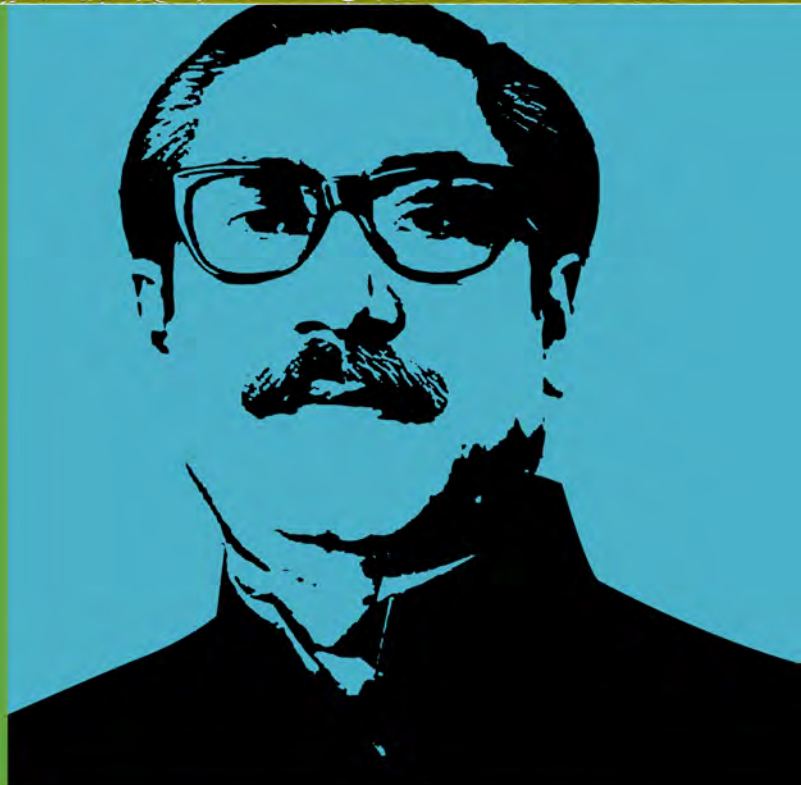





MUJIB CLIMATE PROSPERITY PLAN

DECADE 2030





MUJIB CLIMATE PROSPERITY PLAN

DECADE 2030

**Building forward stronger by charting a decade
of robust socio-economic development
that fully integrates climate resilience
and low carbon economic growth
for optimized prosperity and partnerships.**

SEPTEMBER 2021

MUJIB CLIMATE PROSPERITY PLAN

DECADE 2030

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EXECUTIVE SUMMARY

Bangladesh faces increasing catastrophic impacts of climate change that could result in a 6.8% loss in GDP per year by 2030 if not addressed. For this reason, we need to build Bangladesh's resilience to make sure that these impacts do not affect the country's prosperity. Thus, the Mujib Climate Prosperity Plan Decade 2030 includes a number of ambitious new and strengthened adaptation efforts to build resilience in populations and ecosystems. Minimizing and averting loss and damage is at the heart of this plan. The Mujib Climate Prosperity Plan was launched under Bangladesh's second tenure as president of the Climate Vulnerable Forum (CVF). It works to counteract climate-induced damage and losses by equipping vulnerable communities, industry, and the government with the Mujib vision supported by optimized financing tools and models that will be key to the new risk management paradigm to bring about resilience and stability, especially for small businesses, vulnerable populations, and the economy.

The Mujib Climate Prosperity Plan shifts Bangladesh's trajectory from one of vulnerability to resilience to prosperity (VRP). The Plan's principal aims are to secure Bangladesh's prosperity within a decade, launching an economic transformation with actions that:



Increase growth by maximizing resilience with loss and damage financing through Mujib locally led adaptation hubs, including by increasing gender responsiveness, strengthening the digital economy, enhancing financial protections, and expanding our green economic partnerships. This work aims to enable us to attain high upper middle-income status within a single decade



Strengthen employment in a green economy, that is climate-resilient, low-carbon, resource efficient, gender-responsive and socially inclusive for faster job creation, upskilling of the workforce to high quality green tech jobs, and greatly increasing the level of protection including against rising heat in the workplace



Promote well-being and traditional living to take advantage of 21st century technologies together with inherently sustainable, traditional lifestyle practices and living. These actions aim to promote physical and psychological well-being, and greatly enhanced mobility for all, while protecting the environment through cleaner air, special health programs and support arrangements



Secure our own resilience, energy independence and energy security, and to become a net green energy exporter to the world. With international and other investment support, we aim to reach 30% renewable energy by 2030 and at least 40% by 2041, with grid resilience and modernization. Our flagship energy projects include the Mujib Bongoposagor Independence Array, one of the first large-scale hybrid RE-adaptation infrastructure projects that will revitalize a mangrove green belt to protect our threatened coastlines. As with strategic Mujib Energy Hubs, we will convert coal plants into green energy facilities such as hydrogen works.

The Mujib Plan will be achieved within the framework of already-foreseen national planning processes and will support robust delivery on the 2030 UN Sustainable Development Agenda for Bangladesh. The Plan envisages ambitious, accelerated implementation of the Paris Agreement on Climate Change, towards which the Mujib plan also serves as the nation's climate resilience strategy and co-benefits from long-term low GHG emissions.

The Mujib Climate Prosperity Plan expects investment opportunities in resilient pathways including energy, water, transport, supply chains and value chains, to reach approximately USD 80 billion over the next decade.

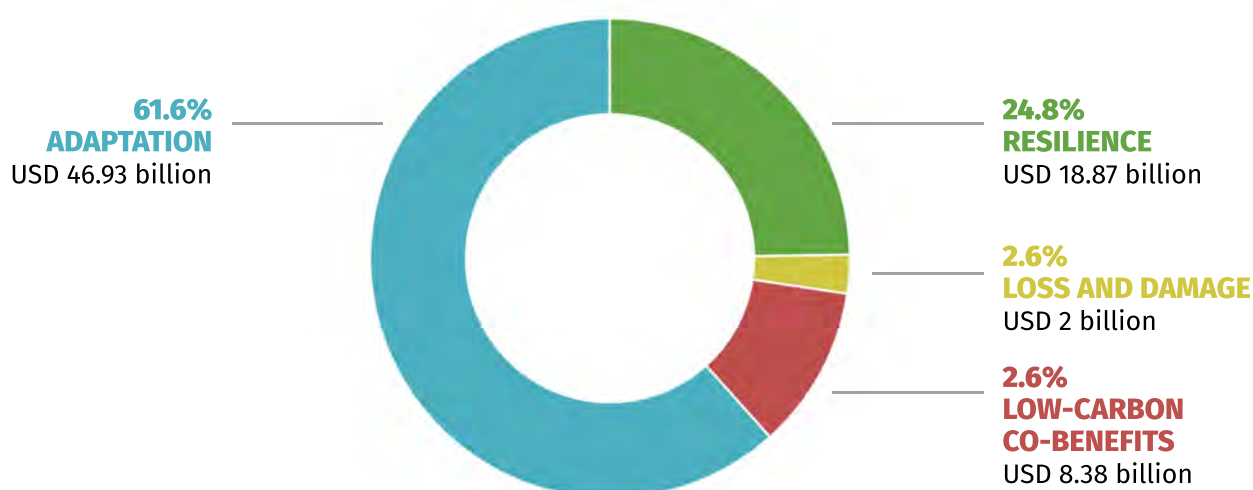


Figure 1. Investment Allocation

Optimized financing structures to attract foreign direct investment and mobilize domestic private sector capital include the use of public private partnerships (PPP) as a key solution to climate investment in coordination with the PPP Authority. The Bangladesh Bank can use different tools to incentivize investment in low-carbon and climate-resilient infrastructure, including preferential refinancing rates, differentiated capital requirements such as a “fossil fuel penalizing factor” commensurate with risk and higher capital requirements for non-low-carbon and non-climate-resilient projects.

Special purpose vehicles for climate resilience can be supported, such as the state-owned enterprises, to better underwrite green off-take agreements. Other alternative financing tools for the delivery of the Plan include special leasing facility windows and de-risking instruments.

The V20's Accelerated Financing Mechanism for the targeted use credit strengthening of national banks includes subordinated debt investment that lowers the cost of capital. Finally, the risk-layering approach in the Mujib Climate and Disaster Risk Management and Financing Strategy including the V20's Sustainable Insurance Facility will utilize cost-effective reduction in exposure to climate risks that will integrate investments in risk reduction (adaptation), risk retention (e.g., budgetary allocations for contingency funds for low impact, high frequency events), risk transfer on and across different levels (e.g., for high impact, low(er) frequency events) and contingency financing.

There are significant opportunities for technology-transfer partnerships and building manufacturing capacity in Bangladesh including in areas such as green hydrogen, solar, electric vehicles, modernized power grid and other resilient and quality infrastructure. Partnerships can also be leveraged for green supply chains and value-engineering in agriculture, fisheries, and manufacturing. The regional partnerships in South Asia (including through the South Asian Association for Regional Cooperation), feature connectivity with neighboring countries that can strengthen value-chain/supply-chain integration.

Moreover, the South Asia region can cement regional energy security through least-cost options that are competitive enough to attract global manufacturing, agriculture, fisheries, and services. In addition, there is an opportunity to explore Bangladesh foreign direct investment in member CVF/V20 countries to earn foreign currency overseas. Incremental gains of over USD 50 billion per year would be added to GDP versus business as usual, yielding USD 850 billion over 10 years. Delaying these investments in infrastructure and adaptive capacity would result in costs and losses of at least 4.9% of GDP by 2030, equivalent to at least USD 30 billion per year by 2030.

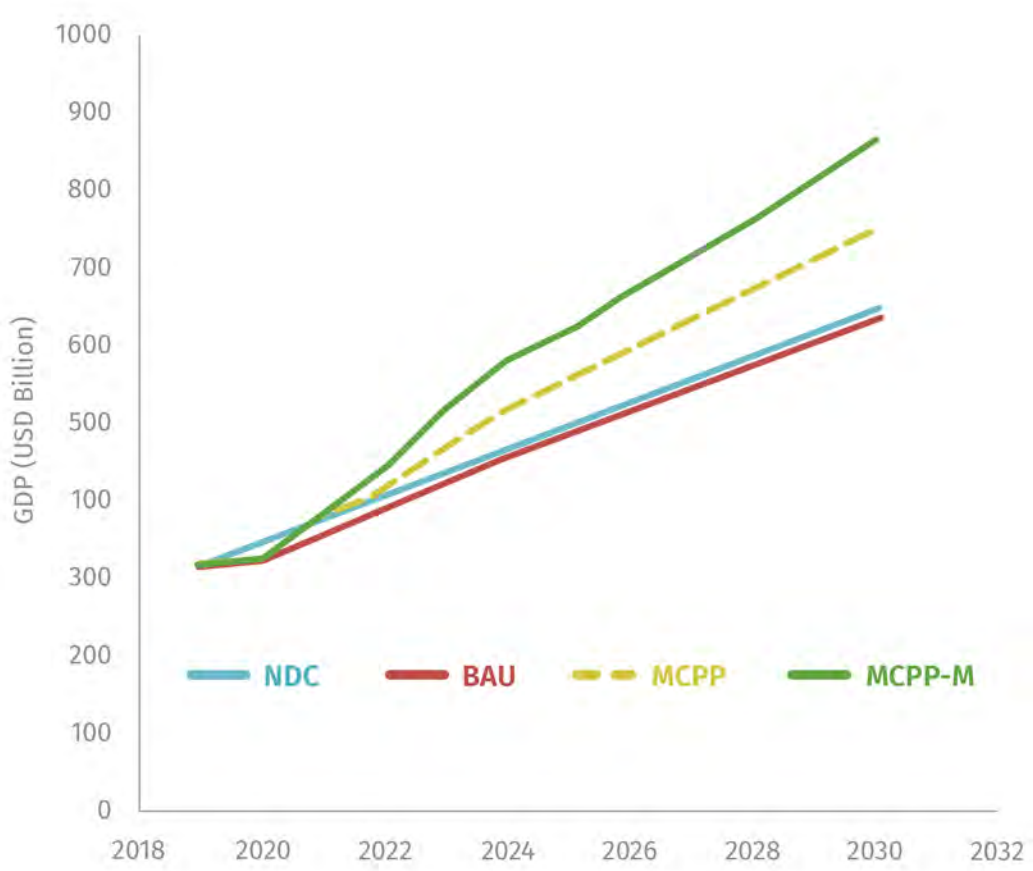


Figure 2. GDP Scenario Analysis

PREAMBLE: VULNERABILITY TO RESILIENCE TO PROSPERITY

Hard-fought development gains and increased productivity will continue to be undermined or reversed if the 1.5°C limit of the Paris Agreement is breached. Episodic climate-induced disasters and losses are only one subset of the threats facing the Bangladeshi people and industry. Other such threats stem from slow-onset effects such as drought, sea-level rise and ocean acidification which may inflict more lasting harm to Bangladesh's economic aspirations.

The Mujib Climate Prosperity Plan counteracts climate-induced damage and losses by equipping vulnerable communities, industry, and the government with the Mujib vision supported by optimized financing tools and models that will be key to embracing a new risk management paradigm that would bring about resilience and stability, especially for small businesses, vulnerable populations, and the economy. The Mujib Climate Prosperity Plan leverages the financing of the Eighth Five Year Plan 2021–2025 of Bangladesh, Vision 2041, and Bangladesh Delta Plan 2100 with synergies from the Bangladesh Climate Change Strategy and Action Plan, National Adaptation Plan and Nationally Determined Contributions submitted in 2020, to unlock a pathway for fast-tracked attainment of the Sustainable Development Goals by 2030 and GDP per capita growth commensurate to upper middle-income status.

The implementation of the Mujib Climate Prosperity Plan's to unlock new private funds could pave the way for Bangladesh's anticipated graduation from least developed country status in 2026. This accomplishment would enable diversified capital sources, including the private sector, blended finance and enhanced economic cooperation, improved market access through competitive positioning globally, export competitiveness and diversification, as well as strengthened financial protection and resilience.

The Mujib Climate Prosperity Plan shifts Bangladesh's trajectory from one of vulnerability to resilience to prosperity (VRP). This shift must happen in the decade to 2030, yet the Mujib Climate Prosperity Plan also positions Bangladesh strategically into the long-term, with this Plan including perspectives beyond 2040 to mid-century, in alignment with the Climate Vulnerable Forum Vision and the Paris Agreement.



BACKGROUND

The Mujib Climate Prosperity Plan is built on the foundation of the major national planning document, 8th Five Year Plan (8FYP) 2021–2025 of Bangladesh. The 8FYP is critical to achieving the outcomes in the Vision 2041, Bangladesh Delta Plan 2100, Bangladesh Climate Change Strategy and Action Plan, Bangladesh National Adaptation Plan and Nationally Determined Contributions 2020, Bangladesh Climate Change and Gender Action Plan (ccGAP) and Sustainable Development Goals (SDGs) by 2030.

Bangladesh foresees an accelerated pace of transformation in the forthcoming decade. There is today an unprecedented opportunity to redesign the power markets and build resilience in industry, education, healthcare, transportation, and communication to ensure more prosperous outcomes with lower power prices, more investment, improved efficiency, and an upskilled workforce.

The existing national plan is called “Bangladesh Climate Change Strategy and Action Plan”. It is focused mainly on eradicating poverty and achieving economic and social well-being for everyone. This will be achieved through a pro-poor climate change strategy, which prioritizes adaptation and disaster risk reduction, and also addresses low carbon emission, technology transfer and the provision of adequate finance. The Bangladesh Climate Change Strategy and Action Plan is built on 11 pillars: (1) Natural Resource Management: Water, Bay of Bengal, Biodiversity and Soil; (2) Ensure and Sustain Food and Nutrition Security; (3) Industry and Power; (4) Health; (5) Social Protection and Gender; (6) Regional and Urban Dimensions of Climate Change; (7) Comprehensive Disaster Management; (8) Infrastructure; (9) Low Carbon Development and Mitigation; (10) Research and Knowledge Management; and (11) Governance: Legal, Institutional and Policy Aspects.

Bangladesh will be highlighted as a global benchmark in the Mujib Climate Prosperity Plan, which will provide a holistic path to prosperity. The strategy will be implemented to optimize resilience and sustainability as well as to ensure Bangladesh's fiscal sustainability. Fighting climate threats and increasing resilience will require a coordinated effort from the entire government and society at large. The whole-of-government model requires participation from not only ministries and departments, but also local government, parliament, and even the security and military institutions, as well as the judiciary. The corporate sector, media, academia, civil society, and organizations for professionals such as engineers, lawyers, doctors, planners, and others are all included in the whole-of-society approach.

The Government of Bangladesh (GOB) commits to rapid growth that is balanced with an emphasis on an equitable distribution of the benefits of growth for all, especially for vulnerable people. As the GOB accelerates development outcomes, complementary to achieving this is the sustainable use of key natural resources such as land, water, forestry, natural habitat, and the atmosphere to avoid depletion and degradation. Planning principles include: (1) Human Rights-Based Approach; (2) Leave No One Behind; (3) Gender Equality and Women's Empowerment; and (4) Do No Harm. Equally important is planetary justice and climate equity where vulnerable countries like Bangladesh are assisted with requisite finance and technology to meet development aspirations.





The 8FYP's core theme is “Promoting Prosperity Fostering Inclusiveness” through a labor-intensive, export-oriented manufacturing-led, agricultural diversification, strengthened cottage, small and medium enterprises, and a modernized services sector, among others. The 8FYP underpins the investment ambition of the Mujib Climate Prosperity Plan through:

- Building quality infrastructure that matches that of upper middle-income economies
- Reducing moderate poverty to 12 percent and extreme poverty to 5 percent by 2025
- Graduating from Least Developed Country (LDC) status by 2026
- Achieving major SDGs targets

Bangladesh's success in climate prosperity planning and implementation hinges on investment in infrastructure, education, health, and poverty reduction. Such spending demands institutional modernization and innovative financing tools such as credit strengthening to reduce the cost of capital.

The Vision 2041 aims for Bangladesh to reach high-income country (HIC) status with per capita income of over USD 12,500, full engagement with the digital world by 2041 and the complete eradication of extreme poverty. The vision is embedded in the “Perspective Plan of Bangladesh 2021–2041” (PP 2041), a development strategy document laying out policies and programs to achieve these ambitious goals, including in key areas such as:

- Human development through quality education and consequent demographic dividend
- Sustainable agriculture for food security, and rural development
- Industrialization, export diversification, and employment generation
- Sustainable power and energy
- An innovation economy that fosters ICT and scientific research
- Building transport and communication infrastructure for sustained rapid growth
- Managing urban transition
- Ensuring sustainable environments while creating a climate-resilient nation in a dynamic delta and unlocking the potential for a blue economy

Bangladesh's Delta Plan 2100 (BDP 2100) takes into consideration the unique long-term challenges for development outcomes presented by climate change and natural hazards. The BDP 2100 seeks to integrate the medium- to long-term aspirations of Bangladesh to achieve upper middle income (UMIC) status and eliminate extreme poverty by 2030. From there the goal is a prosperous country beyond 2041 with the longer-term challenge of sustainable management of water, ecology, environment, and land resources in the context of their interaction with natural disasters and climate change.

While the BDP 2100 looks primarily at the delta agenda up to 2050, it also notes that decisions made in the present will have implications beyond 2050. Therefore, the BDP 2100 sets up a long-term vision for the evolution of the Bangladesh Delta by the end of the 21st century and defines short- and medium-term goals as steps to reaching that vision. These goals and their associated strategies, policies, institutions, and investments are dynamic. They can be adapted in response to change in natural events and relevant to paving the pathway to the long-term, sustainable delta vision.

The Mujib Climate Prosperity Plans contribute to the strengthening of macroeconomic management and the realization of the comprehensive 8FYP including:

01

RAPID RURAL TRANSFORMATION

Over the next decade, rapid transformation will take place in rural Bangladesh in terms of ICT, transport and logistics facilities, modernization of agriculture, healthcare, education, infrastructure, financial inclusion, enterprise development, domestic consumption, training, and capacity building. The Government will take measures in promoting modern agricultural practices, providing rural electrification, improving health education services, encouraging development of micro, small, medium enterprise, and other industries. The Mujib Climate Prosperity Plan outlines a host of potential projects and investment roadmaps in modernization of agriculture, development, and financial support of MSMEs contributing to financial inclusion, and rural electrification.

02

BOOSTING INVESTMENT

The role of the private sector and public-private partnerships (PPP) will be crucial in achieving the vision outlined in the 8FYP. A significant part of the partnerships will come in the form of investment and trade by North-South, South-South, regional and international cooperation. These investments are expected to have compounded positive effects in science, technology, and innovation. The Mujib Climate Prosperity Plan specifies financing structures for all identified projects and programs, and the level and form of international support being sought to realize these.

03

HARNESSING THE POTENTIAL OF THE YOUNG WORKFORCE AND SUPPORTING SME DEVELOPMENT

A key priority in the 8FYP is to create adequate employment for the growing labor force, provide training and skills that match the market demand (local and global), and encourage enterprise building. The 8FYP also seeks to drive growth in the SME sector through a supportive environment and policy incentives. The Mujib Climate Prosperity Plan outlines job opportunities to be created through a just transition and modernization of the labor force to better compete in the labor markets of the future including reskilling and upskilling via technical and vocational education and training, as well as improved efficiency via automation. It also outlines measures for needs-responsive financial protection of micro-, small- and medium-sized enterprises (MSME) that support proactive risk management, risk reduction, and immediate liquidity needs, as well as enhanced productivity through innovative and alternative financing platforms.

04

ENCOURAGING WOMEN'S EMPOWERMENT

Promotion of female labor participation across all sectors remains a key priority in the 8FYP. The MCPP also focuses on financial protection of women-led and owned MSME and through innovative financial risk management tools such as Sustainable Insurance Finance targeted at industries with higher female participation. Actions outlined across the Plan also contribute to increasing protection and resilience of women from climatic shocks and climate-related crises.

05

CONSOLIDATING REVENUE MOBILIZATION

The 8FYP emphasizes reforming existing tax structures to increase revenue through broadening the tax base. The Mujib Climate Prosperity Plan encourages a climate finance strategy, optimized structures and certainty in the carbon markets to raise investment and additional revenue opportunities of up to 0.2% of GDP by 2025 and up to 1% of GDP by 2030.

06

RAPID IMPLEMENTATION OF MEGA INFRASTRUCTURE

The 8FYP assigns top priority to mega infrastructure projects such as Metro Rail Transits (MRT), Bus Rapid Transit (BRT), and expressways that improve mobility with increased speed and reliability to accelerate economic activity. Public-private partnerships and multilateral loans can be effective financing tools for such major infrastructure projects. The Mujib Climate Prosperity Plan outlines quality infrastructure and transportation such as high-speed electric rail and the modernization of urban mobility. It further includes the creation of green and credit-enhanced special purpose vehicles, alternative financing tools to improve the affordability of modernization, and the utilization of a dedicated green capital market, among others.

07

ERADICATING POVERTY, REDUCING REGIONAL DISPARITY AND MANAGING URBAN TRANSFORMATION

The 8FYP renews emphasis on minimizing regional disparity through social safety nets, scaling up investment in health, education, and physical infrastructure. The strategy for urbanization will focus on decentralized development, improved utilization of land and preserving and improving urban environments, particularly water bodies. The Mujib Climate Prosperity Plan will accelerate investment in protective infrastructure to strengthen resilience with a special focus on inland and coastal flooding.

08

PROMOTING MODERN, SUSTAINABLE AGRICULTURE FOR NUTRITION FOR ALL

The 8FYP aims to address the issues related to nutrition, food security, food safety, production, sustainability, and impact of climate change through national level interventions and cooperation from development partners. The Mujib Climate Prosperity Plan outlines the development of climate-resilient agricultural and fisheries supply chains. These would include national disaster risk financing and management to safeguard food and water security by adapting food supply chains to climate change. This will be done through improving access to agro-meteorological services, improving production and management techniques along the supply chain, and introducing risk transfer schemes for key supply chain actors.

EMPOWER MARGINALIZED COMMUNITIES

The 8FYP illustrates Bangladesh's strong progress over the years in terms of eliminating legal barriers and introducing an enabling environment to improve the welfare of persons with disability (PWD) and other vulnerable communities. Included is the implementation of the Constitution which provides equal rights and opportunities to all citizens irrespective of race, religion, caste, creed, or profession. Bangladesh's measures in eliminating all legal and regulatory barriers to inclusion and for building affirmative action in its social development policies to protect social inclusion is an example. The Mujib Climate Prosperity Plan aims to support locally led adaptation actions for the most disadvantaged communities. Measures that consider the needs and appropriateness of these communities remain a core functional requirement in this track. At a local scale, climate-proof adaptation technologies that draw examples from grounded research with local communities remain key to more equitable, effective, and sustainable adaptation.

ENSURING POWER AND ENERGY SECURITY

Power and energy security is a driving force for Bangladesh's future and remains a key priority in the 8FYP. The Government will continue taking major steps to ensure uninterrupted power supply through increased installed generation capacity, an expanded transmission and distribution network, reduced system loss, increased electricity coverage, a greater share of renewable energy, and a cost-effective cross-border energy trade. The Mujib Climate Prosperity Plan outlines specific measures to position Bangladesh towards a maximized share of renewable energy, energy efficiency and energy storage infrastructure taking advantage of the deflationary price trajectory of domestic renewable electricity generation and storage. Bangladesh will pursue accelerated grid modernization and ancillary market development in order for the power system to take advantage of rapid technological advancements to improve cost-competitiveness and socio-economic outcomes. This will enable adequate grid investment, reduction of broader infrastructure risks, protection from spiking fossil fuel prices and reduced pricing impacts.

TACKLING CLIMATE CHANGE, MANAGING DISASTER AND PROTECTING THE ENVIRONMENT

The 8FYP is the first step in implementing the comprehensive delta management plan, the BDP 2100. Financing for this is to be sourced from global multilateral organizations and entities that work bilaterally. The Mujib Climate Prosperity Plan identifies anticipatory and comprehensive investment including climate and disaster risk financing and insurance. This will enable a cost-effective investment mix in adaptation measures (soft and hard engineering), risk retention, risk financing instruments such as risk transfer, contingent credit lines, catastrophe bonds and risk-management. Residual risk can be reduced through early warning systems and communications.



THE MUJIB VISION AND MEASURES



With the advent of the birth centenary of the Father of the Nation, Bangabandhu Sheikh Mujibur Rahman, Bangladesh finds itself at a crossroads. Echoing the sentiments of the Father of the Nation at the United Nations on 23 September 1974, “Our aim is to achieve self-dependence.” Bangladesh is severely threatened by the constant and increasingly devastating impact of climate change that already significantly curtails the nation’s development. Unchecked, global warming could permanently erode and submerge a significant share of the country’s territory, an affront to the future of the nation itself, and ecosystems integral to the planet. By degree of exposure and density of population Bangladesh is one of the world’s most climate vulnerable nations.


“The time to save the planet is not tomorrow, but today.”

H.E. SHEIKH HASINA MP

Hon’ble Prime Minister,
People’s Republic of Bangladesh
CVF Chair

Bangladesh, however, is also resilient. Despite rapidly accelerating climate impacts and the serious health and economic shocks of the COVID-19 pandemic, Bangladesh continues to chart a robust economic development trajectory and serve as an engine of the global economy. Yet, Bangladesh, in the vision of the Father of the Nation, can and must further strengthen its resilience to overcome the greater challenges in store ahead. It should chart the swiftest and most sustainable and resilient pathway to prosperity in fulfillment of the independence of Bangladesh as a major 21st century leader for the world. The Mujib Climate Prosperity Plan Decade 2030 is launched under Bangladesh’s second tenure as president of the Climate Vulnerable Forum (CVF) in line with whose vision Bangladesh aims to pursue and highlight the possibilities of a more prosperous and sustainable future for all.

While the Nationally Determined Contribution (NDC) orientates climate action around commitments to cut emissions and to take other actions, the Mujib plan is instead a strategy that explores the possibilities and potential to deliver robust socio-economic development while simultaneously maximizing our climate resilience and various green opportunities. It will lay out the funding needs required from international, regional, public and private sources, as well as how the local economy can contribute, if the elements of the Mujib plan’s vision for the future are to actually be realized.



Bangladesh is also ready to chart an ambitious course to a resilient and sustainable future. Her Excellency Sheikh Hasina, the Honorable Prime Minister of Bangladesh has said: “The time to save the planet is not tomorrow, but today”. This spirit of urgency and action which is also supported by the Bangladesh Parliament’s declaration of climate change as a “planetary emergency” in November 2019 highlights that the planet faces a series of converging crises, all on the same timeline — global warming, disasters, extreme weather events, biodiversity loss, acidification of oceans, water stress and food insecurity. To combat this “on a war footing” is to build on the key national development planning process including the Eighth Five Year Plan 2021–2025 of Bangladesh, Vision 2041 and Bangladesh Delta Plan 2100, the Bangladesh Climate Change Strategy and Action Plan, the Bangladesh National Adaptation Plan, and Interim Nationally Determined Contributions 2020. The Mujib Plan’s principal aims are to secure prosperity of Bangladesh and its people for the future within a decade, through measures that:

**BOOST RESILIENT
GROWTH THROUGH
MAXIMAL RESILIENCE**

Rendering the people and economy of Bangladesh maximally resilient to climate change, reducing losses to GDP, and so maximizing Bangladesh’s GDP growth beyond reference targets for economic growth. These measures will include empowering locally led action including gender responsiveness, strengthening the digital economy, increased risk-adjusted returns via enhanced financial protections, expanding economic partnerships and leveraging higher levels of international and domestic investment and green commerce, smoothing any adverse impacts of emerging from least developed country status, and advancing Bangladesh’s attainment of upper middle-income status in a decade.

**DRIVE SUPPORT
THROUGH MUJIB LOCALLY
LED ADAPTATION HUBS
TO SUPPORT THE MOST
VULNERABLE**

We will operationalize systematic financing to minimize and avert loss and damage through the Mujib Locally Led Adaptation Hubs. These hubs will support high levels of resilience and gender-responsive opportunities to enhance climate adaptation and counteract internal migration.

**OPTIMIZE CLIMATE
AND DISASTER RISK
MANAGEMENT AND
LOSS AND DAMAGE
FINANCING**

A comprehensive program of financial and social protection including adaptive social protection can enable a transformation in poverty reduction towards the elimination of extreme poverty by 2030 and social inclusion. This will be delivered through the Mujib Climate and Disaster Risk Management and Financing Strategy. We are experiencing economic and non-economic loss and damage due to inadequate emission reduction measures globally. Upscaled action to avert, minimize and address impacts and loss and damage requires finance and dedicated financing mechanisms and allocations. We will operationalize systematic financing to minimize and avert loss and damage impacts through Mujib Locally Led Adaptation Hubs. These hubs will support high degrees of resilience and gender responsive local opportunities for prosperity to counteract internal migration and enhanced adaptation.

