



CLIMATE CHANGE INITIATIVES OF BANGLADESH TOWARDS CLIMATE RESILIENCE



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



United Nations
Climate Change



COP28
UAE

Vulnerability of Bangladesh to the Impacts of Climate Change

Bangladesh is considered one of the most climate-vulnerable countries in the world. According to the Global Climate Risk Index 2021 published by Germanwatch, Bangladesh is ranked 7th among the countries affected most in 2000-2019 due to climate change. Though its contribution to global warming is negligible which is less than 0.48% of global emissions (Climate Watch, 2023), the country is impacted by all the adversities of climate change.

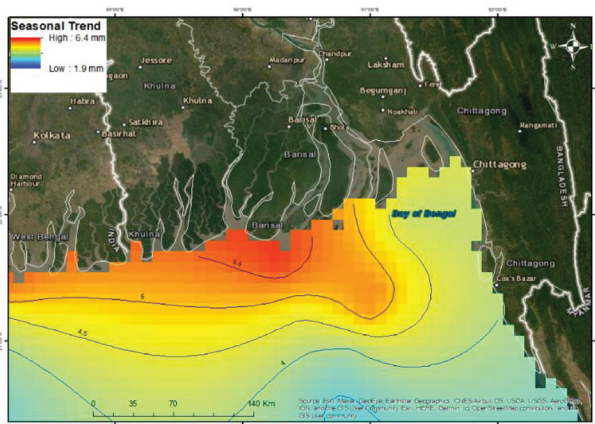
Sea Level Rise and Coastal Vulnerability

Sea Level Rise (SLR) is the biggest threat for Bangladesh among all the external drivers.

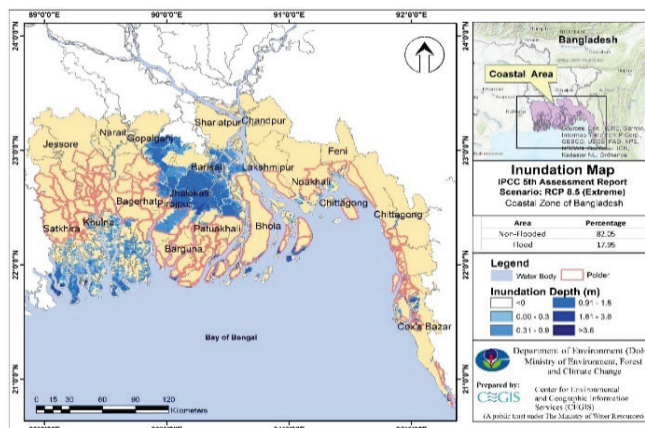
A recent study conducted by the Department of Environment on the projection of SLR using satellite altimetry data shows that the average sea-level rise in the coastal zone of Bangladesh is 3.8-5.8 mm/year over the last 30 years.

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 a 5.8%-9.1% decline in 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 to shift 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), and 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

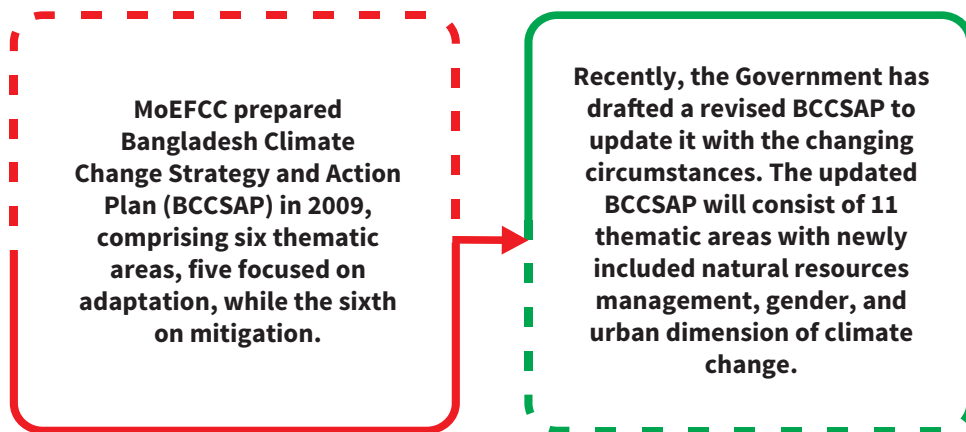
Bangladesh has made commendable efforts to streamline regulatory and institutional settings in realizing the aspiration of climate-resilient sustainable development by creating required policies and regulatory frameworks. Over the years, the Government has formulated the following policies, plans, and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

