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Banking for a Greener Future: A Systematic Review of Sustainable Initiatives in South Asia.
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Abstract:
The expanding role of green banking in South Asia is examined in this study, with an emphasis on how financial institutions are balancing economic growth with environmental sustainability. Natural resource depletion and climate change are two major environmental issues facing South Asian nations, which is why banks in the region are embracing green practices like eco-friendly loans, green investments, and sustainable products. The effectiveness of these measures is investigated, as are the particular challenges that banks encounter, such as legal constraints and striking a balance between environmental goals and economic expansion. This study offers insights into the many green banking tactics, the function of central banks and regulatory agencies, and the wider effects of these activities on sustainability by completing a thorough literature analysis. Key findings highlight the need for stronger regulatory frameworks, enhanced risk assessment mechanisms, and tailored green banking products that address the region's specific needs. This study further identifies policy gaps and recommends future research directions to strengthen South Asia's green finance landscape, emphasizing resilience against climate-related financial risks. Ultimately, the findings aim to guide policymakers, financial institutions, and stakeholders in fostering a sustainable and resilient banking sector in South Asia, aligning with global environmental goals while addressing regional priorities.

Keywords: sustainability, green banking, green products, climate change, environmental conditions.

1.0 Introduction:

Green banking is a concept in which Banks thoroughly look into the projects before provision of financial investments and must ensure execution of those projects which are environmentally friendly and does not cause any sort of unsustainability and hazards to the climate of the world (Yousaf et al., 2016). The research paper is meant to focus upon the increasing trends of green banking in South Asian countries, as people are becoming more aware of the social and environmental issues of contemporary world. Also, it has been analyzed that customers are more interested in investing in the projects which are ecofriendly, environmentally, socially and economically sustainable (Rajput et al., 2013). The negative impacts which have been often observed on the climate have resulted in more emphasis upon adapting such protocols and measures which can make the Earth a sustainable place for future generations as the current resources and conditions are becoming scarce day by day. Financial institutions play a major role in this area as they are capable of setting certain policies and frameworks within the countries (Jha & Bhome, 2013).

1.1 Green banking in South Asian Countries:

Sharma & Choubey (2022) explained that majority of the South Asian countries can be considered as developing countries; hence the environmental damages have also been causing severe threats to their economic and social aspects. Bangladesh is one of such countries which is arguably the least developed countries among all and has also been a victim of global environmental pollution, which is initiated by the Western countries and their role in industrialization. However, some of the banks have introduced proper policies and measures to overcome environmental resistance and hazards, for example, SBI and ICICI have introduced green banking programs. As per the initiatives taken by SBI, it has been observed that they have introduced Green Channel Counter, they have also increased their commitment

to reach carbon neutrality, online money transfer is encouraged whereas Wind farms are also being financed. While, ICICI banks have introduced the facilities of online money transfer from anywhere to everywhere, auto finance and home finance. Apart from that, these banks have also been adopting strategies to reduce carbon emission like depletion (two-sided printing), recycling as well as using the Compact Fluorescent Lighting (CFLs) along with other initiatives. Nath et al., (2014) discussed that the issue has been observed largely in the developing countries in South Asia, as most of these countries are dependent upon the natural resources for their economic growth and income. The environmental hazards have been leading to rapid deforestation, bushfires, pollution, climate change, loss of biodiversity and arable land making it difficult for the agricultural industries. In such conditions, it is essential that certain policies must be implemented for climate conversation, so that industries which are dependent on these natural resources can flourish their businesses even more (Masood et al., 2015). On the other hand, it has been analyzed that most of these industries have already taken a lead and have been investing in sustainable projects and are supporting green financing from banks as well. Countries like Indonesia, Vietnam, Bangladesh, Brazil, China, India and Pakistan have already adopted measures to promote sustainability and green finance (Bahl, 2012).

1.2 Background of the Study:

The emergence and background of green banking can be traced back from the spread of awareness among individuals regarding the hazardous effects of human activities upon the environmental conditions of the world. The life-threatening activities like carbon emission, greenhouse gas emissions, oil spill in oceans and seas and other similar activities have ultimately resulted in numerous challenges like global warming, rising temperatures, extreme weather events, and rise in the sea-levels (Ullah & Takaaki, 2016). Via the lending and investment policies, banks can play a crucial role in aligning and controlling these activities according to the needs and demands of environmental conditions of the world. Various strategies are often adopted by the banks to ensure implementation of green banking policies. Some of these strategies include environmental risk assessment, green lending, green investment, provision of sustainable products and services, as well as promotion of Corporate Social Responsibility. The study aims to analyze the positive impacts of these strategies adopted by various banks upon implementation of green banking policies, and its effects on the environmental conservation (Abbas et al., 2020). It also helps in assessing the extent to which these financial institutions are contributing to Sustainable Development. In addition, the study also helps in examining the policies and regulatory frameworks adopted by the banks in promoting this concept. With the help of implementation of these policies, Banks can help in conservation of natural resources, mitigation of climate change, and helps in sustainable growth. The systematic literature review will also help the policy makers of banking sectors to assess upon all the opportunities and threats in this area, and on the basis of this analysis, they can design their own policies to be implemented in their banks. It will ultimately lead to transitioning into a more resilient and sustainable economy (Yameen et al., 2024).

1.3 Research Questions:

Following research questions have been designed for this study to acquire a detailed yet comprehensive understanding regarding sustainable practices and initiatives taken by banks in South Asian countries to promote green banking.

1. What is the efficacy of the current banking policies towards green initiatives and how do they support these initiatives using their regulatory frameworks?
2. How can green banking impact the economic and environmental sustainability in South Asian countries?

3. Which type of advancements are needed in terms of technological and operational elements to reduce the challenges associated with implementation of green banking initiatives?
4. What strategies and policies can be adopted by South Asian banks to promote their resilience to climate related financial risks, with the help of green banking frameworks?

Considering these aforementioned research question, future policies, researches and practical applications with the help of which green banking can be further promoted and strengthened can be designed.

1.4 Scope of the Study:

With an emphasis on how banks in this region handle the difficulties of both environmental sustainability and economic growth, this study explores the extent and effects of green banking practices in South Asian nations. The study investigates how South Asian banks assist or restrict green finance projects by looking at their distinct role, especially in light of central banks' and regulatory agencies' influence. The study evaluates the efficiency of current green banking products in fostering economic and environmental resilience by examining green loans and sustainable investment vehicles. Furthermore, in order to improve sustainability in South Asia, this study highlights legislative gaps and makes suggestions for incorporating climate-related risk management into the banking industry. The study intends to educate banking institutions and policymakers on how to promote a more resilient, ecologically conscious financial sector that supports regional objectives and global sustainability goals through a thorough literature assessment.

2.0 Literature Review:

The concept of Green banking has been emerging to a large extent, and banks have been playing a crucial role in enhancing the impact on finance and economic conditions of the respective countries, for which different business models and new approaches have been instigated in the market with the help of which investors can acquire more improvised ideas and strategies for their businesses (Nguyen, 2018).