PROMOTE WELL-BEING AND TRADITIONAL LIVING

Leveraging 21st century technologies together with an inherently sustainable traditional lifestyle while safeguarding and promoting physical and psychological well-being. This would entail cleaner air, green health programs, greatly enhanced mobility for all, special support arrangements for the most vulnerable and marginal groups, including women, and people living with disability or mental illness. It would further entail green health programs; developing medicines for climate-related diseases and cancers and ultimately eradicating extreme poverty and exceeding key Sustainable Development Goal (SDGs) targets by 2030.

DELIVER RESILIENT ENERGY SYSTEMS

Ensuring energy systems are resilient to the impacts of climate change and securing energy resilience to be built for the climate of the future through transforming Bangladesh from a net importer of energy to a net exporter, leveraging domestic energy resources to the maximum, and becoming a leading global and regional participant in the green economy (hydrogen, supply chains, high-value nature-based agriculture). Strengthening the current account balance and reducing imported price volatility and inflation risk by minimizing energy imports, expanding green exports, and enabling green commerce including through flagship energy projects such as the Mujib Bongoposagor Independence Giga Array, one of the first large scale hybrid RE-adaptation infrastructure projects and strategic.

MUJIB ENERGY HUBS

Strengthen Employment in a Green Economy: Protecting workers and businesses from the harms of climate change by greatly increasing the level of protection. On top of that measure would be generating more aggregate employment than reference economic targets through strategic green job growth, lowering the level of unemployment, and ensuring upskilling of the workforce to high quality green tech jobs. Equally important is markedly increasing protective measures against the rising workplace heat that exposes indoor and outdoor workers to severe health and productivity risks.

The Mujib Plan will be achieved within the framework of national planning processes and will further strengthen the already-foreseen actions of: the 8th Five Year Plan, Bangladesh Delta Plan 2100, Vision 2041 Bangladesh Climate Change Strategy and Action Plan, Bangladesh National Adaptation Plan, Bangladesh Climate Fiscal Framework and Nationally Determined Contributions 2020. The Mujib Plan will be within the bounds of existing fiscal strategies, while optimizing them for resilience and sustainability and ensuring continued ongoing debt sustainability for Bangladesh. The Mujib Climate Prosperity Plan prioritizes public private partnerships (PPP) as a key element in climate investment.

The Mujib Plan will support robust delivery of the 2030 UN Sustainable Development Agenda for Bangladesh in addition to an ambitious, accelerated implementation of the Paris Agreement on Climate Change towards which the Mujib plan also serves as the nation's long-term low GHG emissions and climate resilient development strategies. With a primary focus to 2030, the Mujib plan also incorporates strategic perspectives extending beyond 2040 to the mid-century.

The Mujib Plan will be implemented by concerned ministries as per rules of business. It will be coordinated and overseen by the existing office of SDG Affairs and a committee under the coordinator. The committee can include representatives of each concerned ministry, PPP Authority, the Bangladesh Investment Development Authority (BIDA), Bangladesh Bureau of Statistics and CVF/V20 representatives from the Government of Bangladesh. An Advisory Board with consultative status comprising key private-sector industries represented by leaders in companies and business chambers in Bangladesh to complement and reinforce investment and partnership efforts. Progress and monitoring will be completed by the Bangladesh Bureau of Statistics that will complete an annual assessment for submission to the SDG office.

NEW HALLMARK INITIATIVES

WITH THE MUJIB CLIMATE PROSPERITY PLAN

Bangladesh already pursues and works to complete a number of key national planning processes. The Mujib Plan is specific to the climate change agenda and to securing Bangladesh's prosperity and independence path amid the major and rapidly increasing threats of global climate change. The Mujib Plan proposes a number of hallmarks, new initiatives that will help to anchor the Mujib Plan and accomplish its goals and objectives.

Such key initial Mujib initiatives include:



MUJIB LOCALLY LED ADAPTATION HUBS

To avert or minimize impacts, loss and damage requires finance and dedicated financing mechanism, as well as unlocking local-level leadership through the establishment and capacity building of hubs for climate change adaptation in the most vulnerable communities of Bangladesh. The Hubs aim to support high degrees of resilience and gender responsive focus, creating local opportunities for prosperity to counteract internal migration, promote the effective management and leveraging of public resources for adaptation, and the adoption of the Kampala Principles for effective private sector development cooperation.

MUJIB COMPREHENSIVE CLIMATE AND DISASTER RISK MANAGEMENT AND FINANCING STRATEGY

The application of a comprehensive set of climate and disaster risk financing and insurance (CDRFI) instruments and a strategy for their utilization to close the financial protection gap will be instrumental for achieving resilience and enabling adaptation investments. A key component of the strategy includes a transformation in poverty reduction and social inclusion through the delivery of Adaptive Social Protection (ASP). The strategy can be supported by the V20 collaboration on a global public-private partnership for analytics to close the protection gap. With support from the G20+ and V20 InsuResilience Global Partnership, the different CDRFI instruments can complement and enable the resourcing of adaptation investments.





MUJIB RESILIENT WELL-BEING PROGRAMS

The Mujib Plan will support a strengthening of disability-inclusive, gender-responsive national initiatives in the domain of mental health and well-being, including: crisis preparedness and management for mental health training and capacity programs, trauma counseling, educational and child support programs, and general well-being and awareness programs in support of healthy, sustainable and traditional lifestyles.

MUJIB BONGOPOSAGOR INDEPENDENCE GIGA ARRAY

A 4-gigawatt wind generation array network linked to a mangrove green belt. This would be one of the first large scale hybrid RE-adaptation infrastructure projects. It would be sited offshore on the Bay of Bengal shelf, harvesting renewable energy to meet the nation's rapid energy growth and backstopping national energy security, while enabling coastal resilience outcomes through the mangrove green belt.



STRATEGIC MUJIB ENERGY HUBS

A strategic program of reconversion of coal, oil, and diesel thermal power plants together with workforce upskilling to act as high-tech green hydrogen production facilities, and waste-to-energy/biomass power plants, interconnected with Bangladesh's growing LNG/natural gas network. This will reinforce grid stability, provide cleaner-burning fuels and develop a new, high-value strategic export product in the form of green hydrogen from renewable sources.

CLIMATE CHANGE AND CARBON INTENSIVE LOSS IMPACTS

Bangladesh's high vulnerability to climate change can be attributed to a number of topographic, hydro-geological, and socio-economic factors. They include its geographical position in South Asia, its flat deltaic topography with low elevation, its extreme exposure to climate variability, its high population density and incidence of chronic/abject poverty, and its greater dependency on an agrarian economy for incomes and employment, which in turn is severely affected by a capricious climate.

Bangladesh's geographical characteristics are intricately linked to local and regional hydrological characteristics that rely on climatic processes, including seasonality. Bangladesh is at risk of natural disasters such as riverine and flash floods, tropical cyclones, storm surges, droughts, salinity intrusions, sea level rise, and riverbank and coastal erosion. Flooding of various types, cyclones, and droughts is common. Many parts of Bangladesh's economy and society are severely affected by climate change including water resources, agriculture and forestry, food security, human health, and infrastructure.

Climate change has the greatest impact on human settlement, causing mass displacement of inhabitants and loss of livelihood. Some 22–30% of the country is usually inundated by heavy rainfall during the monsoon season, while a major flood may inundate two-thirds of the country.¹ Climate change will deplete capital stock in the construction sector by 0.05% annually until 2100.

A rise in sea levels and coastal erosion could lead to a loss of 17% of land surface and 30% of food production by 2050. One-third of Bangladesh's population is estimated to be at risk of displacement because of rising sea levels. A study of sea level rise scenarios by the Bangladesh Ministry of Finance projects the annual cost from loss of capital and reduced economic activity could range between 1.49% and 3.02% of GDP by 2031, with significant job losses.





The International Labour Organization (ILO) notes that the impact of rising heat on exposed indoor and outdoor workers already reduces Bangladesh's annual economic output potential by approximately 4% of GDP and will continue to grow if not addressed. Moreover, the increasing intensity and frequency of natural disasters would also divert limited revenue away from growth-enhancing investment to emergency relief.²

It is safe to say that climate change has been a threat multiplier in Bangladesh as the country continues to experience unprecedented impacts and losses from the phenomenon. Climate change is now a growing humanitarian crisis for the country. Bangladesh has therefore placed building adaptive capacities and adaptation at the very core of climate policies and plans.









Burdens on socio-economic progress and growth also relate to the exploitation of fossil fuels for energy and stem from outdated technology and associated health-related losses. For example, in 2018–19 capacity utilization of coal plants was only 43%, which is below the global average of 54% and well-below the 80% financial assumptions of such plants. Due to the inflexible standard clauses in fossil fuel power purchase agreements (PPAs), reduced utilization translated to 90 billion Bangladeshi Taka (USD 1.1 billion) in capacity payments to idle plants in 2018–19. Moreover, in fiscal year 2018–19, coal imports rose 70% year-on-year to 5.754 million tons, equivalent to at least USD 520 million, contributing to the USD 15.49 billion trade deficit.³ Asian LNG spot prices rose more than 18-fold in 2019.⁴ Limiting reliance on imports also limits exposure to price volatility, as well as inflationary pressures.⁵ Other carbon-intensive losses stem from tax subsidies, financing subsidies and operations subsidies.

The second Climate Vulnerability Monitor published in 2012 found that Bangladesh will face losses of up to 6.8% GDP by 2030, with a carbon-intensive losses of 0.5% of GDP by 2030. Emissions have gone up significantly over the past decade, with the World Meteorological Organization predicting a 20% probability that temperatures will exceed the 1.5°C threshold of the Paris Agreement, it is likely Bangladesh will face higher GDP losses in 2030 and beyond. Moreover, an increase of one degree Celsius would increase the frequency of lightning strikes by 12% over the century.⁶

And considering that solar power prices have fallen 82% since 2010 and 18% between 2018 and 2019, along with concentrated solar power falling 47%, onshore wind by 39% and offshore wind by 29%, coupled with the inflationary pressure and volatility of fossil fuel prices, Bangladesh will face higher GDP losses in 2030 and beyond by locking in carbon assets.

The combined effect of climate change and carbon-intensive loss impacts may raise average yearly mortality by 150,000 by 2030 with about 55 million people impacted by climate change by 2030.⁷ By 2050, climate change could make another 14% of the country “extremely vulnerable” to floods and displace some 35 million people from coastal districts.⁸ Women are disproportionately vulnerable to these effects with a larger share of the burden falling on them.

Table 1. Climate Change and Carbon-Intensive Loss Impacts and Effects⁹

IMPACT	EFFECT
 HEAT STRESS	<ul style="list-style-type: none"> ■ 4.9% in GDP losses by 2030 ■ At least USD 30 billion losses per year by 2030 ■ 4.84% working hours losses by 2030 ■ 3.83 million full-time job losses by 2030
 OUTDOOR AND INDOOR POLLUTION	<ul style="list-style-type: none"> ■ USD 2.3 billion losses per year ■ USD 2100 daily adjusted life year cost per capita (PPP)
 CLIMATE-FUELED DISASTERS (E.G., DROUGHT, FLOODS, AND STORMS)	<ul style="list-style-type: none"> ■ USD 4.075 billion losses per year by 2030
 HABITAT LOSSES (E.G., LABOR PRODUCTIVITY AND SEA LEVEL RISE)	<ul style="list-style-type: none"> ■ USD 50.62 billion losses per year by 2030
 SEA LEVEL RISE AND COASTAL EROSION	<ul style="list-style-type: none"> ■ 17% loss of land surface by 2050 ■ 30% loss of food production by 2050
 SEA-LEVEL RISE	<ul style="list-style-type: none"> ■ One-third of Bangladesh population at risk of displacement by 2100 ■ 1.49% and 3.02% in GDP losses per year by 2031
 HEAVY RAINFALL DURING MONSOON SEASON	<ul style="list-style-type: none"> ■ 22-30% (regular floods) up to 67% (major floods) of the country inundated
 INCREASED INTENSITY AND FREQUENCY OF NATURAL DISASTERS	<ul style="list-style-type: none"> ■ Diversion of limited revenue away from growth-enhancing development investment to emergency relief
 INCREASED FREQUENCY OF LIGHTNING STRIKES	<ul style="list-style-type: none"> ■ An increase of one degree Celsius would increase the frequency of lightning strikes by 12% over the century.
 CLIMATE CHANGE CAPITAL STOCK	<ul style="list-style-type: none"> ■ Impact of climate change capital stock in the construction sector would be depleted by 0.05% annually until 2100
 CLIMATE CHANGE AND CARBON INTENSIVE LOSS	<ul style="list-style-type: none"> ■ 150,000 deaths added to the yearly average by 2030 ■ 55 million people affected by 2030* ■ 6.8% in GDP loss by 2030 with a carbon intensive loss impact of 0.5% of GDP by 2030
 CLIMATE CHANGE	<ul style="list-style-type: none"> ■ Another 14% of the country “extremely vulnerable” to floods by 2050 ■ 35 million people from coastal districts displaced by 2050*

**Women are disproportionately impacted by climate change*

INTRODUCTION TO THE MUJIB DECADE CLIMATE PROSPERITY PLAN

The Climate Prosperity Plan responds to the urgent need for Climate Vulnerable Forum (CVF) member countries and the Vulnerable Group of Twenty (V20) to attract new investment to drive prosperity through the coming decade on the frontlines of a planetary climate emergency.

These country-led strategic investment plans put socio-economic gains first while simultaneously embedding climate-resilient and zero- or low- carbon outcomes as intrinsic elements of “climate smart” design. Prosperity in the 21st century demands the integration of economic and climate agendas, presenting new opportunities to drive truly resilient growth. Climate Prosperity Plans are designed to extend finance mobilization across a range of sources for CVF/V20 infrastructure and economic programs. These programs will promote robust socio-economic progress and reduce emissions while building greater climate and disaster resilience, safeguarding both SDGs progress to 2030 and macroeconomic stability.

The Mujib Climate Prosperity Plan is the first CVF and V20 investment plan to specify a decade to achieve climate prosperity and enhanced macroeconomic management at the conclusion of the Mujib Year. In sum, the CVF and V20 plans aim to drive planetary prosperity. They will include analysis of the benefits for job growth, economic growth, environmental, and health benefits that would be realized if the projects in the plans are financed and implemented. They are structured as a decadal plan with two 5-year cycles with provision for stocktaking and progress review at the midpoint of each cycle and mid-term evaluation upon completion of the first cycle. The plans include key projects from Bangladesh’s existing national plans and seek to finance these and other similar adaptation, climate-resilient, renewable, low-carbon infrastructure and projects.

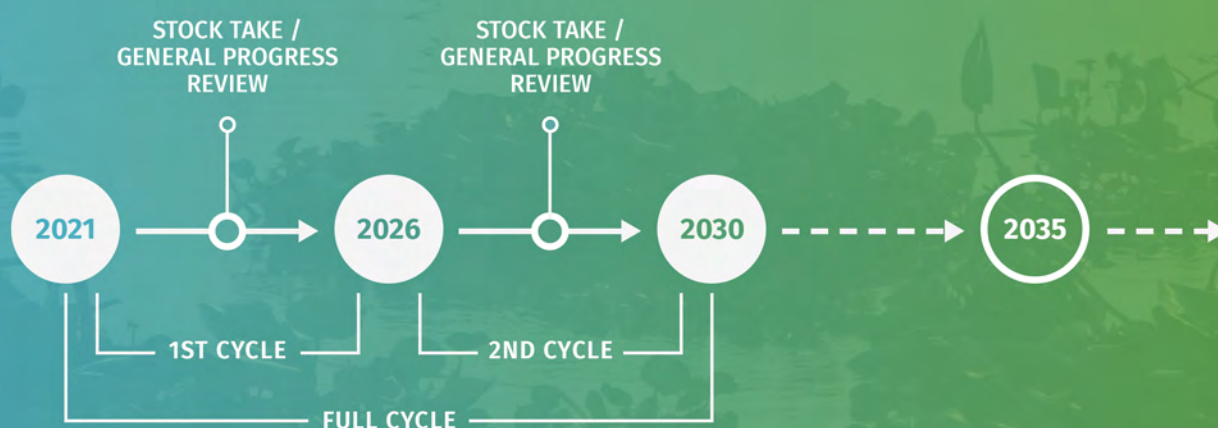


Figure 3

THE NEW ECONOMIC VISION FOR PEOPLE-CENTRIC RESILIENT

The factors that affect vulnerable countries such as Bangladesh will increasingly affect the world economy. Avoidance of future macro-catastrophic risks is key to maintaining or overshooting our economic trajectory. Chief among these is climate risk that will require science to be at the core of our strategic and investment decisions. Recalibrating markets, technology, and finance towards more resilient and sustainable economic futures is urgently needed. Progress to achieve a strong, resilient, inclusive, and sustainable growth trajectory for Bangladesh should be achievable while accelerating efforts that defuse climate-disruptive risks of all kinds, prioritizing climate-resilient and low- or zero- carbon efforts while also maximizing economic growth, socio-economic benefits, and galvanizing SDGs progress.

We seek to improve our key socio-economic growth outcomes including national and disposable income, poverty reduction, investment, jobs, economic stability, trade balance, and other critical socio-economic results by optimizing core economic and climate responses within the real economy. In pursuing climate prosperity, we aim to meet, exceed, or ensure early achievement of the 2030 SDGs and be well on track to emerge, at the latest by 2030–50, as wealthy, climate-smart nations via the strongest possible economic growth and designed to be climate-smart.

A new financing paradigm is emerging: While income, revenue, and profits matter, physical, climate and transition risk cannot be ignored. As we build back stronger, the economic paradigm of the last century must be changed by compelling polluters to value poverty reduction, modernized job opportunities, improved trade and macroeconomic stability. This improved economic vision will be supported by climate risk governance and reporting to identify and assess climate-related risks and opportunities that will influence the investment strategy of the government and market participants.

Climate vulnerable developing countries are burdened with a high cost of capital that undermines their capacity to develop low-carbon and climate resilient projects. There is also a compounding lack of investment in climate change action. An important element of this persistent investment gap is the perception of greater risk and associated high cost of financing in developing countries — especially for low-carbon and climate resilient infrastructure, modernized technology and adaptation projects.

Many climate-resilient and low-carbon projects have higher capital intensity than traditional infrastructure. For example, an adaptation project (e.g., critical infrastructure with climate protection like seawalls or storm drainage) may have additional costs in year one but enjoy lower operations and maintenance costs over time compared to infrastructure without resilient attributes. Similarly, a renewable energy project may have a higher upfront cost, but lower operating costs than a coal plant of equal output. As small changes in interest rates have compounding effects on project costs over time, lowering financing costs can therefore have significant price benefits for project end-beneficiaries (electricity customers, farmers using resilient irrigation infrastructure and so on). This Climate Prosperity Plan hinges on providing a lower cost of capital or a high level of concessionality, especially for adaptation and climate-resilient projects.

Moreover, with reference to the Paris Agreement (Article 4, Paragraph 19), the Mujib Climate Prosperity Plans reflect our communication for long-term low greenhouse gas emission development strategies, mindful of Article 2 to address cost of capital issues and mobilize international, regional, and domestic capital.

SUMMARY OF CLIMATE PROSPERITY OUTCOMES

The Mujib Climate Prosperity Plan estimates that investment in resilient pathways including energy, water, transport, supply chains, value chains, and so on will entail costs of at least USD 80 billion by 2030, with incremental gains of over USD 50 billion to be added to GDP versus business as usual, yielding value of over USD 850 billion over 10 years. Delaying these investments in infrastructure and adaptive capacity would result in costs and losses of at least 4.9% of GDP by 2030, equivalent to at least USD 30 billion per year by 2030.

SOCIO-ECONOMIC OUTCOMES EXPECTED BY 2030

1. Elimination of extreme poverty by 2030
2. Enhanced climate risk adjusted returns for micro, small and medium enterprises of 10% by 2025 and 20% by 2030, especially for women-owned and women-run enterprises
3. Zero climate-induced migration by 2030.
4. 4.1 million new climate-resilient jobs and unemployment reduced to 3.9%
5. GDP growth of 9% with a GDP per capita increase of 137% by 2030, equivalent to USD 4,400, reaching upper middle-income status as per Vision 2041¹⁰
6. At least USD 30 billion in net savings or avoided losses per year by 2030
7. Cumulative revenue potential of up to USD 16 billion
8. Reduced volatility and improved cost-effectiveness with savings of 30% in the power sector
9. Improved trade balance of over USD 8 billion surplus by 2025 and up to USD 15 billion by 2030
10. Improved quality of life through clean air, safer workplaces, and better mobility
11. Economic partnerships strengthened with countries aligned with safeguarding the 1.5-degree limit of the Paris Agreement by up to 10% in 2025 and by up to 30% by 2030
12. Increase in women's participation in the labor force and reduced vulnerability of women

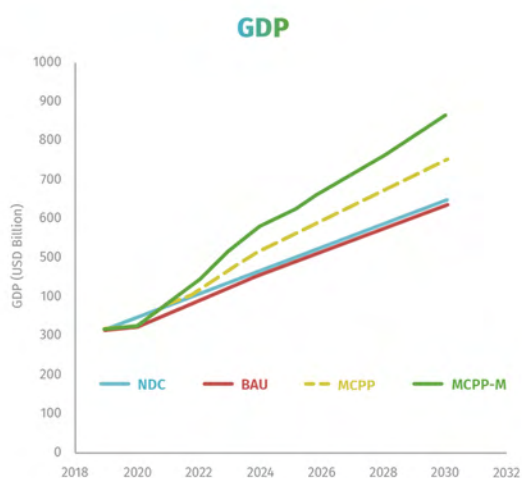


Figure 4

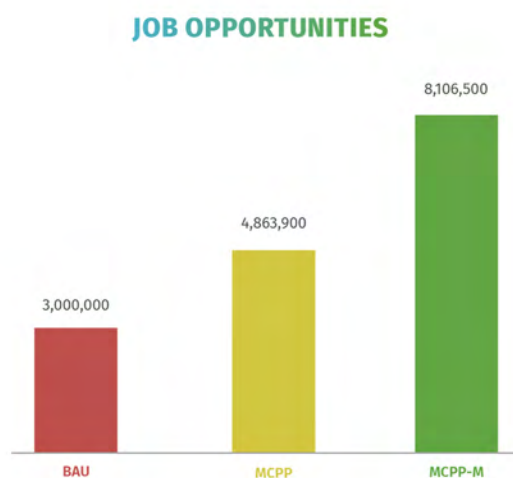


Figure 5



KEY PRIORITY AREAS

The impact of climate-fueled disasters are made more intense and more frequent due to failure to reduce global emissions. This current toolkit of standard macroeconomic ‘fixes’ may not ensure stability in an era of global physical shocks. Systematic climate risk management for policies and projects is essential, but it needs better climate data, tools and resilience planning. Efficient and prepared government institutions matter, as do sectoral and cross-sectoral climate-centered policies and investment.¹¹ Governments must continue to enable and reinforce climate-informed macro-level analysis via research such as whole-of-economy modeling of climate impacts, debt sustainability analysis, public expenditure review and poverty diagnostics.

More importantly, greater internal coherence is key to stronger climate action – that is, the recognition that supply, demand, and development outcomes will hinge on the management of climate risk across sectors and levels of government. Consequently, the baking-in of climate risk in local and national plans, evidenced by explicit pathways for agriculture, infrastructure, and the like. Robust ownership follows more easily from greater internal coherence. Robust ownership of climate action (rather than a compliance response) can speed up the enabling of adaptation and resilience.

The Climate Prosperity Plan aims to support efforts of Bangladesh in mainstreaming climate change (with a focus on adaptation and resilience) in economic planning through innovative mainstreaming tools and approaches which ensure that climate change is factored into growth and development strategies.

Bangladesh has made strides in integrating climate adaptation and resilience into long-term planning through the Climate Fiscal Framework which determines: (1) an equitable division of climate funds and their allocation to relevant sectors; (2) division of services, identification of the demand for climate fund, and expenditure areas of financial authority for raising revenue, for national and international financing options, and for fiscal tools; and (3) governance framework for climate change funds under national fiscal policy.

This section comprises 6 key points of the Mujib Climate Prosperity Plan, which incorporate four scenarios:

- Business-As-Usual (BAU): Uses the reference scenario in Vision 2041.
- Nationally Determined Contributions (NDC): Based on the first NDC submitted. It is important to note this will be updated as NDC submissions continue to be updated.
- Mujib Climate Prosperity Plan (MCP): Realistic climate prosperity scenario based on current and expected prospective access to resources and support.
- Mujib Climate Prosperity Plan Maximized (MCP-M): Maximized climate prosperity scenario based on a significant increase in resources made available both from international support and the private sector (domestic, regional, and international).



KEY POINT 1: ACCELERATED ADAPTATION

BANGLADESH DELTA PLAN 2100 RESILIENCE BONDS TO PROMOTE ACCELERATED ADAPTATION AND PROTECTIVE INFRASTRUCTURE

We will invest in protective infrastructure to strengthen resilience. There will be a special focus on inland and coastal flooding, including natural flood management measures in line with the 8FYP and BDP 2100, towards a prosperous delta. Mitigating flood risks in urban areas lowers financial costs, increases security, and makes feasible investments that would otherwise be too vulnerable to climate risks. All in all, a key benefit of more resilient infrastructure is more reliable services, that crowd-in investment and economic development. This has a positive effect not only on business but also on households that can improve their productivity and living standards.

Bangladesh Delta 2100 (BDP 2100) is a shift in the economic vision towards resilience to climate-driven disasters such as cyclones and flooding. It addresses impacts such as temperature rise, erratic rainfall patterns, and sea level rise through enhanced and adaptive delta management. It aims to eliminate poverty by 2030 on a path to prosperity by 2041.

The implementation of the Bangladesh Delta Plan 2100 prioritizes the use of public private partnerships (PPP) as a key method to enable investment. By leveraging private and public funds, projects are able to increase both the sources and overall levels of financing. Another promising way of scaling institutional investment is to expand investment options through financial instruments such as blended funds and resilience bonds. Resilience bonds are at the intersection of social bonds and sustainability bonds. They can be designed to respond to acute needs such as emergency medical equipment, social protection programs for vulnerable households, and rapid financing for communities and MSME, as well as for medium-term to long-term needs such as resilient hospital infrastructure, supply chains, basic infrastructure (water, sanitation renewable energy, etc.), logistics, urban services, and food supply. Securitizing an asset pool of Bangladesh infrastructure and issuing resilience bonds can transform Bangladesh infrastructure projects into low-risk, liquid assets that are attractive to institutional investors. Backing resilience bonds with the credit rating of issuing institutions such as the Asian Development Bank and World Bank Group further reduces the risk of such bonds.

To accelerate the financing of the BDP 2100 phase 1, as highlighted in 8FYP, resilience bonds can enable an alternative financing avenue for sovereigns and corporates through capital markets for the portfolio within Phase 1 up to 2030.

Specifically, the development of debt instruments by state-owned investment vehicles, multilateral development banks and other development finance institutions would support investments that yield a “triple dividend” of 1) reduced pandemic risk, 2) economic recovery and growth, and 3) climate resilience

There is a clear opportunity to invest in climate-resilient infrastructure to improve adaptation, avoiding further losses and reaping net benefits. The benefits of such investments are estimated to be four times the cost.¹²

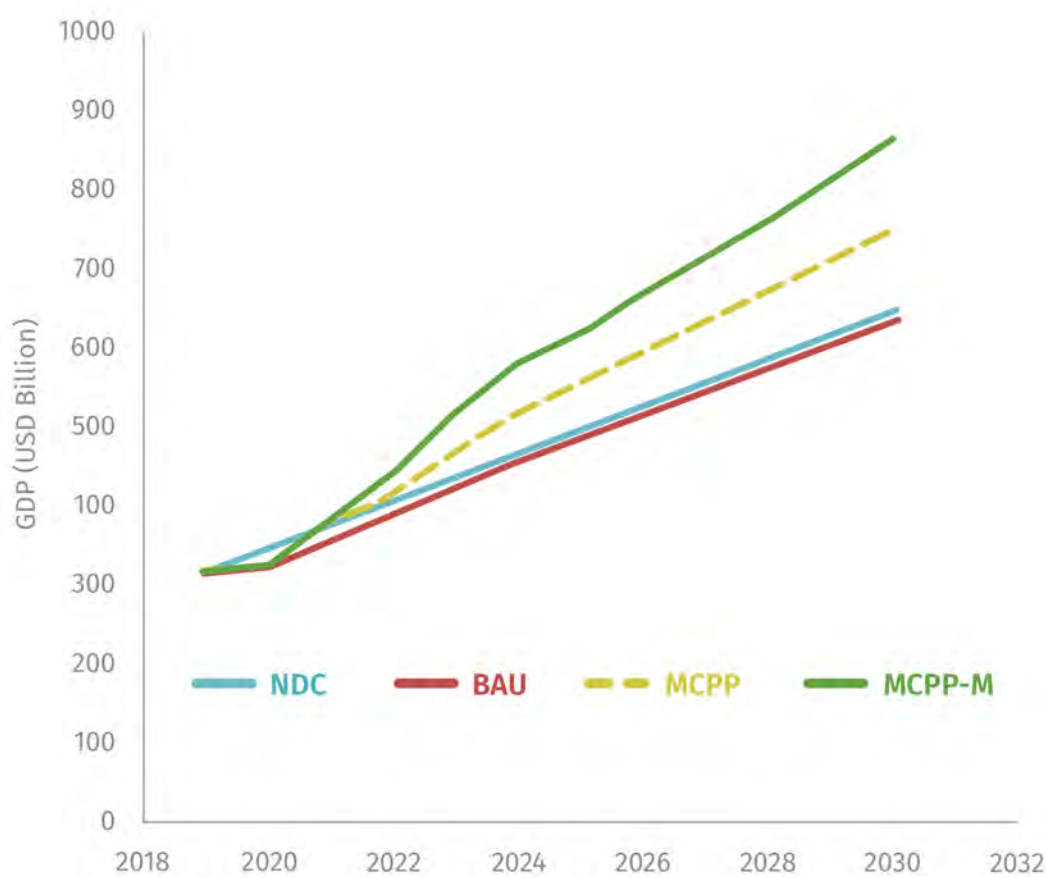
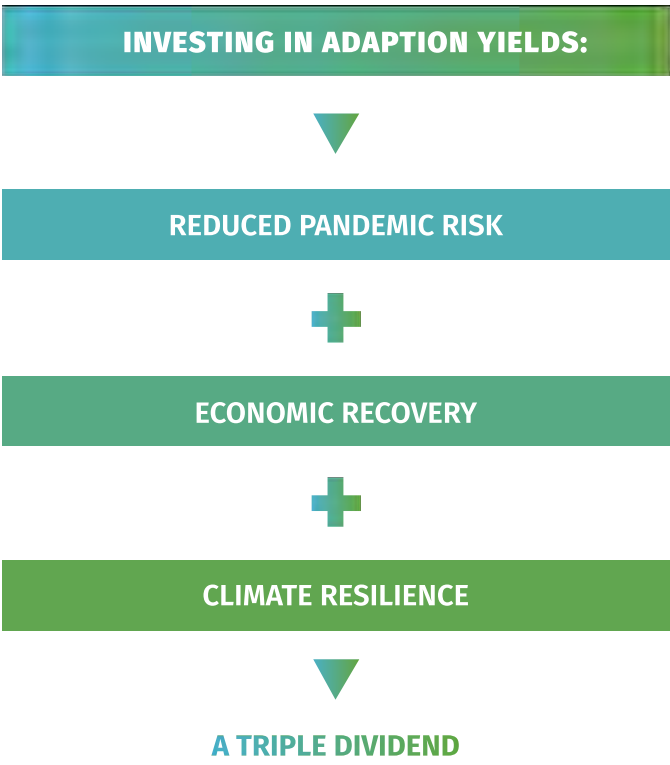


Figure 6. GDP (USD Billion) per year

Below is an overview of actions that development partners and the private sector could deploy within a COVID-19 stimulus package to improve health, the economy, and climate adaptation. It is important to note that developing a pipeline of resilient infrastructure projects, and better taxonomies and standards for a common language and understanding, is key for the prioritization of public investments and the structuring of financial instruments.



