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Abstract

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Green Banking Initiatives: Policy and Practices in Commercial Banks of Nepal

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Environmental and social (E&S) risk management has grown in key aspects of sustainability in banks and other financial institutions these days. A socially inclusive, climate-friendly and green banking system is only possible with the effective management of E&S risk in their business transactions. This study assesses the present implementation status of sustainability within commercial banks in Nepal, by examining their adherence to the environment and social risk (ESRM) guidelines issued by Nepal Rastra Bank (NRB). Using a descriptive research design, the study utilizes ESRM reports published by NRB in 2078/79 and 2079/80. The study examines the present state of ESRM guideline implementation across three key aspects of policy formation, training and development activities for bank employees, and incorporation of environmental and social risks within the core strategies of commercial banks. The result found a satisfactory level of implementation of ESRM guidelines. The policy formulation and governance indicators are almost realized and other indicators have satisfactory and progressive levels of operation in the banks. Effective implementation of sustainable guidelines and initiatives will be accomplished innovative financial instruments that incentivize green investments and support climate-resilient practices can further expedite the transition to a sustainable banking landscape. Overall, this study offers valuable insights into the current state of ESRM in Nepal's commercial banks, shedding light on the progress that can pave the way for a more sustainable and green financial system in Nepal.

BANKS AND FINANCIAL institutions (BFI) are the key mediators that can play a significant role in the achievement of sustainable development goals (SDGs) (Zimmermann, 2019).

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Financial services, because of their intermediary role, have the power to encourage businesses, and individuals from engaging in unsustainable behaviors (Louche et al., 2019). Due to their substantial influence, impact, and effects on both the social and environmental aspects, these financial institutions are required to address various social and environmental challenges, while actively and extensively participating in a multitude of sustainable practices (Zimmermann, 2019). Sustainable banks are those financial institutions that give high priorities to social development, environmental management, financial inclusion, financial literacy, and energy efficiency in their core business operations (Kumar & Prakash, 2019). Sustainable organizations also promote and encourage their employees to utilize public transportation means, facilitating and ensuring access to individuals with disabilities, and deliberately selecting and opting for suppliers and partners who adhere to and comply with stringent environmental and social principles and standards (Weber, 2005). Thus, sustainable banking is an emerging banking approach stands as value generator for their stakeholders with full consideration of environmental and social issues into their activities and operations.

The main objectives of green banking are to safeguard the environment and natural resources, as well as to provide financial services and address social concerns in the nation which can reduce environmental pollution and support to achieve sustainable development goals in the country (X. Zhang et al., 2022). Such practices should have goal to minimize credit risk, legal risk and reputational risk by excluding investments in environmentally threat project (Hoque et al., 2019). The term “green banking” refers to a variety of financial products, such as green bonds, green financing, and other financial instruments, that encourage investments in sustainable agricultural growth, renewable energy and climate friendly infrastructure. To create sustainable green finance, legal and policy frameworks must be in place. By encouraging investments in green technologies, renewable energy, and environmentally friendly farming practices, green finance may play a significant role in supporting sustainable development and environmental conservation in the nation (Soundarrajan & Vivek, 2016). Incorporating green banking practices positively affects environmental performance with creating a link between sustainable banking and environmental outcomes. Environmental-friendly products and services significantly contribute to sustainable development (Rehman et al., 2021). Therefore, social well-being, environmental preservation, and the nation's overall sustainable development are all impacted by the sustainability practices of banks and other financial organizations. Do not end your paragraph in citation. It is not the part of academic writing.

Low-income countries have significant gap in their comprehension of basic financial concepts, as well as the advantages and hazards connected with specific financial decisions (Leora et al., 2020). People have difficulty learning about new innovative financial products and services, as well as the consequences of violating the rules and regulations related to financing, social and environmental aspects, due to a lack of fundamental knowledge, regulation of government and law enforcement agencies (Roy et al., 2015). As a result, sustainable and ethical banking implies a compelling alternative to traditional banks and establishes a valuable precedent for achieving a new approach to sustainable finance. Moreover, this type of banking provides not only economic benefits to stakeholders, but also social and environmental value to shareholders, clients, employees, investors, and society as a whole (del Carmen Valls Martínez et al., 2020). In the banking

