

**IMPACT OF SUSTAINABLE FINANCING ON
FINANCIAL RISK MANAGEMENT OF COMMERCIAL BANKS IN NEPAL**

**A Dissertation submitted to the Office of the Dean, Faculty of Management in partial
fulfillment of the requirements for the Master's Degree**

By

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “Impact of Sustainable Financing on Financial Risk Management of Commercial Banks in Nepal”. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

Aastha Maharjan

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REPORT OF RESEARCH COMMITTEE

Ms. Aastha Maharjan has defended research proposal entitled “**Impact of Sustainable Financing on Financial Risk Management of Commercial Banks in Nepal**” successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Asso. Prof. Rita Maskey and submit the thesis for evaluation and viva voce examination.

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APPROVAL SHEET

We have examined the dissertation entitled “Impact of Sustainable Financing on Financial Risk Management of Commercial Banks in Nepal” presented by Ms. Aastha Maharjan, a candidate for the degree of Master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify that the dissertation is worthy of acceptable.

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ACKNOWLEDGEMENTS

This thesis has been prepared for the partial fulfillment of the requirement for the degree of Master of Business Studies (MBS). I would like to express my great gratitude to Tribhuvan University for providing great opportunity of preparing the thesis that excited and over whelmed me throughout preparation of the thesis.

I would like to express my warm appreciation to Asso. Prof. Rita Maskey, my research supervisor, for his patient guidance, enthusiastic encouragement and useful critiques throughout this research work. Similarly, I wish to acknowledge the help provided by all the concerned members of Ministry of Finance and Nepal Rastra Bank (NRB) for their contribution in providing the required information available in the concerned websites. They also deserve appreciation and special thanks.

I must express my very profound gratitude to all my friends, for providing me with unfailing support and continuous encouragement throughout the process of researching and writing this thesis.

Aastha Maharjan

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ABBREVIATIONS

A.D.	=	Anno Domini
ADBL	=	Agriculture Development Bank
ATM	=	Automated Teller Machine
B.S.	=	Bikram Sambat
BAFIA	=	Bank and Financial Institution Act
BFI	=	Bank and Financial Institutions
C.V.	=	Coefficient of Variation
CAR	=	Capital Adequacy Ratio
CBIL	=	Citizens Bank International Limited
CSR	=	Corporate Social Responsibility
EBL	=	Everest Bank Limited
ESDD	=	Environmental and Social Due Diligence
ESG	=	Environmental, Social, and Governance
ESRM	=	Environmental and Social Risk Management
Et Al.	=	Et Alia
FY	=	Fiscal Year
GDP	=	Gross Domestic Product
GIBL	=	Global IME Bank Limited
HBL	=	Himalayan Bank Limited
JSCB	=	Joint-Stock Commercial Bank
KBL	=	Kumari Bank Limited
LSBL	=	Laxmi Sunrise Bank Limited
Ltd.	=	Limited
MBL	=	Machhapuchhre Bank Limited
MBS	=	Master of Business Studies
NABIL	=	Nabil Bank Limited
NBL	=	Nepal Bank Limited
NEPSE	=	Nepal Stock Exchange
NICA	=	NIC Asia Bank Limited
NIMBL	=	Nepal Investment Mega Bank Limited
NMB	=	Nepal Merchant Bank Limited

NPA	=	Non-performing Assets Ratio
NRB	=	Nepal Rastra Bank
NSBL	=	Nepal SBI Bank Limited
PBL	=	Prabhu Bank Limited
PCBL	=	Prime Commercial Bank Limited
R&D	=	Research and Development
RBBL	=	Rastriya Banijya Bank Limited
S.D.	=	Standard Deviation
SANIMA	=	Sanima Bank Limited
SCBNL	=	Standard Chartered Bank Nepal Limited
SEBON	=	Securities of Board Nepal
SEM	=	Structural Equation Modelling
SIDBL	=	Siddhartha Bank Limited
SOCB	=	State-Owned Commercial Bank
T.U.	=	Tribhuvan University
UCB	=	Urban Commercial Bank
UNSDG	=	United Nations Sustainable Development Goals

ABSTRACTS

This study assessed the detrimental effect of sustainable financing on financial risk management of chosen “A” class banks in Nepal. The study has identified contribution of commercial banks to gross domestic product, number of environmental and social risk management (ESRM) training programs/seminars conducted, allocation of fund in the budget for ESRM training programs/seminars and total number of transactions subject to environmental and social due diligence (ESDD) as sustainable financing variable, whereas capital adequacy ratio and non-performing assets ratio as variables of management of financial risk. The results found that there is significant impact of all sustainable financing variables except contribution of commercial banks to gross domestic product on capital adequacy ratio. Nepalese commercial bank’s capital adequacy ratio has positive influence by $ESRM_{AF}$ and GDP_{CB} , and negative influence by the rest variables ($ESRM_{NT}$ and $ESDD_{NT}$). There is significant but negative impact of contribution of commercial banks to gross domestic product and total number of transactions subject to environmental and social due diligence on non-performing assets of commercial banks in Nepal.

