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Climate Change and Green Financing: Initiatives & Outlook in South Asia

Country Paper

BANGLADESH

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1. Introduction

Bangladesh has been among the fastest growing economies in the world. Between 2011 and 2020, the country registered average annual GDP growth of 6.4 percent, allowing Bangladesh to cross the lower-middle income threshold in 2016. The country has shifted from a predominantly agricultural economy to an industry-led and service-led economy. Economic growth has been accompanied by large gains in poverty reduction and human development. Per capita income increased from USD 759 in 2009 to USD 2824 in 2022. Poverty declined from 40.0 percent in 2005 to 20.5 percent in 2019. Life expectancy increased from 65.2 in 2005 to 72.8 in 2020, and the infant mortality rate decreased from 50 (per 1000 live births) in 2005 to 21 in 2020. The literacy rate (7+ years) increased from 52.1 in 2005 to 75.2 in 2020.

At the same time, Bangladesh has been and remains highly vulnerable to natural disasters and climate change. Its geographical location in a low-lying delta ecosystem makes the country exposed to a number of climate change induced disasters. Notable among them are flash floods, monsoon floods, cyclones, storm surges, salinity intrusions, and unpredictable rainfall. In addition, the country's ecosystem is under major threat as 60 percent of its land mass is barely 5 meters above sea level. There is a prediction that the country will experience about 40 cm (15 inches) of sea level rise by 2080 (Streatfield, 2008), which will certainly further worsen the situation and wreak havoc on the lives and livelihoods of its people, in particular those who are living across the climate hotspots of the country. The Global Climate Change Risk Index 2021 ranks Bangladesh seventh among the countries most affected by extreme weather events in the last 20 years, since 1999.

Given the threats coming from climate change, the GoB has been allocating resources and putting in place relevant policies, plans, and strategies. It has created the Climate Change Trust Fund from its own revenues to build resilience against the vulnerabilities that the country is facing due to climate change. Considering the adverse effects of climate change, BB has also adopted a comprehensive green finance and green banking policy for banks and other financial institutions for sustainable development. Financial institutions, as financial intermediaries, hold a unique position in an economic system that can affect production, business, and other economic activities through their financing activities and thus may contribute to protecting the environment.

2. Overview of the Impact of Climate Change in Bangladesh

Different research organizations conducted studies to make projections on the climatic condition of this region. The study conducted by PRECIS (Providing Regional Climates for Impact Studies) with reference to observed baseline period of 1961–1990 projected that the annual average rainfall would increase by about 4 percent, 2.3 percent, and 6.7 percent in 2030, 2050, and 2070 respectively. The same study while making projections on temperature, indicated that the monthly average maximum temperature will change from -1.2o to 4.7o Celsius in 2030, -1.2o to 2.5o Celsius in 2050 and -1.2o to 3.0o Celsius in 2070. The SAARC Meteorological Research Centre (SMRC) indicated that the average increase in temperature would be 1.3o Celsius and 2.6 oC for the years 2030 and 2070, respectively.

The projections made by the General Circulation Model (GCM) for Bangladesh indicate that temperatures will increase by 2.4o oC and annual rainfall will increase by 9.7 percent in 2100. The baseline study on climate change carried out for Bangladesh Delta Plan 2100 indicates that "the historic trends are likely to continue into the future. Temperature will continue to rise and total annual rainfall is likely to increase in the future". A study of the World Bank noted that up to two-thirds of Bangladesh is inundated by floods in every three to five years. As a result, infrastructure, housing, agriculture, and livelihoods were severely damaged. In addition, low-lying coastal areas are also at risk from cyclones and storm surges. Inter-governmental Panel on Climate Change (IPCC) predicts that by 2050, Bangladesh will lose 17 percent of its land and 30 percent of its food production because of negative impact of climate change.

According to the fifth assessment report of the Inter-governmental Panel on Climate Change (IPCC), Bangladesh was identified as being at specific risk from climate change due to exposure to sea-level rise and to extreme events like salinity intrusion, drought, erratic rainfall, and tidal surges. Bangladesh accounts for just 0.35% of global emissions but is highly vulnerable to climate change. Table 1 shows the list of 10 highest emitting countries with the level of their Green House Gas (GHG) emissions, which account for almost 65 percent of global GHG emissions.

