action across sectors and ministries for better effectiveness. The Second Country Investment plan proposes 13 investment

programmes to improve food and nutrition security in an integrated way. It is anchored in existing national policies and programmatic frameworks and incorporates the priorities expressed by stakeholders, ranging from government agencies to civil society to the private sector. It emphasizes the enhancement of accessing social protection and safety nets and increased resilience. The plan strengthens the enabling environment and cross-cutting programmes for achieving food and nutrition security.

- The National Food Policy Plan of Action 2008-2015 does not mention stress tolerance or improvement/cultivation for the purpose of adapting to climate change, however, these do appear in the Capacity Development Plan under the Agriculture Sector. Responsible agencies include DAE, DoE, BRRI, BWDB, NARS. NGOs and Farmer Communities are also acknowledged as having responsibility for attaining desired outcomes. The Nutrition Sensitive Food System (2016-

2020) and the National Food Policy of 2006 do not look at food security in the context of climate change. Salt tolerant crops are mentioned in the 2005 Coastal Zone Policy, but not in any of the food security policies listed above.

## **NDC Sector 2: Health Protection**

**Prioritized Actions:** Adaptation to climate change impacts on health

**Implementing Ministry:** Ministry of Health; Climate Change and Health Promotion Unit (CCHPU); Health Services Division; Medical Education and Family Welfare Division

### **Relevant Laws, Policies and Regulations:**

#### **Policies, Strategies & Plans**

Health Policy, 2011; Strategic Plan for Health, Population and Nutrition Sector Development Program (HPNSDP) 2011-2016

### **Identified Gaps for Implementing Bangladesh's NDCs:**

- The aim of the 2011 National Health Policy is to ensure an effective health care system that responds to the need of a healthy nation. The health policy

identifies as major threats respiratory diseases, heat strokes, cold wave related illness, vector borne diseases like malaria or dengue, waterborne diseases like cholera, and increased malnutrition caused by reduced food production due to climate change and natural disasters. Therefore, the policy aims to monitor disease and health disasters to discover ways to reduce adverse effects due to climate change. It principally commits to adopt a health safety net comprising of health services, emergency relief, medicine, and instruments for people affected by natural disasters and climate change. In order to achieve this aim and fulfil its principle related to climate change, the policy took the following strategy:

“A concerted effort will have to be made to protect health from adverse effects of climate change. To this end, a national program outline will be developed in order to reduce the burden of diseases due to climate

change. Strengthening of public health services needs to be a central component of adaptation to climate change. The existing health research agenda will include the adverse effect of climate change on health, and field surveys and studies will be conducted to identify the short, medium, and long-term effects of climate change on health.”

- HPNSDP 2011-2016 identifies the key interventions required to accelerate the pace of the Health, Population and Nutrition sector in Bangladesh. The HPNSSP sets out what the sector’s strategic priorities are and explains to a certain extent how these will be addressed. The Strategic Plan 2011-2016 is more elaborate to meet the challenges of climate change. The strategic plan acknowledges increasing incidence of common and non-conventional diseases some of which due to climate change and natural disasters. It proposes establishment of an autonomous institute namely

“Environmental and Occupational Safety and Health” manned by relevant multidisciplinary personnel for protecting not only the safety, health and welfare of people engaged in work or employment, but also with the environment and the community. The strategic plan further identified that – “the initial health risks will be on the groups bearing most of the resulting disease burden, i.e., poor children, women and elderly people”. In this context, creating a well-coordinated approach for protecting health from climate change remains a great challenge for the government that can only be achieved by effective surveillance system and increased institutional capacity to manage these problems including of health professionals.

### **NDC Sector 3: Water Security**

**Prioritized Actions:** No identified prioritized actions.

**Implementing Ministry:** Ministry of Water Resources (MoWR)

**Relevant Laws, Policies and Regulations:**

**Policies, Strategies & Plans**

National Water Policy, 1999;  
Master Plan of Haor Areas, 2012

**Legislation**

Bangladesh Water Act, 2013; The National River Protection Commission Act, 2013; The Sand Quarry and Earth Management Act, 2010; Bangladesh Oceanographic Research Institute Act, 2015; Bangladesh Haor and Wetland Development Board Act, 2013

**Identified Gaps for Implementing Bangladesh's NDCs:**

- In the 2013 Bangladesh Water Act, the 2013 National River Protection Commission Act, the 2010 Sand Quarry and Earth Management Act, the 2015 Bangladesh Oceanographic Research Institute Act, and the 2013 Bangladesh Haor and Wetland Development Board Act, there is no reflection of water security in the context of climate change.
- The 1999 National Water Policy adopts the objectives of

improved water resources management and protection of the environment. However, the Policy document makes no reference of Climate Change.