Keywords: *Sustainable financing, financial risk management, commercial banks, ESG, Nepal*

CHAPTER I

INTRODUCTION

1.1 Background of the study

Sustainable finance, which involves integrating environmental, social, and governance (ESG) factors into financial decision-making, is gaining growing importance. Banks and financial institutions (BFIs) play a key role as intermediaries in advancing sustainable development objectives (Zimmermann, 2019). Sustainable financing also referred to as environmental or green finance is vital due to its role in supporting corporate sustainability. It involves making investment decisions that take environmental and social aspects into account. Green banking offers several benefits, particularly through digital or electronic transactions and processes, which help minimize the use of paper (Bhandari et al., 2022). A company's sustainability significantly shapes how it is perceived by the public, including policymakers and the broader community, and plays a crucial role in maintaining its social license to operate (Edmans & Kacperczyk, 2022). In recent years, a global cultural shift has emerged, emphasizing sustainability and heightened awareness of climate change. This trend has been accompanied by a substantial growth in investment products categorized and promoted as environmental, social, and governance (ESG) offerings.

Sustainability is now a major focus within the financial industry. As part of their commitment to sustainable finance, banks are enhancing existing operations, encouraging shifts in consumer behavior and investing in new technologies (Subedi & Bhattarai, 2024). The goal of sustainable finance policy is to guarantee that all players and stakeholders use a standard and transparent vocabulary within the sustainable finance arena. techniques have developed as a critical way to decrease these consequences and promote sustainable development, which may be major budget gap management in Nepal, where foreign aids appear considerable (Mishra, 2023). Moreover, it was developed to complement existing financial sector initiatives by establishing a unified vocabulary and terminology for sustainable finance. A coherent

and well-structured regulatory and policy framework is essential for sustainable finance to ensure clear goals, safeguard consumers, encourage market expansion, and support smooth transitions in vital economic sectors (Maharjan, 2023). Both the green taxonomy and the sustainable finance taxonomy have been used to define sustainable finance policies. The sustainable finance taxonomy includes socially responsible financing, sustainable agriculture, the identification process of sustainable linked finance, research and development (R&D) for sustainable product innovation, marketing, awareness, capacity building, and sustainable finance disclosure for BFIs, the green taxonomy includes activities of green banking, policy of green finance, environmental and social due diligence (ESDD), use of budget of climate risk, management of internal environmental which consists measurements of carbon footprint, marketing with green concept, disclosures, etc. (Kabir & Millat, 2020).

Determining whether to accept possible hazards in an investment or take steps to lessen their impact is the main task of financial risk management. The management of risks is an ongoing activity since they might change over time. All investments have some level of risk, so managing risk effectively involves carefully balancing potential losses against potential benefits (Kenton, 2024). Sustainable Finance introduces a unique set of risks that differ from traditional financial risk assessments. Alongside the market, credit, and operational risks, sustainable finance encompasses ESG risks, reputational risks, regulatory risks, and transitional risks. These risks stem from factors such as climate change impacts, ethical practices, shifting regulations, and the evolving social landscape (Sharma, 2023). Sustainability regulations, whether enforced by regulatory agencies or influenced by cultural expectations, may be the driving force behind financial risk management in both established and emerging economies. Different methods to risk management are required in various situations due to the unique features and diverse sources of risk (Maharjan, 2023). In order to better comprehend and handle sustainability concerns in their reporting and management procedures, organizations are coming under more and more institutional pressure to implement risk management techniques (García-Benau et al., 2021).

The intersection of finance and sustainability has given rise to a dynamic and promising field known as sustainable finance. As awareness of environmental, social,

and governance (ESG) factors grows in the global economy, the integration of sustainability has become increasingly important into financial decision-making becomes crucial. However, like any financial endeavor, sustainable finance is not without its risks. This article delves into the realm of effective risk management strategies within the context of sustainable finance (Liu & Huang, 2022). When backed by enough funding, entrepreneurship grows significantly, resulting in higher output, better productivity, more innovation, and frequently more export activity. This, in turn, stimulates economic growth and development during recovery periods, drawing in further investment and allowing the economy to not only reach but surpass its pre-crisis GDP levels - a symbol of ongoing progress (Vagin et al., 2022).