Table 1: Top Ten Greenhouse Gas Emitting Countries in the World			
Sl. No	Country	Annual CO2 Emission in 2018 (million metric ton)	% of Global Total in 2018
1	China	11705.8	23.9
2	USA	5734.4	11.8
3	India	3346.6	6.8
4	Europe	3333.2	6.8
5	Russia	1992.1	4.1
6	Brazil	1420.6	2.9
7	Japan	1154.7	2.4
8	Iran	824.3	1.7
9	Germany	776.6	1.6
10	Canada	763.4	1.6
Source: CAIT Climate Data Explorer, 2021.			

Climate-related disasters result in large economic losses, which will have serious implications for Bangladesh's growth performance and poverty reduction. It is estimated that the devastating monsoon flood in 1998 inundated over two-thirds of the land mass of Bangladesh and resulted in damages and losses of over US\$2 billion, equivalent to 4.8 percent of GDP. Similarly, the damages and losses caused by Cyclone Sidr stood at US\$1.7 billion, equivalent to 2.6 percent of GDP in FY2007. An average of the losses and damages over the past decade shows that the direct annual costs from natural disasters to the national economy in terms of damages to infrastructure and livelihoods and losses from forgone production stand at 0.5 percent to 1 percent of GDP. The figures indicated by the studies may slightly vary, but the data are enough to be alarmed about the climatic condition of the country in the future.

There is an estimate that by 2050, climate change could reduce the GDP growth in some countries throughout South and Southeast Asia by up to 4 percent per year. German watch estimated that, during the period 2000–2019, Bangladesh sustained US\$1.86 billion in damages by natural disasters.

The report "Economics of Adaptation to Climate Change in Bangladesh, 2010" of the World Bank report reveals that since the sixties, there has been substantial investment by the GoB to the tune of US\$ 10 billion on structural (polders, cyclone shelters, cyclone-resistant housing) and non-structural (early warning and awareness raising systems) disaster reduction measures. As a result, damages and losses from extreme climatic events have significantly decreased over time, especially in terms of deaths and injuries. However, the report estimates

that Bangladesh will require US\$ 5,516 million for investment and US\$ 112 million for recurrent costs until 2050 to protect against storm surge risk.

3. Landscape of Climate Finance in Bangladesh

3.1 Global Climate Finance

Bangladesh has received climate funds from multiple international sources, which include: Green Climate Fund, the Global Environment Facility (GEF), Adaption Fund, Least Developed Countries Fund (LDCF), the Adaptation for Smallholder Agriculture Program (ASAP), the Global Climate Change Alliance (GCCA), Climate Investment Funds, and the UN-REDD Readiness Program. The major sources are highlighted below:

Green Climate Fund (GCF)

GCF is the main global vehicle for disbursing climate finance from developed countries to poorer nations. Economic Relations Division (ERD) is the National Designated Authority (NDA) to the GCF and acts as the core interface between Bangladesh and the Fund. The authority ensures that the activities to be taken up with support from GCF will be aligned with strategic national objectives and priorities. Bangladesh has so far received US\$ 94.7 million as a grant from GCF. GCF-financed projects in Bangladesh are:

- Promoting private sector investment through large-scale adoption of energy-saving technologies and equipment for the textile and readymade garment (RMG) sectors of Bangladesh (total project value: US\$ 340 million).
- Increasing the resilience of poor, marginalized, and climate-vulnerable communities in flood-prone areas of Bangladesh (total project value: US\$ 13.3 million).
- Global Clean Cooking Programme, Bangladesh (total project value: US\$40 million).
- Enhancing the adaptive capacities of coastal communities, especially women, to cope with climate change induced salinity (total project value: US\$ 33 million).
- Climate Resilient Infrastructure Mainstreaming (CRIM) (total project value: US \$81 million).

The Global Environment Facility (GEF)

GEF has received funds for 43 projects in Bangladesh, with a corpus of US\$160 million in the form of grants and US\$1037 million as additional co-financing. GEF also manages the UNFCCC funds, including the Least Developed Countries Fund (LDCF), the Special Climate

Change Fund (SCCF), and the Adaptation Fund. Activities supported by GEF align with strategic national objectives and priorities.

Climate Investment Funds (CIF)

CIF is helping Bangladesh improve lives in 10 coastal towns by investing in climate-resilient municipal infrastructure, urban planning, and livelihood development. Bangladesh received a total of US\$110 million in grants and near-zero interest credits from the Pilot Programme for Climate Resilience (PPCR). Another US\$75 million in grants and low-cost financing from the Scaling up Renewable Energy in Low Income Countries Programme (SREP) helped kick-start investment in utility-scale renewable energy projects and expand off-grid solar markets. There are nine CIF-funded projects in Bangladesh.