For example, water resilience in Bangladesh needs to be integrated at the basin, city, and utility level to ensure adaptation measures for water systems integrate with other urban services and are effective. Water utilities and service providers, in particular, need to have sustainable and resilient water resources management to ensure continuity of water supply and to provide safe and secure water. Policy and investment interventions to improve access to clean water and sanitation must be a critical component of any stimulus package. It must optimize water management for the effective distribution, especially for women, and use of water in human settlements, agriculture and industry, and support enhanced water governance through improved cooperation frameworks within and across the region.

Scaling up resilient infrastructure can provide both the source of and support for economic growth and job creation, removing barriers to adaptation and pandemic recovery. Adaptation solutions are employment-intensive and have a high return on investment, making them an excellent tool to overcome the current economic crisis while safeguarding livelihoods.






As with climate and health responses, the current crisis is also an opportunity for the adaptation community to explore ways to expand the application of digital solutions. These have already proven effective for enhancing climate-health information exchange, reducing the impact of extreme weather events, and for improving food security.¹³

The opportunity to lessen and diffuse a compound climate-COVID crisis by supplementing emergency medical assistance to fight the COVID-19 pandemic with policy action that is optimized to strengthen resilience for critical climate, economic and pandemic risks, is reflected in the table below. Measures to build climate resilience across a range of key sectors of development bring clear direct and indirect benefits to tackling the COVID pandemic and its impact, and for recovering from this crisis. In the immediate pandemic response and for the recovery, example measures with triplicate benefits for tackling climate change, COVID and pandemic risk, and in support of economic recovery.

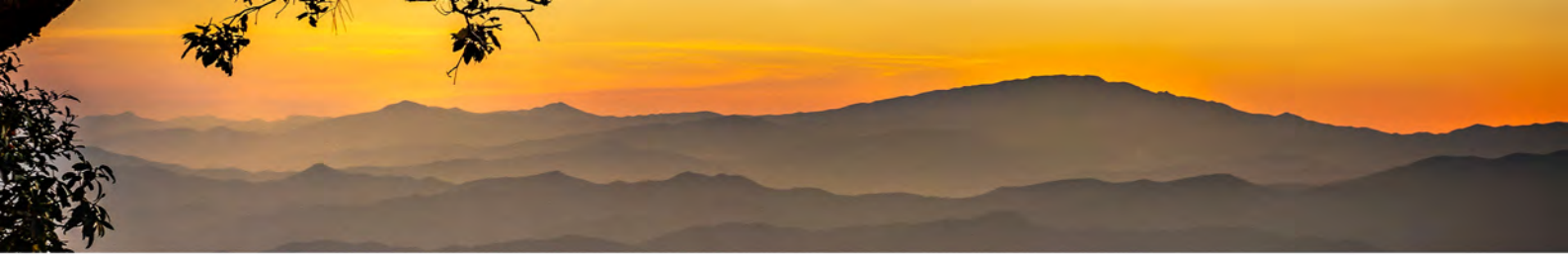
SECTOR-BASED RESILIENCE

SECTOR	EXAMPLE MEASURE BY POLICY TARGET			RESILIENCE DUAL-DIVIDEND		SDG BENEFIT	SENDAI FRAMEWORK
	COVID-19 RESPONSE	PANDEMIC RESILIENCE	POST-CRISIS RECOVERY	PANDEMIC	CLIMATE		
 DIGITAL ECONOMY	Internet access and digital tools	Internet access and digital tools	Internet access and digital tools	E-commerce, tracking tools and information sharing	Disaster and climate data access	9	–
 DISASTER RISK REDUCTION	–	Financial protection: infrastructure insurance	Financial protection: infrastructure insurance	Recovery less exposed to disaster risks	Communities rebuild faster	11	Priority 3 Investing in disaster risk reduction for resilience

SECTOR	EXAMPLE MEASURE BY POLICY TARGET			RESILIENCE DUAL-DIVIDEND		SDG BENEFIT	SENDAI FRAMEWORK
	COVID-19 RESPONSE	PANDEMIC RESILIENCE	POST-CRISIS RECOVERY	PANDEMIC	CLIMATE		
 DISASTER RISK REDUCTION	Emergency preparedness (e.g., early warning systems)	Emergency preparedness (e.g., early warning systems)	Emergency preparedness (e.g., early warning systems)	Reduced transmission following disasters	Reduced exposure of populations to hazards	3	Priority 4 Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation and reconstruction
 EMPLOYMENT & LIVELIHOODS	Social safety nets (e.g., cash transfers, cash-for-work)	Social safety nets (e.g., cash transfers, cash-for-work)	Social safety nets (e.g., cash transfers, cash-for-work)	Reduced economic shock from pandemic response	Reduced economic shock from climate hazards	1, 8	–
 EMPLOYMENT & LIVELIHOODS	Labor heat stress measures	Labor heat stress measures	Labor heat stress measures	Reduced illness susceptibility for pandemic disease and lost work	Reduced heat-related illness and lost work	1, 8	–
 ENERGY	Clean energy access	Clean energy access	Clean energy access	Health system energy needs met; reduced respiratory disease	Disaster resilience of energy systems	7	–
 FOOD & AGRICULTURE	Disaster-resilient agriculture	Disaster-resilient agriculture	Disaster-resilient agriculture	Reduced pandemic food supply risk and recovery less exposed to disaster risks	Reduced exposure of agriculture to climate hazards	2	–
 FOOD & AGRICULTURE	Enhanced nutrition	Enhanced nutrition	Enhanced nutrition	Reduced illness susceptibility for pandemic disease	Reduced food insecurity during climate shocks	2	–

SECTOR	EXAMPLE MEASURE BY POLICY TARGET			RESILIENCE DUAL-DIVIDEND		SDG BENEFIT	SENDAI FRAMEWORK
	COVID-19 RESPONSE	PANDEMIC RESILIENCE	POST-CRISIS RECOVERY	PANDEMIC	CLIMATE		
 HEALTH	Financial protection: health insurance	–	Financial protection: health insurance	Access to health services for pandemic disease	Access to health services for climate-sensitive diseases	3	–
 HEALTH	Public healthcare services	Public healthcare services	Public healthcare services	Access to health services for pandemic disease	Access to health services for climate-sensitive diseases (e.g., malaria)	3	–
 INFRA-STRUCTURE	–	Financial protection: infrastructure insurance	Financial protection: infrastructure insurance	Recovery less exposed to disaster risks	Communities rebuild faster	9	–
 INFRA-STRUCTURE	Sanitation facilities	Sanitation facilities	Sanitation facilities	Reduced transmission of pandemic disease	Reduced transmission of climate-sensitive disease (e.g., cholera)	6	–
 WATER	Clean water access	Clean water access	Clean water access	Reduced transmission of pandemic disease	Reduced climate-sensitive disease susceptibility and transmission	6	–

BDP 2100 projects include the blue economy, sustainable land use and spatial planning, agriculture and rural livelihoods, inland waterway transportation and urban water management, and renewable energy. Areas of investment include coastal zones (USD 11 billion), Barind¹⁴ & drought-prone (USD 2 billion), haor¹⁵ & flash flood (USD 350 million), Chattogram Hill Tracts (CHT) (USD 750 million), river system & estuaries (USD 6 billion), and urban areas (USD 8 billion), among others.



TARGET MILESTONES

- 2021** We will develop the analytical and guiding operational frameworks for development resilience bonds issued by state-owned vehicles, multilateral development banks (MDB) and development banks for enhanced financing to eligible private sector investments that contribute to increased climate resilience while also reducing pandemic risks. This would enable economic recovery, promote both climate-proof and pandemic risk-adjusted growth, with SDGS as key performance indicators.
- 2022** We will develop an investment prospectus with MDB for BDP2100 that combines a phased approach for resilience bonds and the use of de-risking tools for credit strengthening.

BANGLADESH DELTA 2100 FINANCED THROUGH RESILIENCE BONDS CAN ENABLE...

1

investment
to be mobilized
by 2030 via low-cost
international
financing

2

1.5 million additional job
opportunities by 2025 and 3
million additional job
opportunities by 2030

3

The delivery of SDG
outcomes through linkage
and pricing of benefits

BANGLADESH DELTA 2100 IS A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS¹⁶ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

Addresses vulnerabilities
Builds long-term resilience
Targets disadvantaged groups
(e.g., women, rural, etc.)
Supports development of high-level technology
Targets sectors or populations affected by
non-financial shocks

COVID-19 RECOVERY DIVIDEND

Support for long-term transformation
Positive environmental and social outcomes
High employment intensity
Contribution to the productive asset base
High economic multiplier
Positive environmental and social outcomes

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

Local-level integrated water management projects and studies of coastal areas
as per BPD 2100 Phase 1

Increase tree coverage from 22% to 25% by 2030

Construction of the barrages as per BDP 2100

Restore degraded forests in CHT and haor ecosystems

Reduce/halt deforestation and forest degradation

Afforestation in newly accreted char lands and coastal belts

Infrastructure and water management projects for haor and flash-flood areas
as per BPD 2100 Phase 1

Rationalized water and polder projects in Chattogram Coastal plains

National Rivers Stabilization and Land Reclamation Project

Ecological restoration of river systems around Dhaka city

Urban drainage network improvement and solid waste management projects in line with BDP 2100 phase 1

Flood and drought management center setup

Improvement, expansion and modification of the existing water resources infrastructure in drought-prone and Barind areas

Improvement of the existing flood forecasting and early warning systems (e.g., cyclone and surge warnings) and strengthening dissemination mechanisms

RESOURCES

INTERNATIONAL PARTNERS

Credit enhancement

NATIONAL BUDGET

Underwriting support

CONTRIBUTION FROM PRIVATE SECTOR

Industry capital investment and industry utilization



KEY POINT 2: JUST TRANSITION OF LABOR AND FUTURE-PROOFING INDUSTRY WITH TECHNOLOGY TRANSFER

2A: JUST TRANSITION AND MODERNIZATION THROUGH TRAINING AND SKILLS DEVELOPMENT FOR LABOR MARKETS OF THE FUTURE

The Just Transition can reduce future welfare liabilities and enhance tax revenue, while building Bangladesh's ability to future-proof the workforce for green and resilient jobs to improve its competitive positioning in the global supply chain. The cost of reskilling 3.83 million people could be as much as USD 1.5 billion up to 2030.

However, increased frequency of heatwaves and high temperatures results in poor working conditions and low labor productivity. In extreme cases, this could lead to deaths from heat stroke. Bangladesh is among the countries most affected by heat stress and stands to lose 4.84 % of total working hours to climate-induced heat stress in 2030. This is equivalent to 3.83 million full-time jobs in 2030 and GDP losses of 4.9% by 2030.¹⁷ Insulation and clean-energy heating, ventilation, and air-conditioning (HVAC) for buildings, especially workplaces, can help reduce losses and improve working conditions.

LABOR FORCE RESILIENCE	SCENARIO 1: 100% CLIMATE RESILIENT	SCENARIO 2: 50% CLIMATE RESILIENT	SCENARIO 3: 25% CLIMATE RESILIENT
AVOIDED GDP LOSSES IN 2025 (%)	2.45	1.23	0.61
AVOIDED GDP LOSSES IN 2030 (%)	4.9	2.45	1.23

Further, we will accelerate a just transition and modernization of the labor force to better compete in the labor markets of the future and pave the pathway toward the Fourth Industrial Revolution. This will include reskilling and upskilling via technical and vocational education and training, as well as through improved efficiency from the use of automation. We recognize the growing consequences of non-financial shocks and an increasingly competitive environment as companies' future-proof their supply chain with labor being a major input, reshaping labor markets. This reshaping exposes the vulnerability of lower-skilled employment especially in the manufacturing, agriculture, fisheries, service, and retail sectors.

Skilled laborers are typically less vulnerable, so the upskilling of labor is in line with 8FYP and key to the achievement of Vision 2041. While automation may reduce the number of some jobs, it will increase wealth creation. To ensure job creation, it is essential to link the just transition and modernization with automation to unlock the creative capabilities of the workforce and enhance productivity.

Access for skills development or training opportunities is limited for individuals from lower-income households, rural and less well-educated workers, and women. The just transition program will target those people for the labor markets of the future including agriculture, shrimp cultivation, forest and bio-diversity conservation, water management, waste management, carbon trading, electric transport, materials management, green construction, tanning, telecommunications, manufacturing such as the clothing industry, and renewable energy (e.g., solar, wind, biogas) and storage. Equally important, as highlighted in 8FYP, is the quality of educators whose expertise will be a key factor in the success of the just transition and modernization of the workforce.

We aim to foster women's participation in all areas of the economic sphere relating to green transition and low-carbon development. To enhance women's economic empowerment, targeted skills development training will be provided, based on women's needs. Gender-responsive training covering relevant skills coupled with fiscal stimulus packages and social protection programs will be a key priority. We will also focus on increasing the individual and institutional capacity of the labor force.

Accelerated climate action through the installation and management of energy efficiency and renewable energy provides more jobs and higher skills than technologies of the past such as oil, coal, and gas. Power sector modernization through energy efficiency and renewable energy consistent with the 1.5°C limit of the Paris Agreement could create twice the number of jobs by 2050, which is equivalent to a 68% net increase in jobs globally.¹⁸ For Bangladesh, a recent study showed that modernization through renewable energy and energy efficiency could lead to 6 times more jobs than fossil fuel generation, that is up to 55,000 new jobs between 2016 and 2030.¹⁹



JOB INTENSITY ACROSS TECHNOLOGIES

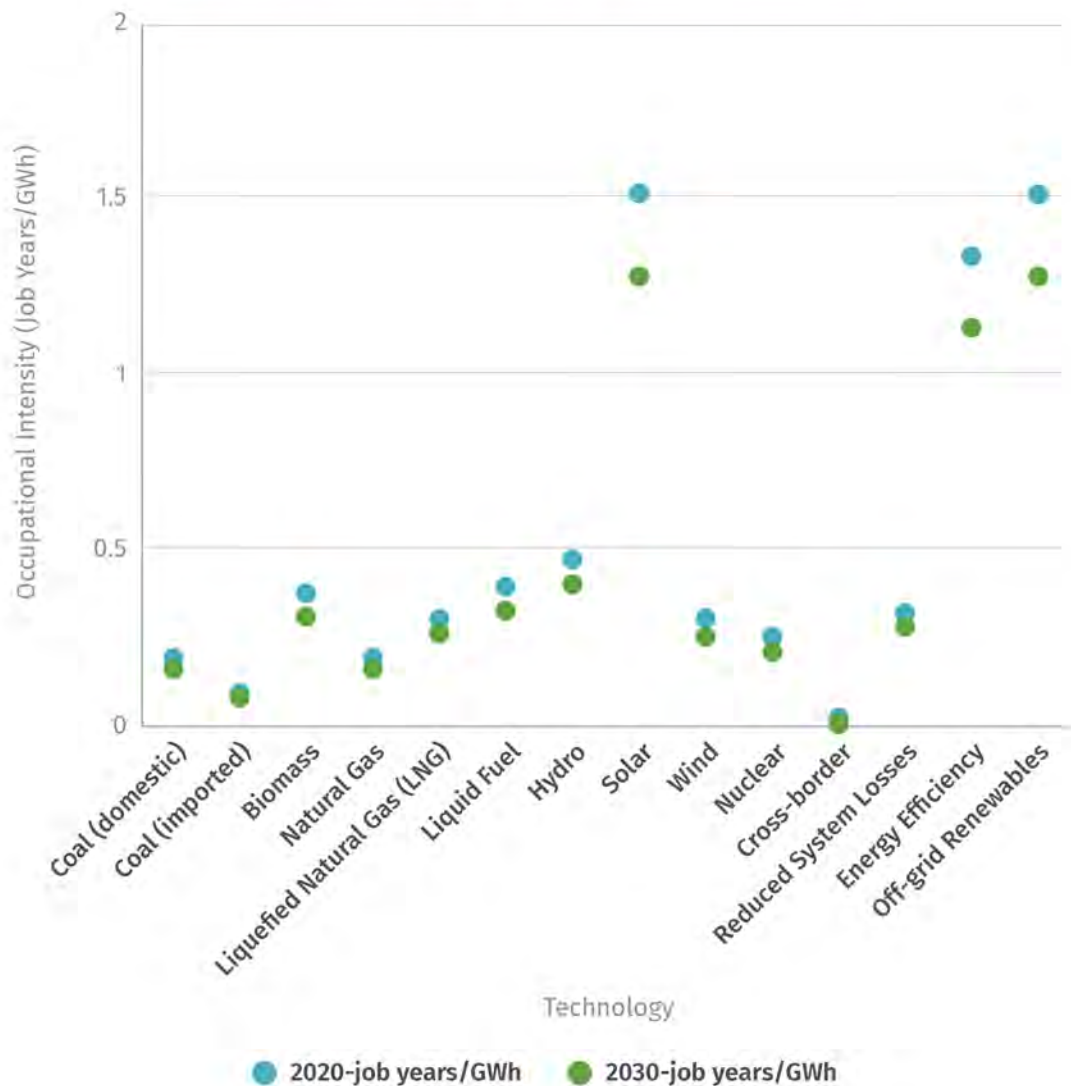


Figure 7. Job Intensity Across Technologies

JUST TRANSITION AND MODERNIZATION THROUGH TRAINING AND SKILLS DEVELOPMENT FOR LABOR MARKETS OF THE FUTURE CAN...

1

Avoid GDP losses of up to 2.45% in 2025 and up to 4.9% in 2030

2

Train and reskill at least 3.83 million people by 2030

3

Generate 6 times more job opportunities under the Mujib vision

TARGET MILESTONES

- 2021** We will join the Climate Action for Jobs Initiative.
- 2021** We will conduct a labor market assessment and stress test the labor force and quality of educators to achieve a just transition and modernization.
- 2022** We will create a plan to transform low-productivity and low-wage development to high-productivity and high-growth including reskilling and special gender-transformative labor market programs, coordinated with National Skills Development Authority (NSDA) and the National Human Resource Development Fund (NHRDF.)
- 2022** We will improve the quality of educators through enhanced support, training, and partnerships with regional and international collaborators.
- 2023** The Bangladesh National Skills Development Council (NSDC) will coordinate with workers' associations on the implementation of the transformational plan.
- 2024** We will finalize a combination of investment options including supply chain coordination, industry coordination to lower costs, national government, and donor support to boost workers productivity and efficiency.
- 2025** Retrofitting 50% of the commercial built environment to be adjusted to the hotter climate.
- 2030** Retrofitting 100% of the commercial built environment to be adjusted to the hotter climate.

JUST TRANSITION AND MODERNIZATION OF THE LABOR FORCE IS A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS²⁰ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

Addresses vulnerabilities
Builds long-term resilience
Targets disadvantaged groups (e.g., women, rural, etc.)
Targets sectors or populations affected by non-financial shocks

COVID-19 RECOVERY DIVIDEND

Short implementation timeline
Support for long-term transformation
High employment intensity
Positive environmental and social outcomes

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

We will finalize a combination of investment options including supply chain coordination, industry coordination to lower costs, national government, and donor support to boost workers productivity and efficiency.

3.83 million people trained and reskilled through Just Transition Programs

RESOURCES

INTERNATIONAL PARTNERS


International resources for training modules and technology transfer opportunities

NATIONAL BUDGET

National budget support via Skills Employment Investment Program (SEIP)

CONTRIBUTION FROM PRIVATE SECTOR

Public-private partnership and investment for better education, skills, entrepreneurship, and employment



KEY POINT 2: JUST TRANSITION OF LABOR AND FUTURE-PROOFING INDUSTRY WITH TECHNOLOGY TRANSFER

2B: FUTURE-PROOF BANGLADESH'S POSITION IN THE GLOBAL SUPPLY CHAIN

We will future-proof Bangladesh's role in global supply chains by positioning the country through export diversification as a viable modernized platform. This may counteract the loss of duty-free quota-free (DFQF) market access for Bangladesh's exports as a result of the country's LDC graduation by 2026. Export diversification will be supported by capitalizing on green opportunities including green logistics (e.g., ports, rail, inland waterway), green power including hydrogen, ammonia, batteries, other green technology, productivity, and energy efficiency gains, as well as preparedness for extreme weather events.

Moreover, modernization will include a reduction in environmental risks through improved supply chain engagement such as environmental data disclosure. Future-proofing the country's supply chain will reduce spillover risks that can undermine competitive global positioning.

The future-proofing is built on the foundation of 8FYP, which articulates that the government will implement policies to support improved infrastructure, strengthen human capital (through education and training) and incentivize research and development. Knowledge and technology transfer can enhance the resilient growth benefits of trade, and so ensure the country's participation in global supply chains and improved value engineering in supply chain management.

We will hasten export-led growth underpinned by green supply chain opportunities and diversification into sectors that can create jobs for many of the 2 million people entering the labor force each year.²¹ This can build on Bangladesh Bank Refinance Scheme for Environment Friendly Products which aims to promote the environment-friendly financial products/initiatives in Bangladesh such as biogas, energy efficiency, green industry, and safe work environment.

As solar photovoltaic and wind power proves to be technically and economically viable, future-proofing the global supply chain includes accelerated support for modern technologies. For example, the deflationary cost trajectory of concentrating solar power (CSP) technologies increases the certainty of CSPs future in the energy mix, especially for industries that require thermal power or high energy intensity such as cement and steel production. Hydrogen has the additional advantage of being able to replace coking coal for zero-carbon emissions steel production.

Currently, there are 150 factories with the Leadership in Energy and Environmental Design (LEED) certification and 500 factories undergoing such certification. Meeting the standard for LEED certification realizes benefits such as cost savings from reduced energy and water consumption, lower operating costs, durability, and improved indoor air quality and employee productivity - which in turn contribute to global competitiveness of the factories. LEED certification will be completed for strategic export industries by 2030 including jute, leather, textiles, information technology (IT) services or components, high-value agriculture, and green hydrogen. It is important to note that commercial rooftop solar technology can also contribute to LEED certification.

As a part of the Bangladesh government's own vision and action, a National Green Building Certification Scheme is in progress. The proposed scheme is designed to speed up the adoption of green building principles and enhance the design and construction of buildings. The goal is to support the environment by encouraging sustainable construction practices, conserving energy, water and building materials, and promoting resource efficiency.

According to the World Bank, the social cost of annual carbon dioxide emission from road freight transport in Bangladesh is equivalent to 1.2% of GDP with 60% of emissions caused by road congestion. Enhancing domestic logistics, for example, could save costs amounting up to 50% of sales for horticulture products.²² Driving cost and energy usage efficiencies in transportation, storage and handling of freight will be a key objective to strengthen Bangladesh's position in global supply chains.

We will encourage the use of electric and hydrogen-powered vehicles to transport goods, development of energy efficient warehouses through the use of sustainable building materials, and large-scale electrification of cargo-handling equipment in logistics facilities such as ports and inland terminals. Incentive schemes will be deployed to lower the direct and indirect costs of logistics while also reducing both dependence on fossil fuels and their harmful environmental effects.

Improving the logistics network to ensure imports and exports are transported in the most cost-effective and efficient manner is in line with commitments from major companies already operating in Bangladesh.²³ Future-proofing Bangladesh's position in the global supply chain can crowd-in more than 280 members of RE100 with 100% renewable energy commitments²⁴ and over 1,000 businesses with net-zero commitments by 2050.²⁵



GREEN EXPORTS PROGRAM

The Green Exports Program will support export-led growth in the various industries mentioned earlier by including a certification of exports that utilize LEED certified factories, voluntary sustainability standards, green transportation, and clean energy utilization, including through the use of carbon credits, environmental data disclosure, measures taken to improve preparedness for extreme weather events.

The Green Exports Program aims at global recognition of Bangladesh's ability to respond to current and future requirements of major companies and global policy shifts including renewable energy commitments, net zero carbon commitments, and pending carbon border adjustment taxes in the EU and other major economies.

The Green Exports Program will also include special support to MSMEs and will thus support the future-proofing of Bangladesh's role in the global supply chain. This can be supported by Bangladesh Bank's Green Transformation Fund which intends to facilitate access to financing in foreign exchange to export oriented textile and textile products, and leather goods manufacturing industries to import capital machinery and other necessities relevant to following environment-friendly/green attributes.²⁶

To increase the global competitiveness and appeal of exports from Bangladesh, it is imperative to bring down the associated logistics costs. This reduction could be achieved by using digital technology to improve the way that transport vehicles and facilities are used. Green transportation and warehousing practices are particularly effective. In addition, using sustainable materials to package goods would increase the attractiveness of Bangladesh's exports.

The localization of global supply chains is an opportunity for the South Asia region to become better integrated economically. Regional partnerships including connectivity with neighboring countries in terms of better value-chain/supply-chain integration can also be strengthened. Bangladesh's location means it can become a key production center as it modernizes facilities, trains up labor, and improves transportation time and costs.

FUTURE-PROOFING BANGLADESH'S GLOBAL SUPPLY CHAIN CAN...

1

Enable a 30% increase in energy savings per annum for industry²⁷

2

Increase capture of global market share by at least 1% per year

3

Establish a green supply chain and logistics network to attract environmental, social, and governance investors among others

TARGET MILESTONES

- | | |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2021 | We will appraise green opportunities including green logistics (e.g., ports and rail), green power including hydrogen, green technology, productivity and energy efficiency gains, as well as preparedness for extreme weather events. |
| 2022 | We will establish a Green Exports Program. |
| 2022 | We will coordinate with major companies on improving logistics and sustainability to expand market opportunities in Bangladesh. |
| 2023 | We will ensure LEED Certification of 500 additional factories. |
| 2023 | Structure investments to lower the cost of trading across borders, financial access, and the allocation of credit across sectors, and improved human capital allocation to enable greater export diversification. ²⁸ |
| 2024 | Make environmental and climate data disclosure mandatory throughout the supply chain in line with international standards. ²⁹ |
| 2025 | Reduce logistics cost by 25%. |
| 2025 | Extend LEED Certification to 1000 additional factories. |
| 2025 | 50% LEED Certification for strategic export industries. |
| 2030 | LEED Certification of 2000 additional factories. |
| 2030 | 100% LEED Certification for strategic export industries. |
| 2030 | Reduce logistics cost by 50%. |

FUTURE-PROOFING BANGLADESH'S POSITIONING IN THE GLOBAL ECONOMY IS A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS³⁰ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

Addresses vulnerabilities
Builds long-term resilience
Supports development of high-level technology
Targets sectors or populations affected by non-financial shocks

COVID-19 RECOVERY DIVIDEND

Support for long-term transformation
High employment intensity
Skills development
Contribution to the productive asset base
High economic multiplier
Strong supply chain

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

Establish Green Exports Program

Energy efficiency measures installed in manufacturing, industrial and other built environments

Renewable energy installations available to manufacturing and industrial areas to improve resilience

LEED certification of 3,500 factories including 100% of strategic export industries

50%-100% greening and electrification of the transport/logistics sector and strategic export industries

RESOURCES

INTERNATIONAL PARTNERS

International supply chain investment support from import and export partners

NATIONAL BUDGET

Fiscal incentives including tax holidays and commercial subsidies

CONTRIBUTION FROM PRIVATE SECTOR

Industry capital investment and industry utilization

Public-Private Partnership on green logistics

A lush green mangrove forest with dense foliage and visible roots in the water, serving as the background for the top half of the page.

KEY POINT 3: INCREASING PUBLIC REVENUE TO SPEND ON THE MOST VULNERABLE

3A: INVESTMENT IN THE REALIZATION OF LOCALLY LED ADAPTATION OUTCOMES


We will invest in the realization of locally led adaptation including long-term funding and decision-making support at the most appropriate level for communities, as well as enabling preferential access for women, youth, PWDs and climate displaced people. We will provide a co-supported funding window through the Ministry of Local Government, Rural Development and cooperatives for locally led adaptation in collaboration with the Ministry of Planning and Ministry of Finance. The framing of locally led adaptation and the processes of a co-supported funding window will be detailed as needed, including the necessary institutional arrangements.

In line with the 8FYP, the delivery of locally led adaptation aims to address poverty, inequality and vulnerability in all its dimensions, beyond income or consumption, through the inclusion of hazards compounded by climate change such as vulnerability to shocks and risks to health, education, empowerment. Moreover, locally led adaptation outcomes enable the acceleration of “My Village – My Town” to extend modernized facilities such as infrastructure, utilities, healthcare, digital solutions, and mobile financial services to every village. It also adds a climate resilient dimension which will enable acceleration of “My House My Farm”³¹ projects’ goals of organizing poor households under the village society, motivating them to save, providing skill development training, providing low-cost as well as seasonal credit, entrepreneurship development, marketing promotion, ecosystems conservation and digital financial service. 30 million people are at risk to be displaced from the coastal areas in Bangladesh with severe implications on livelihood, habitat, drinking water, and rural economy. Protecting internal displacement by more decentralized and resilient ‘My Village – My Town’ so that people have better life in their own settlement and benefit of growth reaches to the bottom with less absorption of benefit in different ladders.