In context of Nepal, to facilitate the flow of domestic green finance - particularly for green bonds, climate risk reporting, and capital requirements in the financial sector, Nepal Rastra Bank introduced a Green Finance Taxonomy in line with the 2022–2023 Monetary Policy. This taxonomy categorizes economic activities, including assets, projects, and sectors, as “green” or environmentally sustainable based on specific criteria. (Maharjan, 2023). Beyond guiding capital, resources, and capacity toward building a green, resilient, and inclusive economy in Nepal, this classification also aims to help financial sector stakeholders identify, track, and validate their green initiatives (Subedi & Bhattarai, 2024). Alongside offering financial services and addressing social challenges, the main objectives of green banking are to safeguard the environment and natural resources, reduce environmental pollution, and support the achievement of the country's sustainable development goals (Zhang et al., 2022). Through avoiding investments, these strategies aim to lower credit, legal, and reputational risks in projects that pose environmental hazards (Hoque et al., 2019). A thorough evaluation of capital sufficiency, asset quality, and operational effectiveness is part of financial risk management. The empirical relationship between sustainable bank financing and its impact on financial risk management has not been well investigated. Thus, using a case study methodology, this study examined 20 commercial banks in Nepal.

1.2 Problem statement

Global conversations on sustainability, nationally specified contributions, and resource-efficient low-carbon circular economies have been made possible by growing awareness of environmental contamination and the depletion of natural resources. The long-term economic competitiveness of a company can be greatly impacted by the conclusions of these conversations (Liu & Huang, 2022). A consequence of its connection to business sustainability is the need of sustainable financing, which incorporates social and environmental factors into investment choices. In order to address environmental sustainability and inclusive growth, the ideas of corporate social responsibility and inclusive financing have been widely accepted. The globe is now dealing with severe effects of the global climate crisis, such as droughts, floods, tsunamis, increasing sea levels, and water shortages. The planet's ability to support life is under peril from climate change, therefore both wealthy and developing countries especially those like Nepal must act quickly and together (Kabir & Millat, 2020).

Green finance is now a new area of study that has caught the interest of scholars all around the world (Rai et al., 2019). Regretfully, in Nepal, green finance is still a relatively new and unexplored subject (Das & Islam, 2013). Nepal, like many other countries, is striving to promote sustainable finance as a means to address environmental challenges and support sustainable development. Thus, it is necessary to study the impact of sustainable financing on financial risk management of commercial banks in Nepal. The study has answered the following concentration area of Nepalese commercial banks:

- i. To what extent does sustainable financing affect the financial risk management of commercial banks in Nepal?
- ii. What is the current status on sustainable financing and financial risk management of commercial banks in Nepal?
- iii. Does sustainable financing have relationship with financial risk management in commercial banks of Nepal?

1.1 Objectives of the study

The main objective of this study is to ascertain the impact of sustainable financing on financial risk management of commercial banks in Nepal. In order to achieve the basic purpose or objective, the following other objectives have been set:

- i. To assess the impact of sustainable financing on financial risk management of selected commercial banks in Nepal.
- ii. To analyze sustainable financing and financial risk management status of selected commercial banks in Nepal.
- iii. To examine the relationship between sustainable financing and financial risk management of selected commercial banks in Nepal.

1.2 Rationale of the study

The research has attempted to cover the sustainable financing and its impact on the financial risk management of commercial banks in Nepal which might be significant to the commercial banks, its shareholders, depositor and all general public who are interested on this current affair of banking industry. Besides, the study will be equally important to the central bank for they can get valuable suggestions which may be fruitful in taking corrective actions if any deviation is found on the past performance regarding with sustainable financing guidelines. The study might also be significant for other researchers who want get knowledge about the sustainable financing and the financial risk management of commercial banks in Nepal.

The study has revealed the accurate picture of sustainable financing and its impact on financial risk management of commercial banks in Nepal, which could be significant to trading firms, investors, depositors, and the public interested in the trading industry's current condition. Moreover, the study is also important for the banks as it offers valuable suggestions that could assist them in making corrective measures if there is a deviation from prior sustainable and financial risk management results. This may help the investors in understanding the sustainable financing of banking industry and encourage them in making investing decision on banking industries.

Similarly, the study provides material for academics who desire to do more research in this area. The study is significant because it provides both a theoretical and conceptual framework for several aspects of sustainable financing and its influence on financial risk management of commercial banks. Similarly, the study aids in the completion of the MBS level as well as the understanding of sustainable financing and its impact on financial risk management of commercial banks.