In addition to these funds, there are other bilateral agencies such as FCDO in the United Kingdom, USAID in the United States, Swedish SIDA and GIZ in Germany, etc., as well as multilateral banks such as the World Bank and Asian Development Bank (ADB) and UN agencies such as UNDP, UNEP, etc. that channel funds to Bangladesh.

3.2 Internal Climate Finance

3.2.1 Climate Finance by the Government of Bangladesh (GoB)

Bangladesh is a pioneer among the developing countries regarding the enactment of climate finance. The country is increasingly mobilizing domestic and international finances and channeling them towards climate adaptation and mitigation goals. Every year, the government channels resources for significant investment in projects and programs to strengthen climate resilience. It currently spends US\$1 billion a year, around 6 to 7 percent of its annual budget, on climate change adaptation, which is nearly a fifth of the US\$5.7 billion that the World Bank estimates Bangladesh will need as adaptation finance by 2050. Seventy-five percent of the resources spent on climate change in the country come directly from the government, while the rest come from international development partners. As part of mitigation efforts, the government is embarking on solar energy projects, afforestation programs in climate hotspots, programs for promoting the use of new technology to replace coal-fired kilns, etc.

The GoB formulated the "Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009" to cope with the adverse effects of climate change. In this plan, 44 programs under six

thematic areas were identified. Bangladesh Climate Change Trust Fund (BCCTF) was created in 2010 from the government's own revenue sources to combat climate change impacts as well as implement BCCSAP 2009. Bangladesh adopted its national Climate Fiscal Framework (CFF) in 2014. Since the adoption of the CFF, many changes have taken place both nationally and globally in alignment with the six thematic areas identified in the BCCSAP 2009. The climate issues were mapped with the new Budget and Accounts Classification System (BACS) and iBAS++ by working out appropriate methodologies.

Table 2 : Trend of Climate Relevance in the Budgets of Selected Ministries/Divisions				
Budget Description	Annual Budget (in crore Taka)			
	2021-22	2020-21	2019-20	2017-18
Total Budget	3,46,106	3,21,985	3,04,038	2,36,240
climate relevant allocation	25,125	24,076	23,538	18,929
as % of total budget-+	7.26	7.48	7.74	8.01
Source: Finance Division, Ministry of Finance, Bangladesh.				

Table 2 provides climate change relevant allocations for twenty-five ministries and divisions of the government of Bangladesh. The total budget allocation of these twenty-five ministries and divisions accounts for 57.33 percent of the national budget for FY2021-22. Out of this total allocation, 7.26 percent is climate relevant. In absolute terms, the climate relevant allocation increased significantly by 32.7 percent from TK 18,929.43 crore in FY2017-18 to TK. 25,124.98 crore in FY2021-22. However, as a percentage of the total budget, it declined from 8.01 percent to 7.26 percent over these five years. This may be attributable to the significant allocations for preparedness and mitigation measures against situations arising from the COVID-19 pandemic and possible post economic recovery in this budget.

