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Green economy for sustainable financial inclusion among low-income households in achieving vision 2030 and economic growth in Bangladesh

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Abstract: Several studies have explored green economy and the needs for improvement on the standard of living among low-income families or households in many developing countries including Bangladesh. Similarly, there is an emphasis on economic growth and vision 2030 is regarded stressed. Nonetheless, there is less attention in exploring green economy in propelling sustainable financial inclusion among low-income families and households in Bangladesh in order to attain vision 2030 and overall economic growth. The primary objective is to explore green economy in fostering sustainable financial inclusion among low-income families and households in Bangladesh in enhancing economic growth and vision 2030 in Bangladesh. Content Analysis (CA) and systematic literature review (SLR) as an integral part of qualitative research. Secondary data were gathered through different sources such as: Web of Science (WOS), related journals, published references, research papers, library sources and reports. The results indicated that poverty is a prime challenge impeding sustainable financial inclusion among low-income families and households in Bangladesh. The study has further established the potential of green economy in improving well-beings and social fairness in fostering sustainable and inclusive finance among families or households with low-income in the country. The paper also highlighted the necessity of implementing policy relating to vision 2030 by enhancing sustainable and inclusive finance among low-income households in particular and overall economic growth in the country in general. In conclusion, it has been reiterated that green economy has been a mechanism for achieving sustainable development in general and poverty eradication among low-income households in Bangladesh. It is therefore suggested that the government and economic policymakers should provide enabling environment for improving green economy among low-income households in achieving Vision 2030 and overall economic growth in the country.

Keywords: green economy; poverty; low-income; household; vision 2030; economic growth; sustainable development; financial inclusion

1. Introduction

Bangladesh has been playing an important role in all spheres of human endeavours in the Asian continent. The current population of the country is estimated as 160 million. Indeed, Bangladesh has been making tremendous effort since several decades ago in improving all facets of human endeavours. There have been significant treads in different sectors of the economy. Nonetheless, there is need to intensify more efforts in order to immensely contribute to a brighter future in the country as part of vision 2030. Undoubtedly, economic growth as well drastic reduction of poverty among the citizens are underlining dimensions for attaining Bangladesh's vision 2030. As part of the government's transformation agenda, it is ready to make the country as a middle-income nation as well as to make the growth rate of gross domestic product (GDP) as 8% per annum. As part of mechanism to achieve the government's plans is

to promote diversification of economy; hence, practically, an emphasis would be made on the development of different sectors such as: information or digital technology, pharmaceuticals, renewable energy among others. In so doing, it is expected that these moves would create employment opportunities as well as making the country's economy to be more robust.

Undoubtedly, green economy is a current economic idea and approach as a core aspect of Sustainable Development Goals (SDGs) for promoting sustainable development and poverty eradication, green economy focuses on the reorganization of economic operations to be more supportive of social and environmental development. In other words, this concept was created to promote protection and conservation of the environment and basically viewed by considering it tool for attaining various aspects of sustainability and development (Haque and Aubhi, 2016). As a result, obtaining monetary success and the increase in environmental risks as well as social disparities are not always the prime target of the green economy. Literature contends that the green economy model focuses on optimal resource management, achieving efficiency sustainable development in general (Voumik and Shah, 2014). Literature contends that the concept of green economy as a model arose as a constructive reaction to safeguard the environment from several issues such as land and resource concerns which explicitly influence the ecosystem and also to drastically reduce the effects of resource deminution (Ali, 2018). Litle effort is made to connect this concern in addressing the challenge of poverty among low-income households in various developing countries including Bangladesh.

Furthermore, financing is typically characterized as the provision of funds for investment spending and fixed capital construction in order to improve production and consumption. Green finance as an integral part of green economy is further described as funding aimed at attaining a long-term from the existing medium- term strategic plan regarding environmental as well as service objectives (Rahman, 2014). It is significant to ascertain that goods and services by individuals are met. Similarly, environmental conservation and resource conservation are meant for sustainability. Reiteratively, the paramount significance of green economy is demonstrated by financing that ensures investments in protected forests, freshwater fisheries, agriculture, and other environmental sectors (Reza et al., 2017). Nonetheless, this assertion remains a concern to be utilized in improving the living conditions of poor and low-income families and households in the context of Bangladesh.

Undoubtedly, in an attempt to promote green economy, literature identifies that there is interconnectedness between the government, corporate communities, and citizens for the implementations of green economy as part of sustainable development. Thus, the government plays a vital role in promoting green economy through a regulatory framework, institutional setup, tariff design, subsidies, and guarantees. Also, business or corporate communities attempt to provide financial participation, technical innovation, managerial roles, local knowledge, and backward as well as forward linkages. In addition, citizens should also be prepared to help the government and corporate communities by their readiness to pay, awareness, and willingness to live ecologically responsible lives in the society (Zeb et al., 2014).

Moreso, previous studies have acknowledged that green economy can aid in poverty reduction among citizens and offering direct support to the poor by ensuring sustainable development through financial inclusion (Hasan et al., 2023). Yet, it is crucial to bridge the gap in the extant literature in exploring green economy in fostering sustainable financial inclusion among low-income families and households in achieving vision 2030 and economic growth in Bangladesh. Thus, the novelty of this research is that green economy is specifically used as a mechanism for sustainable financial inclusion among various households and low-income families in the context of Bangladesh. In so doing, efficiency and effectiveness of green economy as a mechanism for achieving sustainable development as an integral part of vision 2030 and overall economic growth in Bangladesh. Therefore, this research attempts to fill the gap in the cursory literature by exploring different themes in this research.