2.1 Defining Green Banking:

The concept of green banking was firstly coined by a Dutch bank named Triodos Bank. The bank was established in the year 1980, and after their gradual success, in the year 1990, the bank finally introduced support for environmentally friendly projects and promoted the concept of environmental conservation through their projects (Neama et al., 2023). This somewhat also triggered other banks to adopt the ideas and strategies of green banking and invest in environmentally friendly projects (Masood et al., 2015). However, due to the immense pressure on banking and other sectors regarding climate change and impacts of global warming on the world, all the banks are now forced to adopt these sustainable strategies with the help of which positive impacts on the environment can be imposed (Nguyen, 2018).

Multiple strategies have been adopted by the banks in their everyday activities with the help of which little efforts can be made to ensure environmental conservation. Some of these strategies have been discussed in this section.

2.2 Environmental Conservation via Green banking:

Green banking is a concept with several approaches, all of which relate to environmental conservation. The checklist provides is green loans, whereby the bank provides capital for green projects for instance; renewable energy, waste management and other pollution control.

These loans compel investors to finance sustainable projects enhancing environmental conservation (Roy, 2017; To et al., 2019). They are also elements that are incorporated into the concept of green banking. Despite the developments in banking services and delivery, physical bank branches are still located and established, which select sustainable designs with low impacts on the environment. These green buildings combined with community activities such as planting of trees and control of pollution enhance people participation in environmental conservation (Weber, 2016).

2.2.1 Environmental risk assessment:

It is important in green banking to avoid supporting environmental unfriendly economic activities. To manage risks connected with pollution and fines, banks consider possible pollution, usage of resources, and compliance with goals named in sustainable development to establish project feasibility (Yadav, 2013).

2.2.2 Green lending:

Green lending means that banks focus on the financing of producing entities that submit environmentally friendly projects and technologies, including energy-saving technologies and environmentally friendly structures. Being able to offer green terms, banks help support the development of green industries and thus help in creating a sustainable economy (Bahl, 2012).

2.2.3 Sustainable products:

Sustainable offerings are paperless banking, green credit cards and ecofriendly mortgages. The production and consumption of the items fit the environmental conception by promoting responsible consumption among the purchasers.

2.2.4 Corporate Social Responsibility:

Finally, Corporate Social Responsibility (CSR) points to social and environment concern of banks. CSR activities commonly include green initiatives, sensitization initiatives, and sustainability initiatives; activities improve the bank's image and cultivates sustainable environmental management (Masood et al., 2015). Altogether, these strategies comprise sustainable green banking as the concept that contributes to the formation of the sustainable financial community.

2.3 Environmental Considerations in Banking regulations:

Incorporation of environmental factors in the banking regulation is crucial as the banking institutions consider environmental factors on stability. Currently, several authorities on a global level have set rules to ensure that banks had to integrated ESG risks into its risk and reporting frameworks (Korzeb et al., 2024). The ECB and EBA asked the banking sector to integrate climate risks into their risk management systems, whereas, the FDIC advances climate risk management in the United States (Gualandri et al., 2024). JBRE's articles contain assessment of regulations, discuss difficulties in implementing ESG and integrating environmental risk into banking.

2.4 Initiatives taken by South Asian countries:

Different countries have dealt with the situation of sustainable practices in different ways and there are numerous strategies which have been opted by the countries. Primarily, it has been analyzed that India has brought a revolution in the green banking industry because of numerous strategies and measures adopted by their banks in ensuring environmentally friendly projects (Yameen et al., 2024). Some of the initiatives taken by Indian bank have been discussed below:

Table 1: Products introduced by different banks to support Green Banking

Product	**Green Banking Initiatives**	**Banks which have taken these Initiatives**	**References**
Green Product Development	Some of the main products which comes under this category include Green mortgages, Green loans, green finance, loans for green construction, ATM, loans for ecofriendly vehicles, solar ATMs and online payment channels.	SBI, PNB, IDFC, IDBI, YES Bank, IndusInd, BOB, Canara bank, ICICI, Axis, HDFC, Kotak bank	Sharma et al. (2014), pp. 2321–5933 Lymperopoulos et al. (2012), pp. 177–186 Narang (2015) Bank of Ceylon (2015) Mozib Lalon (2015), pp. 78 Sindhu, 2015, pp. 75–87
Green Corporate Social Responsibility	The products which have been introduced under the context of maintaining CSR are Tree plantation campaigns, wild life protection services, maintenance of parks, Internet banking services, Green credit cards, green saving accounts, payment of bills via ATM, green awareness programs, sending brochures for awareness, document management systems as well as introduction of green branches.	YES Bank, IndusInd, BOB, Canara bank, ICICI, Axis, HDFC, Kotak bank	Sudhalaksmi and Chinnadorai (2014), pp. 160–163
Green Internal Processing	In order to improvise the internal systems of the country, the banks have provided services like waste management disposal system, use of daylight appropriately, harvest of rain water, conducting energy audits, provision of training to employees on green banking, and use of internal network communication channels.	SBI, PNB, IDFC, IDBI, YES Bank, IndusInd, BOB, Canara bank, ICICI, Axis, HDFC, Kotak bank	Malliga & Revathi, 2016, pp. 58–66 Rahman & Perves (2016) Herath & Herath (2019)

Analyzing each green banking activity in Table 1 raises questions about the steps that banks in South Asia have taken to establish environmentally sustainable strategies. The table categorizes these initiatives into three key areas: Green Product Development, Green CSR and Green Internal Processing. From the field of Green Product Development, it is worth noting that the banking institutions of the SA region have introduced a number of products relating to environmental issues. There are green loans, home loans for eco-friendly building, financing of renewable energy, like solar home power. Large banks like the State Bank of India (SBI),

ICICI, and Yes bank have launched these products in order to support investment that targets Green Infrastructure, environmentally sustainable Transport, and Renewable energy. These products provide for this market need in environmental sustainability and at the same answer to the call for green finance in the region. Apart from financial products, Green Corporate Social Responsibility (CSR) activities are some of the things that many South Asian banks are involved, mostly in an effort to create awareness of environmental issues and supporting local sustainability. Such activities include tree planting exercises, wildlife conservation and sensitization of the populace on environmental conservation. Companies such as Yes Bank, ICICI and Axis have taken the onus of CSR measures for environment with an added advantage of constructing the brand socially responsible. All these actions fit into the larger picture of satisfying the country's increasing Environmental Social Governance (ESG) standards for the financial sector. Finally, Green Internal Processing deals with the sustainable activeness employed by the banks in their operational procedures. These are waste management systems, energy audit and proper energy efficient office designs to be embraced. Some of the major banks of India such as SBI and PNB have set up initiatives for minimizing their number of adverse environmental impacts for internal use of limited energy, rainwater harvesting systems and using systems that include going paperless.