There is an opportunity for a systemic approach in mainstreaming climate change into local level planning and financing process in Bangladesh and not enough practical means to bring the climate science on the ground with people's perception to the scientific knowledge with local knowledge to address climate risk and support adaptation planning. To ensure climate finance investments are made within the right locations of the local level, on right risks, right communities, and on right adaptation means, we will continue to promote scalable LLA solutions offered by GoB's Local Government Division (LGD)'s project on Local Government Initiative on Climate Change (LoGIC). Whereby, a proven local climate financing mechanism has been established through evidence-based advocacy and two dedicated financing to support local adaptation plans. First, by providing grants to local governments as additional resources to climate-proof their investment on community-based adaptation schemes. Thereby, contributing to make local infrastructures – including drinking water, livelihoods, irrigation, evacuation, early warning, water management systems, watersheds, roads, culverts etc. – more resilient, gender responsive and best suited to incorporate nature-based solutions for adaptation. The LLA can benefit from incorporation of ccGAP, firstly, by increasing women's role as whistleblowers for monitoring and maintenance of local infrastructure (e.g., early warning, embankment breach, river erosion and infrastructure breakage). Secondly, by providing conditional grants directly to the vulnerable households, it is enhancing people's adaptive capacity by sharpening skills in pursuing individual and group enterprise on resilient livelihoods means, both on farm and off farm. It also includes incorporating innovative technology for climate change adaptation solutions at local level with small initiatives. The project is identifying 225 most climate vulnerable wards through census and risk atlas, and developed the vulnerability index of each household. The most vulnerable 35,000 households and moderate vulnerable 10,000 households are selected (in progress) for skill development on climate resilient livelihoods.

A scalable model as this exemplifies how structural barriers can be removed through policy advocacy, innovative financing mechanism, and public-private partnership, with government entities like LGD on the lead of locally led adaptation. By investing on climate resilient livelihoods like crab hatchery, sheep breeding, and sunflower oil processing, the model helps to scale-up nature-based solutions supporting locally led adaptation. It therefore encompasses ideas based on creating livelihood opportunities or jobs that are resilient and green as a sustainable pathway for employment – and therefore contributing to the larger human development spectrum. Its unique contribution for measuring adaptation progress and outcome through effective tracking and monitoring make it distinctive in terms of its larger contribution to the global adaptation goal. It has also developed the social audit protocol and Adaptation Tracking Mechanism to assess both bottom up and top-down performance assessment of the adaptation benefits of the grants and training. Hence, the model provides evidence of enhanced resilience of vulnerable people, making its upcoming phases highly scalable through the GCF or other international climate finance mechanisms.






Among others, we will also continue to support housing initiatives like “Ashrayan”, to settle displaced and landless people through the extension of land ownership, ensuring visibility of the vulnerable and enabling their access to services. Under the Mujib Year Celebration, 100,000 more homeless families had already been given houses in December 2020. We also continue to strengthen country-wide national initiatives for rehabilitation of beggars who are often migrants as victims of climate-induced disasters like river erosion, floods and droughts, through rehabilitation centers with training and healthcare facilities and alternative employment. We also continue the implementation of the “Palli Janapad” project by the Ministry of LGRD & Cooperatives. The main aim of the project is restoration of agricultural land for food security and livelihood improvement of the rural community with modern facilities including community-based bio-gas plant as a source of renewable energy, solar power system as alternate source of electricity, rain water harvesting and waste management facilities, and employment and entrepreneurship opportunities through various capacity building activities. These will contribute to zero migration by protecting or transforming the livelihoods of at-risk areas and people. It also safeguards the zero-poverty by 2030 target.

This measure will be complemented by ensuring that the coastal belt is made 100% climate resilient. Climate resilience means the capacity of a system, structure or entity potentially exposed to climate hazards to adapt, by resisting or changing to reach and maintain an acceptable level of functioning and structure. To ensure a climate-resilient coastal belt, appropriate processes are needed to adapt policy, governance arrangements, and co-management practices for resource development along the coastline in response to climate change.

We recognize the best way to implement locally led adaptation is to engage communities at the design phase, and also to support community-based monitoring and evaluation. Early engagement will allow the evaluation of community benefits while building adaptive capacities. Equally important is the engagement of local authorities to build confidence within their communities by making them part of the decision-making process. Locally led adaptation programs can leverage value across communities through collaborative ventures. Moreover, as locally led adaptation programs are integrated into broader value chain development, they can be supported with international and regional funding. To achieve these goals, a capacity-building program led by universities will be undertaken in tandem with the project design and implementation.

In addition, there is a need for blended and participatory risk mapping for the vulnerable unions of Bangladesh with top-down risk mapping. As a decadal journey, spatial and temporal factors will play critical roles to design context-specific and geographically-specific locally led adaptation solutions. In addition, using socio-economic indicators and exposure information, vulnerability should be quantified through ‘scoring’ across all unions in Bangladesh, segregated by wards – and be available via open access dashboards. Based on this, we will support micro-modeling and downscaling methods towards inundation and risk mapping in line with 1.5 to 2-degree scenario-based projections.



Climate change and its widespread effects threaten lives and livelihoods, impeding global efforts to reduce poverty and promote shared prosperity. Climate services use environmental knowledge and information that plays a vital role in climate-resilient development at the household level by increasing women's participation. Vulnerability mapping and analysis for women, especially when combined with different age groups, and indigenous women's knowledge and practices, will increase climate resilience and improve climate and environmental outcomes.

We will ensure women's representation and participation in capacity-building programs and enable policies and financing processes that address their needs. We will engage with women's organizations, networks, and unions to improve women's economic empowerment, self-entrepreneurship and climate, and environmental outcomes. In line with the ccGAP, we will continue to allocate financial resources to address gender and Disaster Risk Reduction (DRR) issues and ensure participation of women in community level assessments and mapping engagements. Access to modern technology will also enable women to manage climate risk, respond to climate variability, and access support and information relevant to their livelihoods during climate shocks. Targeted social protection measures linked to the resilience of social and ecological systems will contribute to women's adaptive capacity and provide a stepping-stone to other economic opportunities.

To ensure locally led adaptation is effective, the Mujib Climate Prosperity Plan will create Mujib Locally Led Adaptation Hubs (LLA hubs) that will act as focal points for locally led projects. LLA hubs will prioritize 1) gender equality through a transformative approach to benefit women from climate actions, including through gender-focused and targeted training, special financing, and program opportunities, and 2) financial inclusion through targeted interventions to bring vulnerable communities under the umbrella of mobile financial services. More importantly, as a result of economic and non-economic loss and damage due to inadequate emission reduction measures globally, LLA hubs must act to avert, minimize, and address impacts and loss and damage which will require finance and dedicated financing mechanisms.

The hubs will house information on communities, provide a forum for discussion and consultation on projects, enhance community participation and success tracking with specialized incentives for communities. As a Hub, or learning platform, an Adaptation Learning Center for women, similar to that established in Deluti Union of Bangladesh, by the Inclusive Budgeting and Financing for Climate Resilience project, can provide space for women to learn about climate adaptive livelihoods, share experiences and build their capacities, both individually and collectively.

The Mujib LLA hubs will prioritize the most vulnerable regions taking into consideration the correlation between poverty and disaster, establishing hubs in 20% to 30% of areas by 2025 and 100% by 2030.



The development of equitable and sustainable business models is key to achieving prosperity outcomes through locally led adaptation. Such a business model may look like this:

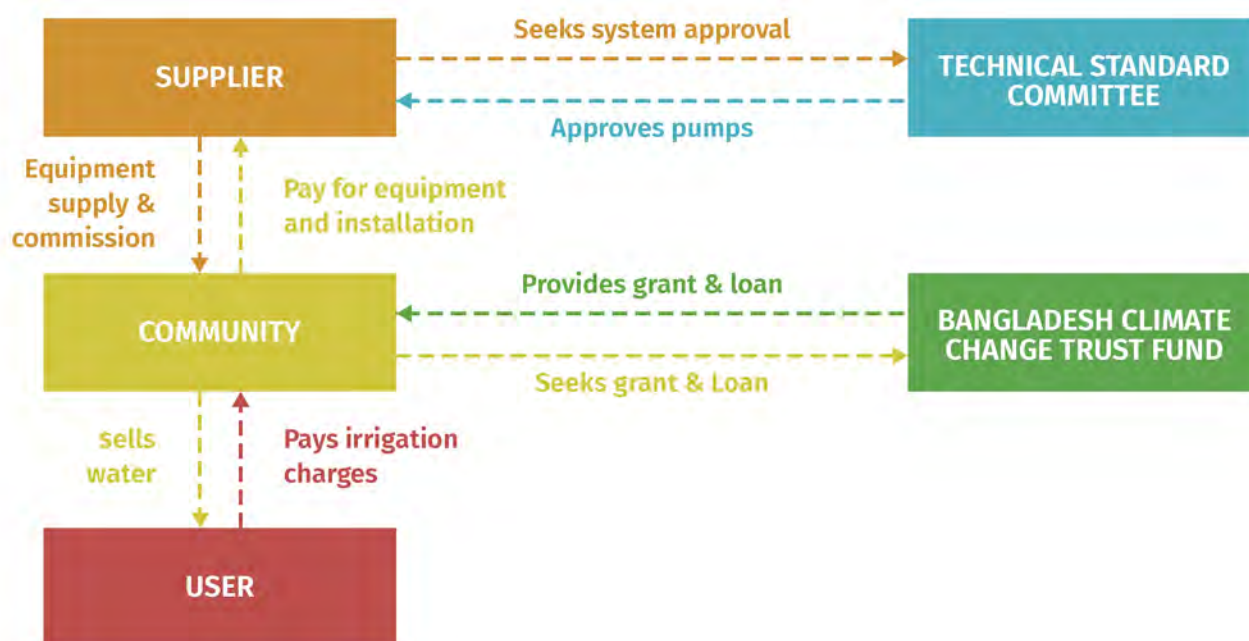


Figure 8. Business model - prosperity outcomes through locally led adaptation

The Private Sector Facility (PSF) of the Green Climate Fund (GCF) can be explored to fund and mobilize private sector actors and stakeholders, including institutional investors, and capitalize on existing funds to attract private corporations in climate interventions. This can engage both the local and global private sector in supporting climate change mitigation and adaptation projects, therefore catalyzing for funding high impact, transformative climate projects and activities in developing countries. We will support in exploring PSF's pivotal role in supporting strategic private sector inclusion and engagement to upscale private-sector driven investments necessary. Also, the Kampala Principles on Effective Private Sector Engagement in Development Co-operation may guide private sector partnerships for development to be more effective while ensuring inclusivity at country level to provide sustainable value chains and responsible business models.

Locally led nature-based solutions can protect natural resources in communities while enhancing and protecting plant and animal biodiversity, conserving genetic resources, protecting wildlife habitats, and improving the condition and quality of ecosystems for multiple dimensions of resilience. In line with the ccGAP, we will document, disseminate and promote indigenous knowledge and products on agriculture with special focus to indigenous and traditional practices by women. Additionally, we could promote technologies and tools that help smallholder farmers and producers to increase their incomes by reducing input costs. Moreover, premium prices could be sought for sustainably produced products.

Consideration of these above factors will remain imperative for sustainable locally led adaptation interventions in Bangladesh. As such the transition from vulnerability to building resilience (economy and people) and then prosperity (focusing on transformation of the economy and society towards environmental globalization) will contribute towards economic transformation in the long run.

LOCALLY LED ADAPTATION AIMS...

1

To mobilize USD 1 billion per year by 2030 from international and national resources in locally led adaptation via Ministry of Local Government and Rural Development in collaboration with the Ministry of Planning and Ministry of Finance by 2030, including through international channels such as the Green Climate Fund³², Global Environment Facility, or Adaptation Fund.

2

To generate USD 300 million in costs avoided per year.³³

3

To eradicate extreme poverty by 2030.

TARGET MILESTONES

- 2021** We will adopt the locally led adaptation principles launched in the 2021 Climate Adaptation Summit.³⁴
- 2021** We will conduct vulnerability mapping and analysis in terms of geography, sex, age, disability, especially in rural communities and indigenous areas to better understand regional variations in composite vulnerability.
- 2021** We will create a locally led adaptation window in the Ministry of Local Government and Rural Development in collaboration with the Ministry of Planning and Ministry of Finance.
- 2022** We will consult vulnerable communities to ascertain capacities and build capabilities to drive locally led actions including leading projects, delivery of projects, and greater access to finance.
- 2022** We will begin effective private sector engagement in climate change adaptation in promoting locally led adaptation in collaboration with PPPA, BIDA and other established mechanisms.
- 2022** We will develop an adaptation-tracking mechanism to quantify adaptation efforts and assess vulnerability reduction through adaptation interventions by exploring various indicators of vulnerability (social, physical, cultural etc.).
- 2022** We will develop a mechanism for success tracking and incentivizing so that successful projects get more support, and the most vulnerable communities receive special support to get them on track.

TARGET MILESTONES

- | | |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2022 | We will develop a national strategy to guide the fund-allocation strategy, themes, delivery mechanisms, and capacity-building needs as well as financing approaches such as guarantees, concessional loans, convertible debt, equity, public private partnership and blended financing. |
| 2023 | We will form a consortium of national, regional, and international technical partners to build analytical skills, knowledge, and resources for delivering the plan. |
| 2023 | We will mobilize an additional USD 100 million per year for locally led adaptation. |
| 2024 | We will mobilize an additional USD 150 million per year for locally led adaptation. |
| 2025 | We will establish Mujib LLA hubs in 20% to 30% of the most vulnerable areas. |
| 2025 | We will mobilize an additional USD 250 million per year for locally led adaptation. |
| 2026 | We will mobilize an additional USD 350 million per year for locally led adaptation. |
| 2027 | We will mobilize an additional USD 500 million per year for locally led adaptation. |
| 2028 | We will mobilize an additional USD 650 million per year for locally led adaptation. |
| 2029 | We will mobilize an additional USD 850 million per year for locally led adaptation. |
| 2030 | We will ensure 100% of the coastal belt is made climate-resilient |
| 2030 | We will establish Mujib LLA hubs in 100% of the most vulnerable areas. |
| 2030 | We will mobilize an additional USD 1 billion per year for locally led adaptation. |
| 2030 | We will ensure zero climate-induced migration by 2030. |

LOCALLY LED ADAPTATION IS A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS³⁵ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

Addresses vulnerabilities
Builds long-term resilience
Supports development of high-level technology
Targets sectors or populations affected by non-financial shocks

COVID-19 RECOVERY DIVIDEND

Support for long-term transformation
Positive environmental and social outcomes

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

Create LLA hubs that will act as a focal point for locally led projects and a repository of information on communities, provide a forum for discussion and consultation on projects to be developed, and enhance wider community engagement for LLA – focusing mostly on vulnerable regions (20%–30% progressing towards 100% by 2030). The structure of LLA hubs will be decided and adopted through national consultations with all relevant stakeholders.

Mobilize USD 1 billion per annum in locally led adaptation by 2030.

Deploy a tracking mechanism to quantify adaptation efforts and assess vulnerability reduction through adaptation interventions through exploring various indicators of vulnerability (social, physical, cultural etc.) Universities can generate the relevant approaches, methods, and tools for such quantification of adaptation outcomes.

Deploy a tracking mechanism for success tracking and incentivizing so that successful projects get more support while the most vulnerable communities receive special support, including incentives.

Develop a blueprint to guide the national fund-allocation strategy, themes, delivery mechanisms, capacity building needs and financing approaches such as guarantees, concessional loans, convertible debt, and equity.

Form a consortium of national, regional, and international technical partners to contribute to the development of analytical insights, knowledge and resources for delivering the plan.

Developing a multi-stakeholder platform for the demand- and supply-side actors in LLA to interact with the market as the key driver to achieve resilience and foster public-private interaction and enhanced private sector engagement.

RESOURCES

INTERNATIONAL PARTNERS

Enhanced access to global funding windows such as the Green Climate Fund and exploring opportunities for regional and international partnership.

NATIONAL BUDGET

National budget support via 8FYP and allocation from Bangladesh Climate Change Trust Fund.

CONTRIBUTION FROM PRIVATE SECTOR

Industry – capital investment and industry consumers as users of ecosystem services.





KEY POINT 3: INCREASING PUBLIC REVENUE TO SPEND ON THE MOST VULNERABLE

3B: AN ESTABLISHED CARBON FINANCING REGIME FOR REVENUE GENERATION

Bangladesh, like many developing countries, has large carbon sinks. The world needs the certainty of a carbon financing regime that keeps our economies safe (1.5°C compliant). Equally important and based on analysis of the shortage of adaptation finance, a global carbon financing regime should bring substantial new financial support for adaptation.

The Bangladesh 2020 NDC targets major black carbon sources and major methane sources through the Bangladesh National Action Plan (NAP) for reducing Short Lived Climate Pollutants (SLCPs). Full implementation of the SLCP Plan is expected to reduce black carbon emissions by 40% and methane emissions by 17% by 2030.

In line with such targets, we will consider 1) enabling a carbon market or carbon financing mechanism with other V20 mechanisms; 2) harnessing the potential of Article 6 of the Paris Agreement and voluntary carbon markets to bring in additional financing; and 3) encouraging bilateral joint crediting mechanisms.

Strategies can include, but are not limited to, objectives such as revenue-raising (carbon tax), behavior shifts (carbon tax and carbon pricing), and new sources of investment finance (international carbon markets). As it is essential to prioritize the objective for each instrument put in place, a strategy for and the auditing of carbon in this regard is imperative.

As a starting point, a National Carbon Finance Coordination Hub will be set up to attract investment from the voluntary carbon market for a) specific standalone projects and b) sectoral jurisdictional programs, where funds from voluntary carbon markets (VCM) can be channeled through a fund and/or matched with other sources of funding. VCM demand is growing fast and will likely accelerate after the publication of the Taskforce on Scaling Voluntary Carbon Markets outputs. In addition, a monitoring and evaluation system for carbon pricing will also be under development. Agencies that may be considered for participation in the National Carbon Finance Coordination Hub include Bangladesh Forest Department, National Board of Revenue, Economic Relations Division, and Power Division.

The National Carbon Finance Coordination Hub will strategically look to donor partners early to fund or underwrite payments by results programs for a) forest/tree conservation, including sustainable management of non-timber forest products (NTFPs) b) afforestation and reforestation c) (natural) revegetation e.g., mangroves, d) coastal ecosystem conservation, protection and rehabilitation e.g., mangroves, tidal marshes, and seagrass meadows e) decarbonization of mass transit systems (e.g., Dhaka bus fleet) and/or f) a scrappage payment for early retirement of uneconomic coal-fired power stations in addition to being linked to loss and damage financing, adaptation, and renewable energy funding. These could either be done through the voluntary market or eventually under Article 6 of the Paris Agreement (subject to corresponding adjustments). Off-grid, rural micro- and mini- grids with storage may also apply for programs of support through carbon financing.

As Bangladesh is part of the V20, a joint carbon fund may be under consideration where projects, including from Bangladesh, can bid for carbon finance and the fund can be tasked with pooling revenue and marketing the credits. Moreover, Bangladesh, with a few similar-sized countries, may consider designing an emissions trading scheme (aimed at power stations, cement plants, and steel mills, for example). These may ultimately consider a bilateral or trilateral arrangement with a given sector, for example the power to set a target and allow installations relating to the target to trade and achieve goals collectively. The participating entities will require early feasibility studies and plans that include the institutional requirement for emissions trading, carbon markets, and carbon pricing. Bringing about such markets will be contingent on securing financing, including through international carbon markets.

Carbon tax implementation would require a dividend to transfer revenue to low-income households through rebates, and in order to raise additional revenue of up to 0.15% of GDP by 2025 and 1% of GDP by 2030.³⁶ The carbon tax would also include “industrial allocations” whereby groups such as MSME and low-income earners will be exempted from the tax. For other sectors and high-income groups, exemptions may range from 80% at the start of the program with a tempered reduction until 2030 to reach full compliance.

The carbon tax could be an additional revenue source alongside the tax reforms and income tax system modernization efforts highlighted in the 8FYP. An administratively practical option is to levy a carbon tax on fossil fuels and use the proceeds to bolster government revenue. That would enable other taxes to be reduced or earmarked for a combination of market readiness and adaptation/resilience projects.

We will also encourage carbon credits from forest carbon, soil carbon, renewable energy, and blue carbon to be made tradable through carbon financing platforms and joint credit mechanisms via bilateral arrangements with support from, for example, the Asian Development Bank and the private sector.

Bangladesh’s wood-burning cooking stoves could be modernized by better design and biogas. They could also benefit from an established market regime. Moreover, current commitments of total tree coverage to increase to 25% by 2030 from the existing 22% could also benefit from a carbon financing regime. There are also co-benefits stemming from reduced loss of life due to increasing lightning strikes.



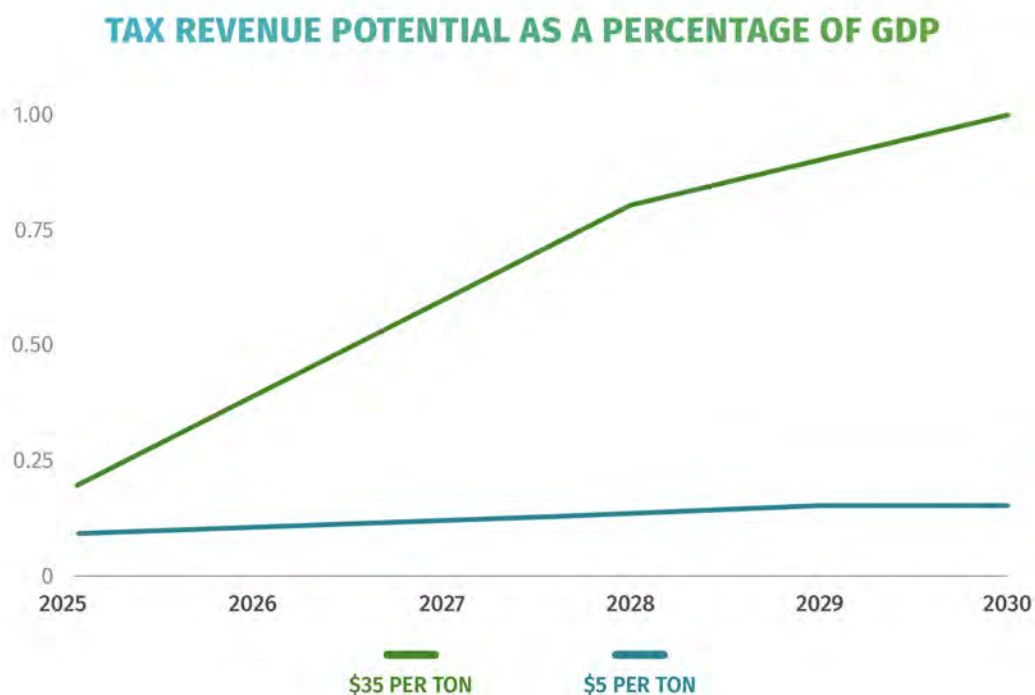
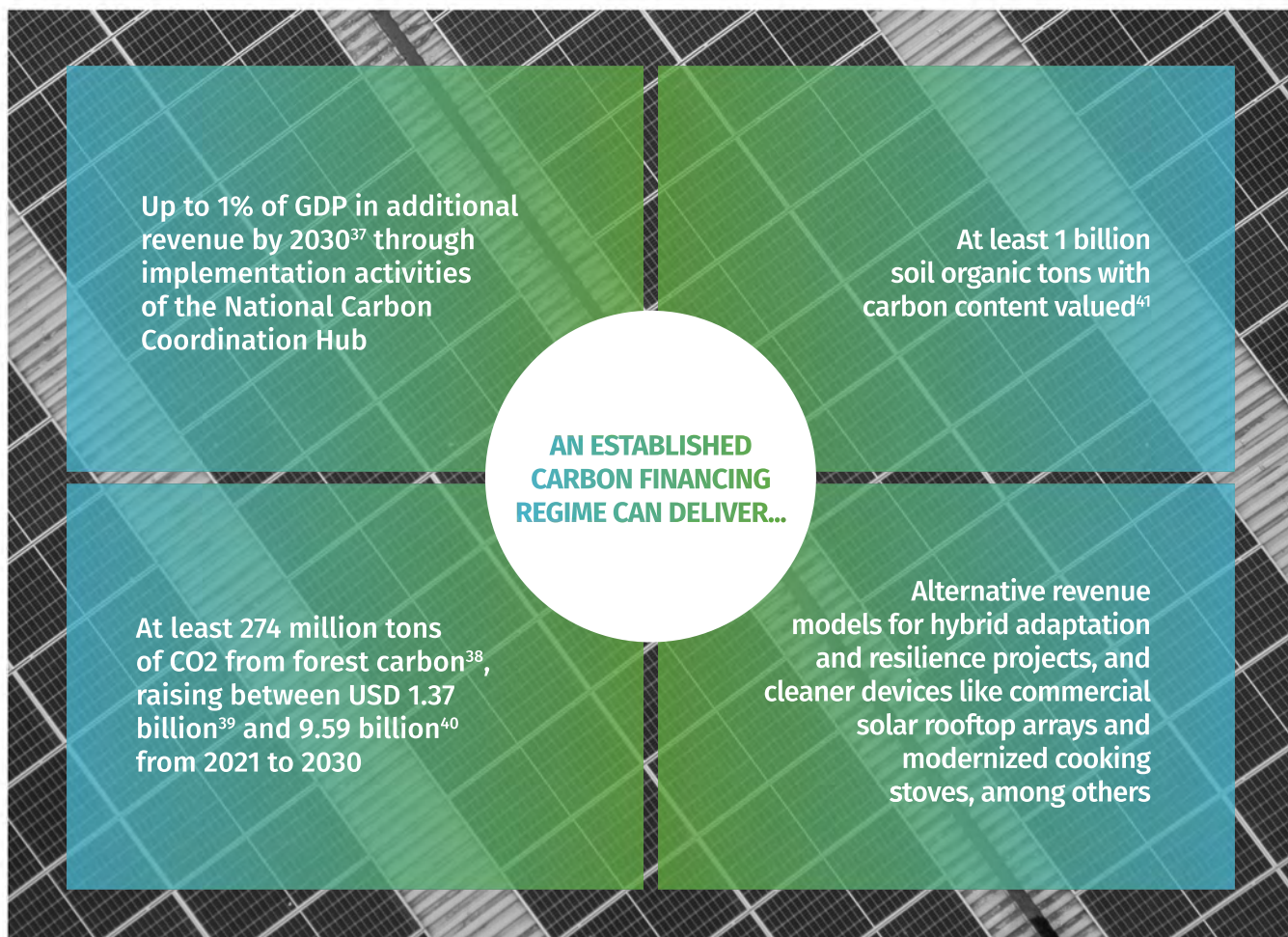


Figure 9. Tax Revenue as a percentage of GDP

TARGET MILESTONES

- 2021** We will conduct a feasibility study and prioritization strategy for carbon pricing mechanisms and create a strategy for the National Carbon Finance Hub including taking into consideration the implementation of the National Short Lived Climate Pollutants plan.
- 2021** We will audit carbon assets (e.g., soil, forest, renewable energy, blue, and modernized cooking stoves) in coordination with the Bangladesh Forest Department and other relevant agencies.
- 2022** We will set up a National Carbon Finance Coordination Hub.
- 2023** We will implement a monitoring and evaluation system for carbon pricing with support from the National Carbon Finance Coordination Hub.
- 2024** We will implement carbon pricing or tax with dividends that disproportionately benefit low-income households, and carbon pricing.
- 2025** We will commit resource gains from the domestic carbon financing to locally led adaptation and loss and damage.
- 2030** We will integrate with international carbon markets in order to mobilize additional resources for locally led adaptation and loss and damage.



CARBON MARKET REGIMES ARE A POLICY & REGULATORY MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS⁴² SUCH AS...

**CLIMATE AND RESILIENCE
RESULTS AND BENEFITS**

Supports 1.5°C goal
Builds long-term resilience

COVID-19 RECOVERY DIVIDEND

High employment intensity
Skills development
High economic multiplier
Contribution to the productive asset base
Support for long-term transformation
Positive environmental and social outcomes

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

Carbon marketplace setup

Monitoring and evaluation system setup

RESOURCES

**INTERNATIONAL
PARTNERS**

International resources
for platform setup and access
to tools for enhanced
monitoring and evaluation

**NATIONAL
BUDGET**

National budget support
via 8FYP through
modernization of tax policy


**CONTRIBUTION FROM
PRIVATE SECTOR**

Private sector tax
revenue contributions



**KEY POINT 4: COMPREHENSIVE
CLIMATE AND DISASTER RISK
FINANCING AND MANAGEMENT**

**4A: MICRO, SMALL AND
MEDIUM ENTERPRISE
FINANCIAL PROTECTION AND
PRODUCTIVITY ENHANCEMENT**



We will support the building of a new system that prioritizes needs-responsive financial protection, supports proactive risk management, risk reduction, and immediate liquidity needs, as well as investment support for MSMEs, especially women-led and owned MSMEs. According to the 8FYP, outside agriculture, micro and small enterprises are the largest sources of employment in both rural and urban areas in manufacturing and services. Moreover, according to the World Bank, the financing gap for MSMEs is USD 2.8 billion.⁴³

Increased resilience reduces the background risk from potential future disasters. This can have immediate and significant development benefits, even if disasters do not occur for a long time. Key benefits include economic gains from positive risk-taking (e.g., new enterprises and innovation); investments in productive assets (e.g., in small-scale agriculture); extending planning horizons (e.g., for building up savings); and an increase in land values. All these lead to job creation, rising incomes, greater productivity, and overall economic growth.


MSMEs contribute to 75% of employment, 25% of GDP, 40% of manufacturing output, and at least 75% of export earnings.⁴⁴ Increased climate-related risk means growing economic losses which warrants protecting MSMEs, the bedrocks of the economy, against climate impacts to maintain and strengthen current growth levels and safeguard jobs.

Key measures to support MSMEs include improving financial structures through innovative and alternative financing platforms (e.g., risk sharing facilities, factoring, warehouse receipt finance, and/or start-up capital policies) to meet the needs of MSMEs.⁴⁵ Opportunities to enhance productivity include more efficient equipment and lower power costs. Moreover, supporting linkages between MSMEs and large corporations can facilitate increased participation in global supply chains and enhanced participation in value chains.

