

The Case for Just Transitions in the Energy, Agricultural, and Ready-Made Garments Sectors in Bangladesh



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Colophon

Written By: Shamsad Mortuza and Minhaz Uddin Ahmed (University of Liberal Arts Bangladesh)

Contributing authors: Samiya A. Selim, Haseeb Md. Irfanullah, Rumana Sultana, Pinki Shah, Raihan Jamil, and Sheguffa Islam.

Research Guidance: Aaron Atteridge

Project Coordination: Nicole Kempis & Nia Hunjan

Reviewed By: Joyashree Roy, Prof Mizan Khan

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Executive Summary

1. Context: Bangladesh is one of the world's most climate vulnerable countries, requiring adaptation across many sectors of the economy. The country currently invests approximately 6-7 percent of its annual budget on enhancing climate resilience through adaptation initiatives (MoEFCC, 2022). These transitions to a low-carbon and climate-resilient economy, while necessary, could negatively impact certain vulnerable individuals and communities whose livelihoods may be affected by changing practices. The concept of 'just transitions' prompts consideration of how these changes across key sectors in Bangladesh should be managed to ensure they uplift communities, boost employment by tapping into green sectors, and engage key stakeholders - including marginalised voices - in decision-making. Just transition planning is essential to minimizing negative impacts, particularly on vulnerable people.

2. Key Sectors for a Just Transition (JT) in

Bangladesh: The **ready-made garments sector** (RMG) contributes to 12% of Bangladesh's GDP and employs 4 million people. However, the sector causes environmental harm to surrounding areas and has been known to perpetuate poor working conditions. A just transition in this sector could accelerate shifts to safer and more sustainable work for millions of people by improving social security, engaging green technologies, and improving coordination across national ministries.

The percentage of the population with electricity access increased from 32% in 2000 to 92.6% in 2020. Fossil fuels have supported growth in the **energy sector**, but the government has pledged to shift to renewables. This creates an opportunity to reskill workers and create new jobs. However, enacting a just transition in this sector will require Bangladesh to secure significant investment, increase institutional capacity, and fill key data gaps.

Over 48% of Bangladesh's population is employed in **agriculture**, a sector that is highly vulnerable to climate change. Policies that increase resilience in this sector are essential, but may affect vulnerable communities if they are not carefully planned, particularly for landless farmers. A challenge and opportunity for just transitions in this sector will be to engage women who play a key role in cultivation but may be restricted from land ownership and fair compensation.

Education and finance also play an important, cross-cutting role in Bangladesh's just transition. Education provides an opportunity for youth to develop the skills needed for green careers and enhance equality through educational accessibility. Financing at both the national level (through state banks and international investment) and the household level (through microcredit and insurance schemes) is essential to implementing an effective just transition in Bangladesh.

3. Recommendations:

- Create spaces for broad stakeholder dialogue to identify and manage risks.
- Increase coordination across key ministries, such as the ministries of labour, energy, and environment, as well as in other government portfolios where policy levers exist to help buffer, or otherwise manage the impacts of a transition to a low-carbon, climate-resilient society (e.g., through social protection systems).
- Institutionalize learning in government institutes to ensure continuity in just transition planning.
- Work with non-government actors to identify and fill in data gaps related to the sectors likely to be most impacted by transitions, and those groups who may be most affected.
- Broaden the way climate finance is used so that funds are also targeted at providing social and economic support to stakeholders and communities that may be negatively affected by these changes.
- Support key social programs, such as reskilling of workers, with a focus on restorative justice to ensure that those who have previously been excluded from such programs (women, youth, those from poorer communities) are able to participate in new green industries.
- Ensure the education sector develops programs and curricula that prepare children and youth for roles in the green economy, as well as build understanding across society of the impacts of climate change and strategies for adaptation.
- Through international forums, hold historically high emitting countries accountable for social and cultural losses, in addition to economic losses, as a result of climate change.
- Stand in solidarity with the Global South to evidence the need for international financing to support climate action and to ensure it is designed to achieve a just transition.

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1. Introduction

Background

Tackling climate change, by promoting a low-carbon economy, climate-resilient development, and adaptation to the unavoidable impacts of climate change, is an imperative for Bangladesh.

Bangladesh is one of the most densely populated countries in the world, with 18 million people living in a low-lying deltaic region bordered by India, Myanmar, and the Bay of Bengal. Although the country's GDP is one of the fastest growing globally (Ovi 2020; IMF, n.d.), it is still among the world's least economically developed countries, with 20.5% of the population living below the poverty line (Asia Development Bank, 2021). Bangladesh has been on the list of the world's most climate-vulnerable countries for the past decade, despite contributing to less than 0.5% of global carbon emissions. Adaptation to the impacts of climate change is therefore a high priority for the government and communities.

Bangladesh has relatively low per capita greenhouse gas (GHG) emissions in comparison to the rest of the world. Nonetheless, in its 2021 Nationally Determined Contributions (NDCs) to the UNFCCC, the government included the target of reducing GHG

emissions by 6.73% by 2030 without any external support, and by 21.85% (an additional 15.12%) if sufficient international technological and financial support is provided (MoEFCC, 2021). These are important commitments given that the country's GHG emissions are anticipated to grow alongside the economy.