2.5 Environment Friendly Practices in Banking Operations vis-à-vis Credit Operations:

In the realm of green banking, two core areas stand out: interbank cash flow and lending business. It is important to define strategies as being central to sustainability but as distinct from practices in the variation of their goals and outcomes.

2.5.1 Sustainability initiatives in banking services:

These programs entail efficient management of banks internal systems with an aim of minimizing their impact on the natural environment. Such includes going paperless in the management of banking services by embracing digital platforms, the use of efficient energy products and ensuring branches' friendly environment. Green operations like waste management, energy audits, and using rainwater been recognized in the organizational structure. For example, system-level change might include specific banks changing from conventional electricity source to renewable power for lighting offices or enforcing the policy of two-sided printing. These endeavors are mainly directed at demonstrating the concept of CSR in a basic way by reducing the total influence of the bank on the environment. Furthermore, internal green practice supports bank's image for being environmentally sensitive, providing competitive advantage to environmental sensitive consumers and investors within a society.

2.5.2 Provision of Ecofriendly Loans:

On the other hand, accreditation-based green lending activities have a wider and more revolutionary impact as they affect outside players. These refer to fundings for long term business ventures that are environmentally friendly for instance, catering for the expansion of energy from natural resources, green building or technologies. Green loans are financial products through which banks offer funds to economically productive and environmentally sustainable initiatives. Risk management is an important aspect of green lending though it involves assessing the environmental risk of each project so as to channel the funds to green projects. When making their investment decisions, and when lending money, there is a significant manner in which that banks can bring about positive social change, this is through the promotion of green industries, and the imposition environmental standards on loans.

Further, activities exemplified by the green bonds enable financial institutions to mobilize funds with the purpose of tackling climate change.

2.6 Statistical Analysis:

The researches have revealed the fact currently there only fewer number of banks which have been playing their essential role in regulating their lending and investment decision making processes, depending upon the ESG factors of the world. Green banking and sustainable investment are still considered as a slightly under rated elements and fewer number of employees are trained in regulating the ESG issues (Volz, 2018). Globally, a very small number of financial institutions have signed up themselves for sustainable financial initiatives. There is a total of 1,874 signatured countries all around the world for Principles for Responsible Investment, out of which only 122 are from South Asia (Neama et al., 2023). The professionals included in these signatories are asset owners, investment managers and the professional service partner. It has also been determined that there is comparatively low level of involvement of South Asian banks in the sustainability initiatives taken by the world, which is also reflected upon their green lending and investment plans. Based on a Global Sustainable Investment Review of 2016, it has been analyzed that the total amount involved in the area of sustainable investments and their related assets in Asian countries, reached up to USD 52 billion (Volz, 2018). One of the widely adopted sustainability strategy which has been observed in most of the Asian countries is ESG integration and exclusion or negative screening. Some of the countries include Singapore, Hong Kong, China, Seoul, Kuala Lumpur have been reported as the main countries which have been taken initiatives towards Sustainability. The largest growing country in terms of sustainability and similar initiatives have been observed in Japan, where the investments in this area have increased from USD 7 billion to USD 473.6 billion (Roy, 2017). This rapid surge in the investment in sustainable market in Japan can be explained through multiple measures and initiatives taken by the country to support the idea of sustainability, and most of these measures have been taken by institutional asset owners and bank professionals.

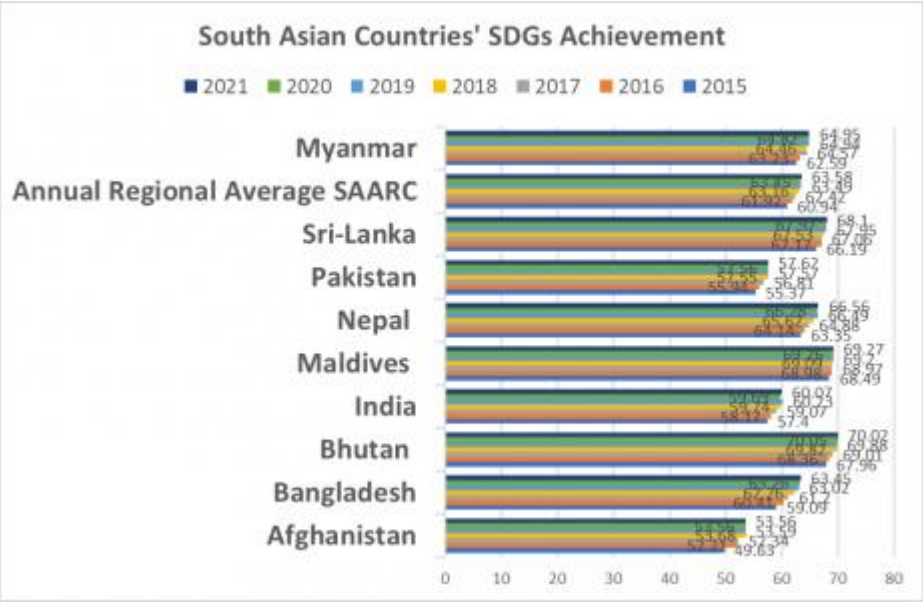


Figure 1: SDG's Achievements of SA countries (Volz, 2018)

The overall sustainability theme and concept has been slowly but largely expanding the overall South Asia as the major challenges and issues associated with sustainability have also been emerging. The main issues identified are climate change, energy challenges as well as water

security. All these issues have shed major focus upon the sustainability measures and parameters which must be followed by financial institutions. The increasing awareness of these challenges and their long-term impact on the overall world condition has also brought attention of the high-end financial institutions owners and professionals to make more investments in this area and provide a safe space for current and future world (Jha & Bhome, 2013). Based on statistical reports, it has been identified that with USD 52 billion, the proportion of socially responsible investments (SRI) in Asia constitute only 0.8% in 2016 which was comparatively much lower as other regions of the world. However, this proportion has been made after excluding Japan. Including Japan, the overall SRI percentage of Asian countries made only a percentage of 2.3% and Japan alone was responsible for making 2.1% of contribution in the SRI globally (Volz, 2018).

2.7 Case Study of Sustainable Initiatives:

Considering the case study of Malaysian Palm Oil firm named IOI, it has been reported that their sustainability certification had been cancelled in the meeting of RoundTable on Sustainable Palm Oil mainly due to noncompliance and inappropriate practices being followed in the Palm Oil industries of Malaysia. As a result of this, some renowned and major international clients' broke ties with Malaysian Palm Oil industry, which ultimately affected he cash flow, and the overall performance and production level of the company. Hence, it shows that the increasing awareness towards ESG challenges has been causing the countries and the industries to focus more on this issue, and noncompliance towards these sustainability practices can ultimately lead to diminishing the market value of the company (Masood et al., 2015). Since Palm Oil and other extractive sectors in Malaysia hold significant importance in the country, therefore this case provides a strong base for the companies to focus upon the sustainability challenges more seriously, and the investors and financial authorities should consider this matter important.