This builds on the 8FYP, which includes greater institutional and financial support to micro and small enterprises by converting the SME Foundation to the “Small Business Agency,” a one-stop support for technology, training, marketing, and regulatory improvements. We will work in close collaboration with the Bangladesh Bank on the financing side to introduce innovative financial solutions involving ICT to improve MSMEs’ access to commercial bank credit through low-cost approaches to loan applications, approvals, and supervision. We will also develop credit guarantee schemes to reduce credit risks and to provide start-up capital to MSME. At least 15% of cottage industries and MSME credit lines will be provided to women entrepreneurs by 2021, complementing the ccGAP to promote women’s access to financial instruments.

The V20’s Sustainable Insurance Facility aims to develop domestic and regional insurance actors’ portfolios to deliver climate and disaster risk products to market for MSME. In addition, there should be strategic premium support (either in the form of a premium subsidy or capitalization support) to enable sustainable private sector uptake of these products in cooperation with the SME Foundation and Ministry of Local Government, Rural Development and Co-operatives.

Bangladesh is a member of the InsuResilience Global Partnership, a collaboration of the G7, G20+ and V20. Its targets represent national ambitions to progress towards and beyond the Partnership’s Vision 2025 to ensure 500 million vulnerable people are covered against disaster and climate shocks by pre-arranged risk finance and insurance.



According to the 2nd Climate Vulnerability Monitor, expected economic losses from climate-fueled disasters such as drought, floods and storms are expected to reach USD 4.075 billion per year by 2030. Related habitat losses such as reduced labor productivity and sea level rise are expected to reach USD 50.62 billion per year by 2030.⁴⁶ Maximized climate and disaster risk financing solutions can reduce losses in the future.

Livelihood protection (including for women) in ecologically fragile areas is a priority in the Bangladesh Climate Change Strategy and Action Plan (BCCSAP). Access to reliable, affordable, and sustainable energy will provide communities — and especially women — opportunities to manage their own businesses, such as an ice-making business in a fishing community to preserve the catch, or other enterprises.



MUJIB COMPREHENSIVE CLIMATE AND DISASTER RISK MANAGEMENT AND FINANCING STRATEGY



The strategy comprises a comprehensive set of climate and disaster risk financing and insurance (CDRFI) instruments led by the Ministry of Finance. This will be crucial for achieving resilience and enabling adaptation investment but clear guidance is needed on applying the strategy, beginning with ensuring we have an overview and understanding of existing CDRFI instruments and to which risk layer to apply them.

Resilience baselines and integrated investment portfolios are still lacking, and this strategy aims to close that gap. Using the risk-layering approach in the strategy to build resilience, we will link planned adaptation with CDRFI instruments to achieve the most cost-effective reduction in exposure to climate risks. What will integrate investments in risk reduction (adaptation), risk retention (e.g., budgetary allocations for contingency funds for low-impact, high-frequency events), risk transfer on and across different levels (e.g., for high-impact, low(er) frequency events) and contingency financing, can also be used to repair the nation's most critical infrastructure.

As a starting point, we will collect data to determine key performance indicators of financing and insurance in the natural catastrophe sector to assess/prove the sustainability of risk financing and insurance markets. This includes, for example, supply side (loss ratio, solvency concerns) and demand side (coverage ratios, natural catastrophe losses, declined coverage etc.). This data may be supported by V20 collaboration on a global public-private partnership for analytics to close the protection gap, with support from the G20+ and V20 InsuResilience Global Partnership. The data may be hosted in the Insurance Development and Regulatory Authority (IDRA). The various CDRFI instruments can complement and enable the resourcing of adaptation investments to be applied in a coordinated manner, as indicated in the Bangladesh Climate Fiscal Framework.⁴⁷

Moreover, a comprehensive program of social protection may be included in the Mujib Comprehensive Climate and Disaster Risk Management and Finance Strategy to enable a transformation in poverty reduction and social inclusion. This can be delivered through Adaptive Social Protection (ASP), taking elements from the World Bank-led Sahel Adaptive Social Protection Program (ASPP), which was launched in March 2014. This means integrating social protection with 1) climate and disaster risk management and 2) adaptation investments. An example of ASP is when droughts are anticipated and the program thus scales up conditional cash transfer via the social safety net to ensure a quick and effective response. This can also include linking public works with social safety nets where able-bodied adults work on rebuilding or other value generating activities for cash or food. As for connecting work within the climate risk insurance-MSME-social protection continuum, it would be advisable to examine a combination of social insurance and climate risk insurance approaches, as well as considering the combination of labor market programs and climate risk insurance approaches.

MAXIMIZED CLIMATE AND DISASTER RISK FINANCING SOLUTIONS

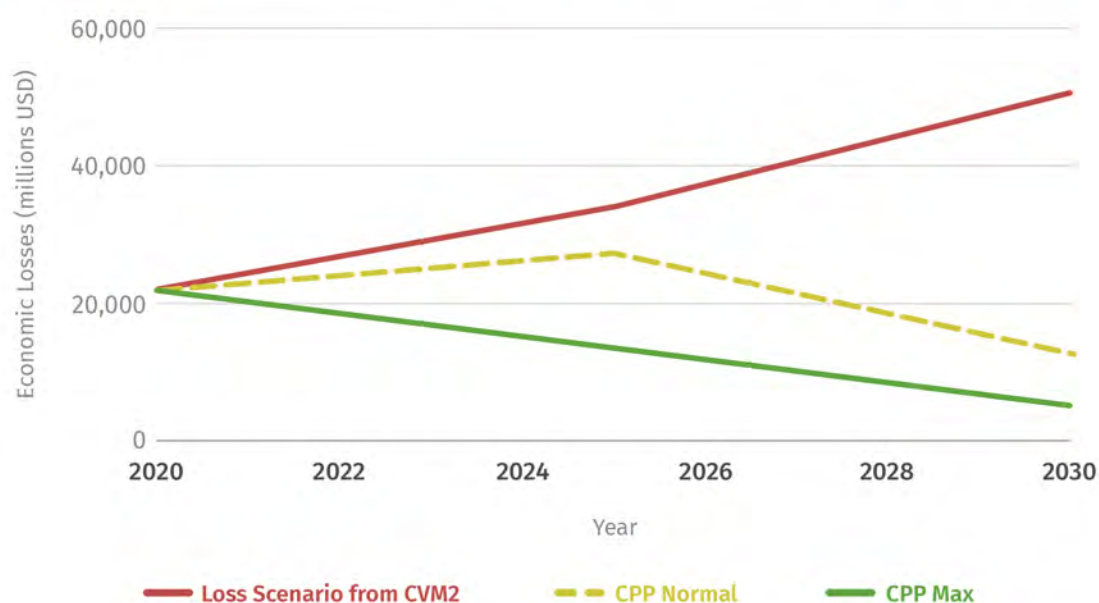
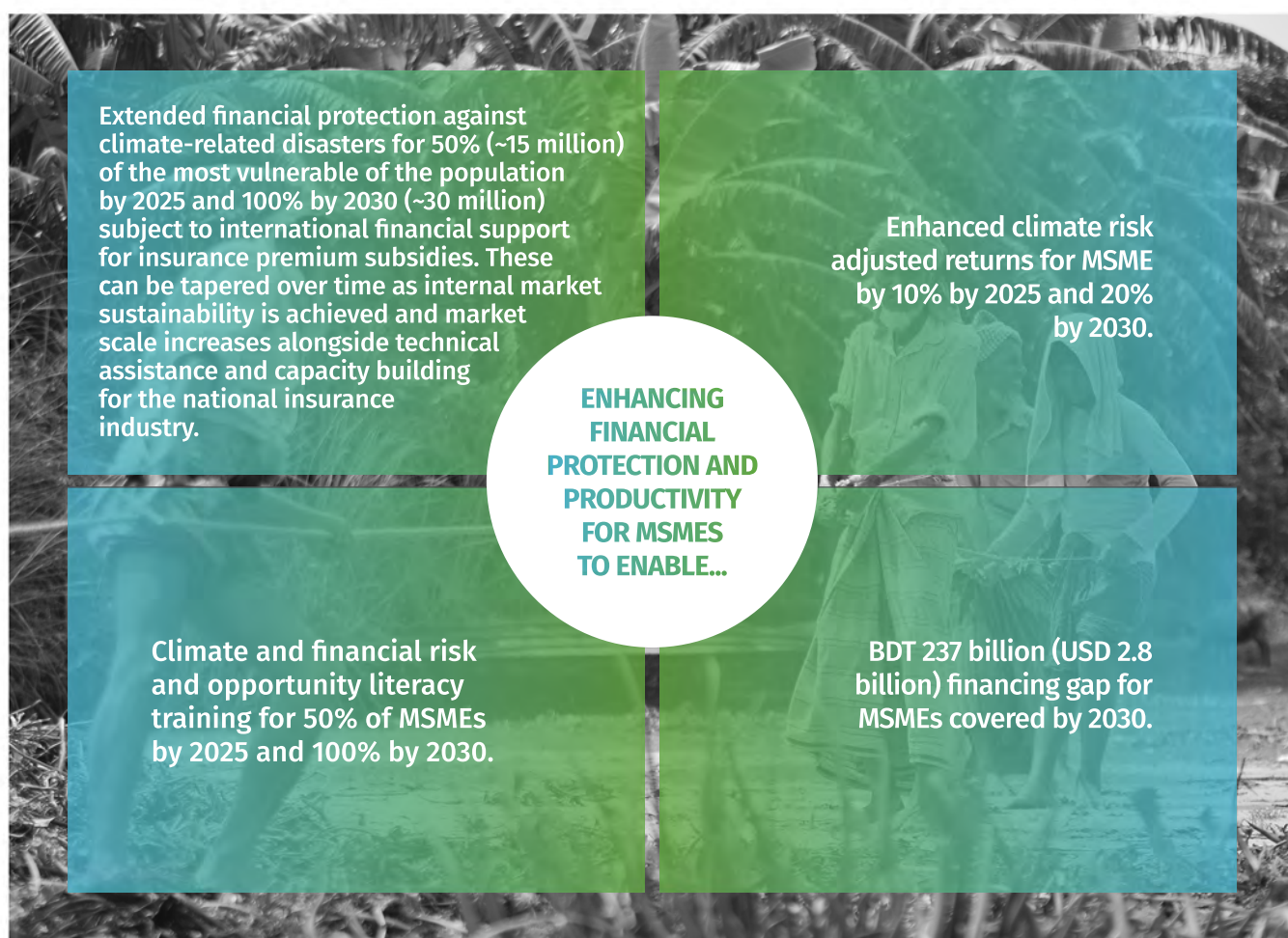


Figure 10. Economic Losses from Climate and Disaster Risks



TARGET MILESTONES

- | | |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2021 | We will establish a unified framework for MSMEs to improve the effectiveness of MSMEs policies. |
| 2021 | We will undertake a study to define most vulnerable areas and segments in relation to locally led adaptation in Point 3A. |
| 2021 | We will begin the Mujib Comprehensive Climate and Disaster Risk Management and Financing Strategy by the Ministry of Finance through developing public perspectives and collecting data about climate and disaster risk financing and insurance key performance indicators in the natural catastrophe sector in order to be able to assess/prove the sustainability of risk financing and insurance markets. This includes for example supply side (loss ratio, solvency concerns) and demand side (coverage ratio, national-catastrophe losses, declined coverage and so on). The data may be hosted in the Insurance Development and Regulatory Authority. |
| 2022 | We will develop a national policy and strategic framework for the risk transfer mechanism. |
| 2022 | We will conduct a pre-feasibility study for climate protection instruments for MSMEs and the vulnerable people that depend on them. |
| 2022 | We will complete the Mujib Comprehensive Climate and Disaster Risk Management and Financing Strategy. |
| 2022 | We will participate in the V20's call for a Global Public Private Partnership in Risk Analytics and Resilience through the Global Risk Modelling Alliance and Global Resilience Index. |
| 2023 | We will implement V20's Sustainable Insurance Facility to develop domestic and regional insurance providers' ability to bring climate and disaster risk cover to market for MSMEs, with strategic premium support to promote sustainable private sector insurance uptake in cooperation with the SME Foundation. |

ENHANCING FINANCIAL PROTECTION AND PRODUCTIVITY FOR MSME IS A DIRECT INVESTMENT AND POLICY REFORM MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS⁴⁸ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

- Addresses vulnerabilities
- Builds long-term resilience
- Supports development of high-level technology
- Targets sectors or populations affected by non-financial shocks

COVID-19 RECOVERY DIVIDEND

- Support for long-term transformation
- High employment intensity
- Positive environmental and social outcomes
- Contribution to the productive asset base

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

Mujib Comprehensive Climate and Disaster Risk Management and Financing Strategy

50%–100% of the population living below the poverty line and at risk of falling below the poverty line covered by financial protection against climate-related disaster

50%–100% of MSMEs trained in climate financial risk and opportunity

Development of a national policy and strategic framework for risk transfer system

BDT 237 billion (USD 2.8 billion) financing gap for MSMEs covered

RESOURCES

INTERNATIONAL PARTNERS

International facilities such as the Sustainable Insurance Facility (SIF) and Global Index Insurance Facility (GIIF)

Premium subsidies or capitalization support to support Mujib Comprehensive Climate and Disaster Risk Management and Financing Strategy

NATIONAL BUDGET

National budget support through insurance subsidy programs

CONTRIBUTION FROM PRIVATE SECTOR

Alternative financing platforms such as risk sharing facilities, factoring, warehouse receipt finance, and/or start-up capital policies

Public-private partnership for risk analytics and disaster risk financing through subsidies from developed and developing countries while banks, financial institutions and the (re)insurance industry develop risk analytics, and insurance and investment products



KEY POINT 4: COMPREHENSIVE CLIMATE AND DISASTER RISK FINANCING AND MANAGEMENT

4A: DEVELOPMENT OF CLIMATE-RESILIENT AND NATURE-BASED AGRICULTURAL AND FISHERIES SUPPLY AND VALUE CHAINS INCLUDING NATIONAL DISASTER RISK FINANCING AND MANAGEMENT TO SAFEGUARD FOOD SECURITY, NUTRITION AND WATER SECURITY

The 8FYP prioritizes productivity improvements to raise yields; reduce climate vulnerability; and promote diversification to non-crop agriculture, fishing, livestock, and dairy products. Therefore, in accordance with the 8FYP, the strategy will be to further increase agricultural diversification while maintaining food and nutrition security by improving farm productivity, the supply of inputs, price policy support, water supply, farm credit, and marketing support.

We will adapt agricultural, fisheries, livestock and poultry supply chains to climate change and upgrade agroforestry systems by improving access to agro-meteorological services. We will support research in developing climate-resilient plant varieties (cultivars), improving production and management techniques along the supply chain, and introducing risk transfer schemes for key supply chain actors. Such solutions include integrated mangrove-shrimp cultivation to sequester blue carbon.⁴⁹ This will complement and align with the World Bank's "Sustainable Fishery Development Project" and the "Community-based Climate Resilient Fisheries and Aquaculture Development in Bangladesh" project supported by the Global Environment Facility.^{50,51}

Formalizing supply chains through reinforced linkages between supply chain actors, as well as increased linkages between formal financial institutions and mature farmers/fisherfolk/enterprise groups would support the expansion of agriculture and fisheries finance via more innovative operating models. Examples from South Asia of high-value, nature-based solutions include seaweed cultivation, floating gardens, aqua-geponics and vertical farming that uses rainwater in salinity-prone coastal communities. These are innovative and culturally sensitive solutions in the context of climate-exposed communities.

Another option is scaled-up promotion of practices such as micro-irrigation and support for organic seeds, especially in communities with limited access to information and resources. Building upon the most successful examples would help address existing bottlenecks including governance issues, lack of capacity for monitoring, reporting, and validating quantitative indicators.


Extreme heat can severely reduce the yields of rice, wheat, and other cereal crops. Acute weather events and disasters are an ever-present risk. Consequently, risk-averse households and firms typically avoid long-term investments in productive assets, entrepreneurial activities are restricted, and planning horizons are shortened, leading to lost development. We will support, among other measures, the deployment of genetically improved crop varieties with resilience to climate-linked events such as heat waves, flooding submergence, and salinization. The development of a heat-tolerant rice variety is an example.⁵²

Risk reduction or management can have immediate and significant economic benefits. Working in extreme heat, for example, can have serious health implications, particularly for elderly people and communities with the least access to health care. A feasible investment that addresses this problem can also boost the overall productivity of farmers. Moreover, to ensure that adequate access to financial support liquidity is made available for low-income groups, social protection schemes will be introduced.

Food security⁵³ can be achieved by ensuring a safe and nutritionally adequate food supply both at the national and household level. Women play a vital role in agriculture, be it the cultivation of land or processing of the product. In general, technological change, utilization of productive resources and different types of training for women in agriculture are aimed at augmenting land and labor productivity and, therefore, have profound implications for labor absorption and employment in agriculture. It is essential to guarantee that women are not shut out of proper training in agriculture or access to land, materials and equipment.

To prevent gender-disproportionate harms from climate-driven shocks and disasters, it is vital to ensure the formulation and implementation of gender-responsive policies which aim to increase both women's agency and access to the productive resources, markets, training, and technology required to enhance agricultural productivity and output. Equally important is to ensure alternative livelihood opportunities for women affected by climate change. In line with the ccGAP, to sustain the dual expansion of climate-resilient livelihoods (e.g., climate resilient cropping, saline resistant vegetables, etc.) along with increased engagement and participation of women in such activities, capacity building and financial inclusion in terms of access to concessional loans/grants and insurance products are two major ways to empower marginalized women while providing safety nets in climate-vulnerable communities. Additionally, policy-based interventions to strengthen market infrastructure in hard-to-reach areas will underpin locally led adaptation and resilience.





The V20 Sustainable Insurance Facility's provision of climate and disaster risk financing and insurance should include premium subsidies and capitalization support to address both market inefficiencies and inequitable coverage. This could simultaneously overcome demand and supply challenges for optimal insurance coverage against extreme weather events. Depending on the target group, such as low-income households, MSME or governments, premium subsidies and capitalization support through shared risk with developed and developing country governments can be used at various scales.

Our approach contrasts starkly with the traditional after-the-fact, loss-centered approach for disaster risk management. It focuses on the benefits of saving lives, reducing losses, and promoting effective recovery from disasters. Moreover, international cooperation for nature-based solutions can be prioritized in order to phase out investment, trade, and export credit practices that drive deforestation and ecosystem loss.

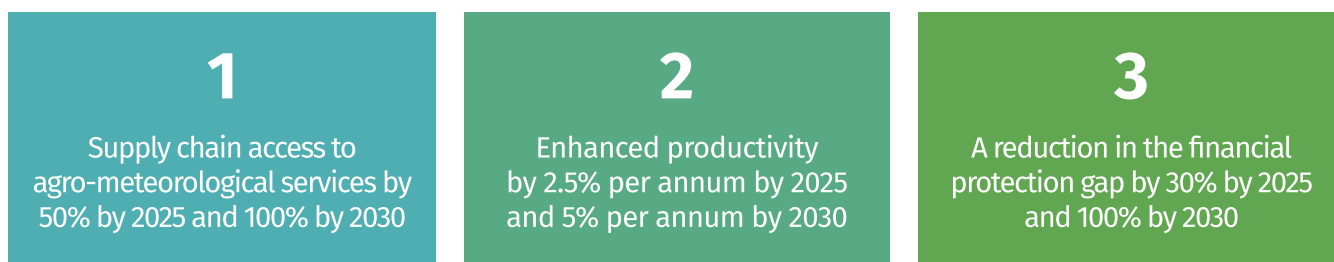
Agricultural exports will be promoted to increase farm income and employment in non-crop activities, especially fisheries, fruit, vegetables, and dairy products. The implementation of the first phase of the BDP2100 public investment program will strengthen water and drought management, lower flood risk, reduce waterlogging, and reduce soil salinity. Priority agriculture and rural infrastructure will be preserved and strengthened, increasing GDP by 1% by 2025.

This flagship plan will be a crucial step towards a green, nature-based, and resilient recovery from the COVID-19 crisis. The Mujib Climate Prosperity Plans will help to strengthen rapid rural transformation, women's empowerment, poverty eradication, universal access to modern and sustainable agriculture, and power and energy security. We expect the plan to have profound effects as we work to tackle climate change, manage disasters, and protect the environment.

A good example of sustainable agriculture is the Bangladesh Rubber Board, which is building sustainable development through patronizing rubber cultivation, creating entrepreneurs and balancing resilience to climate changes. Another example of this is seaweed cultivation with its climate resilience and development benefits. It is a low or even negative carbon industry, resilient to climate shocks, does not require significant capital to be established, is export-focused, and offers a variety of forms of employment suitable for many different circumstances. Well-designed seaweed cultivation integrates well with other activities in the blue economy, for example by raising water quality and sustainably supporting other commercially valuable species. As Bangladesh has a large suitable continental shelf already identified around Cox's Bazaar and the coast south of Khulna, seaweed pilot schemes should be explored based upon marketing partnerships with international purchasers and global best practice for cultivation. Once established, these pilot schemes would then form the basis of a growing and profitable local industry.

COVID-19 has worsened Bangladesh's overall economic condition, putting vulnerable groups, including women and farmers, at further risk in terms of their socio-economic standing access to basic needs (e.g., food, water, and shelter). Human health and environmental health are intricately linked as detrimental changes in the environment will eventually affect human health. It is important to take necessary measures to mitigate the impacts of climate change and to create a sustainable agricultural system.

DEVELOPMENT OF CLIMATE-RESILIENT AGRICULTURAL AND FISHERIES SUPPLY AND VALUE CHAINS INCLUDING NATIONAL DISASTER RISK FINANCING AND MANAGEMENT TO SAFEGUARD FOOD SECURITY, NUTRITION AND WATER SECURITY TO ENABLE...



TARGET MILESTONES

2021	Complete a disaster risk financing and insurance strategy for agricultural and fisheries supply chains including the provision of parametric insurance options/social protection schemes in addition to the provision of premium subsidies and capitalization support.
2022	Conduct a supply chain vulnerability analysis and cost-benefit analysis into financial and operational business impacts, as well as value-engineering prospects through stakeholder consultation.
2023	Make available climate data and information services, adequate risk assessment and financial modelling tools.
2024	Finalize an anticipatory and comprehensive risk management plan with multi-hazard early warning systems and weather-indexed protection and financing tools, including the provision of social protection schemes
2025	Improve supply chain access to agro-meteorological services by 50%
2030	Improve supply chain access to agro-meteorological services by 100%

DEVELOPMENT OF CLIMATE-RESILIENT AGRICULTURAL AND FISHERIES SUPPLY AND VALUE CHAINS INCLUDING NATIONAL DISASTER RISK FINANCING AND MANAGEMENT TO SAFEGUARD FOOD SECURITY, NUTRITION AND WATER SECURITY IS A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS⁵⁴ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

- Addresses vulnerabilities
- Builds long-term resilience
- Supports development of high-level technology
- Targets sectors or populations affected by non-financial shocks
- Targets disadvantaged groups

COVID-19 RECOVERY DIVIDEND

- High employment intensity
- Skills development
- Strong supply chain multiplier
- Contribution to the productive asset base
- Support for long-term transformation
- Positive environmental and social outcomes



SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

Enhance agricultural productivity towards food security in Char Lands (new deposits of soil on or near water) Haor, and Hill Tracts

Promote decentralized, localized industry activity for food processing and marketing in order to secure a higher proportion of the value chain to communities who are generating the primary agricultural outputs

Enhance low-cost, climate-resilient, environmentally friendly, context-specific, and culturally sensitive food security options (e.g., vertical farming in both salinity prone rural contexts and urban agriculture)

Develop innovative financing mechanisms in agricultural production i.e., through innovative climate-adaptive insurance in addition to the provision of premium subsidies and capitalization support, which can encourage the insurance sector to invest in lower-risk products and improve weather-based insurance

Sustainable supply of timber and non-timber forest products

Strengthen participatory forestry in forest and Trees outside Forest (ToF) areas to provide climate resilient livelihood

Ensure water security in hilly areas through watershed management integration through use of land, vegetation, and water in a geographically discrete drainage area for the benefit of the communities residing therein, with the objective of protecting or conserving the hydrologic services the watershed provides and of reducing or avoiding negative downstream or groundwater impacts

RESOURCES

INTERNATIONAL PARTNERS

International resources for financial protection and technology transfer in advanced research and development opportunities along with research to foster South–South and North–South collaboration

Through the V20 Sustainable Insurance Facility, enabling access to premium subsidies and capitalization support through shared risk with developed and developing country governments.

NATIONAL BUDGET

National budget from the Bangladesh Climate Change Trust Fund and Bangladesh Delta Plan 2100

CONTRIBUTION FROM PRIVATE SECTOR

Public–private partnership and investment for better agricultural practices, minimal crop loss and maximized farmers’ output for food security





KEY POINT 5: LEVERAGING 21ST CENTURY TECHNOLOGIES FOR WELL-BEING

5A: MUJIB RESILIENT WELL-BEING PROGRAMS

The Mujib Plan will support the strengthening of national initiatives in mental health and well-being to counteract the extreme vulnerability of people living with mental illness and physical and psychological disabilities. It will address the psychological dimensions of climate threat, considering that a single extreme cyclone has been shown to increase the prevalence of mental health issues in the general population by 4%, whether they were directly affected by the cyclone or not. The national initiatives will include crisis preparedness and management for mental health training and capacity programs, trauma counseling, educational support, support programs for women and children, support for children with special needs and general well-being programs to promote healthy, sustainable, and traditional lifestyles.

Traditional forms of community living and livelihoods in Bangladesh are more attuned to the preservation of the environment, and are associated, for example, with less reliance on fossil fuels for transport, artisanal forms of food production and gathering, traditional ingredients in foods, more regular exercise, and vibrant community activities, particularly periodic national and religious festivals.

As Bangladesh continues its emergence journey of modernity and rapid and sustained socio-economic development, pressure on traditional forms of living and ways of life has increased, sometimes to the detriment of health, such as through chemicals added to food and the environment, compounded by much greater energy use and reliance on motorized transportation. At the same time, higher incomes allow for a general increase in leisure time that creates opportunities to engage in sport, outdoor activity, and traditional cultural pursuits. The Mujib Plan promotes traditional Bangladesh culture, lifestyle, and livelihoods as integral to a prosperous future, with the benefits of sustained socio-economic development, while retaining traditional national approaches to living and avoiding introduced practices that harm the environment and the well-being of the population. The Mujib Plan also foresees ways of strengthening vulnerable communities, increasing participation in pursuits that promote physical and mental health through the promotion of local clubs, schools, and networks active in the performing arts, sport, and outdoor activity.

Mujib Resilient Well-Being Programs will broadly focus on three areas with emphasis on promoting nature therapy through green health programs: 1) psychological well-being; 2) physical well-being; 3) development of medicines for climate-related diseases and cancers.

Psychological well-being can be included as part of the Crisis Preparedness and Management for Mental Health (CPM-MH) strand of the National Resilience Program that is currently being implemented by the Department of Disaster Management. It aims at strengthening disability-inclusive, gender-responsive, national and community capacity to address recurrent and major disasters. A series of training of trainers (ToTs) sessions under this program aims to develop a pool of trainers that can respond to crises and provide mental health support. These trainers form a strong network of additional crisis responders.

The operational and financial capacity of the CPM-MH program will be strengthened by considering alternative mental health services in the country to provide culturally appropriate socially inclusive services; broadening the base of trainers and trainees to include a diversified group of trainers especially at community levels; updating the training manual to expand information within chapters and include further sections on crisis aftermath. A key program under the Mujib Climate Prosperity Plan is Community-Based Psychological First Aid to alleviate the mental health effects of disasters, including specialized support for women, children and children with special needs. This will entail provision of basic psychological support by general community members to their families, friends, neighbors and community during disasters or other stressors such as climate-induced migration.

Physical well-being through traditional ways of living supported by modern technology, while enabling sustained high socio-economic development, including sports such as cricket, Ha-du-du, football, handball, Kabaddi, Nouka Baich, Butthan, Kho Kho, Boli Khela, Lathi Khela, rugby, cycling, swimming, volleyball, and basketball as well as performance, for example folk and ethnic music, dance, theater such as baul, manipuri, and jaatra, complemented by ethically sourced food and traditional cuisine. Initiatives on climate awareness among the general population using mass media will also be strengthened.

Existing initiatives of the 8FYP and 7FYP will be further strengthened under the Mujib Climate Prosperity Plan. These initiatives include improved roads, safe drinking water, developed water management, and high-speed internet and making sure that standard consumer goods are available in rural and semi-urban areas.





Additionally, the ongoing projects of “My Village, My Town” program to reduce rural-urban migration include:

- Setting up economic zones in semi-urban areas to ensure jobs for the local population
- Constructing green mini-stadiums at upazila (county) level to promote healthy living through sports and exercise with special facilities for women, and also serving as temporary evacuation centers or cyclone shelters for people affected by climate-induced migration
- Providing input support to ensure adequate inputs for scientific cultivation in agriculture and fisheries
- Providing input support to facilitate floating vegetable gardens (hydroponics)
- Providing infrastructure to preserve surface water for use and to facilitate the recharging of aquifers
- Establishing a co-operative system in rural areas and increasing off-farm job facilities for the unemployed and informally employed in the agriculture sector
- Improving food and medicine storage in the event of flooding and other disasters
- Providing boat hospitals in coastal regions to serve the dual purpose of providing medical help and evacuation, including support for women’s health and psychological first-aid for trauma from natural disasters and climatic events
- Prioritizing clean air, pure water, and pandemic resilience

As Bangladesh transitions out of LDC status, the vibrant pharmaceuticals industry brings industrialization and jobs, as well as access to essential medicines for Bangladeshis and people in other developing countries and LDCs. It is therefore essential to develop the pharmaceuticals industry for climate-related diseases and cancers with a research, development, and deployment (RD&D) and investment program for climate-related diseases and cancers in partnership with the national adaptation program, including through joint ventures with international pharmaceutical companies.

MUJIB RESILIENT WELL-BEING PROGRAMS...

1

Build psychological well-being through community-based psychological first aid

2

Build physical well-being to deliver “My Village, My Town”

3

Develop the pharmaceutical industry to tackle for climate-related diseases and cancers

TARGET MILESTONES

- 2022** We will pilot a community-based psychological first aid.
- 2022** We will establish improved food and medicine storage options.
- 2022** We will develop a pharmaceuticals research, development & deployment (RD&D) and investment program for climate-related diseases and cancers in partnership with the health national adaptation program, including through joint ventures with international pharmaceutical companies.
- 2023** We will establish additional state-supported boat hospitals.
- 2025** We will strengthen implementation of and utilization green mini-stadiums at all upazilas (administrative regions).
- 2025** We will establish community-based psychological first-aid programs in 50% of vulnerable areas/communities.
- 2026** We will launch pharmaceuticals for climate related diseases and cancers.
- 2030** We will establish community-based psychological first-aid programs in 100% of vulnerable areas/communities.
- 2030** Bangladesh will become a leading pharmaceutical developer for climate related diseases and cancers.

