



# Climate Change Initiatives of Bangladesh

## Achieving Climate Resilience



Ministry of Environment, Forest and Climate Change  
Government of the People's Republic of Bangladesh



United Nations  
Climate Change



UN CLIMATE  
CHANGE  
CONFERENCE  
UK 2021  
IN PARTNERSHIP WITH ITALY

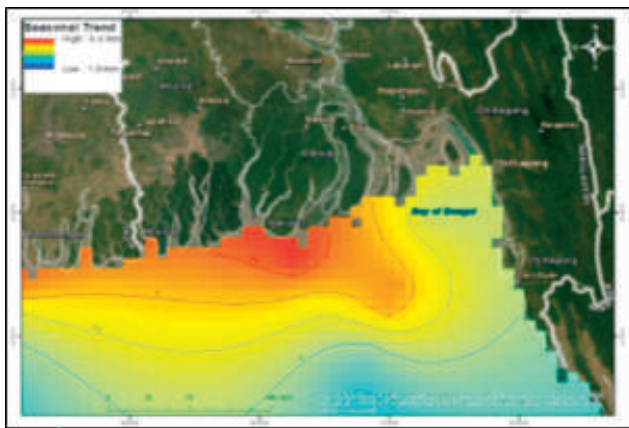


# Vulnerability of Bangladesh to the Impacts of Climate Change

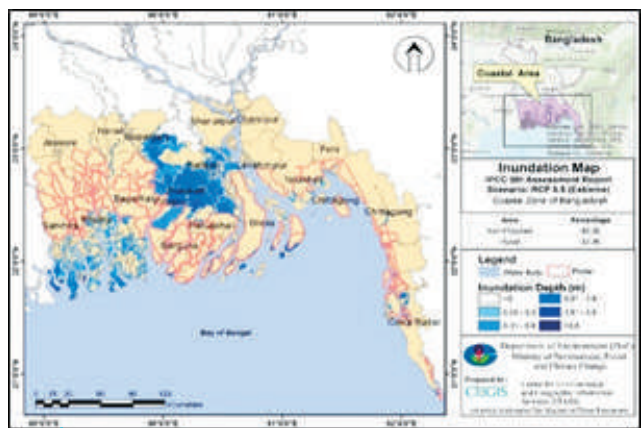
Bangladesh, an innocent victim of climate change, is widely considered as one of the most climate-vulnerable countries in the world. Though its contribution to global warming is negligible (less than 0.47% of global emissions), the country is impacted by all the adversities of climate change.

## Sea Level Rise and Coastal Vulnerability

- Sea Level Rise (SLR) is the biggest threat for Bangladesh among all the external drivers.
- A recent study conducted by the Department of Environment on the projection of SLR using satellite altimetry data shows that the average sea-level rise in the coastal zone of Bangladesh is 3.8-5.8 mm/year over the last 30 years.
- The study illustrates that about 12.34%-17.95% of the coastal area will be submerged due to SLR by this century.
- The findings also show that SLR alone will be responsible for 5.8%-9.1% decline of rice production in the country.



Spatial plot of SLR trends (3.8-5.8 mm/year) near Bangladesh coast between 1993 and 2019.



About 12.34%-17.95% of the coastal area will be submerged by this century.

The Government of Bangladesh earnestly strives for shifting the country's vulnerability towards resilience under the able leadership of Hon'ble Prime Minister Sheikh Hasina. Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Disaster Management and Relief (MoDMR), Ministry of Agriculture (MoA), Ministry of Water Resources (MoWR), along with other relevant ministries/divisions and respective agencies, are working hard to make the country climate-resilient.

Globally and nationally, enhanced adaptation measures will be required to reduce the adverse impacts of projected climate change and variability, regardless of the scale of mitigation undertaken over the next few decades.