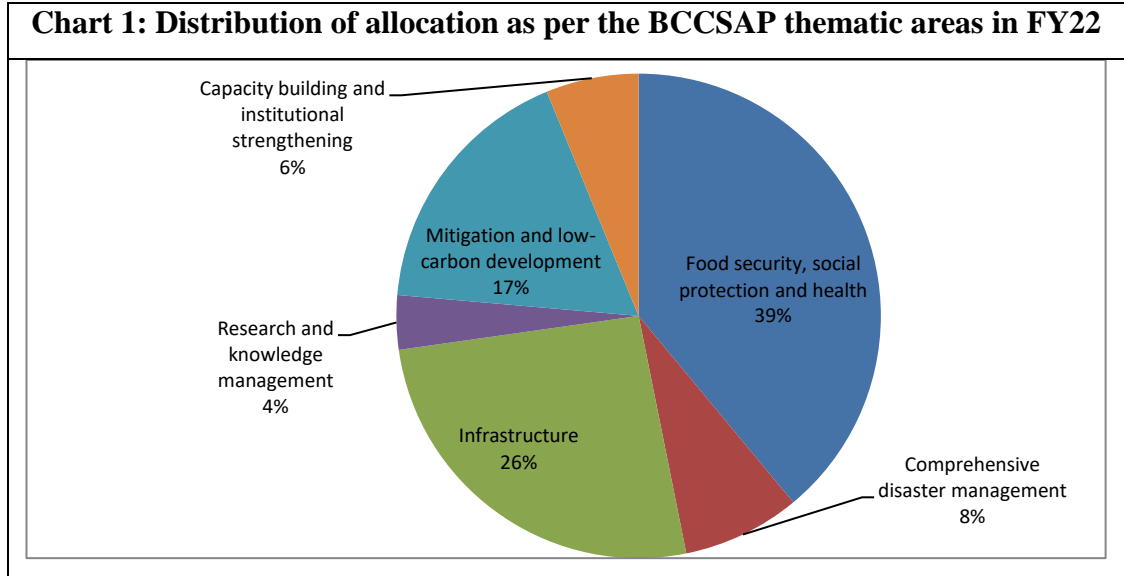
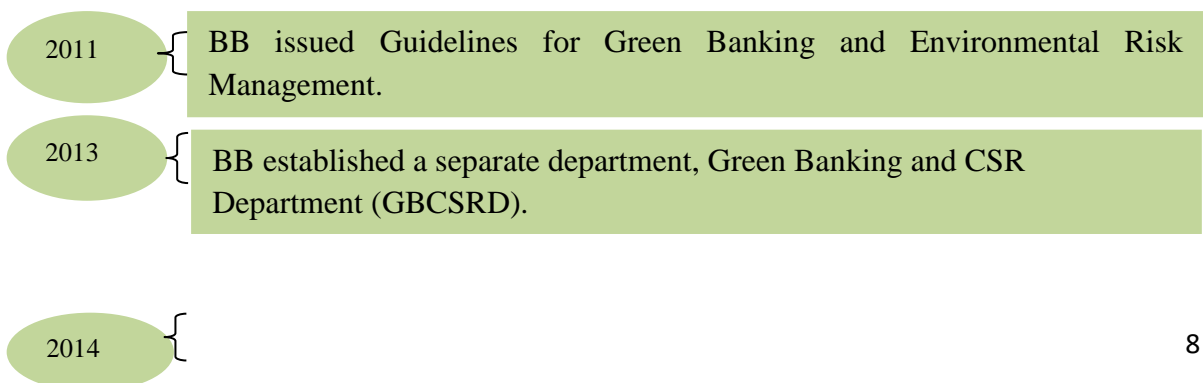