2. Literature review

This section explains the review of different studies which cover triadic aspects of this study namely: Green Economy in Bangladesh, An Overview of Bangladesh's Vision 2030 and Sustainable Financial Inclusion. Each of these is explained in the subsequent subheadings.

2.1. Green economy in Bangladesh

It is noteworthy to posit that the green economy in Bangladesh has been the focus of the government towards achieving vision 2030 and overall sustainable development. Green entrepreneurship and activities on environmental sustainability, such as Industry 5.0, can lead to macroeconomic stability and the fulfillment of Sustainable Development Goals (SDGs). For instance, implementing a green tax can play an effective role in increasing revenue and achieving long-term financial stability (Shamal et al., 2022). However, there are barriers to the application of digital technology to green finance in Bangladesh, including the absence of a solid policy framework and regulatory authority. Onwards, the food system in Bangladesh is an essential source of conservatory gas emissions, but strategies such as alternative wetting and drying in rice cultivation and valorization of organic waste can help reduce emissions and achieve sustainable development goals in the country (Ehresman and Okereke, 2015). Hence, literature contends that, green economy has potential to address environmental challenges, promote the growth of economy, and enhance sustainable development in both developed and developing countries including Bangladesh (Julia et al., 2018). Thus, green economy in Bangladesh has the potential to bring several benefits such that, it can instrumental in achieving macroeconomic stability and fulfilling Sustainable Development Goals (SDGs) (Ahmet, 2017).

It is not doubtful to posit that, green finance contributes immensely to sustainability of the growth of economy and it can also contribute to green growth and development in Bangladesh. The challenges of implementing a green economy in Bangladesh include the predominance of Chinese investments in fossil fuel-based sectors, despite the existence of the green Belt and Road Initiative (BRI). In addition, there are challenges such as vulnerability of high climate change, limited fossil fuel reserves among others which pose challenges for transitioning to green energy from fossil fuels. The Readymade Garments (RMG) industry in Bangladesh faces challenges in establishing a circular economy, including lack of knowledge,

technology, and management support, as well as high establishment costs as literature contends (Haque and Nishat, 2022). There is ambiguity regarding the impact of green finance in fostering sustainability of the growth of economy in Bangladesh, despite its initiation in the country. These challenges need to be addressed through coordinated government approaches, economic policy tools, stakeholder participation, and conscious efforts to ensure the benefits of a circular economy and green finance for sustainable development in Bangladesh (Bangladesh Ministry of Finance, 2023).

It is not doubtful to posit that natural disasters and vulnerable climatic change necessitate the need for advocating for environmental sustainability which is one of the central concerns of the country's vision 2030. The government has put an important mechanism in place for reduction of greenhouse gas emission, protection and restoration of ecosystems as well as to increase the efficiency and effectiveness of renewable energy (Muhammad, 2023). Hence, the low-income household should be enlightened in this aspect in order to enable the country become a leading nation in adaptation and mitigation of climate change.

2.2. An overview of Bangladesh's vision 2030

Bangladesh has set a vision for 2030, aiming to become a country to maximize its potentials towards improving gross domestic product (GDP) and consequently become a higher-income nation which would enable it to achieve goals of sustainability and development. The government's plan includes implementing projects to reduce poverty, improve education, and enhance human and social development indicators. To achieve this vision, Bangladesh needs to address challenges such as skills gaps, institutional reforms, and global crises (Khandker, 2012; Khudri and Chowdhury, 2013). Additionally, the country must focus on improving reproductive health care services, reducing gender-based violence, and integrating population and gender concerns into policies. The Sustainable Development Goals (SDGs) and the Seventh Five Year Plan of Bangladesh provide a blueprint for implementing the SDGs and addressing challenges such as resource mobilization, urbanization, natural disasters, and inequality (Alamgir et al., 2021). Ending the HIV/AIDS epidemic by 2030 is also a priority, requiring rapid scaling up of prevention and treatment services. The country's vision 2030 also targets to harness the digital technological innovation for driving the growth of economy, good governance as well as overall indicators of sustainable development goals (SDGs). As part of practical approach, the government has introduced Digital Bangladesh Programmes (DBP) which aims at expanding technology for enhancement and efficiency of public services. Similarly, through the use of DBP, there would be favourable environment for entrepreneurship among low-income citizens to have access to investment capital for startups of businesses (Rabbani, 2014). There are various components of Bangladesh's vision 2030 as part of sustainable development such as: education, healthcare, women empowerment, gender equality, social protection programmes, infrastructural development, modern transportation networks (e.g., roads, railways and ports), affordable access to electricity, sources of renewable energy for mitigating the impact of environmental degradation, among others (Farah, 2015).

2.3. Sustainable financial inclusion

Bangladesh focuses in strengthening its framework for attaining sustainable financial inclusion among disadvantaged or less privileged citizens. Undoubtedly, financial inclusion in Bangladesh has been facilitated through various initiatives such as agent banking, mobile banking, and inclusive financing practices. Agent banking has emerged as a strong medium of financial inclusion, providing convenient financial transactions to the unbanked population in rural areas (Haque et al., 2014). The provision of savings accounts to the unbanked population has led to increased women's empowerment, participation in household finance decisions, and savings accumulation in both Kerala, India, and Chittagong, Bangladesh. Literature highlighted various factors that influence customer willingness to adopt mobile banking system in Bangladesh include perceived risk, relative advantage, trust, and convenience (Mujeri, 2014). While the empirical evidence does statistically support a direct relationship between inclusive financing and poverty alleviation in Bangladesh, there are indications of positive economic implications and associations between inclusive financing and drastic reduction of poverty in society (Ashraf et al., 2019).