- The MoWR developed the Master Plan of Haor Areas (2012) which addresses climate impacts and vulnerabilities in water resources in Haor basins in its 23 sections. The Master Plan recognizes climate change and climate variability stating that, “excess rainfall in the upstream hilly areas and subsequent runoff, river sedimentation, unplanned road and water management infrastructure, deforestation and hill cuts, landslide, improper drainage and the effect of climate change and variability can be viewed as the main reasons for the devastation caused by flash floods.” The Master Plan also recognizes the climate change implications and the loss of fisheries biodiversity, which is evident in the haor area. It identifies the pillars, themes and programmes of BCCSAP (2009) relevant to haor basin management. It is

worth noting that, “reducing climate impacts and its vulnerabilities” is not among the six national goals of the Master Plan nor in its six key strategies. However, strategies related to improved water and disaster management partially cover climate change issues.

#### **NDC Sector 4: Social Protection and Livelihood**

**Prioritized Actions:** Tropical cyclones and storm surge protection; inland monsoon flood-proofing and protection; stress tolerant (salinity, drought and flood) variety improvement and cultivation (including livestock and fisheries); adaptation on local-level perspectives

**Implementing Ministry:** The Ministry of Social Welfare; Rural Development and Co-operatives Division, Ministry of Local Government, Rural Development and Cooperatives; The Ministry of Women and Children Affairs; the Ministry of Food; The Ministry of Disaster Management and Relief; Ministry of Health and Family Welfare; Ministry of Labour and Employment; Finance Division; Ministry of Agriculture; Ministry of Fisheries and Livestock; Ministry of Commerce; Planning Commission.

#### **Relevant Laws, Policies and Regulations:**

##### **Policies, Strategies & Plans (Social Protection)**

National Social Security Strategy (NSSS) 2015; National Women Development Policy 2011; National Education Policy, 2010.

##### **Policies, Strategies & Plans for Livelihood Related to Agriculture**

National Agriculture Policy, 2013; National Agriculture Policy, 2018 (Draft) National Agricultural Extension Policy, 2015; Climate Resilient Crop Variety and Technology Development Policy, 2010; Integrated Small-Scale Irrigation Policy, 2014; Plan of Action on Disaster and Climate Risk Management in Agriculture for Department of Agricultural Extension, 2015; Master Plan for Agricultural Development in the Southern Region of Bangladesh, 2013; Agricultural Research Vision 2030

##### **Policies, Strategies & Plans for Livelihood Related to Fisheries**

National Shrimp Policy, 2014; Neemgachi Community Based Aquaculture Management Policies, 2011; the Shrimp Plot Lease,

Renewal, Management and Development Policy, 2013

### **Identified Gaps for Implementing Bangladesh's NDCs:**

#### **Social Protection related policies:**

- The National Women Development Policy 2011 reflects the CEDAW charter to ensure equality of men and women in all sectors in light of the Bangladesh constitution. To ensure equal opportunity and partnership of women in property, employment, market and business, and to ensure rights of full control over the assets earned through inheritance, loans, land and market management, the government incorporated a number of policies. However, gender sensitivity in regard to climate change impacts and climate action is not much reflected here.
- NSSS provides eleven sections related to climate change impacts and vulnerabilities on different sociological contexts including women and children. It provided guidance to reduce risks and vulnerabilities from

climate change and environmental degradation, and disaster preparedness through required social security strategy and social safety nets. However, local level adaptation strategies, stress tolerant variety improvement and cultivation are not covered under the strategy.

- The 2010 National Education Policy aims to secure proper quality education at each level. It also aims to spread ICT education. Though the policy makes no reference to climate change, it can support securing social protection.

#### **Agriculture related policies:**

- The objectives of the National Agriculture Policy 2013 are to promote effective initiatives to establish a self-reliant and sustainable agriculture that is adaptable to climate change and responsive to farmers' need. The Policy of 2013 emphasized for research on the weather forecast in the context of climate change and crop production and encouraged production and manufacturing

of agricultural machineries suitable in socio-economic, environment and climate change context.

- The 2013 National Agriculture Policy aims to tackle other challenges including the adverse impacts of climate change in the farm sector. However, the 2018 National Agriculture Policy has put emphasis on investment including quality seed production, fertilizer and irrigation management, bio-technology, farm mechanization, agriculture cooperative and marketing, women empowerment in agriculture, natural resource management, specialized agriculture, regional special agriculture, involvement of the youth force, agriculture rehabilitation, agriculture afforestation, safe and nutritious food production, use of information and communication technology. Natural disaster and agriculture rehabilitation, flood, extreme temperature, cyclone, high and low tides, drought, thunderbolts, submergence and

salinity have also been addressed by the policy for taking appropriate steps both from research and farmers level to avoid productivity loss under the situation. It addresses stress tolerant (salinity, drought and flood) variety improvement and cultivation. It also acknowledges adaptation on local-level perspectives.

- Climate Resilient Crop Variety and Technology Development Policy, 2010; Integrated Small-Scale Irrigation Policy, 2014; Plan of Action on Disaster and Climate Risk Management in Agriculture for Department of Agricultural Extension, 2015; Master Plan for Agricultural Development in the Southern Region of Bangladesh, 2013; Agricultural Research Vision 2030 has a good reflection of climate change throughout the documents which can be supportive to the implementation of NDC.