sector, it is crucial for risk assessment to detect and manage social and environmental risks. Regulation, voluntary actions, and sustainable finance all support responsible banking practices. To include sustainability considerations in the basic activities of the financial sectors, cooperation between banks, regulators, and stakeholders is required. The importance of good risk assessment, sustainable finance, and regulatory framework in accomplishing sustainable aims is enhanced by sustainable and responsible banking (Oyegunle & Weber, 2015). The application of green banking practices has been considerably aided by the adoption of international standards and the implementation of regulatory rules and guidelines. Transparent and motivating regulations and standards are necessary for the financial sector to act consistently. The use of technology has made it feasible to offer eco-friendly products and services. Therefore, encouraging green banking practices and achieving environmental goals may need the use of technology (Asim et al., 2020). The Equator Principles (Eps) is one of the self-regulatory mechanisms in promoting sustainable finance (Contreras et al., 2019). The banks and financial institutions have international business with higher profitability and stronger corporate governance are highly motivated to adopt Eps. It can promote sustainable finance and responsible banking practice (Herbert Smith Freehills, 2013). Banks and Financial Institutions (BFIs) can help the private sector adapt to environmental and social sustainability by increasing green financing and inclusive lending. BFIs are also addressing environmental and social risks in their own operations and reducing their carbon footprint. They are concerned about being at a competitive disadvantage if they implement E&S risk management procedures (NRB, 2019). The main aim of the ESRM guideline is for BFIs to incorporate environmental & social risk management into the credit risk management process to fully inform the credit authority of E&S risks before making financing decisions (Nepal Rastra Bank, 2018). ESRM guideline focuses on environmental, social, and climatic risks related to the BFI's client's business activities, which are increasingly important for Nepal. It intended to develop and implement an environmental and social management system (ESMS) in accordance with local and international standards. Additionally, it provides E & S risk management tools and templates, and explain various applicability in various types of financing.

Global scenario of green banking guidelines

Nepal is becoming increasingly susceptible to the effects of climate change; it is crucial to acknowledge the rising costs associated with such changes and the necessity of implementing measures aimed at minimizing carbon emissions. In light of this, Nepal is faced with the urgent task of establishing a green financial system that can effectively internalize externalities related to the environment, while simultaneously working towards reducing risk perceptions. (UNDP, 2021). According to the IFC country progress report (2022), it is essential to develop and implement a sustainable finance roadmap to highlight the need and opportunities of green finance in Nepal. Some of the green baking policy and initiative in the global scenario are as follows:

Country	Sustainable and green banking policies in different countries	Implementation types
Bangladesh	Policy guidelines for green banking/ mandatory environmental risk management guidelines	Mandatory
India	Green banking best practices	Mandatory
Nepal	Environmental and social risk management	Mandatory
Sri-Lanka	Sustainable banking initiatives and sustainable banking principles Sustainable finance roadmap	Mandatory
France	Disclosure of climate-related financial risk	Mandatory
Japan	Green central bank financing	Mandatory
China	Mandatory green credit guidelines /green credit statistics system	Mandatory
Brazil	Voluntary green protocol	Mandatory
Indonesia	Roadmap for sustainable finance in Indonesia	Mandatory
Kenya	Green bond guidelines	Mandatory
Mexico	Green bond guidelines	Mandatory
Morocco	Guidelines for issuance of green bonds	Mandatory
Nigeria	Green bond guidelines / Nigerian sustainable banking principles	Mandatory
USA	Green bank act	Mandatory
Vietnam	Directive on promoting green credit growth	Mandatory
Lebanon	Green prudential regulation policy	Mandatory
Belgium	Disclosure of climate-related financial risk	Voluntary
Sweden	Disclosure of climate-related financial risk	Voluntary
UK	Disclosure of climate-related financial risk	Voluntary
Pakistan	Green banking guidelines	Voluntary
Maldives	Sustainable finance framework	Voluntary
Mongolia	Mongolian sustainable finance principles and sector guidelines	Voluntary
Colombia	Green credit guidelines	Voluntary
The Netherland	Consideration of ESG factors in assets eligibility criteria	Voluntary
Norway	Consideration of ESG factors in assets eligibility criteria	Voluntary

Source: (Park & Kim, 2020), (Asim et al., 2020), (SBN Country Report 2022)

Environmental and social risk management guidelines is mandatory policy and procedure circulated by Nepal Rastra Bank as a green and sustainable banking guideline. There is a different code of conduct for the implementation of such initiatives in

the world. Some of the countries like Colombia, Magnolia, Pakistan, Belgium, Sweden, the UK, Norway, and the Netherlands follow the voluntary compliance of green banking guidelines. But many other countries like Nepal, India, China, Japan, France, Vietnam, Magnolia, Nigeria, Lebanon, Indonesia, and Bangladesh implemented mandatorily green baking initiatives(Park & Kim, 2020).