Reiteratively, inclusive financing in all its forms, is considered as an essential aspect for driving economic development in Bangladesh, with initiatives such as ATMs contributing significantly to the country's GDP. Sustainable inclusive financing in the country which is an important aspect of achieving sustainable development and reducing poverty. Microfinance providers (MFPs) perform an essential role in this regard. More importantly, sustainability of MFPs is essential for them to effectively contribute to poverty reduction (Rahman, 2021). Factors such as size of loan to be awarded, number of those who are borrowing, percentage of borrowers among women, inflation and among others have a positive effect on the financial sustainability of MFPs in Bangladesh, while structure of organization, leverage, liquidity, cost per each borrower, and gross domestic product (GDP) have a negative effect. National governance indicators also influence the relationship among structure of organization, balance of loan per borrower, number of borrowers, cost for each borrower, and financial sustainability (Datta and Rabbany, 2016).

Financial inclusion, including the expansion of services like Automated Teller Machines (ATMs), is considered a vital component of economic development in Bangladesh. However, the credit-deposit ratio (CDR) has a limited beneficial influence on GDP (Mawla and Khan, 2020). Agent banking has emerged as a strong medium for financial inclusion in the rural settings, providing convenient accessibility for financial transactions for the unbanked population. Sustainable financial inclusion is another essential aspect of the country's vision 2030. In so doing, the government has recognized the need to solve the problem of income and financial inequality and consequently, there is need to improve living standards among the citizens.

3. Materials and methods

This part presents methodological approach and various materials employed in this research. Thus, content analysis (CA) and Systematic Literature Review (SLR) are used in this study Indeed, CA and SLR of secondary data were given prime importance as part of the qualitative research. Undoubtedly, literature contends that

systematic literature review provides guidelines for academic practices (Kraus et al., 2022; Kraus Breier and Dasí-Rodríguez, 2020). While searching for relevant literature, Web of Science (WOS), were used to explore various research papers, published references, journals, library sources and reports that are relevant to the focus of this research. Onwards, review of secondary data of cursory studies in these studies were between 2014 and 2023. This is necessary to provide an updated sources on the central thesis of this research as literature suggests in respect of systematic literature review as being used in various fields (Bougie and Sekaran, 2019; Khan et al., 2022; Klimanov and Tretyak, 2019; Kraus et al., 2023). Thereby, through the content analysis and systematic literature review, several themes were generated in this study namely: green economy, poverty among low-income family and household, vision 2030 and economic growth, sustainable financial inclusion in Bangladesh. The overall analysis of various themes of the study are highlighted to present the significance of green economy for enhancing sustainable living conditions among low-income families and households in Bangladesh. Thereby, a total number of 84 relevant articles are extensively reviewed and analyzed in this study. Therefore, overall results of content analysis are elaborated in detail in the succeeding subheadings.

4. Results and discussion of findings

Th is section presents results and discussion of overall content analysis of the study which are in accordance with the main themes of the study as explicated accordingly in the subsequent sub-headings.

4.1. An overview of green economy in Bangladesh

The green economy in Bangladesh is gaining importance and has the potential to contribute to sustainable development. Entrepreneurial activities on green economy through Industry 5.0 can lead to macroeconomic stability and the fulfillment of Sustainable Development Goals (SDGs) (Abdin, 2017). Implementing a green tax can increase revenue and contribute to long-term financial stability. Green finance is an essential factor in attaining sustainable economic growth and it can adequately contribute to green growth as well as climate change mitigation. However, the integration of digital technology can improve green finance in the context of Bangladesh; however green finance faces challenges due to the lack of strong policy framework (Kabir et al., 2015). The food system in Bangladesh is a significant source of greenhouse gas emissions, but strategies such as alternative wetting and drying in rice cultivation and valorization of organic waste can help reduce emissions and achieve sustainable development goals.

The green economy is important in improving well-being and social fairness among citizens. Thus, it drastically plays significant role in lowering environmental dangers. It is essential to reiterate that a green economy is an economic model that focuses on how to improve on the overall ecological economics as well as sustainability and development. In the contemporary discourse on environment, undoubtedly, the green economy is considered as an integral part in fostering economic growth and development. Hence, it is paramount to note that the essence of economic growth is to ensure that living conditions of citizens are improved in such a

way that is consistent with the attainment of long-term sustainable development (Mondal, 2019). It is noteworthy to posit that a green economy tends to promote triadic aspects namely economic, environmental, and social well-being of the citizens. In addition, a green economy manifests the paramount links among the economy, society, and the environment. Similarly, the change of production processes and consumption patterns in order to contribute to a more sustainable future. Reiteratively, there are various spheres of influence which are regarded as conservation authorities. It is not doubtful to say that internal operations as an integral part of conservation authorities influences green internal operations while influence actions of others contribute to measurement and monitoring, innovative land management, new programme and business opportunities and policy programme collaboration (Uddin et al., 2017). The aforementioned culminated factors have potential on the reduced resource input, reduced waste output and improved social wellbeing. Figure 1 shows conservation authorities in connection with green economy that can judiciously improve green economy for sustainable financial inclusion and social wellbeing of citizens in the context of Bangladesh.