## Policy Response at National Level

Bangladesh has made commendable efforts to streamline regulatory and institutional settings in realizing the aspiration of climate-resilient sustainable development by creating required policies and regulatory frameworks. Over the years, the Government has formulated the following policies, plans and programme to address climate change and disaster management in the country:

- Bangladesh Climate Change Strategy and Action Plan (BCCSAP), 2009
- National Adaptation Programme of Action, 2005, updated in 2009
- Bangladesh Climate Change Trust Act, 2010
- Nationally Determined Contributions (NDC), 2015, Enhanced & Updated in 2021
- NDC Implementation Road Map, 2018
- Bangladesh Delta Plan, 2100
- Mujib Climate Prosperity Plan 2030 (Draft)
- National Disaster Management Policy, 2015

- Standing Orders on Disaster 2019
- Plan of Action to Implement Sendai Framework for Disaster Risk Reduction 2015-2030
- National Strategy on Internal Displacement Management 2021
- National Plan for Disaster Management 2021-2025
- Bangladesh Energy Efficiency and Conservation Master Plan up to 2030
- Renewable Energy Policy of Bangladesh, 2008
- Bangladesh National Action Plan for Reducing SLCPs, 2012, Updated in 2018

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

- MoEFCC prepared Bangladesh Climate Change Strategy and Action Plan (BCCSAP) in 2009 comprising six thematic areas, five focused on adaptation, while the sixth on mitigation.
- Recently, the Government has drafted revised BCCSAP to update it with the changing circumstances. The updated BCCSAP will consist of eleven thematic areas with newly included natural resources management, gender, and urban dimension of climate change.

## National Determined Contributions (NDC)

- Bangladesh revised and submitted Updated NDC on 26 August 2021, enhancing both unconditional and conditional contribution with ambitious quantifiable mitigation targets.
- Our updated, enhanced NDC has expanded its emission reduction coverage from only the energy sector to the whole economy of the country.

<b>Unconditional Contribution</b> (using own resources)	Bangladesh will reduce its GHG emissions by 27.56 MtCO <sub>2</sub> e or 6.73% below BAU in 2030.
<b>Conditional Contribution</b> (with international support)	Bangladesh will reduce additional emissions by 61.9 MtCO <sub>2</sub> e or 15.12% below BAU in 2030.
<b>Combined Total Contribution</b>	Bangladesh will reduce its GHG emissions by 89.47 MtCO <sub>2</sub> e or 21.85% below BAU in 2030.

Quantifiable Mitigation Targets in Bangladesh Updated NDC 2021

## Bangladesh Delta Plan 2100

- The Government has recently adopted the Bangladesh Delta Plan 2100, a comprehensive 100-year strategic plan aimed at gradual sustainable development through adaptive delta management process.
- The plan targets to achieve a safe, climate-resilient and prosperous delta with a mission to ensure long term water and food security, economic growth and environmental sustainability, effectively reducing vulnerability to natural disasters and building resilience to climate change.

## National Adaptation Plan (NAP)

- Currently the Government is in a process of advancement and formulation of National Adaptation Plan (NAP) that will significantly enhance our adaptation ambition.
- Once completed by June 2022, the NAP is expected to be the main vehicle to address adaptation at the national level.

## National Communication Reports to UNFCCC

- Bangladesh submitted First (Initial), Second and Third National Communication in 2002, 2012, and 2018 respectively. According to the Third National Communication of Bangladesh, submitted in 2018, per capita emission from all sectors was 0.98 tons CO<sub>2</sub>eq for the year 2012.
- Bangladesh has initiated to prepare its First Biennial Update Report (BUR1) to the UNFCCC considering GHG emission inventory for 2013-2019 and updating mitigations options.

## National Climate Finance Mechanism - Bangladesh Climate Change Trust Fund (BCCTF)

- Government of Bangladesh established Bangladesh Climate Change Trust Fund (BCCTF) in FY 2009-10 from its own resources becoming pioneer among the developing countries.
- The BCCT has undertaken about 800 projects so far with the investment of around 480 million US dollar to implement strategic actions of the BCCSAP which mainly focus on adaptation, mitigation and climate change research.