The imperative to drive down emissions is not only about tackling climate change. Air pollution is a major health and financial problem, with a recent assessment concluding that Bangladesh was the most polluted country in the world from 2018-2021, with Dhaka as the second most polluted city. In 2019, air pollution was the second largest risk factor for death and disability in Bangladesh, with four out of the five top causes of death associated with pollution exposure (Raza et al., 2022). Air pollution cost the country an estimated 4.4% of GDP in 2019 (Raza et al., 2022). The main sources of air pollutants – power plants running on natural gas and oil, industry, and transport – are all also significant contributors to GHG emissions, thus tackling air pollution should help to drive down GHG emissions.



1. Introduction

The country pledged \$3 billion to climate change mitigation in 2021-2022 - 4.16% of the national budget and 0.73% of the national GDP (Irfanullah, 2021). Bangladesh also spends approximately 6-7% of the national GDP on adaptation efforts, 75% of which is domestically funded (UNFCCC, 2022).

In addition to these financial commitments, Bangladesh has developed numerous policies to mitigate the impacts of climate change and support a transition to net-zero emissions. Key policies or commitments include:

- Bangladesh Climate Change Strategy and Action Plan (2009)
- Bangladesh Delta Plan for 2100 (2018)
- 8th Five Year Plan (2020-2025)
- Bangladesh Nationally Determined Contributions (2021)
- Climate Financing for Sustainable Development (2021)
- Mujib Climate Prosperity Plan for 2030 (2021)

Newer policies, such as Climate Financing for Sustainable Development (2020) and the NDC (2021), expand on the 2009 Action Plan, integrating a new focus on disaster risk reduction, ecosystem-based adaptation, and private sector engagement.

These policies are intended to generate positive outcomes for society. However, depending on their design and implementation, transitions in key sectors could negatively impact vulnerable individuals and communities whose livelihoods are tied to today's unsustainable practices. Therefore, although transitions to a low-carbon and climate resilient society and economy are essential and will result in overall net benefits, special care must be taken in the process to ensure that the costs and benefits of the net-zero transition are fairly distributed and do not cause hardship for certain groups.

About this Report

This brief explores the potential risks and benefits various groups face as Bangladesh transitions to a low-carbon and climate-resilient society, through the lens of 'just transition.'

The just transition provides an opportunity to use the shift to a low-carbon, sustainable economy to uplift communities, create diverse and green employment, and include marginalised voices in decision-making processes, while at the same time managing the way risks and costs are incurred to ensure that the most vulnerable or marginalised do not experience hardship. A just transition should be central to the way Bangladesh approaches sectoral reforms to tackle climate change, given the number of sectors that are implicated by climate policies, and the country's environmental and socio-economic vulnerabilities.

The brief provides an overview of key concepts relating to just transitions and summarises the potential impacts of Bangladesh's climate policies. The brief explores several sectors in greater detail, namely **energy**, **agriculture**, and **ready-made garments (RMG)**. In each, it considers the barriers and opportunities related to a just transition in Bangladesh.

The brief concludes with recommendations for further research and policymaking in this area.

2. What does a just transition mean for Bangladesh?

Key Just Transition Concepts and Related Ideas in Bangladesh

Labour unionists in the United States coined the term “just transition” in the 1980s to address the labour vulnerabilities and potential social inequalities resulting from the transition away from fossil fuels (Just Transition Initiative, 2021). Since then, just transition concepts have become prevalent in national and international discourses, and now incorporate a suite of equity related issues.

The Climate Justice Alliance’s definition (2018) suggests the following elements as central to a just transition:

1. **Buen Vivir (living well)** seeks to promote a balanced society that compromises neither nature nor humanity, including marginalised people or communities.
2. **Meaningful Work** highlights the importance of helping others, developing skills, and leading positive change.
3. **Self-Determination** proclaims the right to active decision-making at the policy level to achieve fair and equitable solutions.
4. **Culture and Tradition** foregrounds the right to maintain one’s traditions and cultures, free of militarism and involuntary servitude, including the return of stolen lands.
5. **Solidarity** at the local, regional, national, and global levels illustrate the importance of multi-level support to reduce environmental degradation and resource extraction.
6. **Build What We Need Now** prioritizes an action plan that mitigates extractive practices by finding concrete solutions.
7. **The Equitable Redistribution of Resources and Power** works toward reducing societal inequalities and other forms of oppression, by creating new systems and reinvesting resources to alleviate economic disparities.
8. **Regenerative Ecological Economies** uses economics to enhance ecological resilience by supporting small-scale producers and reducing large-scale waste and exploitation.

A key theme is the importance of avoiding unfairly distributed economic costs arising from a transition to a low-carbon society. At the same time, the transition provides an opportunity to promote wider benefits in society, such as reducing inequality, accelerating restorative justice, and re-imagining economic processes to foster greater socio-economic equality. In Bangladesh, only the revised Mujib Climate Prosperity Plan mentions the concept of just transitions. However, although the specific term “just transition” has not been used widely in Bangladesh to date, various concept pertaining to its key themes of equity, inclusion, and low-carbon transitions, are present in debate and policy.