Green Investment Opportunities in Nepal

As the nation with the least advanced development, Nepal faces the challenge of effectively managing the necessary funds to undertake intricate development interventions aimed at mitigating risks and fostering a resilient society (Lohani, 2023). In its pursuit of this objective, Nepal is endeavoring to incorporate catastrophic risk reduction and management into the entirety of its development process. In this particular, there is an urgent need to address trade-offs between the growth of transportation and energy infrastructure and conservation goals through multi-sectoral collaboration and agreements (Adhikari et al., 2023). In Nepal, various financing practices have been introduced. However, these practices are currently in a state of evolution. In order to establish sustainable financing mechanisms, it is imperative to establish clear operational guidelines that align with the existing legislations. (Basnyat et al., 2014). Sustainable banking and finance techniques are used to achieve the Sustainable Development Goals (SDGs). Banks and financing institutions can support to achieve SDGs by financing for projects that promote sustainability in the nation, such as infrastructure, renewable energy and sustainable agriculture (Feridun & Talay, 2023). However, the sustainability performance of those financing institutions can measure with the consideration of environmental, social and governance (ESG) issues of project financing (Rosalina et al., 2023).

Green finance stands out as a crucial element among the many sub-platforms supporting the five theme sustainable development goals that the UNDP has adopted. Moreover, banks and financial institutions (BFIs) are enhancing their ambition by collaborating with international organizations and creating green finance mechanisms. The National Determined Contribution (NDC) to the Paris Agreement, the "Guidelines on Environmental and Social Risk Management for Banks and Financial Institutions (ESRM)" circulated by Nepal Rastra Bank (NRB) in 2018, and subsequent directives for implementation serve as the major guiding frameworks for assessing green finance. These frameworks form the basis of Nepal's regulatory-driven approach towards the subject matter (Banks et al., 2018). In Nepal green finance opportunity has the potential to unlock a \$46.1 billion climate-smart investment opportunity by 2030 (Mahat et al., 2019). National Determined Contribution (NDC) has also encouraged green energy, sustainable transport, climate-friendly agriculture products, and a low-carbon economic development strategy, this may stand as the landmark for shifting traditional finance to green and sustainable finance in banking sector. As of mid-July 2022, the allocation of credit by commercial banks to the sectors of agriculture, energy, and small/cottage industry accounted for 12.28%, 5.51%, and 9.85% respectively, in relation to their overall investment. By mid-July 2025, the corresponding percentages of total credit extended by commercial banks to these sectors are required to rise to 15%, 10%, and 15% (NRB, 2022). In an effort to promote and stimulate the adoption of Green Financing, a preliminary version of the Green Taxonomy is set to be compiled, encompassing a broad range of pertinent subjects, including but not limited to the issuance of green bonds, the disclosure and

assessment of climate-related risks, as well as the identification of capital requirements. The submission of the preliminary report, which represents a significant milestone in the ongoing process of formulating the aforementioned draft, has been met with approval (NRB, 2023).

Green banking and financing are the recently growing practices in Nepal to promote eco-friendly projects and initiatives, contributing to sustainable development. Policies and provisions are intended to promote fundings in renewable energy, agriculture, transportation waste management, and more aiming to reduces carbon footprint, mitigates climate change, and protects natural resources. Additionally, to enhances the reputation of financial institutions by attracting socially conscious customers, investors and other stakeholder moving towards the sustainable development, environmental protection, and a resilient economy for the future green financing is utmost necessary in Nepal. Considering the significance, this study aims to identify the current policy provisions and practices of green and sustainable banking guidelines in adherence to environmental and social risk management of the commercial banks in Nepal.

Methodology

The research is descriptive in nature and based on the secondary source of data. The implementation status of Environmental and Social Risk Management (ESRM) guidelines in commercial banks, as well as other policies, provisions, and priorities for the growth of green finance, were evaluated. The study's purview is restricted to the financial industry, and data analysis from financial institutions other than commercial banks was also disregarded. Data and statistics for the analysis are taken from the Nepal Rastra Bank's ESRM report for the fiscal years 2078/79 and 2079/80 and policy provisions regarding the same. The reports include the data from the BFI reporting templates found in ESRM guidelines Annex 11 of the NRB. The study examines the current status of policy formation and governance, employee training and capacity building for ESRM, and the integration of environmental and social risk into core risk management of the commercial banks. The study also revies the policy, provisions and opportunities to develop sustainable and green banking practices in Nepal.