### ADAPTATION PROJECTS

- 352.12 kilometers of embankments constructed
- 590.60 km of canals excavated/re-excavated
- 82 water controlling infrastructure constructed
- 14 schools cum cyclone shelter constructed
- 14,205 Volunteers and Coastal fisherman trained for Cyclone preparedness programme
- 19428 metric ton of stress tolerant seeds produced and distributed
- 8529 climate resilient house constructed
- 2451 water purification solar plant established
- 12900 floating vegetables bed in 210 villages
- 3 rubber dam built and 2 Spars reconstructed
- 90 km of river-bank protective works completed
- 18 regulators, 16 outlets and 12 inlets constructed
- 200.64 km road constructed
- 128.7 km drainage system developed
- 4184 no. Deep tube-wells installed

### MITIGATION PROJECTS

- 71.146 million trees planted and 6921.7 hector of forest land brought under afforestation
- 9,00,000 improved cook-stoves have been distributed and 6000 entrepreneurs built up
- 10,908 solar home systems distributed, and 2 solar mini-grid plants installed in the remote off-grid areas
- 1751 solar streetlight have been set up
- 2451 no. solar water purifier have been installed
- 13 solar irrigation pumps have been mounted
- 7901 biogas plants installed at Household level along with 13 Community biogas plants

### RESEARCH PROJECTS

- 12 stress and heat tolerant crops varieties introduced
- Management of forest using modern software, hardware and other equipment accomplished

## Additional Climate Financing from National Budget

- Bangladesh adopted Climate Fiscal Framework (CFF) in 2014 and updated in 2020 to make Public Financial Management (PFM) system climate inclusive.
- The cumulative budget allocation of the most relevant twenty-five Ministries/Divisions accounts for 57.33% of the total national budget of FY2021-22. Out of this total allocation 7.26% is climate relevant.
- Over the last seven years the climate relevant allocation has doubled, increased from TK. 12,163 crore (about US\$ 1.44 billion) in FY2015-16 to TK. 25,124.98 crore (about US\$ 2.96 billion) in FY2021-22 which is 0.73% of GDP for FY2021-22.

## International Support Received

- Bangladesh has accessed to resources available from Green Climate Fund (GCF), Least Developed Countries Fund (LDCF), Adaptation Fund (AF) and other bilateral and multilateral funds. However, international financial resources are insignificant compared to our requirements.
- Bangladesh has accessed climate finance (considering only national projects) from the following global funds:

SL.	Name of the Fund	No. of Approved Project	Amount of Fund (million \$)		
			Grant	Loan	Co-finance
1	Green Climate Fund (GCF)	05	101.14	250.00	156.66
2	Least Developed Countries Fund (LDCF)	07	34.41	-	187.94
3	Adaptation Fund (AF)	01	9.99	-	-
4	Global Environment Facility (GEF) *	08	24.66	-	402.62
5	Climate Bridge Fund	-	30.00	-	-
<b>Total</b>			<b>200.20</b>	<b>250.00</b>	<b>747.22</b>

\* Considering projects under the climate change thematic areas only.

## Technology Transfer - Climate Technology Centre & Network (CTCN)

- Department of Environment (DoE) is the National Designated Entity of CTCN in Bangladesh to facilitate adaptation and mitigation technology transfer in the country under UNFCCC.
- So far, 03 projects have been completed and 05 more projects have been submitted this year for technology transfer.

## Clean Development Mechanism (CDM)

- Bangladesh could not harness much from the CDM process unlike larger emitting countries.
- So far Bangladesh has registered 21 CDM projects from CDM Executive Board generated 13.28 MtCO<sub>2</sub>e that has the potential to reduce 118 MtCO<sub>2</sub>e by 2030.

## GHG Emission Reduction under Montreal Protocol

- Bangladesh has successfully implemented required obligation under the Montreal Protocol.
- More than 2.14 MtCO<sub>2</sub>e emission will be reduced by 2025 as per Montreal Protocol targets.
- Bangladesh ratified the Kigali Amendment on 08 June 2020 and enacted an SRO to reduce import and consumption of HFCs on 18 March 2021 with a view to HFC phasing-down by 2045.

## Renewable Energy and Energy Efficiency

- Bangladesh is pursuing a low carbon development path with increasing emphasis on renewable energy and energy efficiency.
- Installed 541.7 MW capacity solar power plants, installation of additional 911.8 MW solar power plant and 149 MW Wind Power plant is in the process.
- Installed more than 6 million Solar Home Systems in off-grid areas and distributed 4.5 million Improved Cook Stoves in rural areas across the country.