- ◆ Bangladesh Climate Change Strategy and Action Plan (BCCSAP), 2009 (updated in 2022)
- ◆ Bangladesh Climate Change Trust Act, 2010
- ◆ Nationally Determined Contributions (NDC), 2015, Enhanced & Updated in 2021
- ◆ Bangladesh Delta Plan, 2100
- ◆ National Adaptation Plan (NAP) 2023-2050
- ◆ Mujib Climate Prosperity Plan (MCP) 2022-2041
- ◆ Bangladesh Climate Fiscal Framework, 2020
- ◆ Disaster Management Act, 2012
- ◆ 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
- ◆ National Action Plan for Clean Cooking 2020-2030

Other Environmental Regulations related to Mitigation and Adaptation Actions

- ◆ Air Pollution (Control) Rules, 2022
- ◆ Solid Waste Management Rules, 2021
- ◆ Hazardous Waste (E-waste) Management Rules, 2021
- ◆ Bangladesh Biodiversity Conservation Act, 2015
- ◆ Ecologically Critical Area Management Rules, 2016
- ◆ Bangladesh Environment Conservation Act, 1995 (Amendment, 2010)
- ◆ Environment Conservation Rules, 2023
- ◆ Brick Manufacturing and Kiln Establishment Act, 2013

Bangladesh Climate Change Strategy and Action Plan (BCCSAP)



Nationally Determined Contributions (NDC) at a Glance

- ◆ Bangladesh revised and submitted Updated NDC on 26 August 2021, enhancing both unconditional and conditional contributions with ambitious quantifiable mitigation targets.

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

- ◆ Our updated, enhanced NDC has expanded its emission reduction coverage from only the energy sector to the whole economy of the country.
- ◆ Full implementation of the NDC will require about USD 175 billion within 2030. The Government of Bangladesh commit resources to implement the unconditional actions which will require USD 32 billion. The country will need additional USD 143 billion from international support to implement the conditional action programs.

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 an 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)

- ◆ Bangladesh formulated National Adaptation Plan (NAP) in 2022 that primarily encompasses eight distinct sectors: water resources; disaster, social safety, and security; agriculture; fisheries, aquaculture, and livestock; urban areas; ecosystem, wetlands, and biodiversity; policy and institutions; capacity development, research, and innovation.
- ◆ NAP has identified 113 interventions (including 90 high-priority and 23 moderate-priority) across 11 climatic stress areas to realise the vision of building a climate-resilient nation.
- ◆ For the implementation of the NAP, Bangladesh will require around USD 230 billion for the period of 2023-2050, that is more than USD 8 billion per year as new and additional financing requirements.

National Communication Reports to UNFCCC

- ◆ Bangladesh submitted First (Initial), Second and Third National Communication in 2002, 2012, and 2018 respectively. Bangladesh recently prepared its First Biennial Update Report (BUR1) to the UNFCCC and conducted GHG emission inventory for 2013-2019.
- ◆ According to the BUR1, the per capita GHG emission from all sectors of the country is 1.29 tCO₂e (for the year 2019) which is five times lower than the world's per capita GHG emissions of 6.48 tCO₂e (Climate Watch, 2023).

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 a pioneer among developing countries.
- ◆ The BCCT has undertaken about 851 projects so far, with an investment of around USD 490 million to implement strategic actions of the BCCSAP.