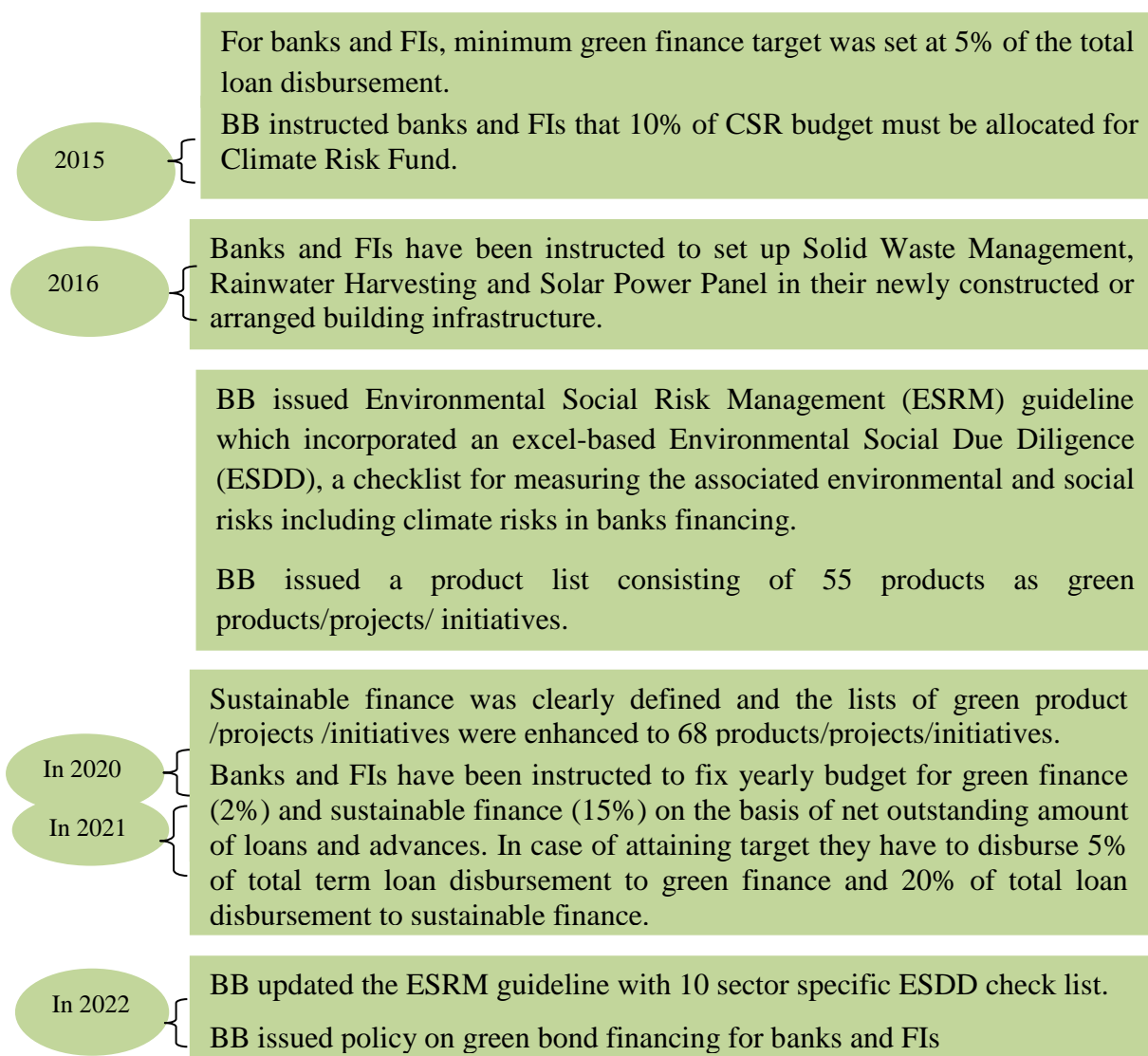
Chart 1 shows the distribution of allocations as per the BCCSAP thematic areas in FY 2021–22 for twenty five selected ministries and divisions. Among the six thematic areas, the largest share of 39 percent goes to ‘Food Security, Social Protection, and Health’ followed by Infrastructure (26 percent), and Mitigation and Low Carbon Development (17 percent). It appears that the climate relevant allocations for ‘Research and Knowledge Management’, and ‘Capacity Building and Institutional Strengthening’ remain as low as 4 percent and 6 percent, respectively.

3.2.2 Sustainable Finance by Bangladesh Bank

Sustainable banking initiatives of BB have been broadly categorized into the following aspects: policy initiatives, monitoring of sustainable finance activities of banks and FIs, and refinance support from BB in diverse green products/sectors.

Policy Initiatives of BB





Green Finance and Sustainable Finance by Banks and FIs

Banks and FIs have been contributing to sustainable finance since January 2021. In 2022, the total disbursement by banks and FIs as sustainable finance was BDT 1307.6 billion, compared to BDT 825.5 billion in 2021. The percentage of sustainable finance against total loan disbursements during this period is 11.59 percent. The amount of green finance disbursement in 2022 was BDT 122.3 billion, which was 3.52 percent of total term loan disbursement. The sustainable linked finance disbursement in 2022 was BDT 1185.4 billion, compared to BDT 753.2 billion in 2021 (Tables 2 and 3).

Chart 2 shows the trend in green finance disbursed by banks and NBFIs during the last 4 years. Category-wise amounts of green finance are given in Chart 3 and category-wise sustainable linked finance is given in Chart 4.

Table 2: Year Wise Performance of Green Finance and Sustainable Finance				
Issue	2019	2020	2021	2022
Green Finance (in million BDT)	111,037.77	119,299.26	72,328.50	122,264.65
Green Finance as % of Total Term Loan Disbursement	1.22%	3.96%	3.06%	4.97%
Sustainable Linked Finance(in million BDT)	-	-	753,188.24	1,185,357.70
Sustainable Finance (in million BDT)	-	-	825,516.74	1,307,622.35
Sustainable Finance as % of Total Loan Disbursement	-	-	8.04%	11.59%
Source: Sustainable Finance Department, Bangladesh Bank				