Solar Home System



Agrivoltaic Solar Power Plant



Solar Mini-Grid Plant

### Adaptation Measures in Agriculture

- Government of Bangladesh has undertaken research on development of drought, cold, waterlog, diseases, pest and salt tolerant crop varieties to cope with the changing climate.
- **Early harvest short duration rice varieties:** BRRI dhan 62 (100 days), 66, 71 (113 days); BINA dhan 7, 11, 16, 17, 19-22 (100-120 days); traditional varieties require 140-150 days.
- **Drought tolerant early varieties:** BRRI dhan 42, 43 (100 days), 57 (100-105 days), 66 and 71 (also short duration); BINA dhan-17, 19, 21.
- **Salt tolerant rice varieties:** BRRI dhan 23, 40, 41, 55, 67, 73 (8 ds/m); BRRI dhan 53, 54, 61, (6 ds/m); BRRI dhan 47 (8-12 ds/m), 97(8-14 ds/m), 99 (8-10 ds/m); BINA dhan 8, 10, 23.
- **Flooding tolerant varieties:** BRRI dhan51, BRRI dhan52, BRRI dhan79; BINA dhan 11, 12, 23.
- **Stress tolerant other crop varieties:** BARI Gom 22, 23, 24 (heat tolerant); BARI Gom 25, 26, 30, 31 (early maturing heat tolerant); BINA Gom 1 & BARI Hybrid Maize 16 (salt tolerant); BINA mung-8, 9, 10, BINA masur 8, 10 and BARI Hybrid Maize 12, 13 (drought tolerant).



Salinity tolerant crops



Drought tolerant crops



Floating vegetable cultivation

### Floating Agriculture in Bangladesh

- Floating bed to grow vegetables and spices or seedlings in the wetlands of the south-central coastal districts utilizing locally available water hyacinth and other aquatic weeds. The land underneath is used for production of fish in the open water and crops on the floating bed.

### Disaster Management in Bangladesh

- Bangladesh has become a role model and demonstrated immense success in Disaster Management and Disaster Risk Reduction, which is well recognized globally.
- Cyclone Preparedness Programme (CPP) established by Father of the Nation Bangabandhu Sheikh Mujibur Rahman have 76,020 volunteers (of which around 50% are women) for DRR. Additionally, 46,000 urban volunteers are also working for urban safety and resilience.
- 4,530 Cyclone Shelters have been constructed across the coast and 320 Flood Shelters have been constructed across the country with additional 393 Flood Shelters under construction.
- 550 Mujib Killa, specially designed raised land, have been constructed to provide shelter for the people and livestock in coastal regions during the cyclone/tidal surge.
- 60 Multipurpose Rescue Boats have been built for persons with disability.
- A total of 66 Disaster Relief Warehouse- cum-Disaster Information Center established.
- 18 community radio (FM) network has been established for the coastal people and fishermen.
- Interactive Voice Response (IVR) provides weather and early warning for anticipatory action in reducing loss and damage.

## Rehabilitation of Climate-Displaced People

- Bangladesh has taken “Khurushkul Ashrayan Prokalpa” the world’s biggest housing project for climate refugees in Cox’s Bazar to construct 139 five-storey buildings with modern facilities to shelter 4,409 climate refugee families.



On 23 July 2020, Hon’ble Prime Minister Sheikh Hasina inaugurated 20 newly built special structures having 32 flats each with all amenities where 600 families get new shelter

## Recent Landmark Initiatives

- Under the “Ashrayan” project, a landmark initiative of the government for the landless and homeless people, a total of 442,608 families have been given houses. Besides enhancing disaster resilience, the project also focuses on mitigation through implementing 1.5 million tree plantations, rainwater harvesting, solar home systems and improved cook stoves.
- To enhance climate resilience and DRR, the government has implemented 726 km river-bank protection, 2,123 km river excavation and dredging, 1,266 km embankment, excavation/re-excavation of 181 km irrigation canal and 499 km drainage canal in last 10 years.
- The government has planted 5.4 million Palm trees to reduce the risk of death due to lightning.