For instance, the importance of the **green economy** in diversifying skills, improving employment access, and increasing social cohesion has been emphasized in the National Sustainable Development Strategy 2010–2021 (NSDS). **Ecological integrity** plays a critical role in restoring biodiversity and maintaining traditions and human health. **Social inclusion**, to promote the inclusion of women and to provide social protection to the elderly, women, children, and disabled people, has been the prime focus in the National Social Security Strategy (NSSS) of Bangladesh since 2015. Moreover, to address **inequalities in the food chain** and promote **agroecology** the Bangladesh government has adopted new policies, outlined in the National Agriculture Policy (2018)

Policies relevant to the promotion of Just Transitions in Bangladesh

Bangladesh has several policies in place that, while not crafted as part of a specific just transition approach, are relevant to the promotion of the concept. Some key policies are listed below, and their contents suggest that a just transition would be well aligned with the government’s overall approach to socio-economic development in the country.

2. What does a just transition mean for Bangladesh?

Policy	Purpose	Just Transition Relevant Details
8th Five Year Plan (8FYP) 2020-2025	This strategic planning document describes sectoral strategies to guide national development over five years.	Key priorities include shifting from an agricultural to a commercial economy, increasing productivity across all sectors, increasing women's participation in the labour force, reducing gender-based violence, increasing employment, reducing inequality, and accelerating inclusive growth. Suggested reforms include increasing technological training to enhance productivity, increasing education access for women and girls, promoting renewable energy, and removing institutional barriers to enable allow the entire population to benefit from growth.
Climate Financing for Sustainable Development (CY2021) 2021	The 5th annual climate budget report, which outlines climate-relevant financial allocations for various ministries.	Despite the COVID-19 pandemic, the total climate-relevant financial allocations in 2021-2022 increased by 9.53% compared to 2020-2021, making up 4.16% of the national budget.
Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009	This document acts as an instrument to finance climate change initiatives.	Key funds include the Bangladesh Climate Change Resilience Fund (formerly the Bangladesh Climate Change Trust Fund). So far, 789 projects have been implemented or received funds from the BCCTF, which had received more than US\$ 440 million as of 2020-2021.
Bangladesh Nationally Determined Contributions (NDCs) 2021	National climate pledges submitted to the UNFCCC process.	Reduce greenhouse gas emissions (GHGs) by 6.73% by 2030 without any external support, and by a total 21.85% (with an additional 15.12% with international support)
Making Vision 2041 a Reality: Perspective Plan of Bangladesh 2021-2041 (PP2041) 2020	This is a long-term development strategy, supported by relevant policies and programs.	PP2041 seeks to eliminate extreme poverty and enable Bangladesh to reach Upper Middle-Income Country status by 2031 and High-Income Country status by 2041 (GED, 2020b).
Mujib Climate Prosperity Plan Decade 2030 (MCPD) 2021	This plan upholds a new development philosophy and aims to shift Bangladesh's development trajectory from vulnerability to resilience to prosperity. The MCPD is one of the few national documents of Bangladesh which explicitly discusses just transitions.	This includes six resilient pathways. 1. Accelerated adaptation; 2. Just transition of labour and future-proofing industry with technology transfer; 3. Increasing public revenue to spend on the most vulnerable; 4. Comprehensive climate and disaster risk financing and management; 5. Leveraging 21st century technologies for well-being; 6. Maximized renewable energy, energy efficiency and power, and transportation sector resilience.
Bangladesh Delta Plan 2100 (BDP2100) 2018	This is a long-term strategic document focused on water governance.	BDP2100 aims to "ensure long-term water and food security, economic growth and environmental sustainability while effectively reducing vulnerability to natural disasters and building resilience to climate change and other delta challenges through robust, adaptive and integrated strategies, and equitable water governance" (GED, 2018).

2. What does a just transition mean for Bangladesh?

There is an opportunity to better integrate the key concepts of just transitions into these national development and climate action plans. Doing so would provide a common conceptual language, and supporting framework, to focus efforts to reduce GHG emissions and address persistent underlying inequalities, while also furthering the government's development goals.

For example, the government has prioritized increasing electricity access in the population, raising the proportion of the population with electricity access to 92.6% (World Bank, 2021). Shifting away from biofuels and increasing electricity access can

increase health, safety, and educational opportunities for vulnerable groups, while also reducing biofuel emissions and paving the way for a shift to renewable energy. At the same time, care must be taken to ensure those people whose livelihoods today depend on the biofuels sector are considered and supported where these changes occur.

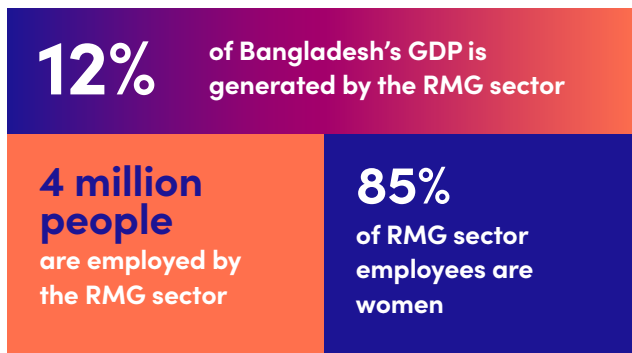
Ensuring that policies adequately consider the daily realities and vulnerabilities that many communities face could allow the government of Bangladesh to leverage climate policies to further its goals of reducing inequality and increasing productivity and well-being.