Results and Discussion

Policy provisions to support sustainable and green banking in Nepal

The major policy and guideline about green banking and sustainable banking practices in Nepal is ESRM for banks and financial institutions in Nepal. Climate Change Financing Framework (2017), Climate Change Policy (2011), Forest Investment Program: Investment Plan for Nepal (2017). Industrial Enterprises Act (2020) and Agriculture Development Strategy (2015-2035) were also supported for sustainable banking, sustainable finance and green banking practices in Nepal. The ESRM guidelines have been formulated with the intention of assisting banks and other financial institutions (BFIs) in the management of environmental and social risks that are associated with their operation (Nepal Rastra Bank, 2018). This is achieved through the provision of exemplary practices and tools for risk management, while also promoting the adoption of low-tech and environmentally conscious while financing decision. Climate change financing framework (2017), content pertain to various aspects of Nepal's sustainable development and

the mitigation of climate change through banking activities and services. The Industrial Policy enacted in 2011 has been designed with the intention of fostering the growth of reliable and long-lasting industrial entrepreneurship. This policy actively advocates for the adoption of environmentally conscious technologies by companies, thereby encouraging sustainable practices and minimizing the negative impact on the environment. Moreover, one of the core objectives of this policy is to facilitate the transformation of existing sectors into models that are not only devoid of pollution but also free from carbon emissions. By emphasizing the importance of these transformative measures, the Industrial Policy of 2011 aims to pave the way for a greener and more sustainable industrial landscape. The acknowledgment of the importance of sustainable agriculture, encompassing organic farming, clean technology, animal welfare, and the preservation of biodiversity, is a fundamental aspect of the Agriculture Development Strategy 2015-2035. The Climate Change Policy (2019) places great importance on the establishment of climate-resilient infrastructure, the promotion of climate-resilient socioeconomic development, and the adaptation of natural resource management strategies to accommodate the impacts of climate change. In order to effectively tackle the challenges posed by climate change, this policy also establishes a dedicated fund to address climate change-related concerns. Nepal's Second Nationally Determined Contribution (NDC) under the Paris Agreement delineates its dedication to the advancement of low-GHG emission development, sustainable energy production, the implementation of e-vehicles, biogas infrastructure, and the attainment of carbon neutrality in renowned tourist areas. The National Adaptation Plan endeavors to mitigate the adverse effects of climate change and enhance Nepal's departure from the classification of least developed countries by means of enhanced strategic planning and synchronization with sustainable development goals, with the ultimate aim of reducing damage and losses inflicted by climate change impacts (NPC, 2017).

Following are the sustainable and green banking initiative and guidelines in Nepal:

Timeline	Initiatives
2014	Sustainable Banking Finance Network member.
2014-2016	Government of Nepal, Ministry of Population and Environment sets Nepal's intended nationally determined contributions and National Planning Commission publishes Sustainable Development Goals Preliminary Report: 2016-2030).
2017	Government of Nepal, National Planning Commission publishes National Review of SDGs, SDGs Baseline Report and issues SDGs Status and Roadmap: 2016-2030.
2018	Nepal Rastra Bank (NRB) issues guidelines on Environmental and Social Risk Management (ESRM) for banks and financial institutions (BFIs), Environmental and Social Due Diligence (ESDD) Checklist and E&S Risk Rating tools and Annual Report Template
2019	Government of Nepal passes the Environmental Protection Act, 2019 which creates the Environmental Protection Fund and NRB conducted a survey on awareness of sustainable banking practices among BFIs in October

2020	NRB issued unified directive mandates all BFIs to follow the guideline on Environmental and Social Risk Management (ESRM), Government of Nepal issues Environmental Protection Rules 2020
2022	NRB updates the Guideline on Environmental and Social Risk Management (ESRM) for BFIs to include consideration of climate risks

Source: IFC Country Progress Report (2022)

The Environmental and Social Risk Management (ESRM) guidelines of the Nepal Rastra Bank establish a requirement for banks to evaluate and mitigate the environmental and social impacts of their operations. Furthermore, the baseline report on Sustainable Development Goals by the National Planning Commission provides a strategic direction for aligning financial products and services with the nation's sustainability objectives. Moreover, the 2019 Environmental Protection Rules offer additional guidance by setting forth environmental safeguards for various sectors. Financial professionals equipped with the requisite knowledge and skills engage in Environmental and Social Due Diligence (ESDD) measures to effectively assess and manage environmental and social risks. This comprehensive approach, incorporating regulatory frameworks, national objectives, and environmental safeguards, paves the way for a more sustainable and responsible banking landscape in Nepal (Report, 2022).

Green banking practices by Implementation of ESRM Guidelines

After the introduction of mandatory guidelines on Environment Social Risk Management (ESRM) by Nepal Rastra Bank, there has been significant progress observed in the implementation of ESRM guidelines by the commercial in Nepal. The majority of commercial banks have formulated policies and procedures pertaining to ESRM and have demonstrated their commitment to human resource development through training and participation in relevant programs. However, it is of utmost importance for these banks to integrate environmental and risk management considerations into their core strategies, as this serves as a crucial indicator of policy implementation. The results show that banks are not adhering to the rules when it comes to rejecting loans from the exclusion list, and none of them have rejected any transactions related to E&S risk management. It suggests that instead of actively participating in risk analysis and rating in their business operations, regulators should exercise caution regarding the potential danger posed by banks and concentrate instead on completing compliance obligations. Provided below is an overview of the compliance status of commercial banks in Nepal in relation to the ESRM guidelines.