2.8 Significant Milestones in Journey of Green Banking:

Researches have also revealed that after rapid developments in the area of green banking, the most important contributions have been observed to be made by PRC and Bangladesh among Asian countries. Considering China, the green lending and related operations have increased exponentially over recent years, and it has mainly occurred due to efforts of Chinese financial authorities to boost green finance. The amount of green credit, which was at RMB 341 billion in the year 2007, has increased largely and has reached to 7.5 trillion by the end of 2016. The percentage increase has been reports from 0.6% to 3.2% According to a report released by China Banking Association, almost 21 banks in China have been reported to be providing and lending almost RMB 8.2 trillion, to the companies to support the idea of green projects by 2017. The exceeding trends in Green loan balance within Chinese banks has been shown in the graph below:

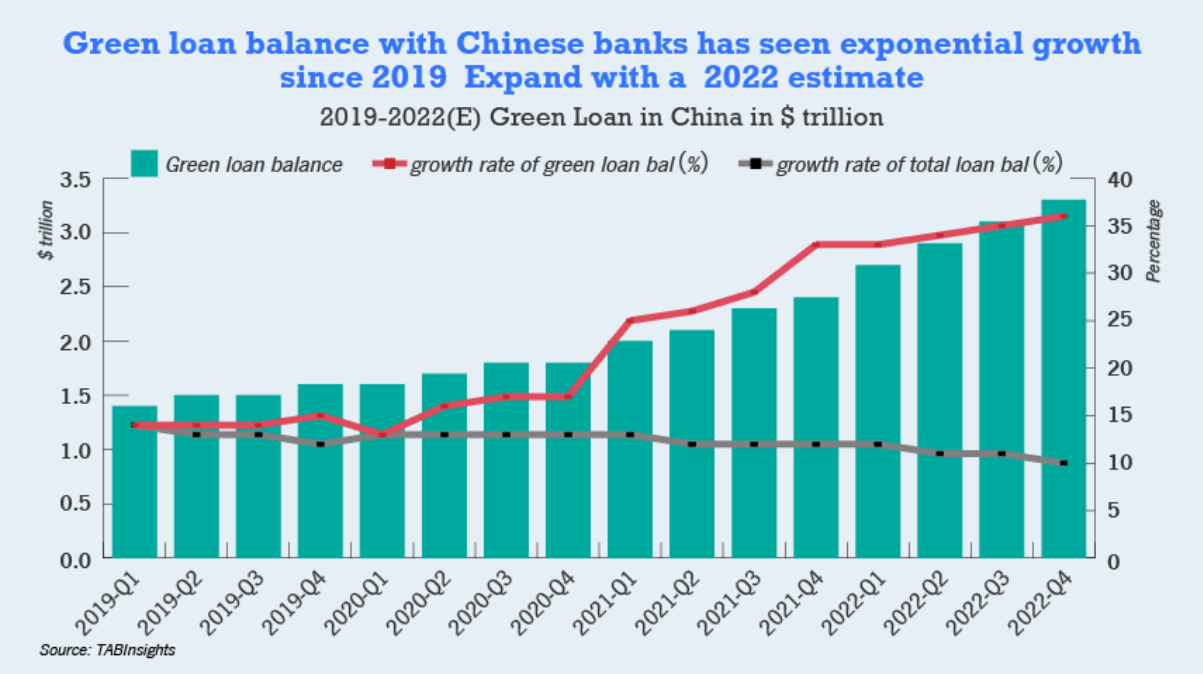


Figure 2: Growth in Green loan balance by Chinese banks

On the other hand, Bangladesh has also made some remarkable efforts in this area as their central banks have made a strong impact over the Greening efforts of their finances. In the year 2016, the banks of Bangladesh collectively extended their total of BDT to 503.2 billion in green finance projects. It makes around 7.5% of the total credit reserves possessed by these banks. In addition to this, all banks have also conducted an environmental risk rating of the new projects (Volz, 2018). The exceeding value in green finance has also been further elaborated in the graph below:

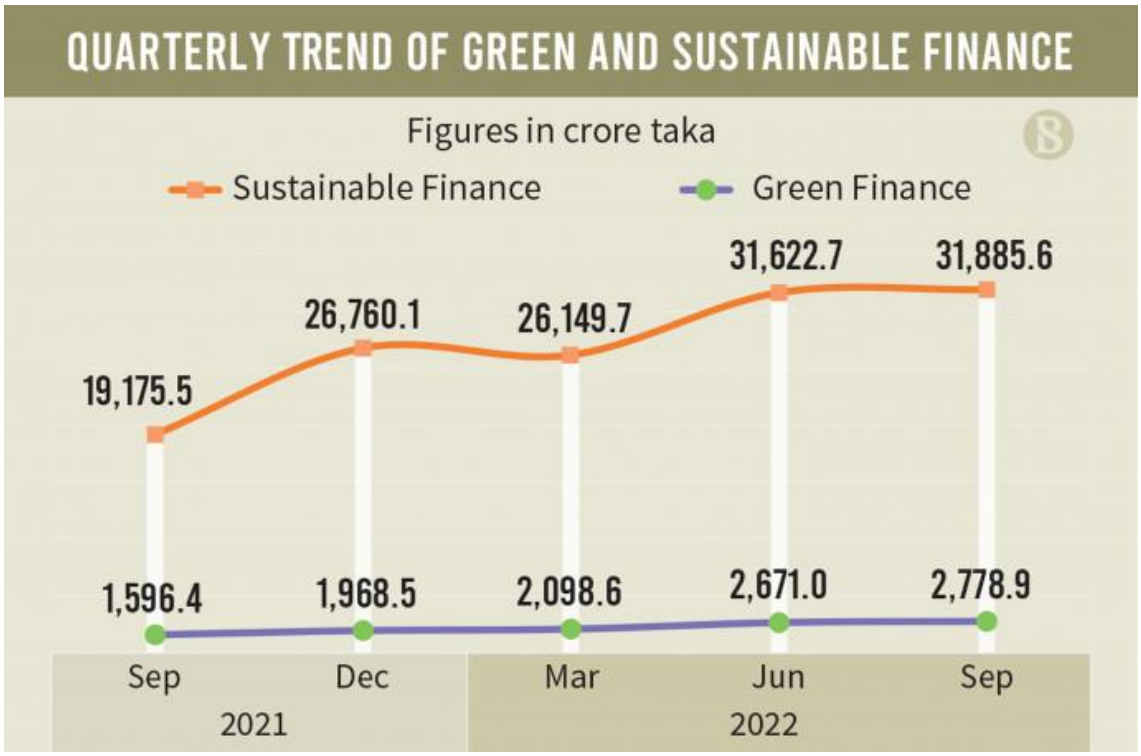


Figure 3: Quarterly trend of sustainable finance

Considering Indonesia, the efforts made by the country in support of green banking and finance are not pretty much remarkable as the country has made little progress in this area. The efforts in Indonesia are mostly made by Bank Indonesia and Otoritas Jasa Keuangan (OJK) and the other financial regulatory authorities. A review has been released by Bank Indonesia in which green lending by banks have been discussed, and it mainly included lending for renewables, sustainable agriculture, green industry and the ecotourism. Almost 29 banks were surveyed for this purpose between 2011 and 2013 and the share of lending which was identified as green was very small. The percentage was only 1.2% of their total lending assets in the year 2011, which increased to only 1.3% in 2012 and 1.4% in 2014 (Khan et al., 2023). Currently, there is still a major lacking within the banks in terms of appropriate tools and methods with the help of which appropriate assessment for environmental risks can be performed. But the authorities in Indonesia have been trying hard to improve this area, for which multiple initiatives have been taken by the country. They also have been providing training programs, green lending manuals and other educational material to their bank employees to improve their awareness and understanding towards the green lending policies. This is mainly performed in cooperation with the partners like GIZ or IFC (Weber, 2016).