MUJIB RESILIENT WELL-BEING PROGRAMS IS A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS⁵⁵ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

- Addresses vulnerabilities
- Builds long-term resilience
- Supports development of high-level technology
- Targets sectors or populations affected by non-financial shocks
- Targets disadvantaged groups

COVID-19 RECOVERY DIVIDEND

- Positive environmental and social outcomes

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

Additional ToTs completed under the CPM-MH program.

Community-based psychological first-aid program set up in disaster-prone areas.

Green mini-stadiums constructed at upazila level utilized round the year

Registered local clubs, schools, and networks active in the performance arts, sport and outdoor pursuits supported in all upazilas.

Development of a pharmaceuticals research, development & deployment (RD&D) and investment program.

RESOURCES

INTERNATIONAL PARTNERS

Support in the creation of economic zones, the psychological first-aid program, and pharmaceuticals research, development & deployment (RD&D). Investment program for climate related diseases and cancers, including through joint ventures

NATIONAL BUDGET

National Budget
Support via
allocation of funds

CONTRIBUTION FROM PRIVATE SECTOR

Industry capital
investment in
economic zones



KEY POINT 5: LEVERAGING 21ST CENTURY TECHNOLOGIES FOR WELL-BEING

5B: ACCELERATED DIGITAL REVOLUTION

The Mujib Climate Prosperity Plan will align with the government's Digital Bangladesh programs to ensure efficiency, transparency, and accountability and pave the pathway for Bangladesh walking towards 4IR. This program will ensure delivery of government services to the doorsteps of citizens through the use of modern technology.

One of the drivers of the Digital Bangladesh initiative is e-governance, commonly called Digital Governance. Through an online service delivery gateway users can apply and pay for 169 government services such as land records, birth registration, telemedicine, and passports, and apply for overseas jobs online. This single online platform for government entities aims to make administration paperless and more efficient. All government-to-person (G2P) for example, social safety net payments and person-to-government (P2G) payments will be automated by 2021.

The government of Bangladesh estimates that around 7.7%⁵⁶ of the country's population makes payments through mobile financial services as of 2020. By 2030, we will increase this coverage to 25% of the population by promoting use of interoperable digital payment platforms, pro-internet banking policies, and micro-merchant support in provision of mobile financial services. As per the 8th FYP financial inclusion, assimilation of the otherwise excluded into the formal financial system by giving them access to financial products and services continues to be a key priority and extension of digital financial services (DFS) is a key component of national plans. The Mujib Plan also foresees acceleration of initiative of the ICT Division to expand and deepen digital financial inclusion through innovative products and services such as 'rural e-commerce' to drive usage of electronic/online financial products/services (and vice-versa) by people who are currently unbanked and underserved.

The Mujib Plan also foresees financial and policy support to banks, non-bank financial institutions (NBFI) and other equity funds that invest in or provide financial support to tech solution providers including e-commerce businesses that contribute to achieving SDGs, optimize traditional living, and promote well-being.

However, to ensure that the benefits of Digital Bangladesh reach even the last-mile users, the National Telecommunications Policy 2016 aims to ensure "Telephone and Internet for All" with the following goals to be achieved by 2025:

1. Increasing internet penetration to 90%
2. Providing broadband facilities to 90%
3. 50% of residences and organizations to have optical fiber connectivity

While increasing internet penetration and broadband facilities will ensure access to high-speed internet, 5G will increase the global competitiveness of Bangladesh by enabling the services of professionals and IT freelancers to be outsourced. Total value of IT export services including freelancing through the banking channel is USD 265.22 million in 2019-2020 financial year.

Access to services online and the infrastructure to support remote work will reduce traffic congestion, air pollution and fuel usage. Moreover, the digital revolution can enable associations such as the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) to establish a global platform to assist with export opportunities.

ACCELERATED DIGITAL REVOLUTION TO...

1

Increasing internet penetration to 90%

2

Extend broadband facilities to 90%

3

Ensure 50% of residences and organizations have optical fiber connectivity

TARGET MILESTONES	
2021	All G2P and P2G payments automated
2026	In-line with the National Financial Inclusion Strategy, we will create an inclusive digital financial infrastructure including DFS, Fintech, Regtech etc. and effective interface using technology between financial products and services as well as delivery channels used by different providers
2030	We will increase internet penetration and broadband capacity to 100%
2030	70% of residences and organizations will have optical fiber connectivity
2030	We will ensure 25% of the population makes payments through mobile financial services
2030	We will reduce paper usage in government offices and agencies by 30% of current consumption.

2030	Mobilize USD 350 million for 200 startups that promote well-being, optimize traditional ways of living, and contribute to achieving SDGs.
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ACCELERATED DIGITAL REVOLUTION IS A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS⁵⁷ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

Builds long-term resilience

Supports development of high-level technology

Supports long-term decarbonization

COVID-19 RECOVERY DIVIDEND

High employment intensity

Skills development

Strong supply chain

Contribution to the productive asset base

Positive environmental and social outcomes



SUSTAINABLE DEVELOPMENT GOALS



RESOURCES

INTERNATIONAL PARTNERS

–

NATIONAL BUDGET

National Budget
Support via allocation
of funds

CONTRIBUTION FROM PRIVATE SECTOR

Industry capital
investment in digital
infrastructure



KEY POINT 6: MAXIMIZED RENEWABLE ENERGY, ENERGY EFFICIENCY AND POWER & TRANSPORTATION SECTOR RESILIENCE

6A: MAXIMIZED RENEWABLE ENERGY WEALTH, ENERGY EFFICIENCY AND ENERGY STORAGE INFRASTRUCTURE

Through the Mujib Plan renewables roadmap we will put Bangladesh on a path to energy resilience and independence by maximizing renewable energy and energy storage infrastructure, taking advantage of the deflationary price trajectory of domestic renewable electricity generation, energy efficiency and storage. Energy wealth utilization within the Mujib Borsho (centenary year) brings 100% energy access to the people of Bangladesh. Building off the 40% renewable energy by 2041 target and 100% renewable energy by 2050 goal of the Climate Vulnerable Forum, resilience and energy independence will enable Bangladesh to become a net exporter of energy and a global participant in the green economy through technological innovation. To complement this trajectory, Bangladesh will reduce, displace, and potentially replace outdated and expensive technology to improve the balance of trade, reduce inflationary pressures and exposure to volatility, and improve the sector's cost competitiveness. Specifically, reduced or even zero imports of coal, oil, diesel, and gas would insulate the economy from the ups and downs of volatile commodity markets providing valuable price stability while contributing positively to the balance of trade.

The 8FYP highlights that renewable energy power supply in Bangladesh has not grown and reliance on imported fossil fuel does not align with global trajectories nor is it in keeping with the latest International Energy Agency 1.5°C scenario. And despite an increase in the price of power (up 40% between 2016 and 2020) in the country, the power sector's financial capability remains limited. The 8FYP further highlights that there is power overcapacity and so incremental renewables and storage options may be promoted to reduce prices and enable new business opportunities and employment. The 8FYP further notes that the increasing reliance on high-priced imported liquefied natural gas (LNG) and coal will increase the cost of producing electricity.

Bangladesh recognizes that technological development in renewables and storage will undermine the competitiveness and return on investment of fossil fuel assets. Considering the deflationary price trajectory of renewable electricity generation and storage options, it is prudent to design the power system to encourage modernized technologies to take advantage of improved pricing and reliability and reduced exposure to inflationary pressures and international volatility.

Previous global market management decisions have resulted in excessive reliance on power generation using imported coal, fossil gas, oil, and diesel with open-ended imported fuel obligations. These options are increasingly uncompetitive and carry ongoing foreign currency and commodity price risks — all of which raise overall stranded asset risk. Bangladesh will adopt modernized management to take the energy system to the next stage of development by adopting the cost-effective and resilient technologies that currently reshape global energy markets with their more reliable and competitive power.

The public and private sectors should take advantage of the falling price of solar power. Solar energy components have declined significantly in price. In recent years, and solar energy's levelized cost of electricity (LCOE) can now compete with coal. Solar panels can also be installed on rooftops and water bodies such as dams instead of relying on agricultural land. For example, replacing diesel generators with solar-powered irrigation systems can expand irrigation opportunities for agriculture and reduce costs — subject to the availability of lease financing.

In addition to disadvantages such as price volatility, inflationary pressures, carbon emissions and pollution, fossil fuels also impose socio-economic costs on health. Luckily, these harms can be minimized by clean energy. A low-carbon trajectory could save Bangladesh a daily-adjusted life year cost per capita of USD 2100 (at purchasing power parity), taking into consideration both outdoor and indoor air pollution. This is equivalent to averting losses of USD 2.3 billion a year.⁵⁸

To foster regional cooperation, Bangladesh will take advantage of record-low solar power tariffs through renewable energy auctions across the region (India for example) to better deliver price stability, cost competitiveness and power sector resilience. Domestic energy security will be driven by investment in solar (rooftop, grounded and floating) including reclaimed land under Delta Plan 2100. Solar power will generate 2000MW for government buildings alone, in addition to offshore wind and domestic storage capacity. Other opportunities include taking advantage of alternative power generation in the Bay of Bengal using predictable tidal power and conversion of the ocean's thermal energy.

Moreover, energy efficiency plays an important role in building the power systems of the future. Bangladesh's 2020 NDCs note that the government aims to lower energy intensity (national primary energy consumption per unit of GDP) in 2030 by 20% versus the 2013 level: A total of 95 million tonnes of oil equivalent or 113 billion cubic meters of gas equivalent is expected to be saved during the period.



MUJIB BONGOPOSAGOR INDEPENDENCE GIGA ARRAY & ENERGY HUBS



Furthermore, considering Bangladesh's land constraints, the flagship Mujib Bongoposagor Independence Giga Array, a hybrid adaptation and offshore wind mega project will be implemented for both domestic consumption and export to the region and beyond in the form of electricity and converted green hydrogen. The National Renewable Energy Laboratory (NREL) confirms that there are wind speeds of around 7.5 m/s⁵⁹, which is within the viable range for offshore generation. Thanks to technological development over the last 5 years, equipment is now available to effectively harvest wind at almost every speed. Turbines designed for low speeds of (4.5 meters per second) and in the range of 6.5 to 7.5 m/s that can deliver 75% to 80% of their rated power at 7 m/s with hub heights that can reach 140m. In the spirit of maximizing opportunities for the delta, the giga array will include maximization of nature-based solutions such as planting mangroves to expand economic opportunities in fisheries, while encouraging fundraising via blue bonds to protect oceans and marine life, and to fund other marine projects.

This output will be complemented by the strategic Mujib Energy Hubs program which will progressively convert uneconomical coal and oil/diesel fired generation plants through recapitalization and transformation of existing fossil facilities into biomass waste-to-energy plants and advanced hydrogen production centers. The Mujib Energy Hubs will benefit from the ability to produce green hydrogen through electrolysis powered by wind energy from the Mujib Giga Array at night when demand for electricity is low. Moreover, the offshore array can power an electrolyzer that operates in 'island mode' to power an electrolysis rig with no link to an electricity grid. Through the existing water resources available to participating power generation plants and via the logistics chains that already supply these plants, the green hydrogen produced by the Mujib Energy Hubs Program can:

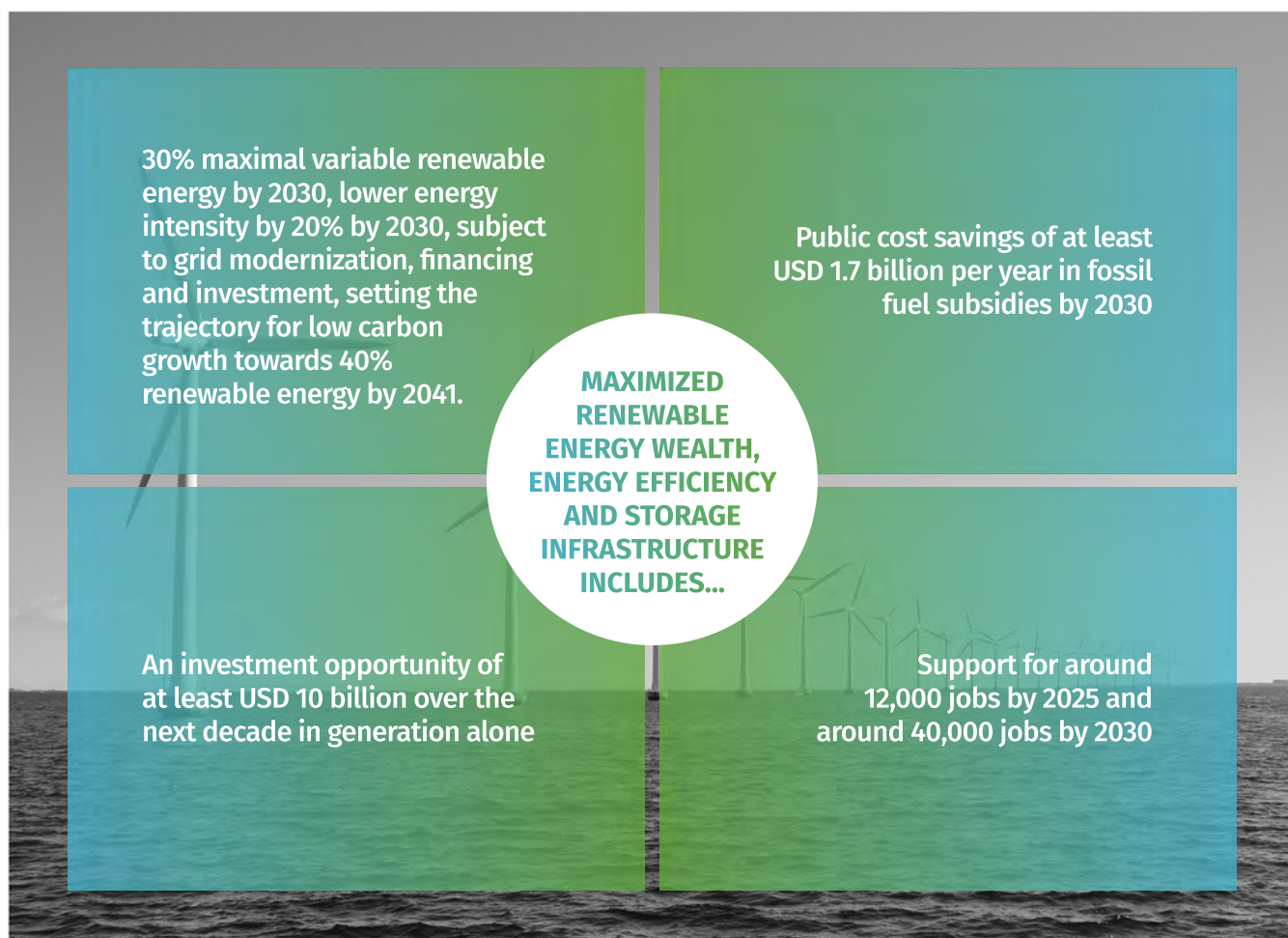
- Dovetail with the growing network of natural gas/LNG capacity in Bangladesh, where green hydrogen can be blended with natural gas to make up to 30% of the fuel and used in consumer gas networks and appliances without modification.
- Support the growing share of hydrogen-propelled transportation including regional aviation, heavy-duty trucking, fuel-cell vehicles, fuel-cell trains, passenger boats and shipping that would be promoted under the Mujib Plan that includes land and water transport.
- Promote the overall optimization of Bangladesh's energy capacity and grid stability through a diversified, greening energy base.
- Promote ocean energy innovation such as tidal power and ocean thermal energy conversion in the Bay of Bengal.
- Promote the delivery of run-of-river hydroelectric power in areas with excess rainfall during monsoon season.
- Position Bangladesh as an emerging exporter of high-value green hydrogen, especially from offshore wind power.

Such a hydrogen strategy could be supported by the Bangladesh Council of Scientific and Industrial Research (BCSIR) Hydrogen Energy Laboratory and commercialization through partnerships with participants in the gas, lubricants and related industries through investment tax credits and capitalization support.

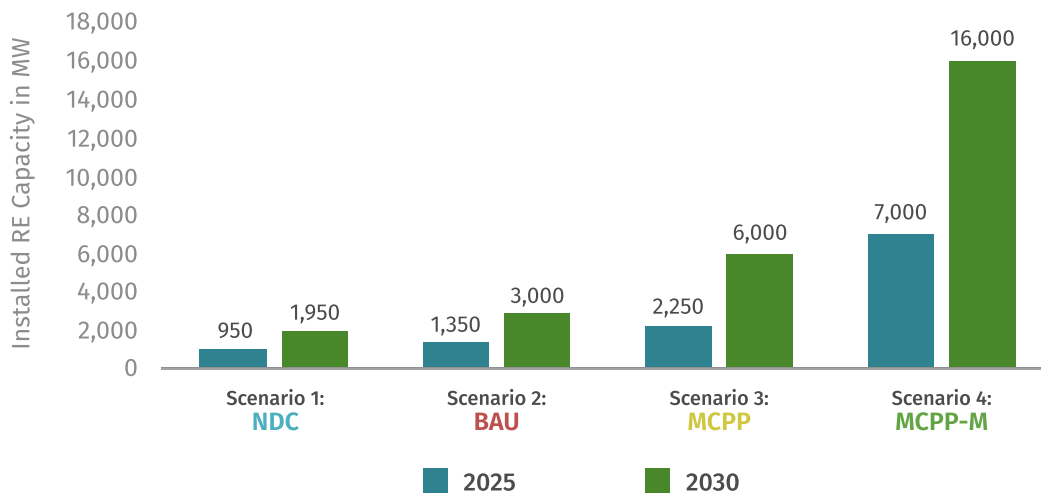
These landmark Mujib energy programs will generate a significant number of new, high-quality jobs, with reconversion plants benefiting from dedicated upskilling initiatives for plant workers. Moreover, the Mujib Bongoposagor Independence Giga Array can further establish optimized artificial reefs on the base of each offshore wind installation to improve habitats for fisheries, yielding blue economy benefits for Bangladesh.

Bangladesh had a target of meeting 10% of power demand from renewable energy resources by 2020, but generation using renewable energy is still less than 3% of total electricity generation.⁶⁰ However, a policy signal to identify with certainty competitive renewable energy zones on land, lakes, at sea, clusters of rooftops, and canals to be matched with incentives and relevant grid investment and development could be an opportunity to rapidly surpass the target while delivering domestically sourced power for lower prices and creating jobs.

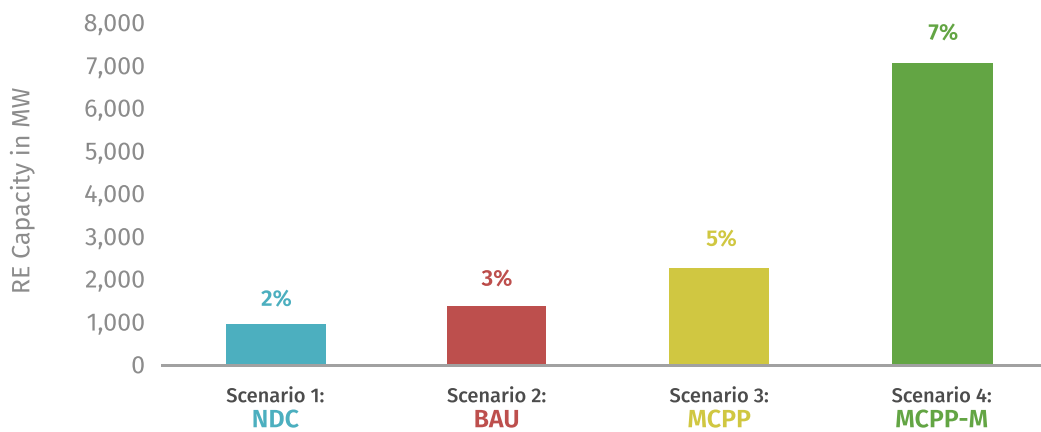
A complementary storage roadmap mandated by policy to optimize renewable energy and grid stability can encourage new market participants and investment. Phasing out the existing fossil fuel subsidies incrementally, and redirecting them to loss and damage, adaptation, renewable energy, storage, and green hydrogen with an eventual phaseout provides some certainty over the modernization of Bangladesh's power system.



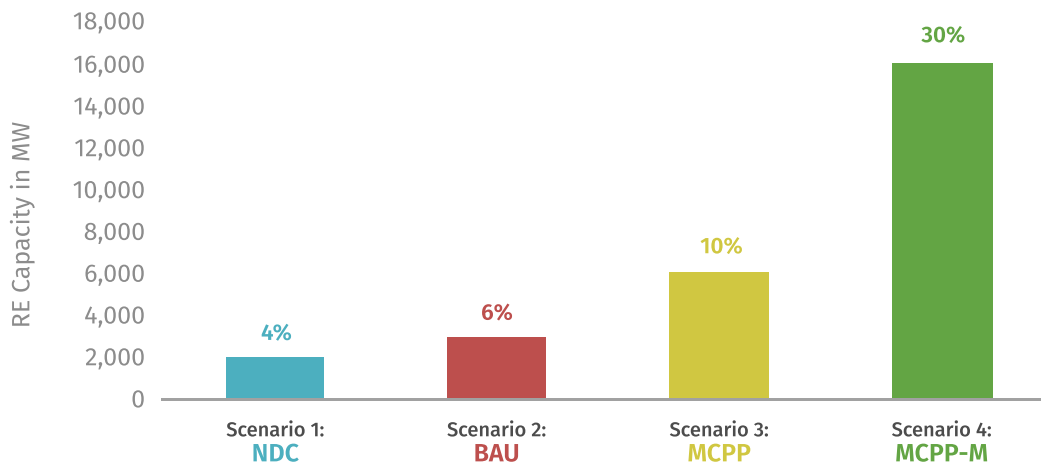
INSTALLED RE GENERATION CAPACITY



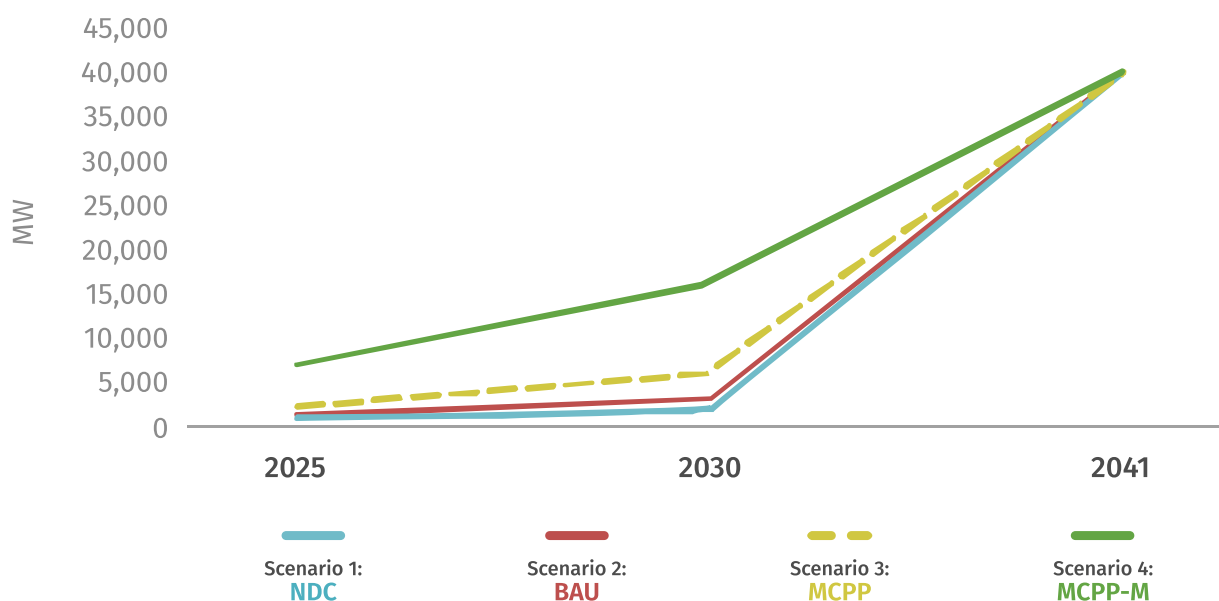
RE SHARE IN 2025 ENERGY MIX



RE SHARE IN 2030 ENERGY MIX



UP TO 40% BY 2041



COST SAVINGS FROM RENEWABLE UNDER DIFFERENT SCENARIOS ARE AS FOLLOWS:

SCENARIO	NET SAVINGS PER ANNUM (BDT CRORE)		NET SAVINGS PER ANNUM (USD MILLION)	
	2025	2030	2025	2030
Scenario 1: NDC	913	3,971	108	468
Scenario 2: BAU	621	2,588	73	305
Scenario 3: MCPP	1,503	8,121	177	958
Scenario 4: MCPP-M	1,957	14,593	231	1,721

It is important to note that the maximum scenario leads to net savings of USD 1.721 billion per year by 2030. By 2050, savings may reach up to USD 3.7 billion per year.⁶¹

TARGET MILESTONES

- 2021** We will conduct a feasibility study for Mujib Bongoposagor Independence Giga Array, one of the first large scale hybrid RE-adaptation infrastructure projects with an offshore wind mega-project for domestic energy security and blue economy benefits at a large scale.
- 2021** We will include resilience in least-cost modelling studies for integrating variable renewable energy at scale and necessary policy support, including maximizing socio-economic outcomes and necessary policy support with IRENA.
- 2021** Mujib Energy Hubs will carry out a feasibility study for energy efficiency, tidal power, hydrogen production and value chain, and ocean thermal energy conversion in the Bay of Bengal.
- 2022** Mujib Energy Hubs plan to enable conversion with recapitalization of existing fossil facilities to biomass waste-to-energy plants, and advanced hydrogen production centers with support from the Hydrogen Energy Laboratory and Sustainable and Renewable Energy Development Authority (SREDA), including taking advantage of seasonality and connecting hydrogen with renewable energy plants, including the upskilling of plant workers, and the overall optimization of energy capacity.
- 2022** We will consult on a storage roadmap for Bangladesh to optimize renewable energy and grid stability including the Bangladesh Rural Electrification Board's Electricity Distribution Modernization Program and IRENA.
- 2023** Mujib Bongoposagor Independence Giga Array begins installing 500MW of offshore wind per year up to 2030 with planting of coastal mangroves to build coastal resilience and expand economic opportunities around fisheries.
- 2023** We will set up 2,000 MW of renewable energy procurement on a modular basis completed by 2025 with access to low-cost capital through public-private partnerships and private power providers.
- 2024** We will set up storage procurement to be completed in phases through 2030 with access to low-cost capital through public-private partnerships and private power providers.
- 2025** All railway platforms to include solar power and other public spaces to maximize use of solar power
- 2026** We will set up 5,000 MW of renewable energy procurement on a modular basis to be completed by 2030 with access to low-cost capital through public-private partnerships and private power providers.
- 2029** We will phase out all fossil fuel subsidies and redirect them to loss and damage, adaptation, renewable energy, and storage technology should low-cost capital be made available for renewable energy and storage, while enabling the lowest income groups to benefit from financial support and subsidized clean energy.
- 2030** Mujib Bongoposagor Independence Giga Array completes installation of 4 GW of offshore wind generation and parallel planting of mangrove greenbelt.
- 2030** We will set the trajectory for 40% renewable energy by 2041 and 100% by 2050.

MAXIMIZED RENEWABLE ENERGY WEALTH, ENERGY EFFICIENCY AND STORAGE ARE A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS⁶² SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

Supporting 1.5° C goal
Supports development of high-level technology
Builds long-term resilience

COVID-19 RECOVERY DIVIDEND

High employment intensity
Skills development
High economic multiplier
Contribution to the productive asset base
Support for long-term transformation
Positive environmental and social outcomes

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

4GW Mujib Bongoposagor Independence Giga Array (offshore wind) with parallel planting of a greenbelt of mangroves – the largest hybrid RE-Adaptation project

Mujib Energy Hubs

Maximized floating solar installations

RESOURCES

INTERNATIONAL PARTNERS	NATIONAL BUDGET	CONTRIBUTION FROM PRIVATE SECTOR
Credit enhancement to ensure gold standard financing	Underwriting support via PPA	Industry - capital investment and industry/consumers as purchasers and beneficiaries of energy generated
International low-cost refinancing or recapitalization		
International support for upskilling labor		



KEY POINT 6: MAXIMIZED RENEWABLE ENERGY, ENERGY EFFICIENCY AND POWER & TRANSPORTATION SECTOR RESILIENCE

6B: MODERNIZATION OF THE GRID AND THE ANCILLARY MARKET TO SUPPORT RESILIENCE

We will position Bangladesh to pursue accelerated grid technology modernization and ancillary market development in order to allow for the power system to take advantage of rapid technological improvements to improve cost-competitiveness and socio-economic outcomes. For electric grids, resilience means not merely a restoration, even one with improvements such as greater tolerance of natural hazards. Resilience is building into the grid structure the fundamental changes in both the natural and human environment, towards a modern grid. The modern grid should reflect not only the need of consumers for dependable and affordable power, but also their aspirations for a cleaner, healthier, and safer environment.

We will thus enable adequate grid investments, reduction of broader infrastructure risks, protection from spiking fossil fuel prices and reduced pricing impacts. Furthermore, the 8FYP recognizes that grid improvements and extensions can address overcapacity issues.

MODERNIZATION WITH:



High shares of domestic renewable energy



Increased installation of storage technology



Increased distributed energy resources



THROUGH CLIMATE FINANCE INVESTMENT IN:



Infrastructure



Software (e.g., Advanced Distribution Management System software applications)



Training programs include use of grid modernization software application, strategies for advanced electric distribution planning methods and tools, with a focus on emerging grid modernization technologies and deployment of distributed energy resources.



TOWARDS THE DELIVERY OF:

FLEXIBILITY

through cost reductions associated in forecast errors and/or reductions in price spikes

FLEXIBILITY

to be able to respond to adapt to economic variabilities and to take advantage of new technology development

RELIABILITY

to maintain delivery of electricity, quality of power, and reduced interruption of distribution

RESILIENCE

to be able to adapt to changing conditions such as a set of defined hazards

SUSTAINABILITY

to reduce health and environmental costs

AFFORDABILITY

to not exceed a customer's willingness and ability to pay

SECURITY

to prevent external threats and malicious attacks including reliance on unstable or volatile supply

A modernized grid aims for increased flexibility to integrate market opportunities such as a new ancillary services market⁶³ for ramping products, and fast frequency response from batteries. Furthermore, the grid also aims for new market participants to provide ancillary services, such as wind turbines providing inertial response, solar PV and utility-scale storage providing voltage support, and distributed energy resources (DERs) providing frequency and voltage control.