Table 1

Policy formulation and governance

Fiscal Year	2078/79		2079/80	
	n	%	n	%
Indicators				
Formulation and Board Approval of ESRM Policy	23	88%	20	100%
Formulation of Board Approval of an ESRM Procedure	23	88%	20	100%
Nomination of an E&S Officer	18	69%	18	90%
Total commercial banks (N)	26		20	

Source: (ESRM Report of Commercial Bank of Nepal- Fiscal Year 2078 / 79; 2079/80)

Table, 1 depicts the result of policy formulation and governance of ESRM guidelines. Result shows that the ESRM policy and procedure formulation and board approval in year I and II have 88 percent and 100 percent commercial banks respectively. Only 69 percent commercial banks were nominated environmental and social (E &S) risk officer in 2078/79 but this result increased in 2079/80 by 90 percent commercial banks. All of the commercial banks formulated environmental and social risk management policy and procedure then approved from their board. However, Himalayan Bank Limited and Nabil bank limited did not appointed E & S officer under even though mandatory circular made by Nepal Rastra Bank till the study period.

Table 2

Employees training and capacity building

Indicators	2078/79	2079/80
Allocation of Funds in the budget for ESRM Training Programs	14	13
ESRM Training Program conducted	22	16
ESRM Training Programs participated (Attended)	22	16
Total commercial banks	26	20

Source: (ESRM Report of Commercial Bank of Nepal- Fiscal Year 2078 / 79; 2079/80.)

Tables 2 show the data and statistics, providing a quantitative overview of the ESRM trainings budget allocation, programs conducted and participated in training workshop and seminars of commercial banks. In this specific case, 14 commercial banks were allocated budget to ESRM training programs in 2078/79 which is 54% of the total banks, whereas only 13 commercial banks were allocated in 2079/80. Similarly, 22 banks were planned ESRM training programs and participated in the same in 2078/79. There is no more progress in 2079/80 for the training and capacity building for ESRM, Agriculture Development Bank, Laxmi Sunrise Bank, Rastriya Banijya Bank, and Standard Chartered Bank were not conducted such programs during the period.

Table:3

Incorporation of environmental and social risk in core risk management

Indicators	2078/79	2079/80
Rejection of loan due to the exclusion list	0	1
Transactions performed subject to E & S Due Diligence (ESDD)	18	16
Total loan value subject to ESDD in the total disbursed Loan portfolio	11	15
Transactions disbursed by E&S Risk Rating	21	18
Transactions performed with specific E&S Action Plan	10	10
Transactions rejected on the E&S risk management	0	0
Incorporation of E&S Risk in Core Risk Management/ beneficial to E&S improvement	13	10
Total commercial banks (N)	26	20

Source: (ESRM Report of Commercial Bank of Nepal- Fiscal Year 2078 / 79, n.d.)

Table 3 presents the particulars concerning the incorporation of environmental and social

risk into the fundamental risk management practices of banks in accordance with the implementation of ESRM guidelines. In 2078/79, there were none of banks were rejected loan on the basis of the exclusion list criteria, in 2079/80, only one bank (Nepal Bank Limited) follows this indicator of the guideline. The Environmental and Social (E&S) Due Diligence (ESDD) was conducted by 18 banks in 2078/79, and this figure increased to 80% or 16 banks out of 20 commercial banks in 2079/80. The proportion of the total disbursed loan portfolio subjected to ESDD in first year was only 11 banks, which experienced a significant rise to 75% or 15 out of total in next year. The E&S Risk Rating indicator, the percentage of transactions that were disbursed based on the Environmental and Social (E&S) Risk Rating in 2022, 81% of banks practiced disbursing loans based on this rating, a figure that further increased to 90% in 2023. The specific Environmental and Social (E&S) Action Plan was employed for 38% of transactions in 2022, and this percentage increased to 50% in 2023. Notably, no transactions were rejected for E&S risk management in both years. The indicator measuring the proportion to which E&S Risk is integrated into the core risk management practices of commercial banks remained constant in both years. Overall result of the implementation of guidelines reflects there is significant progress made for incorporation of environmental and social risk management into their core business strategies and beneficial to the E & S improvement for the commercial banks in Nepal. Some of the commercial banks such as Agriculture Development Bank, Himalayan Bank, NICAsia Bank, and Rastriya Banijya Bank need to improve their implementation status of given indicators.