3.0 Research Methodology:

This research uses the systematic literature review (SLR) approach to synthesize available papers on green banking practices, especially among South Asian banks alongside other emerging markets in South Asia. To gain a broad perspective of the policies, protocols and strategies that banks in South Asia use to address environmental issues the SLR approach was adopted. This both enables a wide-ranging search for academic material, while also comprehensively lending focus to organized research works in the form of publications, journals, and articles on green banking. There is no limitation of the countries with a focus on South Asian region and the emerging markets of green finance within this context are taken into consideration.

3.1 Search Strategy:

The search strategy for this study therefore uses a two-stage approach outlined by Ferreria et al. (2016) and Osei-Kyei and Chan (2015). This has two-staged approach involves as first step a search for white papers followed by a process of narrowing down the selection to obtain only the most relevant and quality white papers.

3.1.1 Selection of Articles:

While first, the article search wasn't limited to Scopus as the main database because of its inclusiveness of high-impact journals. To select the studies, the following words as keywords were searched: green banking, finance systems, green loans, green credit. Scopus was selected due the efficient in finding academic articles and also its national and international collection of journals available. The authors' preliminary search yielded about 130 papers from the following eight categories of databases: books & eBooks, conference papers, news & articles, formal reviews. Cross-sectional: To narrow down articles and index the most relevant findings, articles published in English from the period 1990- 2022 were utilized and after skimming down articles, the option lists 79 publications only.

3.1.2 Screening:

In the second stage, also the articles were screened according to a number of criteria including the year of their publication, the type of research undertaken, the relevance to the study theme

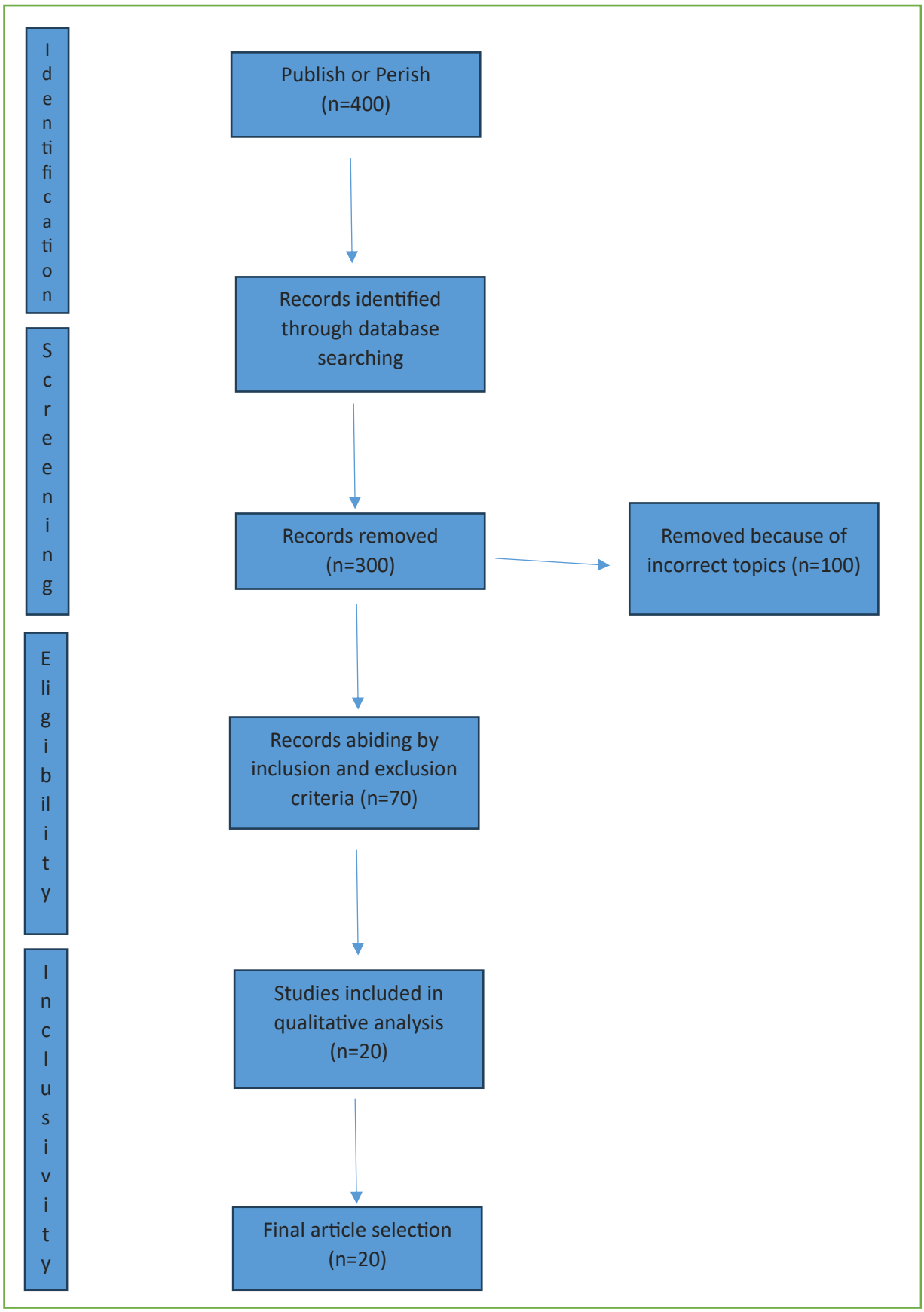
and credibility. This was followed by a process of exclusion to obtain 51 articles that offered the best data for the review. All the identified articles were reviewed based on the research objectives of this study to focus on green banking practices and policies in South Asia.

3.2 PRISMA Framework:

To enhance the study's stringency, the PRISMA framework was used on the article selection phase. PRISMA helped to quickly scan through and assess the quality of articles for including into the sample. Words like "green banking," "sustainability," "CSR," and "green action" were used to filter articles during that phase. Firstly, almost 400 articles were pulled from JSTOR, IEEE, Springer, ResearchGate, ScienceDirect, PubMed, and Statista. From the list of articles, using relevance and conformity with the topic under study, 47 articles were excluded. The inclusion criteria concerned English language and the period from 1990 to the end of 2022 to cover the period the topics under analysis emerged.