### **Policies, Strategies & Plans for Livelihood Related to Fisheries**

- The National Shrimp Policy considers the climate change

impacts and vulnerabilities in shrimp sector. The 2014 policy also emphasizes promoting environment friendly shrimp farming, increasing crop diversification and crop rotation. However, there is still a lack of well-structured adaptation strategy to promote sustainability of shrimp farming.

- The Shrimp Plot Lease, Renewal, Management and Development Policy, 2013 is more focused on management of shrimp plot lease and its renewal. However, it could be expanded further to integrate climate change issues.

## **NDC Sector 5: Comprehensive Disaster Management**

**Prioritized Actions:** Improved Early warning system for tropical cyclones, floods, flash floods and droughts; disaster preparedness and construction of flood and cyclone shelters; tropical cyclones and storm surge protection; inland monsoon flood-proofing and protection

**Implementing Ministry:** Ministry of Disaster Management and Relief;

Department of Disaster Management; Disaster Management Bureau (DMB); the National Disaster Management Council (NDMC); Inter-Ministerial Disaster Management Coordination Committee (IMDMCC); and the Cabinet Committee on Disaster Response (CCDR).

### **Relevant Laws, Policies and Regulations:**

#### **Policies, Strategies & Plans**

National Disaster Management Policy 2015; Cyclone Shelter Construction, Maintenance and Management Policy 2011; National Plan for Disaster Management 2010-15; National Plan for Disaster Management (2016-2020) [Draft]; Comprehensive Disaster Management Plan (CDMP).

#### **Legislation**

Standing Order on Disaster (SoD) 2010; Disaster Management Act, 2012; Standing Orders on Disaster, 2010; Committee (Structure and Functions) Rules, 2015

### **Identified Gaps for Implementing Bangladesh's NDCs:**

- The overall disaster management system in Bangladesh has shifted the paradigm from response/relief-

oriented to a comprehensive approach and risk reduction culture.

- The Standing Orders on Disaster 2010 aim at preparing and protecting people at grass root levels and increasing their capacities to cope with and recover from disasters. The Orders outline the activities of each Ministry, major Agencies / Departments so as to handle emergency situations efficiently. The SoD made the disaster management method clear and comprehensive with operational direction and co-ordination.
- Disaster Management Committee system at all level. Under the National Disaster Management Policy, there is National Disaster Management Council (DMC) headed by the Honourable Prime Minister to formulate and review the disaster management policies and issue directives to all concerns. Inter-Ministerial Disaster Management Co-ordination Committee (IMDMCC) headed by the Honourable Minister in charge

of the Disaster Management and Relief Division (DM&RD) to implement disaster management policies and decisions of NDMC / Government. At sub-national levels there are District Disaster Management Committee (DDMC) headed by the Deputy Commissioner (DC); Upazila Disaster Management Committee (UZDMC) headed by the Upazila Nirbahi Officer (UNO); Union Disaster Management Committee (UDMC) headed by the Chairman of the Union Parishad to coordinate, review and implement the disaster management activities of the concerned Union. The SOD assigns the entire task of different periods of disaster to each level of National Disaster Management Council (DMC). However, among the ministries there are lack of awareness of those tasks. Holding a regular meeting to prepare for each period of disaster is one of their key responsibilities but they have not been held in many cases.

- Policies also include a wider social safety-net programme.
- Minimal action in the National Disaster Management Policy 2015 and Comprehensive Disaster Management Plan is targeted specifically at droughts or flash floods, instead the concentration includes shelter, social protection, preparedness and early warning system.
- Community-Based Disaster Management Practices are promoted in overall all related policies in Bangladesh.
- No action listed for inland flood-proofing and monsoon protection in the National Disaster Management Policy 2015 nor Comprehensive Disaster Management Plan;
- The Five Years Plan broadly integrates the activities of investing in disaster risk reduction for resilience and enhance disaster preparedness for effective response;
- The 2005 Coastal Zone Policy addresses actions for preparedness with a focus on cyclones. It also puts emphasis on floods; whether or not these are comprehensive or will be

effective is uncertain. Salt tolerant crop varieties are mentioned here, not in the food security policies.

## **NDC Sector 6: Coastal Zone Management, including Salinity Intrusion Control**

**Prioritized Actions:** Tropical cyclones and storm surge protection

**Implementing Ministry:** Ministry of Water Resources; Water Resources Planning Organization (WARPO)

### **Relevant Laws, Policies and Regulations:**

#### **Policies, Strategies & Plans**

Coastal Zone Policy, 2005; Coastal Development Strategy 2006; Land Use Policy 2001; The National Water Policy 1999; The Seventh Five Years Plan

### **Identified Gaps for Implementing Bangladesh's NDCs:**

- In the Seventh Five Year Plan, tropical cyclones and storm surge protections, and inland monsoon flood proofing and protection are not addressed explicitly.
- The Coastal Zone Policy 2005 provides a policy framework for

long-term integrated Coastal Zone Management. The Coastal Development Strategy 2006 establishes strategic priorities and activities for integrated Coastal Zone Management. The government has also approved the Priority Investment Program to be implemented during 2006–2010. Coastal Zone Policy 2005 and Coastal Development Strategy 2006 are some of the milestone achievements. However, implementation of policy and strategy directives remains a key issue and have not properly implemented. Some of the key concerns that need to be addressed are as follows—immediate establishment of the “integrated Coastal Zone Management” coordinating arrangement, as approved under the Coastal Zone Policy 2005, to coordinate and harmonize different agencies active in the coastal zone; prevention of deforestation of the coastal green belt by involving coastal communities in its maintenance.