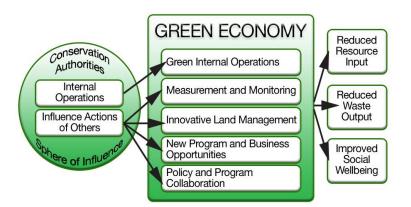


Figure 1. An overview of conservation of authorities and green economy.

Furthermore, on the path to a Green Economy, there are paths to Sustainable Development and Poverty Eradication. The Green Economy is critical for long-term development. Green technology produces energy without being harmful byproducts. Green economy also suggests developing an environment that is friendly in terms of technology (Uddin et al., 2017). Hence, the green economy helps to reduce waste and pollution through modification of manufacturing and consumption habits. In the interest of a green economy, studies demonstrate that diverse approaches, views, models, and instruments are available to any country, depending on its particular circumstances and goals which are mainly to achieve the goals of sustainable development in all the aforementioned dimensions, as literature contends (Akhter and Khalily, 2020). In this sense, green economy is explicitly perceived as a strategy for achieving sustainable development and poverty eradication, and it has the potential to give the Green Economy is critical for long-term development. Green technology generates energy options for policymakers, but it should not be a set of inflexible regulations. We underline that green technology should be utilized as a mechanism for poverty eradication and consequently be used for sustained growth or development of economic facet of society, boosting inclusive social needs, promoting human

wellbeing as well as generating possibilities for employment in the labour market for citizens in an effort to preserve the Earth's ecosystem's health (Siddik et al., 2014). It should be specifically mentioned that green economy covers various spheres of human endeavours as shown in **Figure 2**.

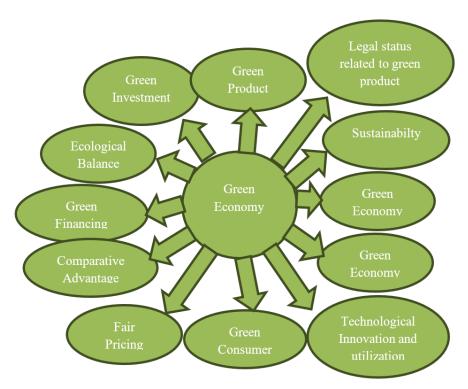


Figure 2. Green economy and linkage with various factors.

4.2. Economic growth and vision 2030 in Bangladesh

Economic growth in Bangladesh has been a topic of discussion in the provided abstracts. The country has experienced a growth rate of around 6% for the past decade, with the GDP showing a growth trend of 7% and above annually (Aziz and Naima, 2021). However, there are concerns about the stability and sustainability of this growth. The growth has been fueled by sectors such as RMG and remittance, but these sectors are now showing negative growth rates. Bangladesh has made progress in reducing poverty, but still, about one-third of the population that lives below national poverty line. Thus, it is not doubtful to say that the rate by which poverty reduced has demonstrated a kind of slow down, and the social indicators of development have progressed at a slower rate compared to other developing countries (Nabi et al., 2017). The country faces challenges such as political instability, weak global markets, and structural constraints, which affect its income growth and progress on shared prosperity (Nabi et al., 2017). To ensure sustainable and inclusive growth, Bangladesh needs to address these challenges and implement strategies for climate-resilient development (Siddik, 2017).

Economic growth in Bangladesh has been modest but steady, with a growth rate of just over four percent annually in the last two decades. However, this growth has not been sufficient to bridge the gap in living standards between Bangladesh and other developing countries in Asia. The country has faced challenges such as poverty, illiteracy, and a large unskilled population. The main sources of income are agriculture,

RMG, and remittances, but these sectors have shown negative growth rates (Chowdhury and Chowdhury, 2023). Bangladesh has implemented economic reforms, but they have not improved the growth performance of the economy due to a focus on allocative efficiency rather than incentives for production and investment. The country has also faced challenges such as political instability, weak global markets, and structural constraints. Despite these challenges, Bangladesh has made progress in reducing child mortality and improving maternal health. Overall, the country needs to address these challenges and focus on sustainable and inclusive growth to further improve its economic situation (Mia et al., 2019).

Bangladesh has major initiatives to implement projects for the purpose of achieving the United Nation's Sustainable Development Goals (SDGs) by 2030. The Bangladeshi government aims at transforming the country into a higher and middle-income nation by 2030. It also targets at developing citizens that are globally competent and competitive. However, there are challenges that Bangladesh faces, such as the Rohingya refugee crisis and the need for an effective domestic education agenda. Additionally, there is a focus on disaster risk reduction strategies and universal health coverage in Bangladesh by 2030. The country has also undertaken the "Digital Bangladesh Vision" to transform the economy into a digital economy by 2021. These policies and initiatives are aimed at achieving sustainable development and improving the socio-economic indicators of Bangladesh. Bangladesh has set ambitious goals for its future development. The government aims to avoid the middle-income trap and become a high-income nation as part of SDGs and the country has been implementing major initiatives in this regard (Ali, 2017).

The main goals of the Vision 2030 policy of Bangladesh are for transformation of the country by improving on GDP by 2030. In so doing, sustainable growth of the economy as well as human and material resources would be improved. The Bangladeshi policy aims at developing critical mass of globally competent citizens through an effective domestic education agenda. Additionally, the policy seeks to ensure quality tertiary education with the target of attaining Sustainable Development Goals (SDGs). Consequently, it will contribute to the economic and material development in the country. Hence, the Vision 2030 policy also focuses on achieving a sustainable public health sector, as sound public health is crucial for the country's prosperity (Rahman, 2020). Similarly, the policy aims to achieve the SDGs, address disease demography, and overcome challenges such as skill development, population momentum, resource mobilization, urbanization, climate change, natural disasters, and inequality.