In this process, only 20 qualitative method-based core articles were left, and therefore there was an assurance that the findings and results in these studies could be useful for the research focusing on green banking. The research strategy of this report is a systematic literature review, which successfully puts forward the scholarly bibliography established for the green banking environment in South Asia while also building a groundwork for policy-making and strategic guidance meant to improve the sustainable finance profiles of member countries in the region.

Figure 4: Self



S. No	Authors	Research Title	Research Method	Findings
1.	Sharma, M., Choubey, A (2022)	Green Banking Initiatives: A Qualitative Study on Indian Banking Sector	Qualitative Analysis	Majority of the participants think that green banking has a positive impact in enhancing brand image.
2.	Li, Y. (2023)	Role Of Banking Sector in Green Economic Growth: Empirical Evidence From South Asian Economies	Qualitative Analysis	Green financing can improvise and provide more robust financial systems and realization of environmental concerns.
3.	Mir, A.A. and Bhat, A.A. (2022)	Green Banking and Sustainability – A Review	Literature Review	Green banking is the need for today and it will ultimately benefit banks, industries and environment at large.
4.	Shahinur Rahman, Iqbal Hossain Moral, Mehedi Hassan, Gazi Shakhawat Hossain, Rumana Perveen. 2022	A Systematic Review of Green Finance In The Banking Industry: Perspectives From A Developing Country,	Systematic Literature Review	The green products of Bangladeshi banks emphasized in this paper are green securities, green investments, climate finance, green insurance, and also bank policies.
5.	World Bank	South Asia Economic Focus: Green Growth in South Asia	Qualitative Analysis	The book mainly emphasizes implementation of appropriate policies to support green growth in South Asia
6.	Ivan Diaz-Rainey, Jan Co rfee-Morlot, Ulrich Volz & Ben Ca ldecott (2023)	Green Finance in Asia: Challenges, Policies And Avenues For Research	Overview	10 articles on the relevant topics have been reviewed which provide the insights that green banking needs further attention in South Asian countries.
7.	Ulrich Volz (2018)	Fostering Green Finance for Sustainable Development In Asia	Review	The concepts of green lending and green investment on South Asia has been focused which shows positive impact on green economy.
8.	Farhan Ahmed, Shazia Kousar, Amber Pervaiz, Aiza Shabbir, 2022,	Do Institutional Quality and Financial Development Affect Sustainable Economic Growth? Evidence From South Asian Countries	Literature Review	Institutional quality and financial developments have a positive impact on green economy of South Asia.

9.	Weiwei Fu, Muhammad Irfan, 2022	Does Green Financing Develop a Cleaner Environment for Environmental Sustainability: Empirical Insights from Association Of Southeast Asian Nations Economies	Qualitative Analysis	the paper emphasizes that government of respective countries must play their role in promoting green finance.
10.	Golzare Nabi, Mahbubar Rahman Khan, Syedul Islam, Jasim Uddin, 2016	Are We Greening the Economy? Recent Trends of Green Financing in Bangladesh	Qualitative Analysis	The paper suggests that despite massive publicity of green finance the fundings in this area is poor, constituting up to only 2 percent.
11.	Rabindra Nepal, Farhad Taghizadeh-Hesary, and Hameed Musibau, 2020	Greenfield Investments as A Source of Sustainable Green Finance? On The Relationships Between Greenfield Investments, Environmental Performance, And Asian Economic Growth	Qualitative Analysis	The greenfield investments in the presence of supporting institutions can be a viable source of green finance.
12.	Masud, Md. Abdul Kaium, Juichiro Sahara, and Md. Humayun Kabir. 2023	A Relationship Between Climate Finance and Climate Risk: Evidence from The South Asian Region	Systematic Review	The paper concludes that SA region requires a holistic framework to address the current climate issues and apply standard practices for green policies.
13.	Park, H., Kim, J.D. (2020).	Transition Towards Green Banking: Role of Financial Regulators and Financial Institutions	Qualitative Analysis	Role of both private and public sectors have been discussed and emphasizes on the change conceptual framework to promote green finance.
14.	IFC, 2021	IFC Launches Green Banking Academy in Europe and Central Asia to Accelerate Green Transformation of The Banking Sector	Overview	IFC is the member of World Bank Group and paper shows it has been making huge funds in promoting green finance worldwide.

15.	Taru Mustalahti, 2022	Green Banking and Greenwashing: Systematic Literature Review	SLR	The paper focuses on greenwashing in banks and the lack of sufficient data causes challenges in green policies implementation
16.	Khairunnessa, Fatema, Diego A. Vazquez-Brust, and Natalia Yakovleva. 2021	A Review of the Recent Developments of Green Banking in Bangladesh	Review of Secondary Data using descriptive statistics	Although Bangladesh is far behind in terms of economic development, but they have been making remarkable progress in green banking.
17.	Adeboye Oyegunle and Olaf Weber 2015	Development of Sustainability and Green Banking Regulations Existing Codes and Practices	Secondary data analysis	The main drivers for green banking have been discussed like internal pressures, social pressures environmental pressures, and external pressures from financial institutions in different countries.
18.	Madhu Khanna, 2020	Growing Green Business Investments in Asia and the Pacific	Qualitative Analysis	The paper mainly discusses about the opportunities and challenges for green business in the South Asian region.
19.	Peter B.R. Hazell, 2020	The Asian Green Revolution	Qualitative Analysis	The research study shows despite of improvisations in green banking, there are still other climatic and poverty concerns which are needed to be addressed in Asian countries.
20.	Andrew Jarvis, Adarsh Varma, Justin Ram, 2011.	Assessing Green Jobs Potential in Developing Countries	Qualitative Analysis	It discusses about the collaborative efforts between several ILO departments and focuses on green jobs and its potential in developing countries.

Table 2: Selected Papers for SLR

4.0 Discussion:

4.1 Challenges associated with Green banking adoption in South Asian countries:

Green banking in South Asia encounters distinct hurdles shaped by the region's socio-economic and environmental realities:

4.1.1 Biodiversity Loss vs. Development:

South Asia's rapid urbanization and industrialization often conflict with biodiversity conservation. Projects essential for economic growth, such as infrastructure development, result in deforestation and habitat destruction. Green banking must prioritize funding initiatives

that balance ecological preservation with developmental objectives, which demands innovative financing models and robust risk assessments.

4.1.2 Climate and Environmental Mitigation:

The region's vulnerability to climate change, evident in frequent floods and droughts, complicates green banking efforts. Financial institutions face the dual challenge of supporting green technologies while overcoming high initial costs and limited capacity for climate risk evaluation. Scaling renewable energy and sustainable agriculture remains critical but underfunded.