- The Land Use Policy of 2001 has provided guidelines for the protection of agricultural land,

water bodies and the optimal use of other land, as well as for restriction or minimization of the acquisition of land for non-productive use. There are 28 policy directives that should be followed by all concerned in land management and administration. However, the institutional structure to implement this policy and the necessary arrangements for cooperation are not functional as yet. The policy calls for raising awareness on the issues of conservation of land, and for active participation of the ministries, departments and agencies, but does not have any action plan to follow up the policy. There is yet to adopt any initiative to demarcate land zoning, as approved under the 2001 Land Use Policy. Capacity development for sustainable land management is needed.

## **NDC Sector 7: Flood Control and Erosion Protection**

**Prioritized Actions:** Disaster preparedness and construction of flood; inland monsoon

flood-proofing and protection; river training

**Implementing Ministry:** the Bangladesh Water Development Board (BWDB); Water Resources Planning Organization; Bangladesh Water Development Board; Joint River Commission; Bangladesh Meteorological Department (BMD); Local Government Engineering Department; Disaster Management Bureau (DMB); Directorate of Relief; Local Government Institutions (LGI)

**Relevant Laws, Policies and Regulations:**

**Policies, Strategies & Plans**

National Water Plan, 1986; Flood and Water Management Strategy, 1996; National Water Policy, 1999; National Water Management Plan (NWMP) 2001; Comprehensive Disaster Management Plan (CDMP); Bangladesh Delta Plan 2100; Master Plan of Haor Areas, 2012

**Legislation**

The National River Protection Commission Act, 2013; the Sand Quarry and Earth Management Act, 2010; Bangladesh Oceanographic Research Institute Act, 2015; Bangladesh Haor and Wetland Development Board Act, 2013

**Identified Gaps for Implementing Bangladesh's NDCs:**

- The National Water Policy (1999) sketches out appropriate measures for disaster protection, but it does not particularly indicate plans on disaster preparedness or flood/cyclone shelters.
- Disaster management facilities in the flood prone areas are a major concern. In the Master Plan of Haor Areas, the projects under water resources hardly provide information on river training, disaster preparedness, and construction of flood and cyclone shelters policies/strategies.
- Bangladesh Capacity Development Action Plan (2011) covers the different climatic and environmental concerns of Bangladesh, e.g. biodiversity, soil salinization, river bank erosion and drought; particular activities related to soil erosion and water resource management rely heavily on the MoWR, BWDB in addition to the MoEF and LGD.

## NDC Sector 8: Rural Electrification

**Prioritized Actions:** No identified prioritized actions.

**Implementing Ministry:** Ministry of Power, Energy and Mineral Resource; Bangladesh Rural Electrification Board (REB); Local Government Engineering Department (LGED); Bangladesh Power Development Board (BPDB); Sustainable Energy Development Agency (SEDA)

### Relevant Laws, Policies and Regulations:

#### Policies, Strategies & Plans

Renewable Energy Policy of Bangladesh, 2008; Power System Master Plan, 2016; Action Plan for Energy Efficiency & Conservation, 2013; Country Action Plan for Clean Cook stoves, 2013

#### Legislation

Rural Electrification Board Ordinance, 1977; Rural Electrification Board Act 2013; Electricity Act, 2018

### Identified Gaps for Implementing Bangladesh's NDCs:

- The 1977 Rural Electrification Board Ordinance, the 2013 Rural Electrification Board Act, and the 2018 Electricity Act have the least reflection of

energy transition and climate change issues.

- The 2008 Renewable Energy Policy of Bangladesh emphasizes the development of rural areas through rural electrification. It also recognizes the need for energy security and to drastically cut global emissions for mitigating climate change. However, the policy set no specific plans on how to disseminate renewable energy technologies in rural areas.
- The Power System Master Plan set forth long term planning up to 2030. The key strategy of the plan is heavily fossil fuel focused, for example in enhancing gas exploration and production, developing domestic coal, coal import (long term contract), and a deep sea port for coal handling and so on, which are contradictory with the NDCs 5% emission reduction goal.
- The 2013 Action Plan for Energy Efficiency & Conservation set a cohesive framework for energy efficiency and conservation

activities under the guidance of the Sustainable and Renewable Energy Development Agency (SREDA). The plan provides an institutional framework and sets up how capacity will be managed in the energy sector. These include an energy star labelling programme, an improved cook stove programme, and installation of solar panels. The Plan has a target to improve 15% of primary energy consumption per GDP by 2021, and 20% by 2030 against a 2015 baseline.

- The Energy Efficiency and Conservation Plan up to 2030 aims to provide clean cookstoves for at least 30 million people by 2030. It inserts strategies for affordable, accessible, clean and efficient cooking solutions with the participation of national government, NGOs, and private enterprises. However, the plan is yet implement adequately to achieve the target.