3. Exploring Just Transition Issues in Key Sectors

Ready-Made Garments

Bangladesh's Ready-Made Garments (RMG) sector has grown by a staggering 25% per year on average between 1983-2020 (EPB, 2021). The RMG sector contributes to 12% of the GDP and employs 4 million people, 85% of whom are women from impoverished rural backgrounds (Uddin, 2014). Moreover, it employs 10% of the total 40 million workers engaged in Bangladesh's manufacturing sector (BGMEA, 2020; 8FYP).



Despite its economic importance, the RMG sector suffers from significant social and economic challenges. The industry consumes and pollutes critical water resources (Hossain and Khan, 2020), and participates in the irresponsible disposal of waste, such as fabric scraps, thread offcuts, and lint, posing a threat to water ecosystems. In 2015, dyeing factories in Bangladesh used around 1500 billion litres of water, roughly 90% of which was released into water bodies as untreated wastewater (Ashraf, A., 2015). The discharge of untreated wastewater pollutes the aquatic ecosystem, causing depletion of oxygen in water, and resulting in the death of fish and other aquatic organisms.

The RMG sector also faces socio-economic challenges. RMG working conditions can be overcrowded, with limited access to fire exits and protective equipment, creating a safety hazard for the workforce (Fairouz, 2017). Workers can also be compelled to engage in overtime, with neither adequate compensation nor rest in loud and poorly ventilated conditions, creating long-term health complications. RMG workers have little job security (Mariani and Valenti, 2013), and women are often excluded from management positions (Haque et al., 2020). Various organizations have proposed better social protection or social insurance for workers, though there has been limited advancement in this area to date (BGMEA, 2020).

As a result of climate change, or climate policies, the RMG sector may experience supply chain disruptions, higher energy costs, and challenges sourcing sustainable raw materials. Reversing the environmental impact of 'fast fashion' means that clothing companies, as well as consumers, will need to shift to more sustainable and ethical practices of production and consumption, greater recycling and reuse of materials, and cradle-to-grave approaches along garment value chains. Some of these changes will be driven by domestic policies to reduce local environmental impacts, while some may be driven by external changes in demand by consumers and international textile corporations.

Just transition objectives align well with efforts to address many of the social and environmental problems that characterize today's RMG sector. There has been some progress improving practices to date, even if efforts are not specifically designated as 'just transitions'. Numerous health, safety and environmental policies have been implemented in recent years to tackle systemic problems in this sector. For example, to ensure fire, building, and electrical safety, the Accord, Alliance, and Tripartite National Action Plan (consisting of the Government of Bangladesh, International Labour Organisation, and BGMEA¹) operationalized a continuous and random inspection system for garment factories. BGMEA also encourages its members to get ISO 45001 certification to improve Occupational Health and Safety (OHS) standards in the factories, and to follow BSCI (Business Social Compliance Initiative) code of conduct to improve social accountability and compliance.

On the environmental sustainability side, Bangladeshi organizations including SREDA (Sustainable and Renewable Energy Development Authority) under the Ministry of Power, Energy and Mineral Resources, as well as Energon Renewable (BD) Limited, Cityscape International Limited, GreenTech Foundation and others have started offering green technologies in the areas of renewable energy, waste management, and construction. Many RMG factories have consulted these green solution providers to get LEED certification and established best practices in the industry. This increased interest in, and application of, green technologies, suggests improved organisational awareness of the need to transition to practices that reduce environmental harm.

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However, neither the government nor industry has necessarily used environmental improvements as an opportunity to enhance labour rights or other social outcomes. The private sector has also often failed to ensure procedural justice for workers, and overall, the pace of positive change to both environmental sustainability and working conditions in the RMG sector has been relatively slow. This may be partly because of barriers within the RMG sector itself, such as low awareness of the intersections between the environmental and social elements of sustainable development, a lack of finance for 'green factories,' and low capacity to engage green technology to deliver environmental improvements.

Prioritising environmental and workers' rights, as well as committing to engaging in social dialogues, could improve policies. Moreover, improving coordination across labour and environmental departments could support just transitions.

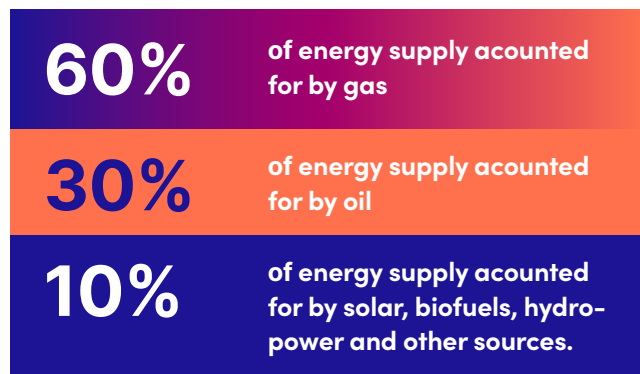
Finally, there have been efforts to improve financing for environmental action. For example, the Bangladesh Bank now requires major financial institutions to include green lending in their loan portfolio. Manufacturing plants, including RMG factories, can borrow at a reduced cost with favourable terms and conditions for solar power, wastewater treatment plants and effluent treatment plans. These efforts could support just transitions particularly if decisionmakers intentionally link environmental sustainability initiatives with broader social goals to address the inequalities vulnerabilities that RMG workers and their families face.