4.1.3 Role of Central Banks:

Unlike their counterparts in developed regions, central banks in South Asia have developmental mandates, focusing on poverty reduction and economic growth. This dual focus often sidelines green banking initiatives. Encouragingly, some central banks, like Bangladesh Bank, are integrating environmental risk assessments and promoting green financing, but these efforts need broader regulatory support and consistent implementation.

4.1.4 Regulatory and Institutional Gaps:

South Asia lacks a unified framework for green banking, with fragmented policies hindering progress. The absence of standardized metrics and inadequate enforcement mechanisms further complicate the shift toward sustainable finance.

4.1.5 Public Awareness and Financial Inclusion:

Low financial literacy and limited banking penetration constrain the adoption of green financial products. Expanding outreach and awareness programs is essential to engage stakeholders and promote green banking's benefits.

Addressing these challenges requires stronger regulatory frameworks, regional cooperation, and innovative financial instruments to align green banking with both local and global sustainability goals.

4.2 Findings:

Multiple authors have proposed different theories and frameworks to cover the subject of green banking and financing all around the world (Rajput et al., 2013, Yadav & Pathak, 2013, Sharma et al., 2014). However, it has been majorly emphasized that the role of central banks has drastically changed and evolved in this area.

4.2.1 Impact of Green Banking on Profitability:

Researches have revealed that there are numerous strategies which can be implemented with the help of which economic stability can be acquired in most of the South Asian countries. Primarily, the focus shifts towards green banking and Profitability and the relationship between both the elements has been positive. It is important to consider the short-term implications and the long-term benefits which can be acquired through it. The first and foremost strategy implemented in support of green banking is investments in renewable energy and the sustainable infrastructure. With the help of these policies, climate change can be controlled on a massive level as one of the major pollutants in today's world is due to carbon combustion, which is an essential process of fuel consumption. The European banking Federation have also conducted a research study in this regard which shows that, the banks who are interested in making investments on ecofriendly and energy saving projects, are expected to acquire more stability in the longer run. This is due to the fact that most of these projects will provide

sustainable outcomes, will enhance efficiency, curtail the expenditures and will also ensure risk management (Sharma et al., 2014). Whereas the most important element in this regard is that investments in the ecofriendly projects will ultimately improve the overall image of the banks in the global market, which also increase their clientele and they will have investors, who believe in supporting the cause on longer run. For this purpose, the banks can market themselves accordingly and differentiate themselves from their competitors, by portraying as an ecofriendly organization, which is intended to support the cause. This brand imaging will ultimately inverse the eco-conscious consumer base for the banks. Roy (2017) proposed that it will also help the banks in acquiring brand loyalty, brand recognition and potentially higher market share. Apart from that, it has also been analyzed that governmental bodies of most of the South Asian countries are now shifting their focus towards more environmentally sustainable policies and approaches, therefore banks who will support this idea can avoid regulatory risks and compliance costs. These banks can easily adapt to the evolving regulations and avoid potential penalties on the longer run. Although implementation of green banking can be costly initially for the banks, but the long-term benefits which can be acquired totally outweighs these short-term challenges and complications (Government of Pakistan, 2017). One of the most important elements of green banking is that the banks can save their personal costs by implementing energy efficient resources in their buildings with the help of which energy conservation can be performed via renewable energy sources. Although the installation cost will be huge, but the consumption cost will be reduced to a considerable extent. Charles and Nairobi (2016) have also researched that implementation of green banking will ultimately perform Cost reduction and will have a positive effect on longer run on their company expenses and economy of the global world (Nath et al., 2014)

4.2.2 Green Banking for Risk Management and Assessment:

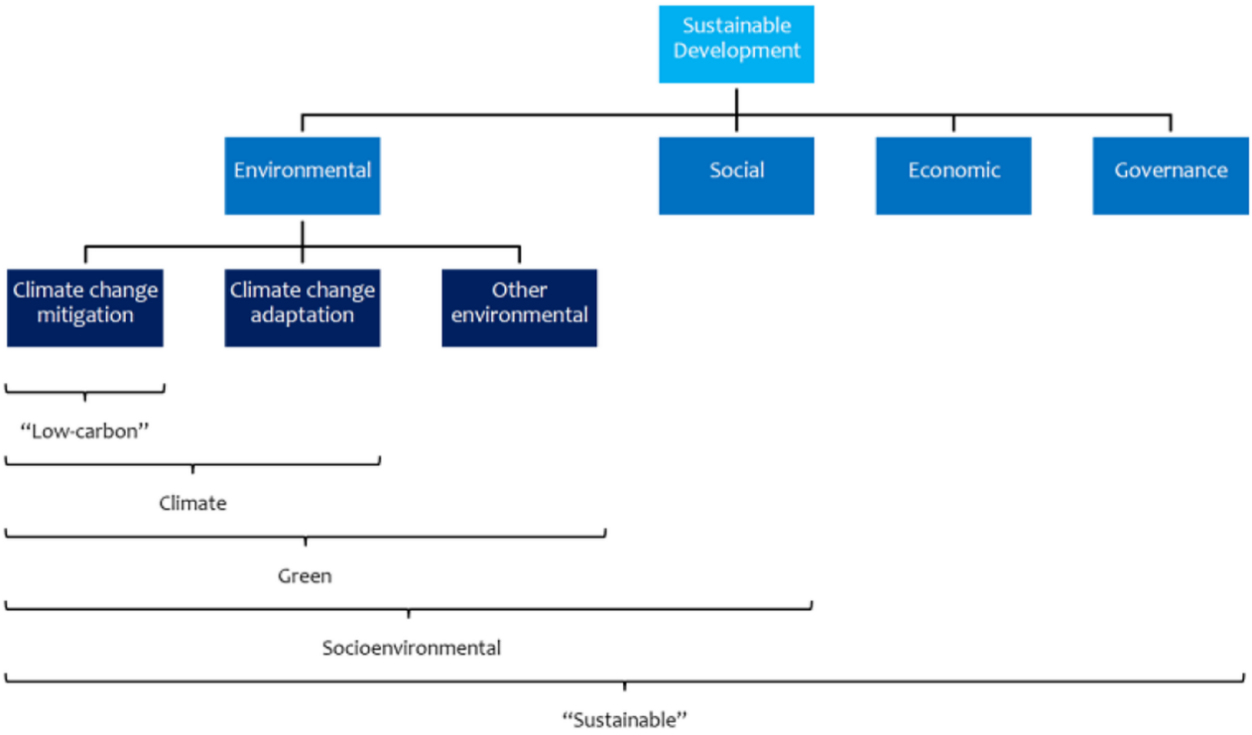


Figure 5: Dimensions of sustainability in financial decision-making. Source: UNEP (2016).