Discussion

The green banking guidelines and Environmental and Social Risk Management (ESRM) policies, has been observed in several South Asian nations including Bangladesh, China, India, and Pakistan (Y. Q. Zhang, 2023), (Li, 2023). These nations have established comprehensive frameworks to encourage banks to adopt environmentally sustainable practices in their operations and investments. The application of such green banking practices has resulted in a reduction in commercial CO₂ emissions while contributing to the attainment of green economic recovery and sustainable development. Green Finance is an investment or lending program that incorporates environmental impact into risk evaluation and uses environmental incentives to influence business decisions, to enhance human well-being, social equity, and ecological integrity while decreasing environmental risks (Soundarrajan & Vivek, 2016). The prior research found that the implementation of environmentally friendly banking practices is significantly impacted by policy, day-to-day operations, and investments (Rehman et al., 2021). Empirical result of green banking activities and effective implementation of such guidelines found to reduce long-term cost, boost the banking industries effectiveness and promote sustainable economic development of the nation in Bangladesh (X. Zhang et al., 2022). Green financing and implementation of policies related to green banking have positive impact of environmental performance, daily operation and customers related performance of the banks and financial institutions (Chen et al., 2022). The interconnection between sustainable development and financial sector stability is evident as various factors such as climate change, wealth distribution, energy use, competition for water resources, and emerging countries' roles will significantly influence the financial sector, necessitating a strategy shift to ensure investments in sustainable development and the ability of the financial sector to handle sustainability risks (Weber, 2015). The collaborative efforts of banking institutions in promoting green recovery have been acknowledged as essential, particularly in emerging econo-

mies. In addition to this, central banks and financial authorities have actively participated in the formulation of sustainable banking frameworks and regulations to bolster green finance initiatives. The implementation of the green banking concept in emerging economies will enable banks and firms to efficiently utilize their limited resources, address the global challenge of sustainability, and protect the natural environment, through financing green technology and pollution-reducing projects, as part of a broader green initiative (Jaydatta & Nitin, 2017).

South Asian countries have made notable advancements in the implementation of green banking guidelines and policies to tackle environmental challenges and foster sustainable growth (Y. Q. Zhang, 2023). The significance of environmental and social risk management guidelines for the banking sector is steadily increasing. Banks must integrate environmental, social, and governance (ESG) risk into their risk management systems, adapt their business and risk strategies, and ensure transparency. Efforts are being made to establish environmental regulations and voluntary initiatives that establish benchmarks for the measurement and management of environmental risk in banks (Bruno & Lagasio, 2021). The importance of climate risks and the necessity for banks to allocate credit and investment to more sustainable sectors have been emphasized by climate change and the 2030 Agenda for Sustainable Development. Driven by political pressure and concerns about reputation, banks and project companies employ E&S standards for sustainability and risk management purposes (Mertens et al., 2023). Environmental risk has an impact on the operational and strategic activities of banks, and central banks face distinct challenges in addressing this risk. In general, there is a growing recognition of the requirement for guidelines and regulations to manage environmental and social risks within the banking sector. The exploration of sustainable finance implementation within the financial services industry, particularly in the banking sector, has been undertaken, revealing the necessity for improved execution and emphasis on environmental sustainability (Mozib Lalon, 2015). The regulatory authorities or central bank have important role for greening the financial system and implementation of different policies and guidelines in the country (Khairunnessa et al., 2021). Prior research of green banking performance in Nepal found that the environmental training of the employees will positively contributed for environmental performance of the banks (Risal et al., 2018). The efficient application of the regulations, guidelines, and circulars of the regulatory authorities in the banks and financial institutions has favorably influenced the development of a sustainable path, as indicated by the varied findings of the empirical studies.

Conclusion, Implications, and Future Research Directions

Financial entities in Nepal have been encouraged to incorporate social, environmental, and governance considerations into their strategies and choices as per NRB guidelines. The guidelines and various circular issued by the NRB are intended to encourage responsible lending, minimize risks and promote investment. Nepal Rastra Bank has encouraged BFIs to increase their credit in green investment. To promote green financing preliminary draft of the Green Taxonomy has been drafted and approved by Nepal Rastra Bank. This study analyzes the implementation status of ESRM guideline circulated by Nepal Rastra bank to promote sustainable banking through environmental and social risk management in bank transactions. Commercial banks are mostly implemented the policy formulation and governance indicators of the guidelines. The significant progression is not found in training and capacity building of their human resource in the banks

regarding environmental and social risk management. Regarding the incorporating environmental and social risk in core risk management found a significant progression of the commercial banks in different indicators issued by the Nepal Rastra Bank. However, the banks are not adhering to the rules when it comes to rejecting loans from the exclusion list, and none of them have rejected any transactions related to E&S risk management. It suggests that instead of actively participating in risk analysis and rating in their business operations, regulators should exercise caution regarding the potential danger posed by banks and concentrate instead on completing compliance obligations.