## **NDC Sector 9: Resilient Infrastructure**

**Prioritized Actions:** Construction of flood and cyclone shelters; inland monsoon flood-proofing and protection; climate resilient infrastructure and communication; climate resilient housing

**Implementing Ministry:** Local Government Engineering Department; Ministry of Finance

### **Relevant Laws, Policies and Regulations:**

#### **Policies, Strategies & Plans**

The Climate Resilient Infrastructure Mainstreaming (CRIM) project; Coastal Climate Resilient Infrastructure Project

### **Identified Gaps for Implementing Bangladesh's NDCs:**

- Of the projects deemed relevant, one focuses on infrastructure for rural floods, the other on rural cyclones.
- Bangladesh's Capacity Development Action Plan includes a sustainable housing programme for communities which keeps in mind the potential hazards they face (NHA implementation).

- Much of infrastructure funding and focus is otherwise covered under the NAPA.
- There are no specific legislations and policies for resilient infrastructure.

### **NDC Sector 10: Urban Resilience**

**Prioritized Actions:** Inland monsoon flood-proofing and protection; climate resilient housing; improvement of urban resilience through improvement of drainage system to address urban flooding

**Implementing Ministry:** Ministry of Planning; Ministry of Local Government (City Corporation)

#### **Relevant Laws, Policies and Regulations:**

##### **Policies, Strategies & Plans**

The Climate Resilient Infrastructure Mainstreaming (CRIM) project; Bangladesh Urban Resilience Project

#### **Identified Gaps for Implementing Bangladesh's NDCs:**

- Drainage provisions only appear in the Climate Resilient Infrastructure Mainstreaming (CRIM) project, but the nature of this project does not ensure

long-term funding and prioritization of these efforts.

- There are no specific legislations and policies for urban resilience and a lack of focus on mainstreaming climate risks in planning and construction.

### **NDC Sector 11: Ecosystems-Based Adaptation (including forestry co-management)**

**Prioritized Actions:** Adaptation on local-level perspectives; biodiversity and ecosystem conservation

**Implementing Ministry:** Ministry of Environment, Forest and Climate Change; Department of Environment

#### **Relevant Laws, Policies and Regulations:**

##### **Policies, Strategies & Plans**

National Biodiversity Strategy and Action Plan of Bangladesh 2016-2021

#### **Identified Gaps for Implementing Bangladesh's NDCs:**

- The National Biodiversity Strategy and Action Plan of Bangladesh 2016-2021 recognizes the synergies and relations between biodiversity

conservation and international agreements. However, there is little elaboration on the nexus between climate change and biodiversity and its significance on the need for effective strategies and plans.

- In coastal Bangladesh, ecosystems-based adaptation is implemented to enhance the resilience of coastal agriculture, fisheries, forestry, and settlements against the impacts of both climatic and non-climatic stressors.

## **NDC Sector 12: Community-Based Conservation of Wetlands and Coastal Areas**

**Prioritized Actions:** River training and dredging (including excavation of water bodies, canals and drains); adaptation on local-level perspectives

**Implementing Ministry:** Ministry of Environment, Forest and Climate Change; Department of Environment

### **Relevant Laws, Policies and Regulations:**

#### **Policies, Strategies & Plans**

Bangladesh Climate Change and Gender Action Plan; National Biodiversity Strategy and Action

Plan of Bangladesh 2016- 2021; Bangladesh National Conservation Strategy (2016-2031); Jalmohal Management Policy, 2009.

#### **Legislation**

The Sand Quarry and Earth Management Act, 2010; Ecological Critical Area Management Rules, 2016; the Bangladesh Biosafety Rules, 2012; Wildlife (Preservation & Security) Act, 2012; Biodiversity Act, 2017

### **Identified Gaps for Implementing Bangladesh's NDCs:**

- The 2016 Ecological Critical Area Management Rules, the 2012 Bangladesh Biosafety Rules, the 2012 Wildlife (Preservation & Security) Act, and the 2017 Biodiversity Act reflect community-based conservation of wetlands from the context of co-management. They also incorporate provisions related to community empowerment; however, these laws are yet to effectively implemented.
- The Bangladesh Climate Change and Gender Action Plan reflects the Millennium Development Goals (MDGs),

the CEDAW (1979), and the Beijing Platform of Action (1995). The intention of the plan is to empower and respond to the needs of the women in the context of climate change. The plan seeks to mainstream gender in climate change and use opportunities that promote gender equality and facilitate transformational change in climate action as outlined in the BCCSAP, the NAPA, and other policy documents. Importantly, it also seeks to make communities more resilient. The underlying principle of the plan is the transformative nature of gender interventions. The plan establishes clear objectives and outlines substantial activities that are accompanied by reachable indicators in four pillars. It highlights the specific contribution women do and can make within each of these as well as the required interventions necessary to incorporate the role of women effectively over a timeframe of five years, from 2013/14-2018/19.