The challenges to achieving the goals of the Vision 2030 policy of Bangladesh include the need for creating an effective mechanism for enhancing national on agenda education mainly to produce citizens who are competent to compete at the international level. Additionally, there are challenges related to unequal access to health facilities, which contribute immensely to inequality and hardship in terms of accessibility to healthcare. It is paramount to say that there is need to address institutional challenges emanating from proper implementation of Sustainable Development Goals (SDGs) which include overlapping jurisdiction, lack of cohesion conflicts of interest, and among ministries and agencies (Zam, 2019). It should be emphasized that Bangladesh also faces challenges related to population growth and

unplanned urbanization, which act as constraints to sustainable development. These challenges require proper planning and management in areas such as education, healthcare, and urbanization to ensure the successful achievement of the Vision 2030 policy goals in Bangladesh (Zam, 2019). Another key challenge in this journey is the low status of women in society and the prevalence of issues such as maternal death, illness, and child marriage. Additionally, Bangladesh is facing the Rohingya refugee crisis, which could have economic and political risks if it continues indefinitely (Nabi et al., 2017). The country has made progress in improving eye health care services, but further investment and a transparent accountability framework are needed to eliminate avoidable blindness Aziz and Mohamad (2016). Overall, Bangladesh is working towards its vision for 2030 and beyond, but it must address various challenges and prioritize key areas for development.

4.3. Utilizing green economy for poverty reduction among low-income families

Poverty affects low-income families or households in various countries including Bangladesh. Studies have shown that poverty levels vary across different regions and are influenced by factors such as occupation, income, and household size (Omer, 2019). Poverty among low-income households in Bangladesh is a significant issue. Studies have shown that a large percentage of households in Bangladesh experience poverty and food insecurity. In one study, it was found that over 50% of households had less than \$1.90 earning a day, indicating extreme poverty. Another study revealed that 24% of households in a specific area were considered extremely poor, while 40% were moderately poor. These findings highlight the prevalence of poverty among low-income households in Bangladesh (Omer, 2019). Additionally, the current economic hardship has further exacerbated the situation, with households becoming more susceptible to food insecurity.

It is crucial to address this issue through comprehensive strategies and targeted interventions for the purpose of reducing poverty as well as to ensure security of food among the vulnerable households. In rural areas, the prevalence of poverty among farmers is high, with a considerable percentage of households classified as extremely poor or moderately poor (Ahmed and Salleh, 2016). In poverty-prone areas like Rangpur, the consumption-based poverty headcount is high, indicating a large number of households living below the poverty line. Additionally, the study found that low food security is associated with extreme poverty, highlighting the interlinkage between poverty and food insecurity. The accuracy and reliability of poverty measurement in Bangladesh have also been questioned, with evidence suggesting that poverty lines may overestimate the poverty headcount for households with larger family sizes (Ahmed and Salleh, 2016). Overall, addressing poverty among low-income families and households in Bangladesh requires comprehensive strategies, including targeted interventions, employment opportunities, and access to basic needs and services.

Undoubtedly, green economy can potentially help solve the challenge of poverty among low-income families and households in Bangladesh. By promoting sustainable development and the efficient use of resources, a green economy can create new job opportunities and stimulate economic growth, which can directly benefit low-income

individuals and families. Additionally, the adoption of green technologies and practices can lead to cost savings in areas such as energy and water, making these resources more affordable and accessible for low-income households. Furthermore, the establishment of a Green Investment Bank in Bangladesh can support economic innovativeness particularly on green projects and technologies which further contributing to poverty reduction as well as overall sustainability (Carfora et al., 2019).

Utilizing the green economy can be a potential solution for poverty among lowincome families and households in Bangladesh. It is affirmed that a green economy focuses on sustainable development, social equity, and the best utilization of scarce resources. It is important to note that the green products are essential to be encouraged among consumers to be sensitive about the environment and they should be ready to pay prices of premium for these products. The establishment of a Green Investment Bank (GIB) in Bangladesh could provide economic value for promoting innovativeness in utilizing technologies in connection with green projects and which are leading to increased capacity in achieving sustainable economic development (Topu and Tugcu, 2020). There is an emphasis for promoting and encouraging businesses mainly for production and marketability of green products. Thus, the government agencies, financial institutions and civil society organizations can play a significant role in poverty alleviation. Additionally, an emphasis on inclusivity and growth of green model can explicitly upheal the poor citizens through entrepreneurial activities and reforms of fiscal policy. In so doing, it will help in tapping into the potential of green consumptions in the aspects of production, innovation, and entrepreneurial activity among low-income families.

In Bangladesh, several key sectors stand to benefit significantly from the implementation of a green economy, which can enhance financial inclusion and contribute to achieving the Sustainable Development Goals (SDGs). The agricultural sector, through the adoption of green supply chain practices (GSCP), can improve environmental sustainability and economic performance, while also promoting social well-being by fostering ethical labor practices (Emon, 2024). The financial sector, particularly through green banking initiatives, can facilitate eco-friendly financing and raise awareness among clients about sustainable practices (Kulsum and Huda, 2018). Additionally, the integration of green finance with digital technologies can enhance access to funding for renewable energy projects, thereby addressing the current low proportion of green funds available (Koley, 2021). Furthermore, sectors such as construction, energy, and technology can adopt sustainable practices that align with green economy principles, ultimately leading to a more inclusive and resilient economic framework (El-Haggar et al., 2019; Niekerk, 2024).