Nepalese banking sectors are beginning to adopt the sustainability practices and they are effectively implementing the guidelines and various circular issued by the Nepal Rastra Bank. The implication of the sustainable banking practices and green banking guidelines have potential to drive positive changes in financial industry. It promotes reputation and brand values, environmental sustainability, social responsibility, investment opportunity and long-term economic growth in the country. The integration of ESG consideration into core business strategies and decision-making process will helps to minimize overall risk of the banking industry.

The study usages only the secondary data of ESRM report published by NRB. Further research should examine the overall green banking and environmental performance of the commercial banks by collecting and analyzing qualitative and quantitative data compromising individual performance of the banks. Further study can evaluate the financial performance and overall sustainability status of commercial banks with align from the compliance of ESRM guidelines in Nepal. Additionally, the research may be conducted the investment of banks in accordance to the guidelines of green finance projects and overall mitigated environmental harmful activities and such environmental risk of financing projects.

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Appendix: I ESRM Report I

ESRM Report of Commercial Bank of Nepal- Fiscal Year 2078/79

S.N	Bank Name	Policy Formulation and Governance			Employee trainings and capacity building			Incorporation of Environmental & Social Risk in Core Risks Management							
		Formulation and Board approval of an ESRM Policy (or similar policy document)	Formulation and Board approval of an ESRM Procedure (Manual)	Nomination of an E&S Officer	Allocation of Fund in the budget for ESRM Training Programs/Seminars/Workshops (in NRs)	No. of ESRM Training Programs/Seminars/Workshops conducted	No. of attendees of the ESRM Training Programs/Seminars/Workshops conducted	No. of loan requests rejected due to the Exclusion List	No. of transactions subject to Environmental & Social Due Diligence (ESDD)	Share (% total loan value) of the transactions subject to ESDD in the total disbursed commercial (business purpose) loan portfolio	Total No. of disbursed transactions by E&S Risk Rating	Total amount in disbursed transactions by E&S Risk Rating (NRs Billion.)	No. of transactions with specific E&S Action Plan	No. of transactions rejected on the E&S risk management grounds	Incorporation of Environmental & Social Risk in Core Risks Management
1	Agriculture Development Bank Ltd.	No	No	No	500,000	1	28	-	-	-	-	-	-	-	-
2	Bank of Kathmandu Ltd.	Yes	Yes	Yes	-	-	-	-	5,997	-	5,997	112	-	-	435
3	Century Commercial Bank Ltd.	Yes	Yes	Yes	181,200	2	40	-	-	-	2,356	89	-	-	-
4	Citizens Bank International Ltd.	Yes	Yes	Yes	-	1	1	-	170	38	162	132	14	-	1
5	Civil Bank Ltd.	Yes	Yes	Yes	18,080	3	6	-	1,070	92	128	12	-	-	8
6	Everest Bank Ltd.	Yes	Yes	No	16,000	2	4	-	78	5	78	15	-	-	-
7	Global IME Bank Ltd.	Yes	Yes	Yes	-	2	8	-	4,763	51	9,526	181	-	-	141
8	Himalayan Bank Ltd.	Yes	Yes	No	-	3	132	-	-	-	676	133	-	-	-
9	Kumari Bank Ltd.	Yes	Yes	Yes	9,040	1	1	-	-	-	36	9	-	-	4
10	Laxmi Bank Ltd.	Yes	Yes	Yes	26,500	2	3	-	27,510	37	27,510	85	329	-	1
11	Machhapuchhre Bank Ltd.	Yes	Yes	No	-	3	36	-	113	26	113	24	5	-	7
12	Mega Bank Nepal Ltd.	Yes	Yes	Yes	-	2	8	-	120	-	120	19	3	-	3
13	Nabil Bank Ltd.	Yes	Yes	No	-	4	19	-	23	-	103	4	23	-	4
14	Nepal Bank Ltd.	Yes	Yes	No	200,000	1	2	-	-	-	-	-	-	-	-
15	Nepal Credit and Commerce Bank Ltd.	Yes	Yes	Yes	15,066	1	2	-	-	-	-	-	-	-	-
16	Nepal Investment Bank Ltd.	Yes	Yes	Yes	500,000	3	94	-	317	-	314	18	-	-	-
17	Nepal SBI Bank Ltd.	Yes	Yes	Yes	42,239	-	-	-	109	-	80	16	14	-	-
18	NIC Asia Bank Ltd.	Yes	Yes	Yes	-	3	-	-	-	-	-	-	-	-	-
19	NMB Bank Ltd.	Yes	Yes	Yes	249,289	16	670	-	101	22	52	13	10	-	9
20	Prabhu Bank Ltd.	Yes	Yes	Yes	-	2	4	-	7,192	86	7,192	67	-	-	-
21	Prime Commercial Bank Ltd.	Yes	Yes	Yes	110,019	7	63	-	29	-	29	6	-	-	-
22	Rastriya Banriya Bank Ltd.	No	No	No	-	-	-	-	-	-	-	-	-	-	22
23	Santima Bank Ltd.	Yes	Yes	Yes	2,097,238	7	248	-	5,799	51	6,535	73	19	-	35
24	Siddharth Bank Ltd.	Yes	Yes	Yes	48,794	3	151	-	178	42	178	10	22	-	18
25	Standard Chartered Bank Ltd.	No	No	No	-	-	-	-	869	-	869	123	-	-	-
26	Summi Bank Ltd.	Yes	Yes	Yes	-	3	8	-	388	11	388	5	29	-	2