The aforementioned diagram clearly shows the hierarchy of Sustainable development and the factors which are responsible for affecting the overall sustainability of the world. Primarily, it has been identified that environmental factors have a major impact on sustainable development,

which include climate mitigation, adaptation etc. for climate change mitigation, it is essential to adapt to low carbon economy, adaptation of green services and products in different sectors, encourage socioenvironmental policies and measures so that sustainability of the climate can be encouraged (Abbas et al., 2016). According to the claim of IPCC it has been determined that there is no direct effect of climate change on the banking systems, as no prominent evidence has been acquired which might prove the level of effect that these banks might have on the overall climate conservation, or the impact of climate change upon profitability of the banks. However, different scholars, authors, academia, scientific evidences, regulators and central banks have somewhat agreed to the fact that climate change has a drastic effect on sustainability, which might lead to financial challenges and impacts on stability of the countries worldwide. The research conducted by Prudential Regulation Authority (PRA) which is located within the bank of England has mainly proposed the idea that there are two major financial factors associated with the climate change, they are physical and transition (Weber, 2016). Primarily, the physical risks are termed as the major events that are occurring as a result of climate change, including droughts, floods, hurricanes, thunderstorms, bushfires, heatwaves and the overall rise in the sea level. These physical risks can further lead to another types of challenges which may affect the overall asset values and cause financial losses by weather impairment. On the other hand, the transition risks are those which might develop due to the strategies and measures taken by the companies to adjust in a disorderly fashion within low carbon economy (Yousaf et al., 2016). Thus, these types of financial risks can cause a major setback for the overall economy of the world and it might also show some drastic after events as a result (Yadav & Pathak, 2013). In addition, it has also been determined that banking sectors are responsible to somewhat assess and manage these risk factors by introducing appropriate measures and strategies, with the help of which various actions and solutions can be adopted promptly to overcome these effects (Nguyen, 2018).

4.2.3 Risk Management:

After evaluating some serious threats and financial risks to the banks, these banks have adopted some risk management strategies with the help of which they can overcome the financial threats and challenges and can avoid the companies from becoming bankrupt. One of the frameworks is Equator Principle. It is basically a financial risk management tool which helps in identifying and managing the environmental and social risks during the project finance transactions. However, these principles are voluntary and demonstrate inherent limitations in numerous ways as they are also not legally bounded (IPCC, 2014). The most appropriate risk management strategy will be to ensure adaptation of such principles on a regulatory level, and the governmental sectors should help in reinforcement of these tools and frameworks for better outcomes and results. The aforementioned researches clearly represent the idea that South Asian countries and their banks have already adopted multiple Green strategies and policies with the help of which they can improve the overall stability and sustainability of the world, and support the climate conservation policies, however there is still a need for regulatory bodies to design appropriate frameworks to be implemented within banks, so that they can play their efficient role in guiding the companies about Green banking and its efficacy on the longer run (To et al., 2019).

4.2.4 Risk Assessment:

In order to detect, assess, and control environmental risks related to financial operations, green banking integrates risk assessment. This tactic lowers possible liabilities from ecologically harmful projects by ensuring that banks take the environment into account when making lending and investment choices. Finding projects with high environmental risks, such as those associated with fossil fuels, deforestation, or sectors that produce a lot of pollution, and either

avoiding these investments or imposing strict financing requirements are key components of effective risk assessment in green finance. Important elements of risk assessment for green banking include:
Identification of Environmental Risk: Banks examine possible environmental risks associated with the projects they fund. Examining hazards such as pollution, carbon emissions, biodiversity loss, and the depletion of natural resources is part of this. For instance, because of carbon emissions, funding a coal plant may present significant environmental concerns, making it a less favorable option for green banks.

Tools for Assessment: Banks use a range of environmental risk assessment tools, including environmental risk score systems and the Equator Principles. In order to help banks make well-informed judgements regarding the projects they finance, these tools assist in quantifying and classifying risks according to variables such as emissions, waste generation, or water use.
Risk Mitigation Strategies: Banks may place restrictions on loans or investments, such as demands for emissions reduction or sustainable resource usage, in order to reduce exposure to environmental hazards. Banks may choose to limit their involvement in high-risk projects or raise interest rates to offset the extra expense.
Climate-Related Financial Disclosures: To make the environmental risks associated with their portfolios publicly available, many banks are implementing frameworks for climate-related disclosures, such as the Task Force on Climate-related Financial Disclosures (TCFD). This openness aids in managing reputational risks and bringing banks into compliance with international sustainability norms.
By using these tactics, green banking for risk assessment not only shields financial institutions from environmental risks but also encourages sustainable financial practices that help achieve environmental objectives around the world. By taking this proactive stance, banks may protect their financial stability while making a constructive contribution to environmental conservation.

4.3 Limitations of the Study:

The design of the study was mainly to conduct a detailed systematic literature review, including all the relevant secondary sources for the paper. Although extensive researches have already been conducted in this regard, however the proper initiatives and products introduced by the banks within South Asian countries was somewhat vague and incorrect in most of the sources. There were no clear percentages regarding the role played by banking sectors in introducing green products and the extent to which these green initiatives have been adopted by the companies. However, some of the reliable and authentic sources gave approximate digital values on the basis of which the appropriate measures and movements have been analyzed by the South Asian central banks to promote the concept of green banking and climate conservation in the truest possible ways.

4.4 Future Research Directions:

To expand knowledge and enhance procedures, future studies on green banking in South Asia can examine a number of important topics. First, it would be beneficial to look at how green banking has affected South Asian banks' financial performance over the long run. Research could look into whether these green measures result in increased resilience to environmental and economic shocks, lower risks, and sustainable profitability. Research can also concentrate on central banks' contributions to the advancement of green banking policies and regulatory frameworks. This entails comprehending the ways in which various regulatory strategies influence the uptake of green financing and investigating efficient incentives for banks to give environmental sustainability first priority. Assessing climate-related financial risks,

particularly in South Asia's weak economies, is another exciting field. In order to protect financial institutions from instability brought on by climate change, future research may create models to measure these risks and suggest customized risk management techniques for banks. Lastly, studies might evaluate the economic and social advantages of green banking for nearby areas. This would entail investigating the ways in which green financing initiatives support economic growth, employment, and social equity in underprivileged and rural communities. These guidelines will assist in filling existing gaps and serve as a roadmap for financial institutions and governments to improve sustainable banking practices throughout the region.

5.0 Conclusion:

The drastic impacts of Climate change on the world are not something new, and almost every other researcher, scientific personnels and individuals are pretty much aware of these challenges and threats. Banks, being one of the major and central points for stabilizing economy of any country have to play their essential role in promoting implementation of such products and policies which could help in climate conservation and encourage economic stability worldwide. Considering the aforementioned researches, it has been clearly identified that despite the fact that South Asian countries still come under the category of developing countries, but most of their banks have been adopting multiple strategies to ensure climate conservation and reduce the threats of climate change. Some of the products introduced by these banks are paperless banking, loans for green construction, green mortgages, green loans, solar ATMs, Tree plantation campaigns wildlife protection campaigns etc. Despite the banks, common public have also been observed to be participating in climate conservation policies and strategies as the threatening impacts on natural and environmental impacts of the world are quite visible to common public, and they have also been supporting the cause of Go Green.

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