The green economy has significant potential to enhance Bangladesh's GDP growth and job creation by 2030 through various sectors such as renewable energy, construction, and transportation. Transitioning to a green economy can create numerous jobs; for instance, the number of green jobs in Bangladesh rose from approximately 748,701 in 2009 to 811,268 in 2010, indicating a growing sector despite existing challenges (Bahauddin et al., 2012, Bahauddin and Iftakhar, 2014). By prioritizing sustainable practices, Bangladesh can leverage its domestic market and improve infrastructure, which is essential for achieving an accelerated GDP growth rate of 8%–10% (Rahman and Khan, 2013). Furthermore, initiatives aimed at reducing

environmental degradation, such as promoting renewable energy and green business practices, not only enhance public health and social equity but also contribute to economic resilience (Huda, 2024; Manucharyan, 2023). Thus, a strategic focus on the green economy can drive substantial economic and social benefits for Bangladesh by 2030.

To support the growth of a green economy in Bangladesh and achieve the goals of Vision 2030, a robust policy and regulatory framework is essential. This framework should prioritize low-carbon development, as outlined in the Bangladesh Climate Change Strategy and Action Plan, which emphasizes adaptation, disaster risk reduction, and technology transfer (Islam et al., 2012). Additionally, enhancing renewable energy utilization is critical, with current reliance at only 4.59%; thus, strategic policies must be implemented to promote solar, biomass, and other renewable sources (Akash and Anderson, 2024). Furthermore, the development of green finance is vital, as banks are currently falling short of targets for green and sustainable finance disbursement, achieving only 3.16% and 9.32% of their respective goals (Azad et al., 2022). Effective policies should also address the interconnections between economic growth, urbanization, and carbon emissions, promoting sustainable practices in industrialization and technological innovation (Raihan et al., 2022; Raihan, 2023b). Lastly, coherent policy planning and technical capacities are necessary to overcome existing challenges and ensure the successful implementation of environmental policies (Uddin et al., 2023).

The key components of a meta-synthetic and conceptual framework for the growth of a green economy in Bangladesh encompass several interrelated strategies aimed at achieving environmental sustainability while fostering economic development. Central to this framework is the integration of renewable energy use, technological innovation, and sustainable urbanization, which collectively contribute to reducing carbon emissions and enhancing resource efficiency (Raihan et al., 2022). Additionally, the framework emphasizes the importance of strategic sectoral integration and management dynamism, advocating for a holistic approach that incorporates environmental considerations from the outset of development processes (Akash and Anderson, 2024). Effective policy implementation is crucial, necessitating a combination of price-based instruments, regulations, and public investments to maximize economic co-benefits and social acceptance of green initiatives (Raihan, 2023a). Furthermore, prioritizing structural changes and enhancing human capabilities are essential for leveraging Bangladesh's domestic market and achieving sustainable growth rates of 8%–10% in the future (Emon, 2024).

4.4. Sustainable financial inclusion among low-income households

Bangladesh is the third largest Muslim population in the whole world and the country has been playing significant roles in economic growth of the Asian continent. Undoubtedly, it should be noted that the current level of promoting inclusiveness or inclusivity of finance is rated as 40%. Financial inclusion among low-income households in Bangladesh has been a key focus in recent years. Despite efforts to increase access to financial services among citizens, more than 50% of the poorest households in Bangladesh remain unbanked. Microfinance institutions (MFIs) have

been playing a significant role in improving inclusivity of finance with around 43% households having access to services such as that relate to finance. However, there is still substantial financial gaps, particularly in rural areas (Aziz and Mohamad, 2016). Agent banking has emerged as a potential solution to reach the unbanked population more efficiently and at a lower cost. Regulatory policies and financial literacy have also contributed to the increase in inclusiveness of finance in the country. As part of effort in achieving sustainable inclusive financial activities among low-income households, it is crucial to address the barriers to access, expand the reach of MFIs, and continue promoting regulatory policies and financial literacy programmes (Akram Laldin and Furqani, 2013).

Sustainable financial inclusion in Bangladesh can be achieved by focusing on the financial and sustainable activities of microfinance providers (MFPs). This can be done by considering several factors such as size of loan, number of borrowers, percentage of borrowers among women, and among others, which have a positive influence on financial and sustainable development. Indeed, there are several factors that have a negative influence on sustainable financial aspect. Of such factors are: structure of an organization, cost per borrower, leverage, liquidity, and GDP (Alam and Hossain, 2016). Additionally, national governance indicators play a role in the aforementioned factors. Furthermore, agent banking can also contribute to financial inclusiveness in the country through the provision of financial services specifically to the majority of unbanked citizens predominantly in rural areas. Mobile banking can also play a significant role towards achieving financial inclusiveness by addressing multifarious aspects such as perceived risk, relative advantage, trust, and convenience (Alam and Hossain, 2016).