## Reducing Emission from Deforestation and Forest Degradation (REDD+) and Afforestation

- Bangladesh has developed its forestry sector capacity to engage in mitigation co-benefit process manifested by estimating baseline emission, preparing monitoring system and adopting National REDD+ Strategy for reducing emission and enhance forest carbon stocks.
- The baseline emission is 1.18 ton CO<sub>2</sub>e per year from 2000 to 2015. To arrest this trend, the National REDD+ Strategy targets to restore all degraded forest and afforest all newly accreted costal lands increasing tree cover from current 22% to 25% by 2030.
- Bangladesh completed its first National Forest & Tree Inventory in 2019 and assessed 1275.54 million ton of Carbon (all five carbon pools, soil up to 30 cm).
- To commemorate the birth centenary of the Father of the Nation Bangabandhu Sheikh Mujibur Rahman, the Government planted 10 million trees in 2020.

## Role at International Level

- **Kyoto Protocol:** Bangladesh is among the first 4 countries accepting the 2<sup>nd</sup> commitment period of the Kyoto Protocol on 13 November 2013.
- **Paris Agreement:** Bangladesh signed the Paris Agreement on the first day of opening for signature on 22 April 2016 and ratified on 21 September 2016.
- **Membership in UNFCCC Bodies:**
  - ❖ Member of Technology Executive Committee
  - ❖ Alternate Member of CDM Executive Board
  - ❖ Alternate Member of Joint Implementation Supervisory Committee (JISC)
  - ❖ Member of Compliance Committee referred to Article 15.2 of Paris Agreement - PAICC.

## Leadership of Hon'ble Prime Minister in international climate diplomacy



Hon'ble Prime Minister of Bangladesh, H.E. Sheikh Hasina, and United Nations Secretary-General, H.E. António Guterres at the CVF Leaders Event at COP25 on 2 December 2019



HPM chaired the CVF Leaders Event on 7 October 2020 and launched "Midnight Survival Deadline for the Climate" initiative calling all nations to deliver new and enhanced NDCs by 31 December 2020



Meeting between Hon'ble Prime Minister of Bangladesh, H.E. Sheikh Hasina, and United State Special Envoy for Climate, H.E. John Kerry on 9 APRIL 2021

## Climate Vulnerable Forum (CVF)

- Bangladesh is a founding member of CVF, a platform of 48 most climate vulnerable countries.
- At the special session of the CVF during COP25, Hon'ble Prime Minister of Bangladesh, H.E. Sheikh Hasina, agreed to take over the Chairmanship of CVF for next two years.
- As Chair of the CVF, HPM Sheikh Hasina launched a program in October 2020 to develop "Climate Prosperity Plan," which will be a strategic investment framework to mobilize financing, especially through international cooperation, for implementing renewable energy and climate resilience initiatives.
- Each member of the forum is expected to develop their own Climate Prosperity plan. Bangladesh has already drafted the "Mujib Climate Prosperity Plan 2030," with the vision of achieving energy independence (maximizing share of renewable energy & energy efficient technologies) and setting Bangladesh's trajectory from one of vulnerability to resilience to prosperity (VRP).

## Statement by Hon'ble Prime Minister in Response to IPCC Sixth Assessment Report 2021

- In her response to IPCC AR6 Report, Hon'ble Prime Minister Sheikh Hasina said the IPCC's report has come as a clarion call for the entire world.
- HPM has noted that debt burdens are mounting for CVF nations spending more than 25% of their annual expenses on adaptation efforts in response to the climate emergency.
- On behalf of the 48 vulnerable countries, HPM has reiterated that it is unjust of the world to expect climate-vulnerable countries to pay such a heavy price for the emissions of others.
- As CVF Chair, HPM has demanded a Delivery Plan for the UN-agreed US\$500 billion of additional climate finance from developed countries for the five years, 2020-2024.

## GCA Regional Center for South Asia

- In recognition of the country's progressive role to address climate change, the Global Commission on Adaptation established a GCA Regional Center for South Asia in Bangladesh.
- Hon'ble Prime Minister of Bangladesh, H.E. Sheikh Hasina and the Chair of GCA Supervisory Board, 8th UN Secretary-General Ban Ki-moon jointly inaugurated GCA regional office at the Department of Environment in Dhaka on 8 September 2020.
- The center will exchange knowledge, experience, and best practices on adaptation among 8 (eight) South Asian Countries and support their efforts to accelerate climate adaptation.