- Developing community-based adaptation, including local level participation, is included in the Seventh Five Years Plan, but specific actions are not mentioned
- In the National Biodiversity Strategy and Action Plan of Bangladesh 2016-2021, capacity building at individual level emphasising on grass-root/community level development and integration is not sketched out fairly.
- Under the National Biodiversity Strategy and Action Plan of Bangladesh restoration actions, proposed/plans for degraded wetlands or coastal areas are not clearly outlined.
- Biodiversity and conservation identified by the Bangladesh Capacity Development Action Plan (2011) as an area of significant challenge; although the document identifies the capacity needs for this area, it is unclear whether these are being fulfilled.
- The Bangladesh National Conservation Strategy (2016-2031) is prepared and approved

with the expectation that it will be a key government document and provide a guideline to conserve natural resources. However, its implementation is not yet concrete.

- The 2009 Jalmohal Management Policy reflected well the community-based wetland conservation.

### **NDC Sector 13: Capacity Building**

**Prioritized Actions:** Disaster preparedness; tropical cyclones and storm surge protection; inland monsoon flood-proofing and protection; climate resilient communication; research and knowledge management; capacity building at individual and institutional level to plan and implement adaptation programmes and projects in the country

**Implementing Ministry:** Ministry of Planning; Ministry of Finance; Ministry of Environment and Forests; Ministry of Local Government, Rural Development and Cooperative; Ministry of Agriculture; Ministry of Commerce; Ministry of Water Resources

#### **Relevant Laws, Policies and Regulations:**

##### **Policies, Strategies & Plans**

Bangladesh Capacity Development Action Plan for Sustainable Environmental Governance, 2011; the Seventh Five Year Plan.

#### **Identified Gaps for Implementing Bangladesh's NDCs:**

- The 2011 Bangladesh Capacity Development Action Plan for Sustainable Environmental Governance summarizes Bangladesh's existing capacity in addressing climate change, biodiversity and land degradation problems. It includes an action plan developed to improve the country's capacity in the public and private sectors and at individual, institutional and policy levels. It adequately accommodates the capacity building issue from the context of climate change.
- In the Seventh Five Year Plan, capacity building at governmental institutions as well as the individual level is not comprehensively addressed; climate change capacity building and requires capacity enhancement mechanisms to bridge the gaps.

- The Seventh Five Year Plan includes lack of communication in coordination and in development of activities and expertise between

governmental institute and local level institutions. Climate resilience communication has not been incorporated into climate change adaptation.

## 11. Financing NDCs Implementation

No specific financing request or allocation from the national budget is included in the NDC of Bangladesh or in the NDC Implementation Roadmap, 2018. However, the NDC indicates need for international financial assistance.

In 2014, the government adopted a Climate Fiscal Framework (CFF), which aims to establish a climate expenditure tracking framework for the budget submissions of all line ministries. A climate dimension is part of all budget circulars and therefore the strategic directions given to ministries. The CFF was reviewed and updated in 2016, and the government is in the process of mainstreaming a climate change dimension into other financial policies and instruments as well (for example the Climate Inclusive Debt Management Strategy or the Climate Sensitive Lending policy).

### **Bangladesh Climate Change Trust Fund (BCCTF)**

Under the Climate Change Trust Fund Act 2010, the Bangladesh Climate Change Trust Fund was established. BCCTF

provides funds to programs and projects from the national budget to help communities recover and become resilient to climate change impacts. The fund is managed by the Bangladesh Climate Change Trust (BCCT) and the Government of Bangladesh.

### **Bangladesh Climate Change Resilient Fund (BCCRF) Act, 2010**

Under the Bangladesh Climate Change Resilient Fund (BCCRF) Act, a trust fund was established in 2010 to support the projects under Bangladesh's Climate Change Strategy and Action Plan (BCCSAP) and build community resilience to the effects of climate change. BCCRF was managed and implemented by the Government of Bangladesh. A technical assistance portion of the BCCRF was managed by the World Bank with agreement of the Government of Bangladesh. This fund became operational in 2010, but closed its operations again in 2016.

## **12. Measurement, Reporting and Verification (MRV) of NDC**

Bangladesh will develop a comprehensive MRV system that can perform multiple functions, including collating and reporting on information on (a) progress towards 2030 targets, (b) projections of future GHG emissions and other key parameters and (c) the performance of individual policies and NAMAs.

### **Synergies between NAP and NDC**

As the NAP process is yet to be initiated in Bangladesh, it is hard to predict what the

synergies between NAP and NDCs would be. However, for governance and coordination of NDC implementation, an institutional arrangement has been established under the NDC Implementation Roadmap 2018. The arrangement mainly aims to include and integrate NAP implementation side by side to NDC implementation under one single framework.

### 13. NDC Implementation and the Sustainable Development Goals

2015 was a significant turning point for both the sustainable development and climate change agendas. Alongside the Paris Agreement, the United Nations General Assembly (UNGA) adopted the Sustainable Development Goals (SDGs) as part of their 2030 Agenda for Sustainable Development.<sup>27</sup> The challenge to effectively implement both international agendas.