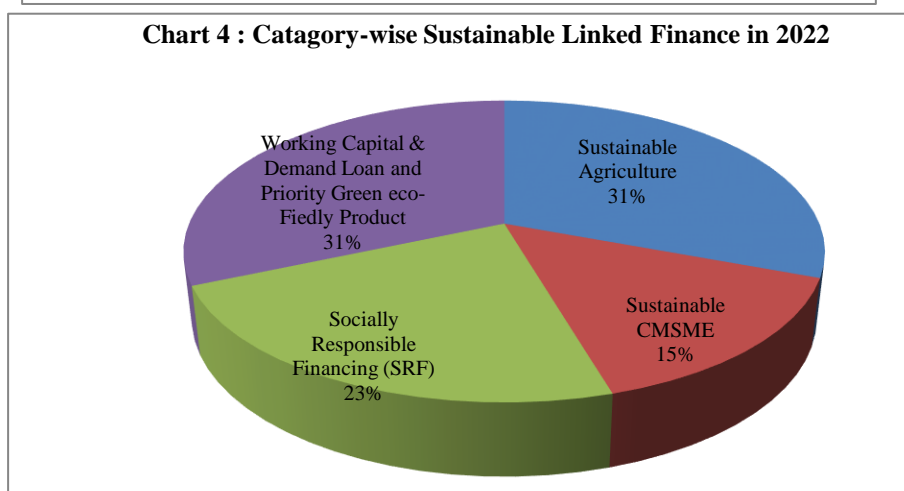
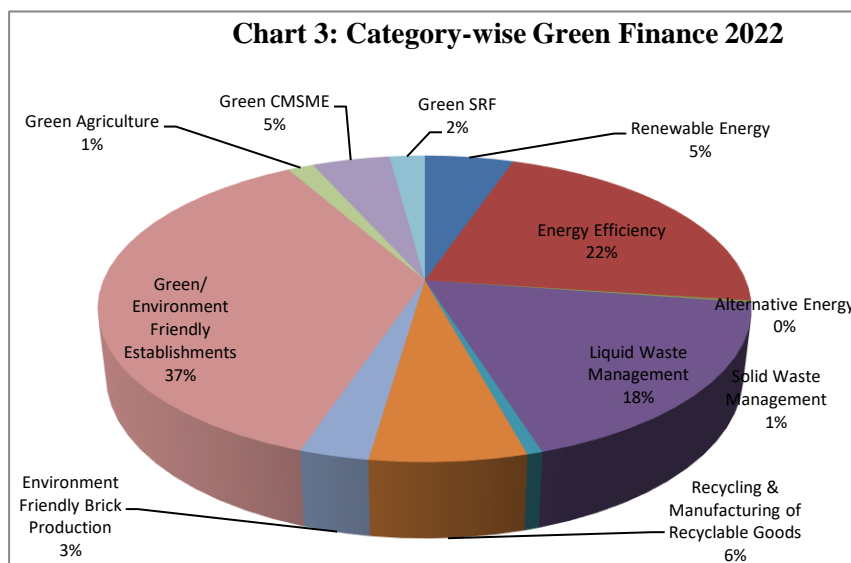
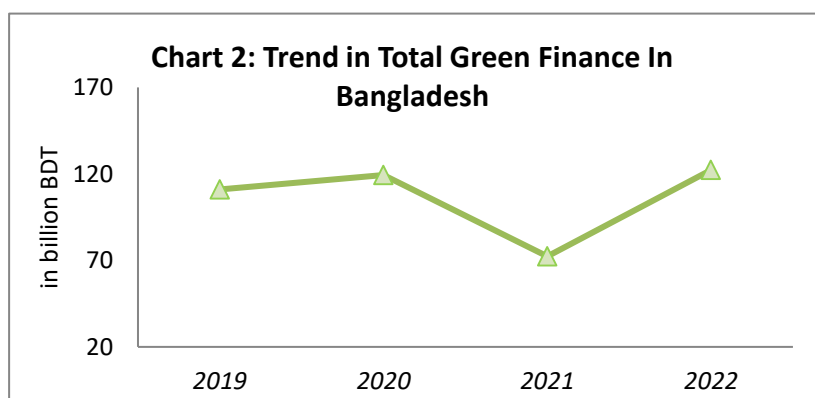


Table 3: Year Wise Information on Green Banking Activities				
Green Banking Activities	2019	2020	2021	2022
Utilization of Climate Risk Fund (in million taka)	385.65	506.18	1514.36	911.289
No. of Finance ESDD Rated	57650	62787	118992.00	164243
Amount of Rated Finance Disbursed (in million taka)	2147053	1516643	3005023	4372186
Number of Solar Powered Branches	601	613	687	712
Number of Branches with Rainwater Harvesting	7	7	7	6
Number of Branches with Solid Waste Management System	252	402	18	323
Number of Solar Powered ATM Booths	76	31	138	71
Number of Solar Powered Agent Outlets	5	17	22	4
Source : Sustainable Finance Department, Bangladesh Bank				