There are key features which tend to influence sustainable financial inclusiveness in Bangladesh are perceived risk, relative advantage, trust, convenience and national governance indicators among others. It should be emphasized that several features impact the financial sustainability among microfinance providers (MFPs) in the country and their ability to reduce poverty (Baser et al., 2020). Additionally, support for women entrepreneurs and improved technology access can also contribute to closing gaps in many aspects such as gender equality and social inclusion (GESI) specifically in rendering financial services, leading to sustainable development. It is not doubtful to posit that banking sector of the economy tries to ensure that financial integration and inclusive economic growth are achieved in Bangladesh. However, there are challenges that impede the process of financial inclusion, particularly for RMG workers. Solutions to these challenges need to be identified and implemented to improve the financial inclusivity scenario in the country (Nargis, 2019). In a nutshell, in order to enhance financial inclusiveness, Bangladesh should focus on rural branch penetration, nationwide financial awareness, trust-building in the banking system, as well as development and rendering digital financial services. Similarly, it is essential to strengthen that foreign direct investment in propelling economic progress as well as in achieving sustainable energy efficiency as literature posits (Chen et al., 2024; Syed Abdul Rehman et al., 2022). In addition, as part of effort to achieve sustainable development, literature identifies the paramount importance of affordable housing especially among low-income citizens as part of effort in promoting sustainability of the community (Silvia et al., 2024).

4.5. Improving Bangladesh's green economy and achieving the (SDGs): Drawing lessons from international experiences

Improving Bangladesh's green economy and achieving the Sustainable Development Goals (SDGs) can be accelerated by drawing on international and comparative experiences. Many countries have faced similar challenges related to sustainable development, and their strategies can offer valuable lessons for Bangladesh and the country could consider key lessons to enhance its green economy and work towards the SDGs. Bangladesh can learn how to integrate green growth into national policy from South Korea and China. Both countries have successfully incorporated green growth into their national policies. For instance, South Korea launched its Green New Deal, focusing on green technologies, renewable energy, and sustainable infrastructure (Raihan, 2023a). China has integrated green development into its five-year plans and established a national carbon trading system (Wang et al., 2022). Bangladesh could more explicitly integrate green growth into its national economic planning, aligning policies with SDGs, particularly SDG 7 (Affordable and Clean Energy), SDG 13 (Climate Action), and SDG 8 (Decent Work and Economic Growth). Creating a comprehensive green growth strategy can help address both environmental and economic challenges.

Moreover, Promoting Renewable Energy and Energy Efficiency can be learnt from Germany's Energiewende (Energy Transition) has been a model for scaling renewable energy, with a focus on wind, solar, and biomass (Sonnenschein and Hennicke, 2015). It also emphasizes energy efficiency measures in industries and residential sectors. Bangladesh could expand its renewable energy mix, especially solar power, where it already has some success with solar home systems. Policies to improve energy efficiency in manufacturing, transportation, and households would contribute to SDG 7 (Affordable and Clean Energy), and SDG 12 (Responsible Consumption and Production).

Inferably, Circular Economy Practices can be learnt from the Netherlands which is a global leader in circular economy practices, promoting waste reduction, reuse, and recycling across industries. The government incentivizes businesses to adopt sustainable practices and circular business models (Walker et al., 2021). Bangladesh could promote circular economy principles by encouraging industries, especially textiles and manufacturing, to adopt waste-reducing technologies and processes. The informal sector, which plays a major role in recycling and waste management, could be better integrated into formal systems to boost sustainability.

Furthermore, leveraging green finance can be learnt from the UK which has actively used green bonds and financial incentives to fund projects that align with sustainable development goals. Green finance mechanisms have supported renewable energy, energy efficiency, and climate resilience projects (Gerrard et al., 2018). Hence, Bangladesh could strengthen its green finance ecosystem, including green bonds, micro-financing, and low-interest loans for green businesses. By creating a supportive financial infrastructure, Bangladesh could attract both domestic and international investments for green projects and SDG-related initiatives.

Further still, climate resilience and disaster risk management are relevant to Japan's disaster risk reduction strategies, particularly its approach to climate-resilient infrastructure, are globally recognized. The country has made significant investments in early warning systems, flood defenses, and disaster recovery mechanisms (Kanbara and Shaw, 2021). Thus, Bangladesh, being highly vulnerable to climate change and extreme weather events, could further strengthen its disaster risk management frameworks. Investing in resilient infrastructure, early warning systems, and capacity-building for local communities would help safeguard the SDGs, especially SDG 13 (Climate Action), SDG 11 (Sustainable Cities and Communities), and SDG 9 (Industry, Innovation, and Infrastructure).

Sustainable agriculture and agroforestry are Brazil's experience in integrating sustainable agricultural practices, such as agroforestry and sustainable land management, has helped mitigate deforestation and promote food security. The country's focus on responsible agricultural practices has improved both environmental and economic outcomes (Siminski et al., 2016). Bangladesh could expand sustainable agricultural practices such as organic farming, agroforestry, and climate-smart agriculture. Promoting these practices will help ensure food security (SDG 2: Zero Hunger) while also enhancing biodiversity and reducing environmental degradation (SDG 15: Life on Land).

Moreso, strengthening education and public awareness is paramount as Sweden has invested heavily in public awareness campaigns and educational programs about sustainability. The government has introduced sustainable development into the school curriculum, while citizens are encouraged to engage in environmentally friendly behaviours (Cars and West, 2015). Raising awareness about the importance of sustainability and the SDGs in Bangladesh can empower citizens, businesses, and local governments to adopt more sustainable practices. Bangladesh could introduce sustainability education in schools, as well as public awareness campaigns focusing on energy conservation, waste management, and climate adaptation.

Regarding collaboration with International Partners, Costa Rica has successfully collaborated with international organizations, NGOs, and multilateral development banks to fund conservation and climate adaptation projects. The country is recognized for its efforts in preserving biodiversity and creating national parks, while promoting eco-tourism (Aguilar-Støen, 2015). Bangladesh can strengthen partnerships with international organizations like the UN, the World Bank, and other climate funds to finance green projects. With the ongoing challenges of climate change and SDGs, collaboration on joint ventures, technical expertise, and financial resources can provide critical support for national initiatives.