Energy

The energy sector has seen a massive shift in the past decade as the government seeks to diversify energy supplies and promote investment in renewable energy to meet its NDC carbon reduction targets (MoEFCC, 2021). To tackle the impacts of climate change, Bangladesh has set targets to increase energy efficiency, improve energy conservation, expand the generation and use of renewable energy, and reduce dependence on fossil fuels. Estimates suggest that in a business-as-usual scenario, over 30 million households in Bangladesh will be affected by climate change by 2030, costing as much as 3 billion annually (Khatun and Sadaat, 2021). The policies that aim to mitigate these impacts by reducing energy-related emissions are described in the Bangladesh Energy Efficiency and Conservation Master Plan up to 2030; National Solar

Energy Roadmap, 2021-2041; Renewable Energy Policy of Bangladesh, 2008; Power System Master Plan, 2016; and the original National Energy Policy, 1996.

In 2015, Bangladesh had one of the lowest per capita energy consumption rankings in the world (Sun, 2015). While 96.2% of the population now has access to electricity, around 80% of those with access are affected by load shedding (World Bank). The remaining 4% lack access to the grid as a result of poor infrastructure. An estimated \$7.5 billion is needed to meet growing electricity demand, which will require significant foreign investment. Many existing frameworks and policies focus on meeting energy needs and raising the required foreign investment.



The energy profile in Bangladesh currently includes gas (10,979 MW), furnace oil (5,540 MW), coal, (1,290MW), hydro (230 MW) and solar PV (35 MW). For power generation, Bangladesh depends on gas for approximately 60% of its energy supply, followed by oil (30%), with the remaining 10% coming from hydropower, solar, bio, and other sources.

Existing energy plants are gas or oil-powered, but there has been an increase in coal-fired plants since 2017. However, the government has cancelled plans to build ten coal-fired power plants (Daily Star, 2021). Dependence on coal and gas presents significant challenges given global gas shortages and the environmental and public health costs associated with coal burning. Coal-fired plants are a major source of greenhouse gas emissions and emit other harmful air pollutants that have localized health effects including asthma, bronchitis, and other respiratory diseases. Coal-based power plants also discharge wastewater, which contains poisonous heavy metals including lead, mercury, and arsenic.

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Climate change itself, and particularly increasing extreme weather events, poses a threat to Bangladesh's power infrastructure (Shahid, 2012).

These factors, and the falling costs of cleaner alternatives, such as renewable energy, mean that the energy sector may be compelled to transition away from fossil fuel consumption faster than planned. The government plans to increase the generation and application of renewable energy, along with increasing energy efficiency. The plans are reflected in the government strategies and policies mentioned in Energy Efficiency and Conservation Master Plan; and Renewable Energy Policy of Bangladesh (2008). The Mujib Climate Prosperity Plan (MCPP) includes the target of generating 30% of the country's energy mix from renewable energy.

The potential impacts, for instance on employment, of any significant shift towards renewables in Bangladesh has not been extensively assessed. One study by the ILO (2019) indicates that between 2011 and 2016, green jobs in solar energy steadily increased by 18.5% annually from 60,000 to 140,000 (compared to jobs growth nationally of 1.9%). However, the potential negative impacts on workers affected by these transitions has not been examined.

This transition to green electricity generation provides an opportunity to create new jobs in Bangladesh's energy sector, furthering a just transition. For example, households in rural areas present an ideal market for new small and medium enterprises (SMEs) promoting solar mini-grids, solar irrigation pumps, and efficient cook-stoves. Targeted support from development partners could help new and existing businesses tap into this vast potential market and, in the process, help households reduce reliance on traditional polluting sources of energy such as kerosene.

The government could support efforts to transition to a green energy system by investing in green technology and reskilling affected workers, as a shift to renewable energy may cause layoffs in the fossil fuels and non-renewable energy sector. On the other hand, a new energy sector may provide an opportunity to address inadequate well-being policies and a gender imbalance in the sector, if it ensures jobs are more accessible to women, youth, and marginalised groups, and if new green jobs are in the formal sector (ensuring workers have greater access to union representation and social protection systems) (Mahbub & Jongwanich, 2019).



3. Exploring Just Transition Issues in Key Sectors

Although just transitions in the energy sector could benefit communities, as well as reduce emissions, Bangladesh faces several challenges to realising these objectives. Firstly, due to the high initial investment required, a lack of resources, and a lack of infrastructure, Bangladesh has been struggling to shift its heavy reliance on fossil fuel-based power generation to sustainable sources. This over-dependence on fossil fuel power generation has caused a decrease of human resources in alternative energy sectors.