As discussed above, the NDCs under the Paris Agreement need to be implemented at domestic level to achieve its respective targets. At the same time, the SDGs, which encompass 17 goals and 169 targets, need to be translated into national and subnational actions and reporting.<sup>28</sup> This creates an unprecedented opportunity to pursue implementation of these two agendas in a way that can generate significant mutual benefits in achieving their respective goals.

For example, in Bangladesh's NDCs, there are a number of climate actions that can

also recognised as sustainable development goals. The example is given below:

1. The primary goal of the SDG is to end poverty in all its forms. Similarly, the NDCs of Bangladesh list enhanced adaptive capacity of communities through development gains and improved well-being, which is strongly connected to livelihoods and reduction of poverty.
2. Goal 3 of the SDG is to ensure healthy lives and promote well-being for all. The NDCs of Bangladesh undertake to improve traffic safety through shifting transport modes from road to rail, including underground metro systems and bus rapid transit systems in urban areas.
3. Goal 9 of SDG talks about building resilient infrastructure. The NDCs of Bangladesh pledge to build climate resilient infrastructure to address the adverse impacts of climate change.
4. Ensuring sustainable cities and communities is incorporated in Goal 11 of SGD. Ensuring liveable cities while

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<sup>27</sup> Sustainabledevelopment.un.org. (2019). Transforming our world: the 2030 Agenda for Sustainable Development. Sustainable Development Knowledge Platform. [online] Available at: <https://sustainabledevelopment.un.org/post2015/transformingourworld> [Accessed 4 Oct. 2019].

<sup>28</sup> Advancing the 2030 Agenda: Interlinkages and Common Themes. (2019). IJARKE Business & Management Journal, 1(4).

lowering GHG emissions is one of the mitigation objectives of Bangladesh's NDCs.

5. Ensuring sustainable consumption and production patterns is recognized as goal 12 of the SDG. Similarly, the NDCs of Bangladesh pledge to promote mitigation actions that increase the decomposition of organic waste and capture gases from landfills and power generation to reduce waste and emissions.

6. Goal 13 of SDG talks about climate change mitigation. The entire NDCs of Bangladesh are primarily focused on climate mitigation actions.

Climate actions communicated in the NDCs of Bangladesh are in various ways aligned with SDGs and give rise to opportunities to secure effective integrated implementation of both NDCs and SDGs on a national level. However, new approaches need to be developed to mobilize and efficiently distribute resources for successful implementation of NDC and SDG.

There is no separate Secretariat for the implementation of the SDGs, but the Bangladesh Planning Commission under

the Ministry of Planning serves as the focal point for SDG implementation. The implementation of SDGs is overall impressive as per the report of UNDP<sup>29</sup>. However, lack of efficient monitoring mechanism, absence of the rule of law, limited access to justice, corruption in governance mechanisms, and lack of accountability overall remain as barriers for the effective implementation of SDGs.<sup>30</sup> As the implementation of NDCs is yet to be triggered, how SDG and NDC implementation will be aligned is not clear yet.

### **Synergies between the Sendai Framework and Bangladesh's NDCs**

The Seven Global Targets (such as to substantially reduce the number of affected people, substantially increase the availability of and access to multi-hazard early warning systems and disaster risk) and the Four Priorities for Action of Sendai Framework (Strengthening disaster risk governance to manage disaster risk, understanding disaster risk) are well reflected in the NDCs of Bangladesh as a priority sector of Adaptation. Specifically,

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<sup>29</sup> 'Sustainable Development Goals: Bangladesh Progress Report 2018' (Undp.org, 2019)  
<<https://www.undp.org/content/dam/bangladesh/docs/Publications/Pub-2019/SDGs->

Bangladesh\_Progress\_Report%202018%20(1).pdf> accessed 4 October 2019.

<sup>30</sup> Ibid.

the Disaster Management sub-sector focuses on:

1. Improved Early Warning System for tropical cyclone, flood, flash flood and drought.
2. Disaster preparedness and construction of flood and cyclone shelters.
3. Tropical cyclones and storm surge protection.
4. Inland monsoon flood-proofing and protection.
5. Climate resilient infrastructure and communication.

#### 6. Climate resilient housing.

The Ministry of Disaster Management and Relief is the focal point of Bangladesh in implementing the Sendai Framework. For implementing Sendai Framework, some of the initiatives from Disaster Ministry are adoption of- National and Local DRR Strategies 2020, Dhaka Declaration 2015; National Resilience Programme. However, there is lack of coordination between the Ministry of Environment and the Ministry of Disaster which ultimately results in an overlap of their work.

## 14. Key Findings and Conclusions

In order to implement its NDCs, the Government of Bangladesh has developed and approved enabling policies and identified many of the priority objectives for climate change mitigation and adaptation. For the implementation of NDCs, key policies that will play fundamental roles are (1) the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009, (2) the Seventh Five Year Plan (2016-2020), and (3) the Bangladesh NDC Implementation Roadmap.