Concerning sustainable urbanization and green infrastructure, Singapore is a model for sustainable urban development, incorporating green buildings, parks, and sustainable transportation systems. The city-state emphasizes high-density green buildings, urban farming, and green public spaces to improve livability while reducing environmental footprints (Diao, 2019). With rapid urbanization in cities like Dhaka, Bangladesh could focus on green urban planning, such as promoting sustainable transportation (e.g., electric vehicles), improving waste management, and incorporating more green spaces and energy-efficient infrastructure into its urban development strategies. This will help meet SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action).

Policy Coherence and Multi-Stakeholder Approach play significant roles whereby Norway has worked towards policy coherence between economic, environmental, and social goals. By ensuring that national policies on energy, climate, and economy are interlinked, Norway has succeeded in achieving progress across multiple SDGs (Ahlström and Sjåfjell, 2023). Bangladesh could improve policy coherence across ministries and stakeholders to ensure that economic growth is aligned with environmental sustainability and social inclusiveness. A multistakeholder approach involving government, businesses, civil society, and international partners will be critical for achieving the SDGs.

The forgoing has shown that in order to improve its green economy and advance the SDGs, Bangladesh can adopt lessons from other countries, particularly those that have made significant strides in green growth, climate resilience, and sustainable development. These strategies, combined with strong governance, green financing, and active public participation, could help Bangladesh transition towards a more sustainable and inclusive future. International collaboration and tailored solutions that consider Bangladesh's specific challenges and opportunities will be key to making progress on the SDGs and securing a greener economy for the country.

5. Policy implications of the study

The explanations policy directions are meant for the implementations of green economy as part of sustainable development in the context of Bangladesh. More importantly, it focuses on various aspects in attaining the aim of this research. Thus, the Bangladeshi government has made a lot of efforts to transform all spheres of human endeavours. Hence, there is a need for relevant green economy policies that would enable Bangladesh as a nation to accomplish overall sustainability. The policies relating to green economy should be harmonized with physical policy which should centrally focus on strengthening financial instruments that can be utilized for poverty eradication among low-income families and households in the country. In so doing, capital meant for investments among low-income families should be provided in order to provide social fairness and sustainable well-beings of the citizens. In order to achieve, the government is expected to deeply reform fiscal policy as well as to provide modality for the distribution of investment capital among the low-income households in Bangladesh.

Moreover, conventional and Islamic financial institutions cannot be underestimated in providing sustainable financial inclusion through green economy and initiatives which serve as an important institution responsible for investment as well meant for promoting economic growth. It is not disagreeable to posit that, vision 2030 and economic growth is currently paramount in Bangladesh and the country has been making a tremendous effort in promoting green economy for sustainable financial inclusion among low-income households in the country. In so doing, with the provision of investment capital to low-income families in Bangladesh, it would be regarded as an initiative that would encourage the low-income households in contributing to the overall discourse relating to green economy in Bangladesh. Indeed, the spirit of entrepreneurship among low-income families and household in

Bangladesh as well as provision of investment capital or mobilization of resource for low-income households in achieving financial inclusion.

6. Conclusion and suggestions

This research has extensively elaborated on green economy as an important component of sustainable development in the country. The paper has elaborated the significance of green economy as an important part of sustainable development in Bangladesh. In other words, it has been extensively elucidated that green economy as an important driver for sustainable financial inclusion among low-income families and households towards achieving economic growth and vision 2030 in Bangladesh. It has been stressed that the government should create an enabling environment and investment capital to the low-income families and households in the context of Bangladesh. Indeed, Bangladesh vision 2030 has been regarded as government's commitment for building a nation with prosperity and sustainability. With collective efforts, inclusion and improvement of living conditions of low-income families and households can be instrumental for transformation of the country through green economy for sustainable financial inclusion. This means that addressing poverty among low-income families through their harmonization with green economy which will provide a brighter future for low-income households in particular and all citizens in general.

The following suggestions are made:

- The government is the foremost authority responsible for the implementation green economy by providing fiscal policy, regulatory framework, institutional setup etc. that would eradicate poverty and improve living conditions of lowincome families and households in Bangladesh.
- 2) Also, the government should provide an implementable framework of green economy for participation of business or corporate communities in providing financial participation, technical innovation, managerial roles, local knowledge, and backward as well as forward linkages that would have positive impact on the low-income families and households in Bangladesh which would address poverty and contribute to how economic growth and vision 2030 can be achieved in the country.
- 3) The government should provide investment capital to low-income families and households as part of intensification of effort for sustainable financial inclusion for economic growth and attainment of vision 2030 in the country.
- 4) There is a need for creating awareness among citizens concerning efforts made by the government as well as corporate communities on green economy through their readiness to become responsible citizens that would contribute to the sustainable development, economic growth and vision 2030.
- 5) There is a need for promoting collaboration among the governmental agencies, non-governmental organizations (NGOs), private sector, international partnerships among others in fostering green economy for financial inclusion among low-income families and households in the country.
- 6) The green economy can also lead to reducing greenhouse gas emissions towards achieving environmental and economic goals respectively.

- 7) Establishing a Green Investment Bank can make provision for economic support for innovativeness using technologies for fostering green projects for further promotion of the green economy in Bangladesh.
- 8) The future studies should incorporate visual tools such as thematic maps or graphical concept analyses to summarize and highlight the connections between the analyzed studies.

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