Additionally, there is a widespread belief that green growth and energy efficiency will lead to an economic slowdown, worsening the quality of life for many workers in Bangladesh. Corruption and weak enforcement mechanisms also present a challenge to just transition implementation. To address these challenges, the government and civil society could raise awareness on the co-benefits of a just transition as well as support efforts to increase institutional capacity for implementation.

One key institutional issue to address is the lack of a coherent strategy that builds on “lessons learned” from past and ongoing just transition efforts. This is exemplified by recent policies and frameworks which were developed without regard to previous energy audits. The government, through agents like SREDA, could find a way to institutionalise continuity and learning to increase policy coherence.

Another key challenge is a lack of data for energy demand, generation, and consumption, which inhibits researchers’ potential to build a clear picture of energy usage in Bangladesh. These gaps will need to be filled to adequately plan an orderly transition.

These institutional, technical, and social and capacity strengthening initiatives require investment at the international level. Investment in these areas could engender significant co-benefits. For example, Bangladesh could build a program for job creation and green skills development around the renewable energy sector. This would create jobs and challenge the narrative that green growth negatively impacts economic growth. For example, the United States Agency for International Development (USAID) Catalyzing Clean Energy in Bangladesh (CCEB) (2015) program has shown that clean energy can promote energy savings and a reduction in annual CO2 emissions in Bangladesh.

Agriculture

The agricultural sector includes crops, fisheries, and livestock, and has seen significant changes in productivity (8FYP). Bangladesh is the fourth biggest aquaculture producer globally, and the fifth biggest fisheries producer. As a lower riparian country, water management, and its implications for human health and crop irrigation, is an essential topic that could benefit from engagement with the just transition framework

The agriculture sector in Bangladesh constitutes 18% of the country’s GDP (BBS, 2019). 48.4% of the population is employed in agriculture, and 70% of land is dedicated to crop cultivation (FAO, 2021). Agriculture is also one of the most vulnerable sectors to climate change, resulting in an urgent need for new approaches like agroecology and agroforestry (Viglione, 2021).



This sector has already been affected by climate change. The impacts are evident in the increasingly frequent occurrence of extreme weather events, such as floods, cyclones, droughts, and sea level rise. 60% of all deaths caused by cyclones in the last 20 years occurred in Bangladesh, and cyclones are expected to become 5-10% stronger in the Bay of Bengal (World Bank, 2011). Certain man-made activities, such as deforestation, river-filling, urbanization and industrialization, have intensified the effects of climate change. The government has adopted several policies to combat these challenges. These include crop diversification, soil conservation, agroforestry, water management, improved and water-efficient irrigation systems, and prompt, accurate weather information services.

3. Exploring Just Transition Issues in Key Sectors

Bangladesh incurs an annual economic loss of \$1 billion due to tropical cyclones. By 2050, climate variability and extreme events may cause a loss of one-third of agricultural GDP (World Bank, 2022). As climate change causes water scarcity and rising sea levels, it may lead to 13.3 million internal migrants in the next 30 years. Bangladesh's GDP could also decline by up to 9% as a result of severe flooding (World Bank, 2022).

Addressing the impacts of climate change will require a reduction in agricultural emissions. The IPCC (2020) estimates that 23% of total anthropogenic greenhouse gas emissions (2007–2016) were derived from agriculture, forestry, and other land uses. This creates an impetus for policymakers to drive down emissions in this sector, as well as create policies to support resilience and adaptation.

These mitigation and adaptation policies may, however, affect many vulnerable communities who rely on the land for their survival, and who may not have the capacity to adapt to new farming or forestry regulations. In Bangladesh, small-holder farmers, landless workers, and marginal community constitute a sizeable portion of the agriculture-dependent population living below the poverty line. As a result, any agricultural policies must pay attention to these groups, and there is a clear need for a just transition plan (8th Five-Year Plan 2020–2025)

Agriculture is interrelated with environmental (e.g. climate change), social (e.g. women's rights), cultural (e.g. traditional farming practices) and economic factors (e.g. land ownership). As such, any policy introductions, even those intended to reduce emissions or support adaptation, can have cascading and complex repercussions, including reduced production and food instability. Careful stakeholder and impact mapping will be needed to mitigate these impacts, including dialogues with those who could be most affected.

There is already uncertainty and stress regarding changes to climate. For example, rice production in Bangladesh has been affected by the increased global temperature and erratic rainfall (Maniruzzaman et al., 2018) which has decreased the economic, social, and environmental capacity for adaptation, particularly among smallholders.

Larger producers are moving away from traditional practices to reduce climate change-related losses and increase income. Examples of innovative approaches include producing more fruit-bearing trees and using them to support and surround crop fields. Small-holder farmers, however, may lack the additional resources needed to implement these processes, and therefore experience greater declines in productivity. This has led to some small-holders giving up farming the land themselves and leasing their land to larger producers (Rana and Moniruzzaman, 2021).

As agriculture has shifted from a small-holder system to a more commercially oriented system, employment decreased from 25.8 million to 24.2 million from 2015–2019 (World Bank, 2022). The shift to larger agribusiness has resulted in small-holder farmers losing control of their land, leading to various socio-economic repercussions. Larger businesses have the capacity to divert increasingly limited freshwater, cutting out smaller producers. The loss of community access to water also has a gendered impact, as it is often women who must walk further to collect fresh water for their household.