Appendix II: ESRM Report II

ESRM Report of Commercial Bank of Nepal- Fiscal Year 2079/80

S. N	Bank Name	Policy formulation and governance			Employee trainings and capacity building			Incorporation of Environmental & Social Risk in Core Risks Management							
		Formulation and Board approval of an ESRM Policy (or similar policy document)	Formulation and Board approval of an ESRM Procedure (Manual)	Nomination of an E&S Officer	Allocation of Fund in the budget for ESRM Training Programs/Seminars/Workshops (in NRs)	No. of ESRM Training Programs/Seminars/Workshops conducted	No. of attendees of the ESRM Training Programs/Seminars/Workshops conducted	No. of loan requests rejected due to the Exclusion List	No. of transactions subject to Environmental & Social Due Diligence (ESDD)	Share (% total loan value) of the transactions subject to ESDD in the total disbursed commercial (business purpose) loan portfolio	Total No. of disbursed transactions by E&S Risk Rating	Total amount in disbursed transactions by E&S Risk Rating (NRs Billion.)	No. of transactions with specific E&S Action Plan	No. of transactions rejected on the E&S risk management grounds	No. of transactions beneficial to E&S improvement
1	Agriculture Development Bank Ltd.	Yes	Yes In Progress	Yes	650,000	-	-	-	-	-	-	-	-	-	-
2	Citizens Bank International Ltd.	Yes	Yes	Yes	449,500	2	50	-	209	10.89	199	40.88	8	-	25
3	Everest Bank Ltd.	Yes	Yes	Yes	220,000	2	11	-	274	5.91	274	46.36	-	-	-
4	Global IME Bank Ltd.	Yes	Yes	Yes	480,000	16	726	-	1,610	40.40	1,610	112.60	-	-	226
5	Himalayan Bank Ltd.	Yes	Yes	No	-	2	140	-	-	-	572	95.50	-	-	-
6	Kumari Bank Ltd.	Yes	Yes	Yes	-	4	80	-	458	5.98	458	68.01	40	-	40
7	LAXMI Sunrise Bank Ltd.	Yes	Yes	Yes	-	-	-	-	25,362	36.12	25,362	91.52	196	-	-
8	Machhapuchhre Bank Ltd.	Yes	Yes	Yes	4,398,000	1	2	-	782	11.46	782	42.92	17	-	10
9	Nabil Bank Ltd.	Yes	Yes	No	-	6	301	-	89	0.24	185	5.78	-	-	60
10	Nepal Bank Ltd.	Yes	Yes	Yes	465,560	2	38	1	21	1.09	21	1.32	6	-	2
11	Nepal Investment Mega Bank Ltd.	Yes	Yes	Yes	400,000	1	3	-	1,322	4.72	1,316	58.67	-	-	46
12	Nepal SBI Bank Ltd.	Yes	Yes	Yes	33,900	1	4	-	82	4.95	111	5.99	2	-	-
13	NIC Asia Bank Ltd.	Yes	Yes	Yes	30,000	2	286	-	-	-	-	-	-	-	-
14	NMB Bank Ltd.	Yes	Yes	Yes	4,038,420	13	193	-	383	14.65	369	8.51	201	-	35
15	Prabhu Bank Ltd.	Yes	Yes	Yes	-	3	99	-	12,355	84.40	12,355	146.00	-	-	-
16	Prime Commercial Bank Ltd.	Yes	Yes	Yes	408,361	10	231	-	51	-	51	-	-	-	-
17	Rastriya Banriya Bank Ltd.	Yes	Yes	Yes	-	-	-	-	-	-	377	-	-	-	-
18	Santima Bank Ltd.	Yes	Yes	Yes	459,402	7	344	-	7,238	16.98	7,880	103.43	98	-	173
19	Siddharth Bank Ltd.	Yes	Yes	Yes	178,157	2	53	-	146	6.91	146	2.16	16	-	3
20	Standard Chartered Bank Ltd.	Yes	Yes	Yes	-	-	-	-	923	25.00	923	102.36	-	-	-