Alternative Financing Initiatives/Refinance Schemes

Green Transformation Fund (GTF)

In February 2016, BB announced a new long term refinancing window of USD 200 million, namely the Green Transformation Fund (GTF). In April 2020, an amount of Euro 200.0 million along with the existing USD 200.00 million was introduced in GTF. The UD Dollar component facilitates refinancing for all manufacturer-exporters of any sector against the import of green capital machinery and accessories for implementing specified green or environmentally friendly initiatives mentioned in the GTF guidance note. On the other hand, the Euro component facilitates refinancing for importing green capital machinery and accessories, including industrial raw materials, in all manufacturing enterprises, including both export oriented and deemed exporters. In 2022, another \$50 billion refinance fund (in local currency) for the export and manufacturing industries will be introduced to serve the same purpose. The disbursement from GTF up to FY22 was USD 138.75 million in 43 projects and Euro 61.72 million in 26 projects.

Refinance Scheme for Green Products/Projects/Initiatives

A revolving refinance scheme of BDT 2.0 billion was established in 2009 with a view to broadening finance for green products or initiatives at a lower cost of funds, which increased to 4.0 billion subsequently. The refinance scheme for environmentally friendly products/projects/initiatives offers refinance facilities to Participatory Financial institutions (PFI) for 55 green products/projects/initiatives under 9 green categories. The product line has been enhanced to 68 products in 11 categories. The cumulative amount refinanced under the

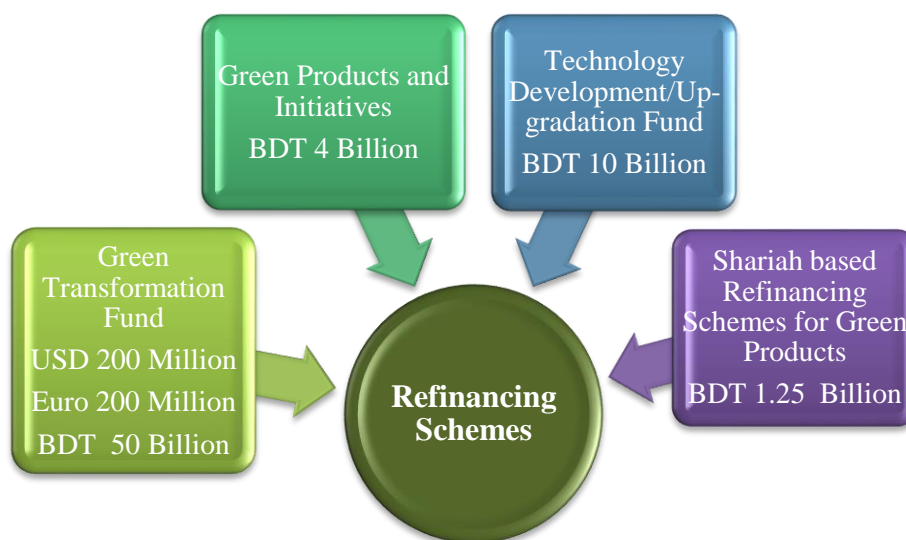
scheme up to June 2021 stood at BDT 6,474.47 million. In FY22, total disbursement under the BB's refinance was BDT 792.58 million.

Refinance Scheme for Islamic Banks & Financial Institutions for Investment in Green Products/Initiatives:

BB has introduced a refinance scheme funded by excess liquidity of shariah based financial institutions to facilitate shariah based banks and FIs in 2014. In 2018, Bangladesh Bank issued an integrated and comprehensive "master circular" by revising and incorporating all the existing circulars and circular letters related to this refinance scheme. BB has enhanced the product range under this scheme to 51 and segregated these products into eight categories. The cumulative amount of refinancing under the scheme up to June 2021 stood at BDT 476.73 million. Total disbursement under this scheme during FY21 was BDT 37.91 million.

Refinance Fund for Technology Development /Up gradation of Export Oriented Industries

The BDT 10 billion fund took place in 2021 and offers refinance facilities for the modernization and technological development or upgrade of export oriented industries, including textile and RMG industries, in Bangladesh, mostly in the area of environmentally friendly and energy efficient technologies. The fund facilitates 32 industrial sectors mentioned in the Export Policy, 2018–2021, under 11 initiatives/categories. In FY22, the total disbursement under the refinance scheme was BDT 106.36 million.