Major Initiatives of BCCT

Adaptation Projects

- 352.12 kilometers of embankments constructed
- 590.60 km of canals excavated/re-excavated
- 82 no. water controlling infrastructure constructed
- 14 no. schools cum cyclone shelter constructed
- 14,205 no. Volunteers and Coastal fisherman trained for Cyclone preparedness programme
- 19428 metric ton of stress tolerant seeds produced and distributed
- 8529 no. climate resilient house constructed
- 2451 no. water purification solar plant established
- 12900 no. floating vegetables bed in 210 villages established
- 3 no. 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 no. improved cook-stoves have been distributed and 6000 entrepreneurs built up
- 10,908 no. solar home systems distributed, and 2 solar mini-grid plants installed in the remote off-grid areas
- 1751 no. solar streetlight have been set up
- 2451 no. solar water purifier have been installed
- 13 no. solar irrigation pumps have been mounted
- 7901 no. biogas plants installed at Household level along with 13 Community biogas plants

Research Projects

- 12 no. 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 the framework in 2020 to make climate inclusive Public Financial Management (PFM) system.
- ◆ In FY2023-24, the total climate-relevant budget allocation of the climate relevant 25 ministries/divisions accounts for 54.09 % of the total budget of these ministries/divisions. Of the total budget of 25 climate relevant ministries/divisions, 8.99 % is specifically for climate-relevant expenditures.
- ◆ Over the last five years, the climate-relevant budget allocation increased by 44.45 % from Tk. 25,650.28 crore (about USD 2.3 billion) in FY2019-20 to Tk. 37,051.94 crore (about USD 3.34 billion) by FY2023-24.

International Support Received

- ◆ Bangladesh has access 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 USD)	
			Grant	Loan
1.	Green Climate Fund (GCF)*	07	168.30	250.00
2.	Least Developed Countries Fund (LDCF)	07	34.41	-
3.	Adaptation Fund (AF) **	01	9.99	-
4.	Global Environment Facility (GEF) ***	08	24.66	-
5.	Climate Bridge Fund	-	30.00	-
Total			267.36	250.00

* Considering only national projects

** 2 more projects with USD 15 million finance from Adaptation Fund are in pipeline

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

GHG Emission Reduction under Montreal Protocol

- ◆ Bangladesh has successfully implemented the required obligation under the Montreal Protocol.
- ◆ More than 2.14 MtCO₂-e emissions 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 the import and consumption of HFCs on 11 Feb 2021 with a view to HFC phasing-down (80%) 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 1195 MW RE power plants and installation of 2687 MW solar power plant and 357 MW Wind Power plant is in the process.
- ◆ Installed more than 6.1 million Solar Home Systems in off-grid areas and distributed 6.5 million Improved Cook Stoves in rural areas across the country.



6.1 million Solar Home Systems



10 large-scale Solar Parks



Country's first electric vehicle manufacturing plant underway in Chattogram set to roll out its first EV cars by March next year.

Adaptation Measures in Agriculture

Government of Bangladesh has undertaken research on the development of drought, cold, waterlog, diseases, pest and salt tolerant crop varieties to cope with the changing climate.

Early harvest short duration rice varieties: BRRRI 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: BRRRI dhan 42, 43 (100 days), 57 (100-105 days), 66 and 71 (also short duration); BINA dhan-17, 19, 21.

Salt tolerant rice varieties: BRRRI dhan 23, 40, 41, 55, 67, 73 (8 ds/m); BRRRI dhan 53, 54, 61, (6 ds/m); BRRRI dhan 47 (8-12 ds/m), 97(8-14 ds/m), 99 (8-10 ds/m); BINA dhan 8, 10, 23.

Flooding tolerant varieties: BRRRI dhan51, BRRRI dhan52, BRRRI 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).



Stress 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.

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 in 1973 by Father of the Nation Bangabandhu Sheikh Mujibur Rahman, has 76,140 volunteers (around 50% are women) for DRR. Additionally, 46,000 urban volunteers are also working for urban safety and resilience.
- ◆ 4,200 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.



Mujib Killa specially designed raised land to provide shelter for people and livestock during the cyclone and tidal surge.



Climate Resilience House in coastal areas provide housings and shelter during cyclone.

- ◆ 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.
- ◆ 18 community radio (FM) network has been established for the coastal people and fishermen.
- ◆ 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-excitation of 181 km irrigation canal, and 499 km drainage canal in the last 10 years.

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.