Energy storage systems such as batteries, flywheels, and compressed air energy storage are reserve resources that can have an important role in improving the stability and reliability of the electricity grid. Traditional power purchase agreements rely on the logic of maximizing extraction of good outcomes relative to low-cost financing on terms; however, the pricing of worst-case scenarios means the delivery of more expensive and volatile power purchase outcomes. The optimization of domestic renewable energy through a modernized grid can enable a constellation of investment with low-cost financing due to risk mitigation in the planning phase with storage and system balancing. In short, risk mitigation in the front end through the planning process may reduce the reliance of credit-impaired off-takers on traditional power purchase agreements and instead enable a cost-effective and optimized power system that prioritizes affordability, domestic energy security, flexibility, and resilience.





Green hydrogen presents an opportunity to take advantage of domestically sourced and low-cost power through direct delivery to manufacturing and transportation sectors both domestically and in the region while also improving grid resilience and flexibility. Green hydrogen also presents an opportunity to strengthen the grid through limiting any surges by matching energy demand, while blending green hydrogen with LNG. As Bangladesh has an existing gas network, the infrastructure can be modernized by setting up hydrogen electrolysis alongside existing domestic gas. Hydrogen can be liquefied for long-haul transport or conversion to ammonia, which together present opportunities to build a fuel cell industry in Bangladesh, substitute imported fertilizer, and export surpluses to liquid clean-fuel markets.

The strategic energy hubs in the location of coal plants and gas plants will be transformed to green hydrogen plants, waste-to-energy plants, and biomass plants. This creates new options around electric vehicles and transportation in urban areas. Moreover, the existing nuclear reactors could produce byproduct heat to increase the efficiency of hydrogen electrolysis and produce surplus power for hydrogen production. As such, green hydrogen presents an opportunity for Bangladesh to reduce its exposure to imported gas as existing infrastructure can blend up to 30% green hydrogen which enables a transition starting in 2030 to 100% green hydrogen from the Mujib Bongoposagor Independence Giga Array, plus distributed solar photovoltaic and nuclear sources.

Supported by the Mujib Energy Hubs to enable conversion via modernization of fossil fuel plants, with the upskilling of plant workers, the overall optimization of energy capacity can enable the power and transportation infrastructure of a 21st century economy. Green energy trade with neighbors will also be fostered, replacing at least 50% of power imports with contracts for green energy. It could also enable the new 1,000 MW of new transmission connectivity with India to include green energy trade as early as 2025.

In addition to the direct economic benefits of utilizing low-carbon technology in the power sector, women and other vulnerable groups will be prioritized with access and training to benefit from maximized renewable energy wealth, energy efficiency, and storage infrastructure. In rural Bangladesh, women are primary consumers of energy at household levels. According to the ccGAP, access to alternative low-carbon technology like improved cooking solutions and renewable energy-powered lamps and pumps could provide an interesting approach for promoting women's economic participation in climate action. Not only are jobs created for women who can be engaged in the upkeep and maintenance of solar-powered lamps or pumps for example, but can also translate to less time spent on certain activities.

For example, improved cooking solutions (ICS) presents an opportunity of improving health and livelihoods. The Gas Sector Master Plan (2017), Bangladesh, set an objective to reach 20 million households with ICS by 2030. As per Nationally Determined Contribution (NDC), 2020 of Bangladesh, dissemination of additional 6 million ICS has been planned till 2030. The 8th FYP also highlights incentivizing the use of biogas through the gas use policy as the alternative of pipeline natural gas considering the limited domestic reserve of gas. According to the Renewable Energy Policy 2008, Biogas has been considered as one of the promising Renewable Energy resources for Bangladesh.

Infrastructure Development Company Limited (IDCOL), a government owned financial institution, is currently implementing successful clean cooking initiatives through two programs - i) Improved Cooking Stoves (ICS) - Increase thermal efficiency of cooking stoves from tier 1 to tier 3 as per ISO standards. Each ICS saves about 1.5 to fuel wood and reduces 1.12 ton of emissions per year. ii) Domestic biogas program - prefabricated fiberglass biodigester technology. IDCOL's expertise and experience may be leveraged for installation of additional 18.2 million ICS and 100,000 domestic biogas plants by 2030 which will reduce about 60 million tCO₂e and million tCO₂e, respectively in the next 10 years.



TARGET MILESTONES

- 2021** We will have a moratorium on new inflexible power plants.
- 2022** We will begin studying a displacement strategy in partnership with the Asian Development Bank and IRENA for technologically outdated, expensive, and inflexible generation plants (e.g., old coal fired plants and high-speed diesel plants, etc.) towards new technology. This also includes co-locating solar irrigation pumps in farming areas to replace diesel powered irrigation pumps.
- 2022** We will consult on the Grid Modernization Strategy and optimize effective policies and undertake comprehensive analysis to create an energy market design and opportunities of the future in partnership with IRENA.
- 2023** We will conduct a feasibility study on hydrogen for up to 30% absorption by existing gas infrastructure.
- 2023** We will begin implementing infrastructure and software modernization and worker upskilling.
- 2024** We will establish a Management Skill Development Center (MSDC) of Excellence under the Power Grid Company of Bangladesh.
- 2025** We will establish a new ancillary services market through policy and improved market management design.
- 2026** We will update the displacement strategy in partnership with the Asian Development Bank and IRENA for technologically outdated, expensive, and inflexible generation plants.
- 2027** We will structure financing with donors and investors on a displacement strategy.
- 2028** We will implement the displacement strategy to match with replacement capacity from domestic renewable energy and green hydrogen.
- 2030** Achieve 100% clean cooking solutions by 2030 in-line with Bangladesh Country Action Plan's goal for clean cook-stoves.

MODERNIZING OUR GRID COULD DELIVER...

1

Incremental transmission and distribution (T&D) investment for fortifying grid infrastructure, software, and training, including advanced meters⁶⁴ to all households, delivering investment of over USD 3.1 billion by 2030

2

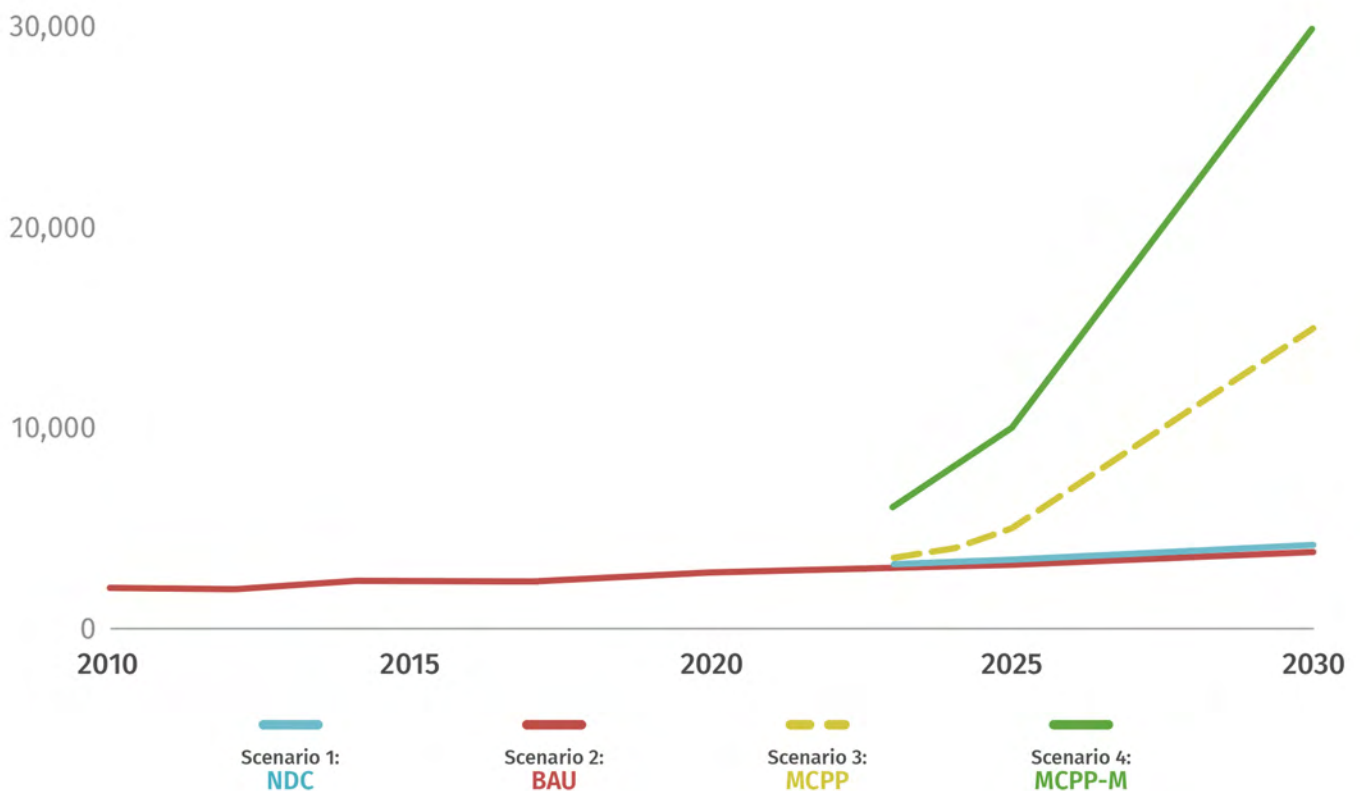
Establishing an ancillary service market to crowd in private sector investment of at least USD 250 million by 2025 and USD 500 million by 2030

3

Support for around 10,000 jobs by 2025 and around 30,000 jobs by 2030⁶⁵



EMPLOYMENT POTENTIAL FOR GRID MODERNIZATION



MODERNIZING OUR GRID IS A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS⁶⁶ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

- Addresses vulnerabilities
- Builds long-term resilience
- Supports development of high-level technology
- Supporting 1.5°C goal

COVID-19 RECOVERY DIVIDEND

- High employment intensity
- Skills development
- High economic multiplier
- Contribution to the productive asset base
- Support for long-term transformation
- Positive environmental and social outcomes

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

Establishment of ancillary marketplace for ramping products and fast frequency response batteries, among others.

Incremental transmission and distribution upgrades for fortifying grid infrastructure (e.g., substations, transformers, high-voltage lines, medium- or low-voltage lines, metering, and associated components).

Installation of smart software platforms for utilities, automation components (hard or soft), remote monitoring, energy management systems, or other basic distribution infrastructure upgrades.

RESOURCES

INTERNATIONAL PARTNERS

Credit guarantees to ensure gold standard financing

NATIONAL BUDGET

Budgetary support for Power Grid Company of Bangladesh

CONTRIBUTION FROM PRIVATE SECTOR

Industry - capital investment and industry/consumers as purchasers and beneficiaries of energy generated



KEY POINT 6: MAXIMIZED RENEWABLE ENERGY, ENERGY EFFICIENCY AND POWER & TRANSPORTATION SECTOR RESILIENCE

6C: TRANSITIONING TO TRANSPORT SOLUTIONS OF THE FUTURE

We will prioritize modern mobility solutions for both urban and rural areas as recognized in the 8FYP for efficient, sustainable, safe, and regionally balanced transportation systems. These would include green and electric inland water transportation to complement the Bangladesh dredging master plan to unlock 10,000 kilometers of river routes while the collected silt and debris can be used to raise low-lying land. In addition, high-speed electric rail, and urban development in climate-smart ways, such as modernization of urban mobility through rapid-transit e-buses and e-bikes is also included. Moreover, inclusion of women-only section in rapid transit systems will also be prioritized. We will unlock fiscal incentives (tax breaks for electric transportation including inland water transportation and vehicles) to improve the project economics of modernized technologies, while removing fiscal incentives and increasing tax rates for outdated technology, contributing to the establishment of an Energy Efficient Vehicles (EEV) hub. The EEV hub can also attract EV production lines including, but not limited to, solar-powered car and boat producers. Special tax breaks will be provided for domestically owned EVs, and hydrogen-powered vehicles and other modernized transportation. This can include cars, shuttles, baby taxis, and scooters, among others. EV-charging infrastructure as part of the Bangladesh Rural Electrification Board network can thus be utilized.

As the transportation system in the capital, Dhaka, relies heavily on road transport, ride sharing via various digital media will be promoted to reduce congestion through carpool lanes and other incentives. To further capture sustainability gains and improved socio-economic outcomes, road improvements, storm drainage upgrades, and the establishment of green infrastructure including but not limited to footpaths, bike lanes, street trees, and urban parks will be part of the modernized mobility solution. The Mujib Climate Prosperity Plan expands urban mobility in 8FYP to the entire country by 2023 and foresees reduction in private transport mobility due to establishment of public transport networks like MRTs.

In addition to urban passenger mobility, it is equally important to address congestion and the subsequent polluting impact of freight transportation between production and consumption centers as well as distribution activities within urban areas. We will leverage PPP models to create green distribution networks for freight through the use of integrated distribution facilities and electric vehicles to fulfil the freight demands of urban areas. The use of rail transportation will be encouraged for long-haul movement of goods to reduce dependence on road transport with rail growth supporting the Bangladesh Railway 30-year Revised Master Plan (2016-2045) to Cox's Bazar, Mongla Port, Tungipara, Barisal, Chattogram Hill Tracts and other parts of the country. Similarly, use of internal waterways for transportation of goods will be prioritized to utilize the extensive network of waterways and bring down the logistics costs for transportation of freight.

TRANSITIONING TO TRANSPORT SOLUTIONS OF THE FUTURE TO...

1

Mobilize at least USD 5 billion of green financing from international investors

2

Shift at least 30% of the transportation fleet to electric by 2030

3

Build modernized industries including ridesharing transportation industry and manufacturing capacity for modernized transportation

TARGET MILESTONES

- 2022** We will assess the Revised Strategic Transport Plan for Dhaka and adjacent cities for the use of modernized technology and green financing.
- 2022** We will enable green transportation options to engineer value in products by creating enabling environments for manufacturing mobility solutions such as inland water way transportation, e-bikes, etc. including tax breaks for electric vehicles.
- 2022** We will conduct feasibility studies and mapping to upgrade regional coordination highway corridors inside Bangladesh to improve road connectivity with neighboring countries.
- 2023** We will conduct a feasibility study for e-bike and bicycle transportation in the entire country.
- 2023** We will accelerate greening and electrification of inland water transportation in coordination with the dredging master plan to enhance green logistics and improve navigability of 10,000 kilometers of river routes.
- 2024** We will establish an energy efficient vehicles (EEV) manufacturing hub through strategic investments and adaptation of high technology for the domestic market and to penetrate regional and global markets.
- 2025** We will ensure 50% of the rideshare fleet is green/electric.
- 2030** We will enable the climate resilience of the Bangladesh Railway 30-year revised master plan including protection measures from extreme weather, heavy rain, high temperatures, high wind speeds, and reduced soil stability. We will also support energy efficiency measures of railway infrastructure including a shift to electric.
- 2030** We will ensure 100% of the rideshare fleet is green/electric.
- 2030** We will enable EV manufacturing to contribute up to 10% of GDP by 2030.
- 2030** We will ensure 3,790km of national highways are upgraded to 4/6 lanes to handle traffic growth.
- 2030** We will ensure the Roads and Highways Department is digitized.⁶⁷
- 2030** At least 50% of railway infrastructure made climate-resilient and energy efficient.

TRANSITIONING TO TRANSPORT SOLUTIONS OF THE FUTURE IS A DIRECT INVESTMENT MEASURE THAT SUPPORTS COVID-19 RECOVERY INTERVENTIONS⁶⁸ SUCH AS...

CLIMATE AND RESILIENCE RESULTS AND BENEFITS

Addresses vulnerabilities
Builds long-term resilience
Supports development of high-level technology
Targets sectors or populations affected by non-financial shocks
Targets disadvantaged groups

COVID-19 RECOVERY DIVIDEND

Skills development
High economic multiplier
Contribution to the productive asset base
Support for long-term transformation
Positive environmental and social outcomes

SUSTAINABLE DEVELOPMENT GOALS



KEY MEASURES

Electrify 10,000 km of internal waterways transportation in coordination with the dredging master plan

Restore all canals and box culverts

Construct 10,000 km of bike lanes

Construct 10,000 km of footpaths

Electrify transportation including rideshare, e-scooters, e-bikes, and e-baby taxis

Upgrade 3,790 km of national highways, 4,206 km of regional highways

Retrofit 13,000 km (approx.) of zilla and upazila (farm to market) roads

RESOURCES

INTERNATIONAL PARTNERS

Support in the creation of special leasing facility windows and credit enhancement

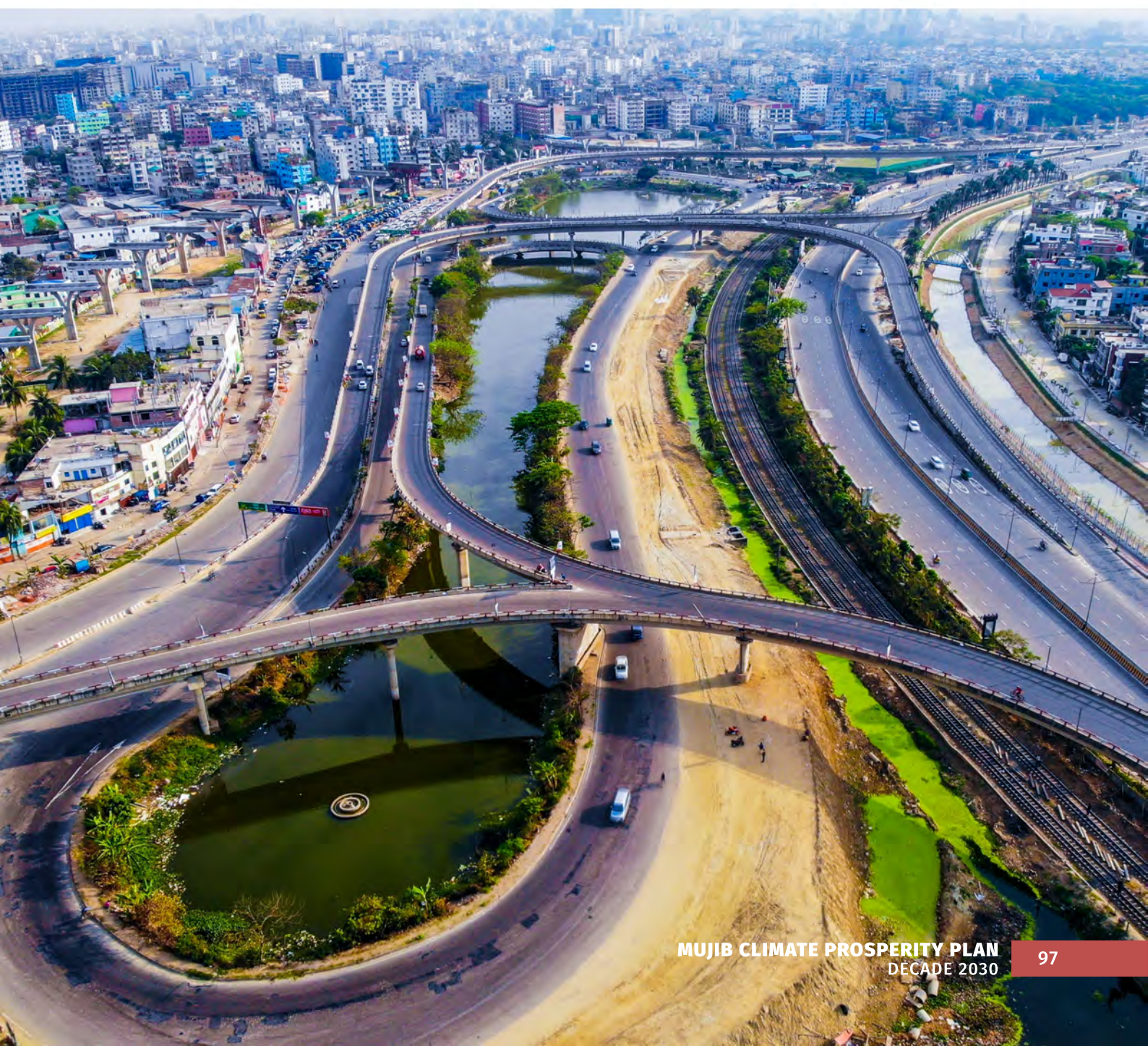
NATIONAL BUDGET

Commercial subsidy for green and electric vehicles for transport/logistics sector (e.g., either a tax break or direct financial incentive)

CONTRIBUTION FROM PRIVATE SECTOR

Industry capital investment and industry consumers as users of transportation system

Public-Private Partnership on construction and electrification projects





CONCLUSION

This section consists of three parts relating to implementation, financing and partnerships:

1

**MUJIB CLIMATE PROSPERITY PLAN
OVERSIGHT & IMPLEMENTATION**

2

FINANCING

3

STRENGTHENED ECONOMIC PARTNERSHIPS

MUJIB CLIMATE PROSPERITY PLAN OVERSIGHT & IMPLEMENTATION

The activities under the Mujib Climate Prosperity Plan will be implemented by the concerned ministries as per Government Rules of Business. In Bangladesh, the implementation of SDGs targets and indicators is monitored by the office of SDGs Affairs under the Prime Minister's Office (PMO). This office also coordinated the approval of Disaster Risk Reduction Strategies of Bangladesh 2016–20 in line with the Sendai Framework (2015–30) and other international protocols. As the Mujib Climate Prosperity Plan aims to accelerate the pace of achieving all the SDGs by 2030, the existing SDGs unit can be entrusted with monitoring the implementation of Mujib Climate Plan activities. Moreover, all relevant financing will be coordinated by the Ministry of Finance taking into consideration the Climate Fiscal Framework that includes Office of the Controller and Auditor General (OCAG), Parliamentary Oversight and social audits from civil society.

Resource mobilization, particularly from external sources and coordination with the private sector, will be crucial to the implementation of the Mujib Climate Prosperity Plan, and the involvement of the PMO will play an important role. The SDGs unit is headed by a Chief Coordinator, a government official holding the rank of Senior Secretary previously headed by the Principal Secretary of the Prime Minister's Office.

A committee for implementing the Mujib Climate Prosperity Plan under the coordinator will be responsible for:

1. Tracking the plan's implementation and overseeing the review, stocktaking and plan cycles, including the baseline and tracking of SDGs analytics of socio-economic outcomes to be completed by end of 2021
2. Enabling the marketing and promotion of economic partnership and investment with public and private international, regional, and bilateral partners, including through the formation of investment clubs and delegations
3. Commissioning, developing, and publicizing all analytical studies and strategies required for the effective and full delivery of the plan
4. Creating an online knowledge hub that is accessible to the public by the public sector, private sector, and civil society, including universities and research organizations
5. Collaborating with each relevant ministry and department in the government as per the Rules of Business (e.g., Economic Relations Division, Finance Division, Ministry of Environment, Forest and Climate Change, Ministry of Power, Foreign Aided Projects Audit Directorate, etc.)

Equally important is engagement with domestic implementation partners including the PPP Authority, Bangladesh Investment Development Authority (BIDA), Bangladesh Bureau of Statistics and CVF/V20 representatives from the Government of Bangladesh. The partners can have consultative status and will also include key private sector industries represented by the leadership of companies and business chambers in Bangladesh in order to complement and reinforce investment and partnership.

THE FINANCING PLAN

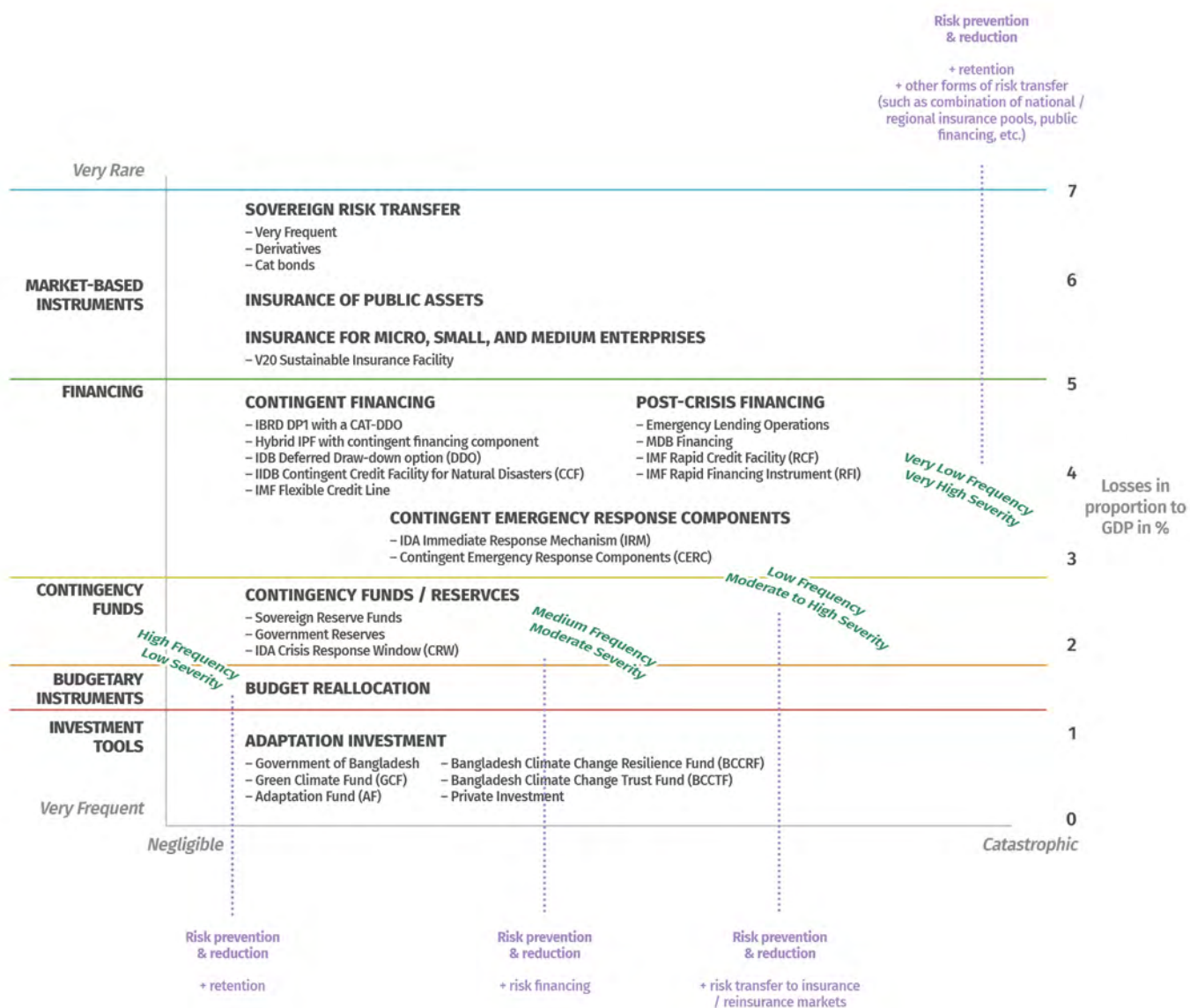


The Mujib Climate Prosperity Plan can seize the opportunity to address the prevailing market failure arising from the lack of private sector participation, as well as international public support, and investment in modernized, adaptive and resilient infrastructure. Insufficient information coupled with a lack of tailored affordable financing has led to underinvestment in resilience. The introduction of a modernized power sector vision for Bangladesh, and the advent of climate and disaster risk financing and insurance builds on detecting market opportunity and pricing risk that can enable the outcomes of 8FYP, Vision 2041 and BDP 2100. Moreover, with Bangladesh's LDC graduation underway and expected in 2026, the cost of development finance and debt servicing may rise, creating a need to leverage private sector capital and diversify financing options.

Therefore, green financing is considered to be part of resilience building and CDRFI as an element of national adaptation planning processes that can help to address the market failure outlined above. Green finance could also incentivize cost-effective investment in adaptation measures (soft and hard engineering), risk retention, risk financing instruments such as risk transfer, contingent credit lines and cat-bonds, and risk management. Residual risk can be reduced through early-warning systems and communication. The building of value recognition stemming from pricing risk can drastically shift the economics of operating in our system by adding value to investment in and tools for options that offer resilience and price stability such as renewable energy and storage, disaster risk reduction, improved climate risk management and contributions to sustainable development goals by 2030.