4. Challenges for Greening the Financial System in Bangladesh

Despite all regulatory authorities encouraging the financing of green projects and programs, green financing is still in its nascent stage in Bangladesh. Only recently has there been viable, feasible, and faster growth in green financing. However, there are many general factors that may create major challenges, and some of the main difficulties are described below:

- As a developing nation, Bangladesh has limited financial resources. Therefore, it is challenging to mobilise more resources from domestic and international sources and allocate them towards the creation of sustainable initiatives;
- Enterprises and people are not fully aware of the advantages of sustainable finance in Bangladesh. As such, it is difficult to raise support for environmentally friendly endeavours and green initiatives.
- Bangladesh's financial sector lacks technical expertise and green financial tools in areas such as green bonds, sustainable finance and climate risk assessment. This makes it difficult to design and implement effective sustainable finance initiatives;
- Lack of capacity building across banks and FIs on green financing. Banks have been facing difficulties to meet the quota of maintaining 5 percent of total loan portfolio for green financing.
- Proper monitoring and regulations on green financing by BB over FIs is also a big challenge;
- Coordination among all the concerned authorities i.e. GoB, commercial banks, Bangladesh Bank, DoE, law enforcing agencies, environmental NGOs, and the end-users is critical problem in pursuing sustainable financing in Bangladesh;
- Poor track record of enterprises in project design, implementation and monitoring on green financing;
- Bangladesh has failed to internalize environmental externalities. Most of profit-taking business enterprises focus on short-term earnings rather than long-term impacts on the environment;
- Green Projects have a high transaction cost which leads to a delayed return from them. Green Projects requiring high initial cost fail to arrange funding and some of the low-scale green entrepreneurs even fail to prove credit-worthiness.
- Non-appearance of an efficient green finance database; and
- Green marketing has not yet been efficiently adopted.

5. Way Forward

- Enhancing capacity building to make sure that Bangladesh achieves more grants under the GCF and handles the grants and green projects more professionally.
- Developing more financing instruments to mobilize additional resources. Green financing products like green bond, green savings account etc. should be introduced and more focus can be given to venture capitalists to finance green projects;
- Developing of climate-resilient cultivars and cropping;
- Implementing energy efficiency and circular economy solutions in ready-made garments and textile factories and energy efficiency building standards;
- Shifting of different categories of industry (such as, Garments, Textiles, Tannery) to a proper location;
- Restoration and afforestation will contribute to a reverse trend and make forests into carbon sink;
- Strengthen assessment and disclosure of climate and environmental risks in financial and real sector; every bank and FI should publish sustainability annual report;
- Providing adequate incentives for positive externalities of green projects and penalties for negative externalities of green projects;
- Realigning education and skills training programs to raise climate awareness and meet skill needs for low-carbon transition.
- Incorporating SMEs, agent banking and micro finance in green banking;
- Applying a quantitative approach for a more justified Environmental Risk Rating (EnvRR) which is now on the basis of the Environmental Due Diligence (EDD) Checklist under Subjective Criterion.
- More trainings, workshops, and seminars can be arranged to educate people about sustainable finance. The deadline for implementation of different phases of green banking should be commensurate with the size and capacity of different banks;
- Coordinated efforts of MoF and other line ministries, BB and commercial banks are required to move the green economy;
- Data related to green financing should be handled and kept sophisticatedly. Establishing a climate change portal with publicly disclosed data; and
- Strengthening regional cooperation to mitigate adverse impact of climate change and developing a joint regional investment plan in this regard.

5. Concluding Remarks

Bangladesh is one of the most vulnerable countries to climate change. Livelihood support and employment opportunities for the poor and ultra poor will be drastically reduced, particularly in vulnerable areas. On the other hand, Bangladesh's economy is improving steadily. With a gradual rise in GDP, Bangladesh graduated from LDC to developing country. Now is the perfect time for Bangladesh to thrive in green financing. For a country like Bangladesh, green financing is a very crucial step in achieving the SDGs. Bangladesh Bank is one of the few central banks in the world to initiate green financing as a policy. Despite going through immense challenges, Bangladesh has been performing quite satisfactorily in green finance activities. With more scrutiny and regulations, green financing in Bangladesh can advance even more in the days ahead.