However, as evaluated in this research, there are major gaps when it comes to Bangladesh's NDCs and their implementation:

- Lack of coordination among different government institutions.
- The NAP is yet to be adopted.
- There is a need of detailed road maps for transport, power, and energy sectors but not for adaptation.
- The NDC adaptation sectors should be integrated into the ADP, sectoral plans, programs, and projects, five-year plan etc.
- Detailed financial and technical support should be included in the NDC road map.
- Loss and damage is still in the conceptual stage and needs to be integrated into the different Ministry/institution/agency/organization particularly in the Ministry of Disaster Management and Relief and the Ministry of Agriculture/Livestock and the Fisheries Ministry. However, the Government of Bangladesh addresses the issue of Loss and Damage through different ways such as safety net program, disaster management and relief, emergency support, rebate of agricultural loan, subsidies on agricultural input and so on.
- There is already an institutional arrangement (proposed) for NDC implementation, but it is not operational.
- The advisory committee, coordination committee, NAP implementation analytical support needs to be more strengthened with more detailed guideline, mandates.
- There is lack of awareness about the adaptation part of the NDC to concerned agencies and different agencies.

It is clear that the Government of Bangladesh is determined to implement NDC adaptation goals through the NAP project within the next three years. The Government of Bangladesh is reconsidering the existing governing and institutional structures like the NDC and NAP working groups. Through implementing the NAP activities, Bangladesh might change the existing institutional and government structure. The Government has approved the NDC roadmap in 2018, and there is a good number of effective, well-drafted policies and strategies to support this roadmap which are very relevant to NDC and NAP activities. However, there is a need to establish effective coordination among ministries and other government institutions. Each committee should be restricted to its area and have clear boundaries and responsibilities.

There is also a need for financial and political support to ensure that NDC implementation measures can gain momentum. Multilateral development banks (MDB) such as the Asian Development Bank and World Bank are sources of finance. However, MDBs give less priority to financing for adaptation. UNDP and WHO are UN agencies which focus their funds on mitigation, such as clean energy. The FAO is adaptation

centric. Development partners fund mostly capacity building, training, and knowledge sharing. 80% of Bangladesh's development funding comes from the private sector. From that, the money flowing for adaptation is currently almost zero.

Bangladesh's adaptation fund generation is mainly from the National budget. a) Annual development plan (10% of this is used on adaptation) 1.5 core taka (The government is using 1% of GDP, 2.7 billion dollars for adaptation; it might go up to 8-10% if the situation worsens). b) Climate change trust fund, which is around 420 million USD and comparatively small. Unfortunately, there is no practical road map on adaptation on how money will be generated. As a way forward the research work suggest adoption of following works immediately.

- The major problem of Bangladesh is governance. For effective implementation of NDC adaptation components, the NAP needs to be formulated as soon as possible.
- Need to build capacity within government ministries and line agencies to effectively coordinate, streamline and implement NDC related actions.
- Need to secure and promote transparency in administrative and implementation processes of NDC.

- Need to develop a detailed monitoring plan to track and report on NDC-NAP implementation progress at the national level.
- Need to develop a more detail policy landscape for financing mitigation and adaptation actions.
- Need to conduct an assessment of resource and capacity needs. In line with the assessment, mobilization of adequate resource is also needed here.
- Need to increase the private sector engagement and overcome barriers to investment.
- To look after the day to day functions of the NDC and NAP implementation activities, the Government may consider to establish a separate secretariat.

## 15. Additional References

1. (Bmet.org.bd, 2019)  
<<http://www.bmet.org.bd/BMET/resources/Static%20PDF%20and%20DOC/publication/Brief%20on%20Climate%20Change-%20Impact%20on%20Bangladesh.pdf>>  
accessed 9 June 2019
2. Intended Nationally Determined Contributions (INDC), September 2015, Ministry of Environment and Forests (MOEF) Government of the People's Republic of Bangladesh
3. Savaresi A, "A Glimpse into The Future of The Climate Regime: Lessons from The REDD Architecture" [2016] SSRN Electronic Journal
4. The Paris Agreement, Dec. 1/CP.21, Annex, UN Doc. FCCC/CP/2015/10/Add.1, at 21 (Jan. 29, 2016).
5. Zaman S, "Exploring the Legal Nature of Nationally Determined Contributions (NDCs) Under International Law" (2015) 26 Yearbook of International Environmental Law
6. Zaman S, "The 'Bottom-Up Pledge and Review' Approach of Nationally Determined Contributions (NDCs) in the Paris Agreement: A Historical Breakthrough or A Setback in New Climate Governance?" (2018) 5 IALS Student Law Review
7. Zaman. S "The Paris Agreement and The Challenges for Climate Change Policy Regime" (Dhaka Tribune, 2019) <<https://www.dhakatribune.com/climate-change/2016/11/05/paris-agreement-challenges-climate-change-policy-regime/>>  
accessed 31 January 2019
8. (Sustainabledevelopment.un.org, 2014)  
<[https://sustainabledevelopment.un.org/content/dsd/resources/res\\_pdfs/ga-64/cc-inputs/Bangladesh\\_CCIS.pdf](https://sustainabledevelopment.un.org/content/dsd/resources/res_pdfs/ga-64/cc-inputs/Bangladesh_CCIS.pdf)> accessed 9 June 2019

## 16. Annex

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