Women's role in agriculture more generally presents a key intervention for the just transition, as women play an important role in cultivation, but are often not compensated, and may be restricted from accessing land ownership and other financial resources. Sensitive climate policies and inclusive processes can help to ensure that emissions are reduced, equity is increased and new agroecological methods are employed. Inclusive processes also create an avenue for farmers to share generational knowledge and traditional practices that could bolster climate resilience.

For example, the Trade Union Congress (TUC) funded a project implemented by the Bangladesh Occupational Safety, Health, and Environment Foundation (BOSHE) to raise awareness of just transitions amongst workers in the agriculture, fisheries, transportation, construction, and manufacturing sectors. Unfortunately, the project's impact was reduced by more recent national efforts to foreground commercial farming and high value crops. However, the project does illustrate the potential of just transition solutions for improving

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production, reducing environmental impacts, and furthering socio-economic benefits (Meisner and Ali, 2017). For example, the production of high-protein vegetables can reduce reliance on meat, increase health and nutrition, and provide opportunities to increase income. The recently published draft Nation Adaptation Plan (NAP) highlighted homestead vegetable farming, rooftop, and stress-tolerant vegetable farming in its plans (Ministry of Environment, 2022). The policy also suggested skill development approaches to implement this plan.

Bangladesh has also been highlighted as a role model for local-led adaptation. As a result, the country has capacity for and awareness of participatory processes, and these could be harnessed to support a bottom-up just transition in the agricultural sector that incorporates smallholder farmers and women.



4. Key Social Issues to Consider in a Just Transition in Bangladesh

While efforts to tackle climate change will have sectoral implications, there are wider social themes that will, similarly, require consideration for a just transition in Bangladesh. These cross-cutting themes intersect with the objectives of, and policies promoting, just transitions, such as re-skilling, job creation, diversification, and efforts to strengthen social safety nets. Below, we profile two such themes that are less frequently discussed in climate transition dialogues, but could nonetheless play a vital role in the implementation of a just transition.

Education

Education is an essential pillar that supports access to livelihoods and new opportunities. As a result, issues related to accessing education, particularly among poor or marginalized groups, urgently need to be addressed so that educational systems are aligned with a low-carbon and resilient economy.

To facilitate a low-carbon economy, sustainable development concepts need to be integrated in academic curricula in Bangladesh. Environmental Science courses that include climate change, renewable energy technologies, waste management and other elements of sustainable development could be introduced as requirements in primary and secondary education. In addition, topics on sustainable agriculture and green business could be included in the curricula to increase awareness of potential green jobs in these fields.

Children will also need to receive a clear messaging regarding Bangladesh's green priorities. The mainstream media has proliferated the 'development myth' and emphasised consumerist culture - these ideas are prevalent in academia. The existing primary education system fails to combat these myths, and could further incorporate conservation, social justice, sustainable development, and democracy into a comprehensive framework for personal and social transformation. Without goal-oriented education that prioritizes a just transition, it becomes difficult to attain effective public participation in the decision-making process. Additionally, revitalising environmental educational materials for children presents an opportunity to share local or indigenous knowledge across the country, potentially increasing resilience and supporting a just transition that includes a plurality of knowledge types.

A just transition will also need to ensure that educational opportunities are accessible. A key part of any change to the educational system will be ensuring that marginalized groups have access

to these opportunities so they can participate in new and evolving sectors related to low-carbon transitions. To improve educational accessibility, the government has extended primary education facilities to remote areas of the country. New schools have been constructed, additional teachers deployed, and extra resources arranged. Policies are also in place to ensure access to education for children with disabilities. Moreover, the Primary Education Stipend Program and distribution of free textbooks has been implemented to encourage admission and attendance in schools. These positive steps will need to be continued to ensure that relevant environmental subjects are available to all children and young people.

Ensuring educational accessibility in the just transition will also require that school delivery systems are made more resilient. This might include providing extra support to ensure that children do not drop out of school due to the impacts of climate hazards. Additionally, schools will need to address the physical, social, and mental health of children affected by climate hazards.

Educational systems can also prepare children for climate hazards. For example, primary school textbooks still present floods in an overly optimistic manner, as they only highlight the fact that flooding leads to fertile land. Some successful efforts to increase awareness of climate-related hazards include the Mass Media Campaigns and Coastal Livelihood and Environmental Action Network (CLEAN) project. Media campaigns have been successful in building awareness among vulnerable communities, while the CLEAN project assisted vulnerable communities to adapt to the impacts of climate change.

4. Key Social Issues to Consider in a Just Transition in Bangladesh

Finance

Finance is essential to ensuring a just transition at the national level, but financing is also important for SMEs and households, who may be affected by fluctuations in the market (e.g., because of new types of energy) or changing technologies (e.g., solar power). A just transition strategy will require financing to support business and households in accessing these opportunities.