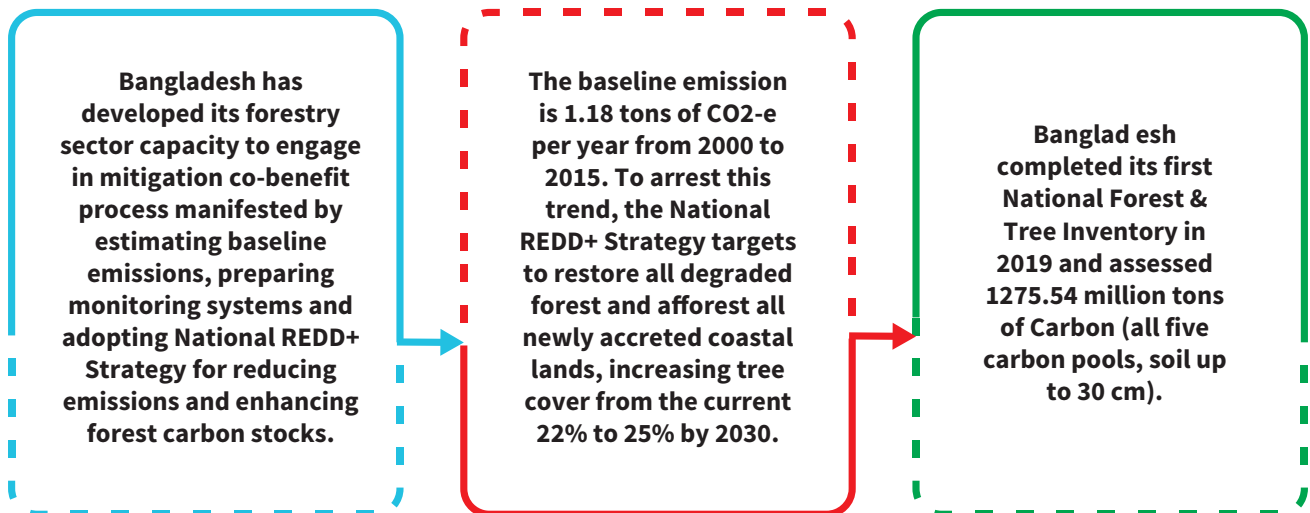


On 23 July 2020, Hon’ble Prime Minister Sheikh Hasina inaugurated 20 newly built special structures having 32 flats each with all amenities where 600 families get new shelter



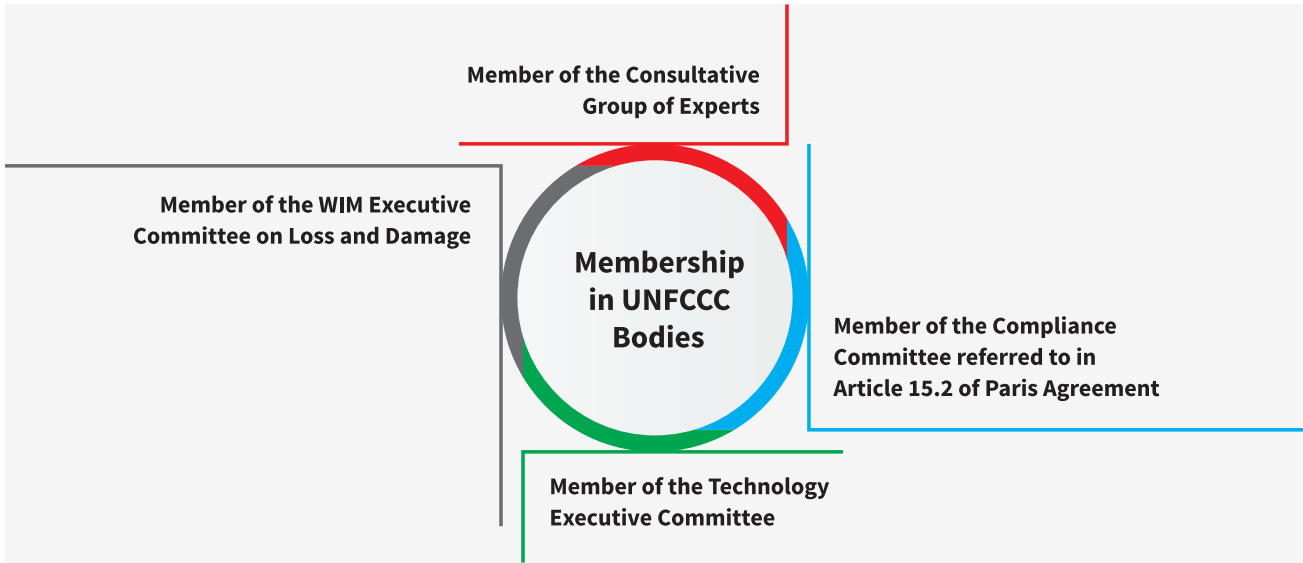
Under the “Ashrayan” project, a landmark initiative taken by the Prime Minister’s Office, Bangladesh for the landless, homeless, and displaced people, 5 million people from 840,000 families have been provided with houses free of costs.