The climate finance strategy (refer to figure and table below) describes anticipatory and comprehensive climate and disaster risk management to enable adaptive capacities, as well as an overview of climate funds. International climate funds include Climate Investment Funds (CIF), the Global Environment Facility (GEF) and the Green Climate Fund (GCF). The Bangladesh Climate Change Trust Fund (BCCTF) is a national climate fund that can be supplemented through fund matching by international climate funds. Furthermore, there is recognition of the need to withdraw capital from certain inflationary sectors such as coal, oil and gas, and therefore requires the development of green and adaptation-focused financing structures that can catalyze favorable debt terms, along with redirecting fossil fuel subsidies to loss and damage remediation, adaptation, renewable energy, storage, and grid modernization

CLIMATE PHYSICAL RISK: CLIMATE CHANGE ADAPTATION AND DISASTER RISK REDUCTION OPTIONS



Source: Adapted from the World Bank/DRIP⁶⁹ World Bank (2011)⁷⁰, Munich Climate Insurance Initiative (2018)⁷¹



CLIMATE FUNDS ARCHITECTURE

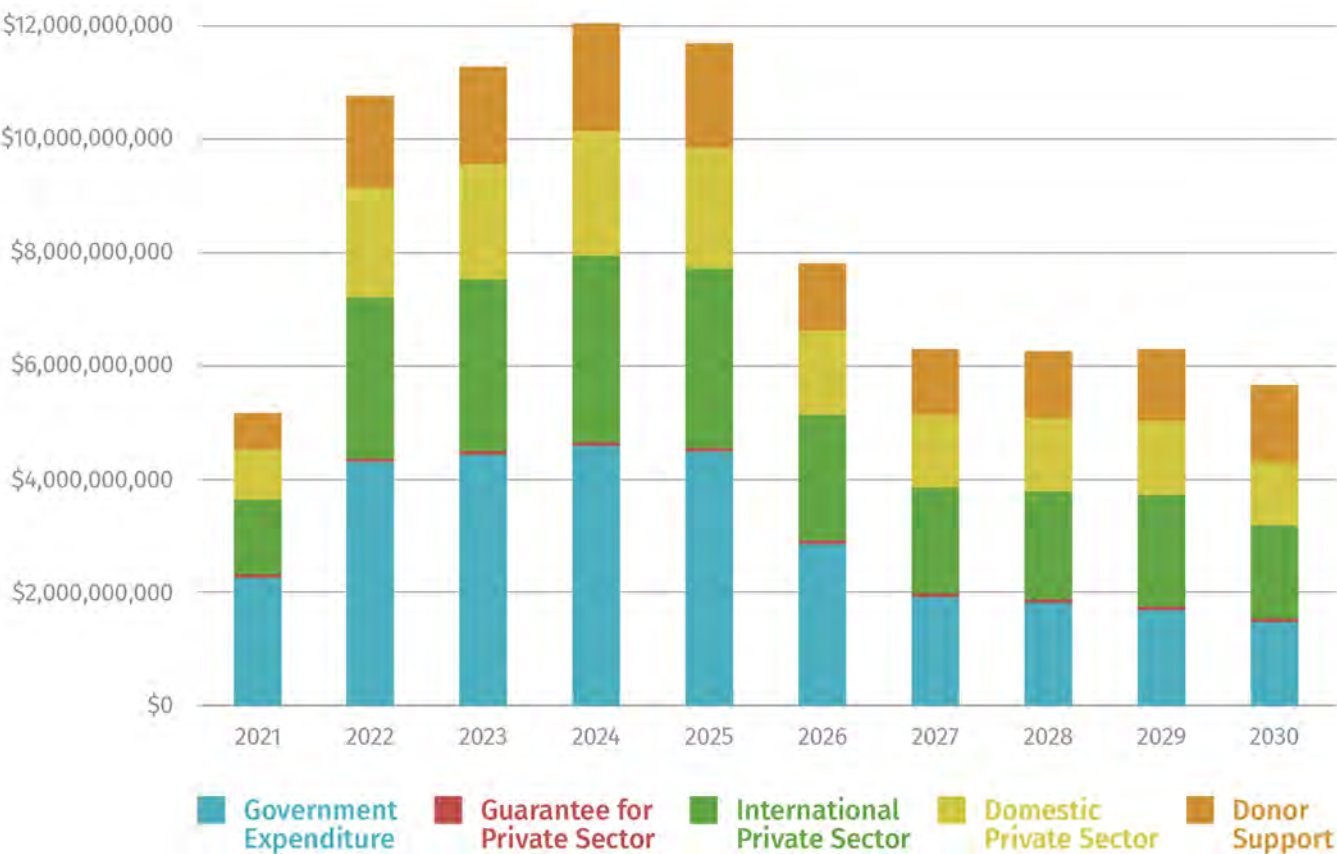
	GRANTS	LOANS	RISK MITIGATION INSTRUMENTS	EQUITY	AVERAGE FUND APPROVAL PER PROJECT	CO- FINANCING RATIO	POTENTIAL IMPLEMENTERS
BANGLADESH CLIMATE CHANGE TRUST FUND (BCCTF)	✓				N/A	0	Government ministries
CLIMATE INVESTMENT FUNDS SUCH AS PILOT PROGRAM FOR CLIMATE RESILIENCE (PPCR)	✓	✓	✓	✓	\$15.8 million (for PPCR)	1:1.3 (for PPCR)	ADB, World Bank
GLOBAL ENVIRON- MENT FACILITY (GEF)	✓	✓	✓	✓	\$6.7 million	1:9.7	ADB, FAO, World Bank, UNDP, UNIDO, UNEP, IFAD, IUCN
GREEN CLIMATE FUND (GCF)	✓	✓	✓	✓	\$42.4 million	1:2.2	Direct Access: IDCOL, PKSF Indirect Access: AFD, ADB, GIZ, EIB, FAO, HSBC, WB, IFC, IFAD, IUCN, JICA, KfW, UNDP, UNEP, WFP, WMO

THE MUJIB PROSPERITY PLAN'S ESTIMATED LEVEL OF INVESTMENT

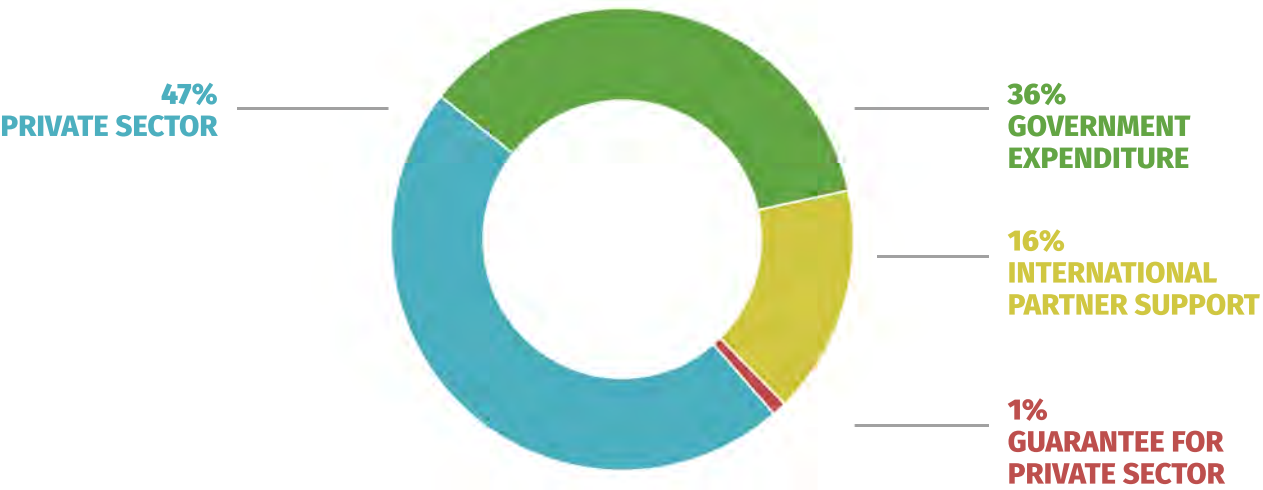
MUJIB CLIMATE PROSPERITY PLAN		EST. INVESTMENT SIZE UP TO 2030	
	PER PROGRAM	TOTAL	
POINT 1: ACCELERATED ADAPTATION			
Bangladesh Delta Plan 2100 (Phase 1) Resilience Bonds towards Accelerated Adaptation and Protective Infrastructure	USD 44.1 billion	USD 44.1 BILLION	
POINT 2: JUST TRANSITION OF LABOR AND FUTURE-PROOFING INDUSTRY WITH TECHNOLOGY TRANSFER			
2A: Just Transition and Modernization through Training and Skills Development for Labor Markets of the Future	USD 1.51 billion	USD 11.63 BILLION	
2B: Future-Proof Bangladesh’s Position in the Global Supply Chain	USD 10.12 billion		
POINT 3: INCREASING PUBLIC REVENUE TO SPEND ON THE MOST VULNERABLE			
3A: Investment in the Realization of Locally Led Adaptation Outcomes	USD 3.89 billion	USD 3.92 BILLION	
3B: Established Carbon Financing Regime for Revenue Generation	USD 25.13 million		
POINT 4: COMPREHENSIVE CLIMATE AND DISASTER RISK FINANCING AND MANAGEMENT			
4A: Micro, Small and Medium Enterprise Financial Protection and Productivity Enhancement	USD 2.87 billion	USD 4.89 BILLION	
4B: Development of Climate-Resilient and Nature-Based Agricultural and Fisheries Supply and Value Chains including National Disaster Risk Financing and Management to Safeguard Food Security, Nutrition and Water Security	USD 2.02 billion		
POINT 5: LEVERAGING 21ST CENTURY TECHNOLOGIES FOR WELL-BEING			
5A: Mujib Resilient Well-Being Programs	USD 150.75 million	USD 4.55 BILLION	
5B: Accelerated Digital Revolution	USD 4.40 billion		
POINT 6: MAXIMIZED RENEWABLE ENERGY, ENERGY EFFICIENCY AND POWER & TRANSPORTATION SECTOR RESILIENCE			
6A: Maximized Renewable Energy Wealth, Energy Efficiency and Energy Storage Infrastructure	USD 13.55 billion	USD 7.09 BILLION	
6B: Modernization of the Grid and the Ancillary Market to Support Resilience	USD 3.18 billion		
6C: Transitioning to Transport Solutions of the Future	USD 3.90 billion		
TOTAL		USD 76.18 BILLION	

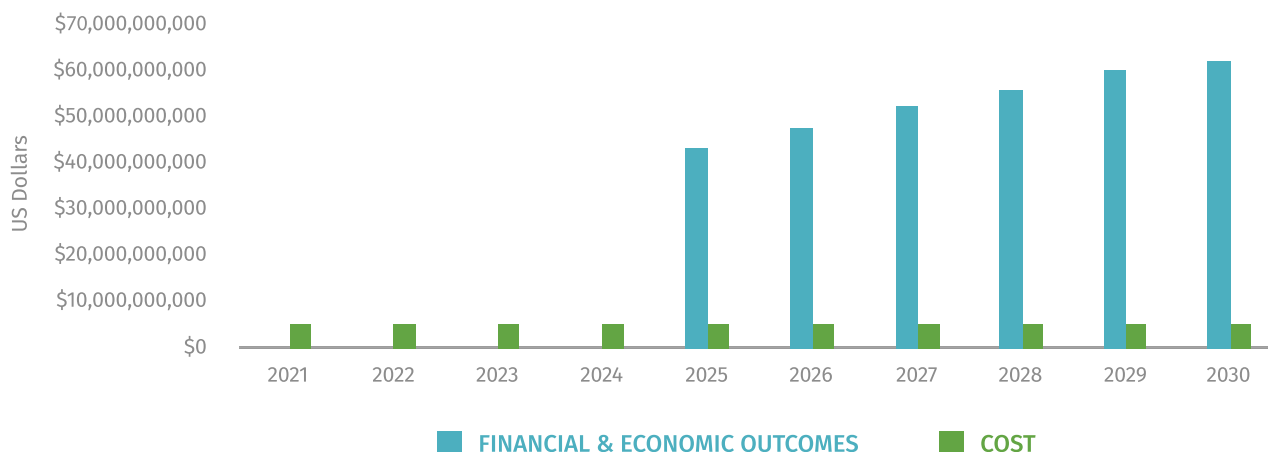
Below is an overview of the breakdown in investment including guarantees for private sector, international partner support through grants, private sector participation (international and domestic) and government expenditure, which is based on existing planned government spending.

YEARLY INVESTMENT



FINANCING BREAKDOWN





THE INITIAL TYPOLOGY OF PROJECTS AND FINANCING⁷² IS AS FOLLOWS:

TYPE	PROJECT NAME	PROJECT DETAILS	KEY RESPONSIBLE ENTITY	FINANCING	ESTIMATED INVESTMENT	GOVT	PVT	CONCESSIONAL OR DE-RISKING TOOL OR GRANT
Resilience/ Adaptation	Mujib Comprehensive Climate and Disaster Risk Management and Financing Strategy	Financial protection instruments	MOF, MoDMR, MOEFCC	Risk and opportunity sharing and investment within members of the InsuResilience Global Partnership	USD 1 billion	40%	20%	40%
Transport	Electrifying Transportation	E-Bikes, E-Buses in Dhaka		State-Owned Green SPV Build Operate Transfer	USD 1 billion	30%	40%	20%
Resilience/ Adaptation	Delta 2100 Phase 1	Coastal zones (USD 11 billion), Barind & drought-prone (USD 2 billion), haor & flash flood (USD 350 million), Chattogram hill tracts (USD 750 million), river system & estuaries (USD 6 billion), and urban areas (USD 8 billion), among others.		Resilience project bonds (both public and private sector) leveraging low-cost international financing sources	Over USD 35 billion in investment mobilized by 2030	20%	55%	10%
Adaptation	Locally led adaptation	To be determined	Lead - Local Government Division, MoEFCC, MoDMR, MoWCA	Grant financing with international and regional	USD 1 billion per year by 2030	55%	5%	45%

TYPE	PROJECT NAME	PROJECT DETAILS	KEY RESPONSIBLE ENTITY	FINANCING	ESTIMATED INVESTMENT	GOVT	PVT	CONCESSIONAL OR DE-RISKING TOOL OR GRANT
Resilience / Renewable Energy	Mujib Bongoposagor Independence Giga Array (offshore wind – one of the first large scale hybrid RE-adaptation infrastructure projects)	500GW per year from 2023 to 2029, 1GW in 2030 and 4GW installed capacity by 2030	MPEMR	State-Owned Green SPV as off-taker with PPA Build Operate Transfer	USD 7.2 billion	20%	75%	5%
Energy Efficiency and Renewable Energy	Energy efficiency and renewable Energy (including floating solar and rooftop solar) for households, manufacturing and industry	At least 1GW by 2025 At least 2GW by 2030	MPEMR	Lease financing with concessional grant to reduce cost of capital for industry and households	USD 2 billion	30%	20%	40%

To ensure that finance can be effectively accessed, mobilized, and scaled up to contribute to achieving climate prosperity, our strategy includes creating pools of funds with credit enhancement to encourage programmatic investment, rather than project-level investment.

Given the catalytic role they can play in supporting both better public and private investment and in scaling up and reducing the cost of finance, we aim to strengthen state-owned institutions as we recognize the need to embark on the Mujib vision of a climate resilient and low-carbon future to capture all possible socio-economic and financial benefits.

Optimized financing structures to attract foreign direct investment and mobilize domestic private sector capital include but are not limited to the following:

- Prioritizing the use of public-private partnerships (PPP) as a key solution to climate investment in coordination with the PPP Authority as it may enable access to bonds or syndicated loans.
- Creating special-purpose vehicles (SPV) or partnerships for climate resilience. For example, joint ventures or partnerships with state owned enterprises.
- Adopting alternative financing tools such as a special leasing facility windows. Modernized technology requires sizable capital expenditure and by changing the financing from a capital-expense model into an operating-expense model, and by matching expected revenue or savings with lease payments, it would greatly improve the affordability of modernization.

- Introducing measures that include the issuance of resilience bonds to make additional credit available for public and private sector actors that target triple-dividend investments. Such stimulus spending will have long-term impacts, especially when used for major infrastructure, or to support selected technologies and even in particular social protection programs. Choices made quickly without considering the wider range of risks facing Bangladesh and especially the now-inevitable effects of climate change could lock countries into high carbon and vulnerable options, closing off more resilient pathways. There is also the risk that misguided allocation of stimulus and recovery spending could lead to stranded assets, vulnerable populations, and irreversible damage to natural assets such as the healthy ecosystems and watersheds upon which the livelihoods of so many ultimately depend on.
- Enabling the Bangladesh Bank to use a variety of tools to incentivize investment in adaptation and resilient low-carbon infrastructure, including preferential refinancing rates, differentiated capital requirements such as a “fossil fuel penalizing factor”, and setting higher capital requirements for non-low-carbon and non-climate-resilient projects.
- Mobilizing state-owned enterprises, including banks and others, to play a risk-reduction role by deploying a range of business models and utilizing a range of instruments to reduce the cost of financing. A well-regarded state-owned enterprise for example can mobilize the volume of finance needed, bringing down the cost of capital and managing risk. There is a clear need for de-risking instruments and enabling flows into new green and resilient sectors and asset classes that could unlock significant investment.
- Creating a dedicated green capital markets platform to increase uptake and use of resilience bonds, green bonds, climate bonds, and sovereign blue bonds that will help increase finance for resilient recovery packages. A green bond is focused on assets with positive and quantifiable environmental impacts. A blue bond also has green finance eligibility but is focused on marine conservation. A sustainability bond is debt security with environmental and social impacts. A social bond on the other hand raises funds for new and refinancing projects with positive social outcomes. A transition bond is a new class of debt security that can finance brown energy’s transformation to green and to catalyze resilience building. A dedicated green capital markets platform would reduce information asymmetry by improving and standardizing metrics for the classification of assets.
- Blended finance can be used as catalytic capital from philanthropic or public sources to increase private sector funding for high impact projects. Blended finance aims to de-risk loans for greenfield projects that will not proceed in the absence of concessional financing. It enhances asset credit value as it reduces uncertainty and costs in terms of risk-return expectations. For example, utilizing the V20’s Accelerated Financing Mechanism for the targeted use of credit strengthening for national banks can enable the financing of adaptation and resilience projects. This could include partial credit guarantees or insurance and risk sharing, including subordinated debt investment, thus lowering the cost of capital.
- Export Credit Agencies in developed countries can reinforce the cooperative relationship among financial institutions and government agencies through financial support for resilient infrastructure projects. In support of this, the central bank (Bangladesh Bank) for example, can craft enabling regulations in terms of hard currency being advanced by ECAs to local commercial banks to ensure borrowing is affordable and accessible for projects.
- Adopting the risk-layering approach in the Mujib Climate and Disaster Risk Management and Financing Strategy to build resilience, we will link planned adaptation with CDRFI instruments and thus utilize the most cost-effective reduction in exposure to climate risks that will integrate investments in risk reduction (adaptation), risk retention (e.g., budgetary allocations for contingency funds for low-impact, high-frequency events), risk transfer on and across different levels (e.g., for high-impact, low(er) frequency events) and contingency financing.



ECONOMIC PARTNERSHIPS STRENGTHENED

A large part of economic partnership strengthening will come in the form of investment and trade with climate considerations by North–South, South–South, regional and international cooperation. Private domestic and foreign investment can be boosted by improving the investment landscape with a view to reducing the cost of doing business and providing access to serviced land through special economic zones. The Mujib Climate Prosperity Plan aims to increase domestic private investment and foreign direct investment. Strengthening economic partnerships is to be supported through marketing campaigns, publicizing projects, and hosting annual investor conferences with a range of capital providers, international institutions, and bilateral partners.

The Climate Prosperity Plans will drive climate resilience, adaptation, and low carbon development demand from investors (bilateral, multilateral, and commercial). These plans can serve as a negotiating tool to enable a climate trade that leads to robust competition with partners including strengthened economic partnerships with countries aligned with safeguarding the 1.5-degree limit of the Paris Agreement by up to 10% in 2025 and up to 30% by 2030. Concurrently, there will be a reduction in the volume of trade with countries that are not aligned with climate prosperity outcomes as a result of reduced fossil fuel imports. This could be a 30-fold reduction in 2025 and up to a 1,000-fold decline in 2030.

There is significant opportunity for technology-transfer partnerships and building manufacturing capacity in Bangladesh. Partnerships in adaptation technology may be pursued in areas such as flood safeguards, weather forecasting technologies, insurance tools, more resilient crops, water recycling, water purification, efficient irrigation systems, and sensors especially for flood zones. Moreover, partnerships with the EU, Japan, the US, and Korea can be leveraged to pursue green hydrogen. India could be a valuable partner in solar power and electric vehicles. China can be leveraged for a modernized power grid and other resilient and quality infrastructure, alongside Japan and the EU. Partnerships can also be leveraged for green supply chains and value-engineering in agriculture, fisheries, and manufacturing with the US, EU, China, Southeast Asia, and others.

The regional partnerships in South Asia (including through the South Asian Association for Regional Cooperation) feature connectivity with neighboring countries that can strengthen value-chain / supply-chain integration. Moreover, the South Asia region can secure regional energy security through least-cost options that are competitive enough to attract global manufacturing, agriculture, fisheries, and services. In addition, there is an opportunity to explore foreign direct investment by Bangladesh in member CVF/V20 countries to earn foreign currency overseas.

Given the heightened risk of spillover effects that could cause countries and industries to perform below their potential, it is imperative for economic partners to coordinate stimulus efforts to build a low-carbon and climate-resilient global supply chain.

Moreover, multilateral development banks can improve capacity-building efforts, including the creation of project-preparation tools to support speedier project cycles and implementation. Additional support for knowledge sharing between countries will also increase capacity for modernization and climate adaptation.

CONCLUSION

During the Bangladesh presidency of the CVF and V20, we launch a new 'climate prosperity' program for the development and implementation of the strategic economic-climate-SDG investment and cooperation frameworks to advance CVF and V20 ambitions for resilience and prosperity across our economies, commencing with Bangladesh's 'Mujib Climate Prosperity Plan' in honor of the centenary year of Bangladesh's Father of the Nation, Bangabandhu Sheikh Mujibur Rahman. Through these plans, we will work to catalyze the economic transformation of our member economies facing both similar and unique climate challenges to launch a decade and more of progress propelled by fast-tracked action. Our goal is to improve our key socio-economic growth outcomes – national and disposable income, poverty reduction, investment, jobs, economic stability, trade balance, and other critical socio-economic results – by optimizing core economic and climate responses together. Our plans will form a CVF and V20 contribution to vital change in systems of the global economy. Through economic cooperation, the realization of prosperity plans could represent significant opportunities for investment and trade, technology transfer, and manufacturing partnerships. We strongly believe that the CVF and V20's potential, as growth engines for the world economy, will be sustainable through our joint efforts.

ENDNOTES

1. https://unfccc.int/sites/default/files/resource/TNC%20Report%20%28Low%20Resolution%29%2003_01_2019.pdf
2. <https://www.imf.org/~media/Files/Publications/CR/2019/1BGDEA2019002.ashx>
3. http://www.xinhuanet.com/english/2020-02/05/c_138758245.htm
4. http://ieefa.org/wp-content/uploads/2021/01/Gas-and-LNG-Price-Volatility-To-Increase-in-2021_January-2021.pdf
5. <http://34.101.159.164/wp-content/uploads/2020/10/low-carbon-monitor-lowres.pdf>
6. https://science.sciencemag.org/content/346/6211/851?_ga=2.97403547.504488939.1621419092-307304231.1621419092
7. <https://thecvf.org/resources/publications/climate-vulnerability-monitor-2012/>
8. <https://www.bloombergquint.com/onweb/cyclone-shows-cost-of-delaying-38-billion-bangladesh-delta-plan>
9. Summarized using above mentioned data and sources.
10. It is important to note that the COVID-19 crisis has led to GDP growth of 6.8% in 2021 and 7.2% in 2022. The 8FYP targets 8.5% GDP growth by 2025 which is to be achieved with 75% of the total investment needs to be generated from the private sector. A maximized scenario of new investment opportunities is consequently expected to raise GDP growth by 0.5% from the 8FYP to 9% by 2030.
11. <https://econ.upd.edu.ph/dp/index.php/dp/article/view/1527> (DP 2020-04) Surviving the Lockdown and Beyond. Toby C. Monsod, Orville Jose C. Solon, Maria Socorro Gochoco-Bautista, Emmanuel S. de Dios, Joseph J. Capuno, Ma. Joy V. Abrenica, Agustin L. Arcenas, Ma. Christina Epetia, Laarni C. Escresa, Karl Jandoc, Aleli D. Kraft, Cielo Magno, Renato E. Reside Jr.
12. <https://gca.org/reports/a-green-and-resilient-recovery-for-latin-america/>
13. <https://gca.org/reports/integrated-responses-to-building-climate-and-pandemic-resilience-in-africa/>
14. Barind is a comparatively high, undulating, region with reddish and yellowish clay soils.
15. Haor: A haor is a wetland ecosystem in the north-eastern part of Bangladesh which physically is a bowl or saucer shaped shallow depression, also known as a backswamp.
16. <https://www.adb.org/sites/default/files/publication/647876/climate-disaster-resilience-low-carbon-covid-19-recovery.pdf>
17. The Daily Star. (2019). Heat Stress cuts productivity, jobs: ILO. Retrieved from The Daily Star Website: <https://www.thedailystar.net/business/news/heat-stress-cut-productivity-jobs-ilo-1765945#:~:text=Bangladesh%20may%20lose%204.84%20percent,70%20percent%20during%20the%20period.>
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21. <http://documents1.worldbank.org/curated/en/982561587362264731/pdf/Building-Competitive-Sectors-for-Export-Diversification-Opportunities-and-Policy-Priorities-for-Bangladesh.pdf>
22. <https://www.thedailystar.net/backpage/news/high-transportation-cost-hurts-economy-1826758>
23. Including those with RE100 commitments such as Ajinomoto, Citi, Commerzbank, Dell Technologies, FUJIFILM Holdings, HSBC, Kingspan, Konica Minolta, Mastercard, Nestle, Phillips-Van Heusen (PVH), Sanofi, Schneider Electric, SGS, Steelcase, Target Corp, Tata Motors, Unilever, and Visa, as well as companies with net zero commitments by 2050 such as LafargeHolcim, Charoen Pokphand (CP) Group, Nestle, H&M, Siemens, Unilever, Reckitt Benckiser Group, GlaxoSmithKline, Ericsson, Artistic Milliners, Arauco, Biogen, etc.
24. <https://www.there100.org/re100-members?page=1>
25. <https://unfccc.int/climate-action/race-to-zero-campaign>
26. Bangladesh Climate Fiscal Framework 2020
27. <https://www.adb.org/sites/default/files/project-document/80742/45916-014-tacr-01.pdf>
28. <https://www.imf.org/en/Publications/WP/Issues/2019/05/14/Understanding-Export-Diversification-Key-Drivers-and-Policy-Implications-46851>
29. https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/005/554/original/CDP_SC_Report_2020.pdf?1613048129
30. <https://www.adb.org/sites/default/files/publication/647876/climate-disaster-resilience-low-carbon-covid-19-recovery.pdf>
31. <http://www.ebek-rdcd.gov.bd/site/page/da340399-e912-46a4-a262-e01c4917cd28/->
32. Engagement with the GCF is based on the current country programme of Bangladesh.
33. <https://openknowledge.worldbank.org/handle/10986/31805> (For every \$1 invested, at least \$4 in benefit).
34. https://files.wri.org/s3fs-public/uploads/Locally_Led_Adaptation_Principles_-_Endorsement_Version.pdf
35. <https://www.adb.org/sites/default/files/publication/647876/climate-disaster-resilience-low-carbon-covid-19-recovery.pdf>
36. <https://www.imf.org/en/Publications/Policy-Papers/Issues/2019/05/01/Fiscal-Policies-for-Paris-Climate-Strategies-from-Principle-to-Practice-46826>
37. <https://www.imf.org/en/Publications/Policy-Papers/Issues/2019/05/01/Fiscal-Policies-for-Paris-Climate-Strategies-from-Principle-to-Practice-46826>

38. http://bfis.bforest.gov.bd/library/wp-content/uploads/2021/02/BFI-Report_final_08_02_2021.pdf
39. 274 million tons of CO₂ x USD 5 per ton (Note: voluntary carbon markets may have higher prices than the current accessible projects under the Clean Development Mechanism (CDM) and the price of carbon is expected to rise, especially as the IMF seeks to set a price floor, mirroring the G7 tax reform drive to set a minimum rate in international corporate taxation.)
40. 274 million tons of CO₂ x USD 35 per ton
41. http://bfis.bforest.gov.bd/library/wp-content/uploads/2021/02/BFI-Report_final_08_02_2021.pdf
42. <https://www.adb.org/sites/default/files/publication/647876/climate-disaster-resilience-low-carbon-covid-19-recovery.pdf>
43. <http://documents1.worldbank.org/curated/en/995331545025954781/Financing-Solutions-for-Micro-Small-and-Medium-Enterprises-in-Bangladesh.pdf>
44. https://climate-insurance.org/wp-content/uploads/2020/04/DRAFT_V20_High-Level_Needs_and_Support_Assessment_Sept_2019.pdf
45. https://climate-insurance.org/wp-content/uploads/2020/04/DRAFT_V20_High-Level_Needs_and_Support_Assessment_Sept_2019.pdf
46. <https://daraint.org/wp-content/themes/dara/pdf/Bangladesh.pdf>
47. Bangladesh Climate Fiscal Framework includes that the “existing insurance policy needs to be reviewed, in partnership with Insurance Development and Regulatory Authority (IDRA), to identify areas where innovative tools related to climate risk transfer issues can be included. Different challenges related to insurance access by specific climate vulnerable communities will also be identified and addressed. This will improve their adaptive capacity. The results of pilots carried out by different NGOs including the potential of micro-insurance as a complement to adaptation actions should also be reviewed to propose relevant tools to IDRA.”
48. <https://www.adb.org/sites/default/files/publication/647876/climate-disaster-resilience-low-carbon-covid-19-recovery.pdf>
49. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5884761/>
50. <http://documents1.worldbank.org/curated/en/517901563252361747/text/Concept-Project-Information-Documents-PID-Sustainable-Fishery-Development-Project-P171352.txt>
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53. M. Arimond, C. Hawkes, M.T. Ruel, Z. Sifri, P.R. Berti, J.L. Leroy, et al. Agricultural interventions and nutrition: Lessons from the past and new evidence
54. <https://www.adb.org/sites/default/files/publication/647876/climate-disaster-resilience-low-carbon-covid-19-recovery.pdf>
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58. <https://energyandcleanair.org/publication/air-quality-health-and-toxics-impacts-of-the-proposed-coal-power-cluster-in-chattogram-bangladesh/>
59. <https://www.nrel.gov/docs/fy18osti/71077.pdf> p.64
60. <https://www.pv-magazine.com/2021/03/25/bangladesh-to-try-again-with-national-clean-power-policy/>
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62. <https://www.adb.org/sites/default/files/publication/647876/climate-disaster-resilience-low-carbon-covid-19-recovery.pdf>
63. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Feb/IRENA_Innovative_ancillary_services_2019.pdf?la=en&hash=F3D83E86922DEED7AA3DE3091F3E49460C9EC1A0
64. Est 35.2 million households x Est. USD 70 per smart meter
65. <https://www.iea.org/reports/sustainable-recovery/evaluation-of-possible-recovery-measures>
Note: In developed economies, job creation opportunities are as follows: 9.9 jobs per USD 1 million invested in storage; 6.8 jobs per USD 1 million invested in solar PV; 5.3 jobs per USD 1 million invested in grid modernization; 0.9 jobs per USD 1 million invested in wind; and 5.9 jobs per USD 1 million invested in hydrogen production.
66. <https://www.adb.org/sites/default/files/publication/647876/climate-disaster-resilience-low-carbon-covid-19-recovery.pdf>
67. <https://dlca.logcluster.org/display/public/DLCA/2.3+Bangladesh+Road+Network>
68. <https://www.adb.org/sites/default/files/publication/647876/climate-disaster-resilience-low-carbon-covid-19-recovery.pdf>
69. <https://www.scor.com/en/file/25401>
70. https://www.researchgate.net/figure/Risk-layering-and-disaster-risk-financing-strategy_fig3_228220080 <https://openknowledge.worldbank.org/handle/10986/10104>
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72. Financing scenarios have been developed based on realistic scenarios of available international public finance as it would be expected to grow in future, and also the borrowing capacity of the government within its agreed fiscal constraints. Most of the public debt relates to large-scale projects derived from earlier plans that the Mujib Plan has incorporated, notably Delta 2100. The plan aims to leverage USD 13.84 billion in international public funds.