As an outcome of Bangladesh Climate Change Strategy and Action Plan (BCCSAP), the Bangladesh Climate Change Trust Fund (BCCTF) was formed to invest in social protection and health, comprehensive disaster management, low carbon development, and climate research. Bangladesh Bank, which promotes green banking, directs financial institutions to allocate at least 5% of their loan portfolio towards renewable energy initiatives. This policy has encouraged financing for solar, biomass, and biogas projects. There are also loan facilities available at reduced interest rates to individuals and businesses for investment in energy-efficient technologies, such as LED lighting and appliances. Moreover, farmers have access to special loan packages to support sustainable agricultural practices, such as organic farming, crop rotation, and the use of natural fertilisers. Bangladesh Bank also issued Environmental Risk Management Guidelines (ERM) to support lenders' environmental impact assessments.

Efforts to introduce microcredit activities have also increased, particularly in rural areas, where low-income women have benefitted (MoF, 2021). Women are often prioritized in microcredit programs which support women's empowerment. Microcredit programmes in rural areas also enhance sustainable agriculture practices (Imran, Haq & Ozcatalbas, 2022).

Mobile Financial Services (MFS) can promote financial inclusion in Bangladesh by making financial services more accessible. Such services include mobile banking, mobile money transfer, and bill payments. MFS enables women, who may be excluded from the formal banking system, to access financial services, including saving accounts, payment services, and investment opportunities. COVID-19 increased the adoption of mobile banking of reducing the need for in-person processes and improving accessibility for many marginalized people. MFS also increased the flow of remittances within the country (Bangladesh Bank & University of Dhaka, 2017).

Finance plays a crucial role in implementing just transitions to a sustainable future. Bangladesh's commitment to financing a sustainable future is revealed in policies such as the Bangladesh Climate Change Trust Fund and the central bank's directives for loan allocation in renewable energy sector. However, more research and policy advocacy is necessary to progress sustainable finance in Bangladesh.

5. Conclusions and Recommendations

A just transition is critical to Bangladesh's efforts to reduce emissions and build a resilient society, but implementing a just transition will not be simple, as the country faces significant challenges to designing and promoting these principles.

Firstly, Bangladesh has limited income and domestic resources. Transitioning to a low-carbon economy is expensive, and a just transition requires additional finances to support procedural engagement and to offset costs that are unfairly distributed. This financial challenge is exacerbated by high levels of poverty, a reality that heightens the tension between environmental, social, and economic trade-offs.

Secondly, Bangladesh has a large informal sector, which currently employs 87% of the labour force (ILO). Including informal workers in the just transition requires additional planning and coordination, further increasing the costs and risks.

Thirdly, Bangladesh suffers from high income inequality, as the top 10% of workers control almost 60% of the wealth, and the bottom 50% of workers control less than 5% of the wealth (World Inequality Database). This high-level of income inequality, combined with poverty, can increase the number of vulnerable households. These vulnerable households are less resilient to climate change impacts, but they may also be sensitive to new policies aimed at curbing emissions, which can increase the prices of goods and services.

Social inequalities, such as gender discrimination, can also concentrate vulnerability in specific groups, such as women, children, and the elderly. These groups may bear a disproportionate amount of the costs of a transition to a low carbon economy and may have fewer resources to adapt.



Way Forward: How can a Just Transition be Promoted in Bangladesh?

Promoting a just transition will help to ensure that vulnerable people and communities are not left behind, as key economic sectors like energy, agriculture and RMG undergo reforms and, in some cases, structural change.

Just transition, as a relatively new concept in Bangladesh, has not yet gained major influence in the decision-making processes of policymakers. However, many of the equity issues associated with climate action are recognized and some are already integrated – explicitly or implicitly – in various government policies. In this sense, the concept of a just transition could be useful as a framing device for climate action and could build on existing capacity and awareness.

To help progress just transitions planning and implementation in the short and medium term, there are a few actions that could be prioritized. For example:

- Raising awareness about the equity issues associated with transitions (costs and opportunities), through the creation of more detailed transition narratives and through exercises with varied stakeholders to understand how transitions might affect individuals, communities, and different regions of the country.
- Creating space for dialogue between different stakeholders on risks and how these might be best managed.
- Committing to human rights and the rights of nature in key sectors, such as RMG, to improve social and environmental justice.
- Increasing coordination across key ministries, such as the ministries of labour, energy, and environment, could support efforts to plan and implement a coherent just transition.
- Finding ways to institutionalize learning in government institutes to ensure continuity in just transition planning.
- Working with non-government actors to identify and fill in data gaps related to impacted sectors and stakeholders to plan an evidence-based just transition.
- Broadening the way climate finance is used so that, alongside 'climate' transitions, the funds are also supporting those affected through policy reforms, dedicated support programs, economic diversification strategy, and environmental rehabilitation.
- Supporting key social programs such as reskilling, with a focus on restorative justice to ensure that those who have previously been excluded (women, youth, those from poorer communities) are included in new green industries.
- Planning programs and curricula that prepare children and youth for roles in the green economy and build their understanding of climate change.
- In the near term, international climate finance could be useful in helping to fill some of the knowledge gaps around transition, which would help engage more stakeholders in the debate and in transition planning over time.
- At an international level, the Global North must take responsibility for the social and cultural losses in addition to economic losses. Solidarity is needed within the Global South to call for enhanced engagement and leadership in just transitions, and to evidence the need for international financing.

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