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



Role at International Level

- ◆ **Climate Vulnerable Forum (CVF):** Bangladesh is a founding member of CVF, a platform of the 55 most climate-vulnerable countries. During Bangladesh’s 2nd tenure (May 2020 – June 2022) as the chair of the Climate Vulnerable Forum (CVF), has initiated the “Climate Prosperity Plan,” with the vision of achieving energy independence (maximizing its share of renewable energy and setting trajectory from one of vulnerability to resilience to prosperity (VRP).



Leadership of Hon'ble Prime Minister in International Climate Diplomacy



Hon'ble Prime Minister Sheikh Hasina addressed the 78th session of the UN General Assembly at UNHQ, New York, USA on 22 September 2023, where the HPM call upon the major emitters to submit and implement ambitious NDCs.



HPM Sheikh Hasina received UN's highest environmental accolade 'Champions of the Earth' on 27 September 2015 recognizing her first-off-the-block initiatives to prepare the country for the challenges it faces from climate change.



COP28 President-Designate, Dr. Sultan Ahmed Al Jaber and Prime Minister of Bangladesh, Sheikh Hasina, call for the world's most vulnerable to be placed at the heart of climate action during his Dhaka visit in July 2023.



Statement by Hon'ble Prime Minister H.E. Sheikh Hasina at different International Events

In a visionary statement delivered at the **26th Session of the UN Climate Change Conference (COP 26)** in Glasgow, HPM Sheikh Hasina placed four-point proposal urging global leaders to work together -

- ◆ The major emitters must submit ambitious NDCs, and implement those.
- ◆ Developed countries should fulfil their commitments of providing 100 billion dollars annually with a 50:50 balance between adaptation & mitigation.
- ◆ The developed countries should disseminate clean and green technology at affordable costs to the most vulnerable countries. The development needs of the CVF countries also need to be considered.
- ◆ The issue of loss & damage must be addressed, including global sharing of responsibility for climate migrants displaced by sea-level rise, salinity increase, river erosion, floods, and draughts.

At the **UN Food Systems Summit 2023** held in Rome, July 2023, the HPM placed five points proposals to ensure a sustainable, safe and nutritious food system worldwide, three of which are -

- ◆ The international community should come forward to establish global and regional 'food banks' to deal with emergency situations and also help developing countries transform the food production systems in the situation given by climate change.
- ◆ Nano-technology, bioinformatics, and advanced agricultural technologies developed keeping pace with the 4th industrial revolution in agricultural education and research should be made available to all.
- ◆ It is necessary to develop a massive social movement involving young people to prevent the waste of about one-third of the food produced worldwide every year.

Recently, in the **78th Session of the UNGA in September 2023, New York**, the HPM again push for the following issues -

- ◆ We call upon the major emitters to submit and implement ambitious NDCs. The developed economies must fulfill their 100-billion dollars commitments.
- ◆ The development needs of the climate-vulnerable countries must be considered. We also demand an urgent operationalization of loss & damage funds as agreed in COP27.
- ◆ We call for a stronger global solidarity in sharing the burden of climate migrants induced by sea-level rise, salinity increase, river erosion, floods, and droughts.

Again, while addressing the **2nd Voice of the Global South Summit 2023**, hosted by India on 17 November 2023, the HPM recommended, "All efforts are vital to limiting the global temperature to 1.5° Celsius. Increased financing and the transfer of relevant technologies for climate adaptation to the Global South are imperative."