1.3 Limitations of the study

Every study has its share of restrictions. The aspects of the design or technique that impact or have impacted the interpretation of the study's findings are known as the study's limitations. Although the efforts will be made to present and analyze the facts clearly, truly and within the boundary, some errors may arise due to reliability of tools, lack of research experience, lack of time, unavailability of adequate data, and so on.

The limitations of the study are as follows;

- i. The study has observed only few aspects measuring the sustainable financing and financial risk management indicators of commercial banks.
- ii. The study has emphasized on only two different year period covering from FY 2021/22 to FY 2022/23 A.D.
- iii. The study is based on the secondary data available on annual reports of and ESRM reports of commercial banks.
- iv. The result of the study depends upon the availability of data.

CHAPTER II

LITERATURE REVIEW

Literature reviews are studies of earlier research projects and publications that aim to fully understand the research question and choose the best approach. The market is filled with a variety of books, papers, and research studies. Literature reviews are created by thoroughly examining such documents and summarizing their findings on a particular subject (Adhikari & Pandey, 2017). In academic research, reviewing prior studies is crucial and aids in the completion of the study. A literature review might appear in a published or unpublished book, thesis, or bigger report detailing research findings. The review of literature serves in placing the study within the framework of previous scholarship, showcasing your grasp of the subject and illustrating how your study adds to the ongoing dialogue in the field (Dhanya, 2024).

2.1 Theoretical review

2.1.1 Sustainable financing

Investment decisions that factor in environmental, social, and governance (ESG) considerations are referred to as sustainable finance (Bakken, 2021). The utilization of renewable resources and initiatives to lessen the effects of climate change are examples of environmental factors in sustainable finance. Social aspects include things like consumer protection, inclusive work practices, and the rights of people and animals. The management of both public and private enterprises, including employee relations and remuneration rules, is referred to as governance. Integrating environmental, social, and governance (ESG) principles into financial services while encouraging long-term, sustainable economic growth is the main goal of sustainable finance in the banking industry. Additionally, given the long-term nature of these risks and the difficulties in pricing and evaluating them, it aims to increase openness and knowledge among financial players about the significance of managing ESG-related risks efficiently.

Sustainable finance looks at how finance (investing and lending) interacts with economic, social, and environmental issues. In the allocation role finance can assist in making strategic decisions on the trade-offs between sustainable goals. Moreover, investors can exert influence on the corporates in which they invest. In this way, long-term investors can steer corporates towards sustainable business practices. Finally, finance is good at pricing risk for valuation purposes and can thus help dealing with the inherent uncertainty about environment issues, such as the impact of carbon emissions on climate change. Finance and sustainability both look at the future (Schoenmaker & Schramade, 2019).

2.1.2 Financial risk management

Financial risk management involves identifying and analyzing potential risks that could negatively impact an organization's financial performance. Its purpose is to develop and implement strategies to mitigate those risks. Organizations can use various risk management strategies to manage these risks. It is a plan of action or policies that are designed to deal with various forms of financial risk. The strategies are important for any firm or individual to manage the inherent financial risks that come with operating within the economy and financial system (Powell, 2023). For corporations and financial institutions, there are additional types of risks faced, such as market risk, the risk that losses may occur to financial assets based on the dynamics of the overall financial markets, for example, an equity security losing a substantial portion of its value, credit risk, the risk that a counterparty may default on their contractual obligations, for example, an individual defaulting on their personal loan, liquidity risk, the risk that funding obligations may not be met due to cash constraints, for example, a bank not having enough cash on hand to meet deposit withdrawal demand, and others (Mehta, 2024).

Managing financial risk necessitates making organizational decisions about risks that are acceptable versus those that are not. The passive strategy of taking no action is the acceptance of all risks by default. Organizations manage financial risk using a variety of strategies and products. It is important to understand how these products and

strategies work to reduce risk within the context of the organization's risk tolerance and objectives. Strategies for risk management often involve derivatives. Derivatives are traded widely among financial institutions and on organized exchanges. The value of derivatives contracts, such as futures, forwards, options, and swaps, is derived from the price of the underlying asset. Derivatives trade on interest rates, exchange rates, commodities, equity and fixed income securities, credit, and even weather. The process of financial risk management is an ongoing one. Strategies need to be implemented and refined as the market and requirements change. Refinements may reflect changing expectations about market rates, changes to the business environment, or changing international political conditions (Roncalli, 2020).

2.1.3 Three stages of sustainable finance

At the level of the economy, the financial return and risk trade-off is optimized. This financial orientation supports the idea of profit maximization by organizations and economic growth of countries. Next, at the level of society, the impact of business and financial decisions on the society is optimized. And finally, at the level of the environment, the environmental impact is optimized. There are interactions between the levels. It is thus important to choose an appropriate combination of the financial, social and environmental aspects.

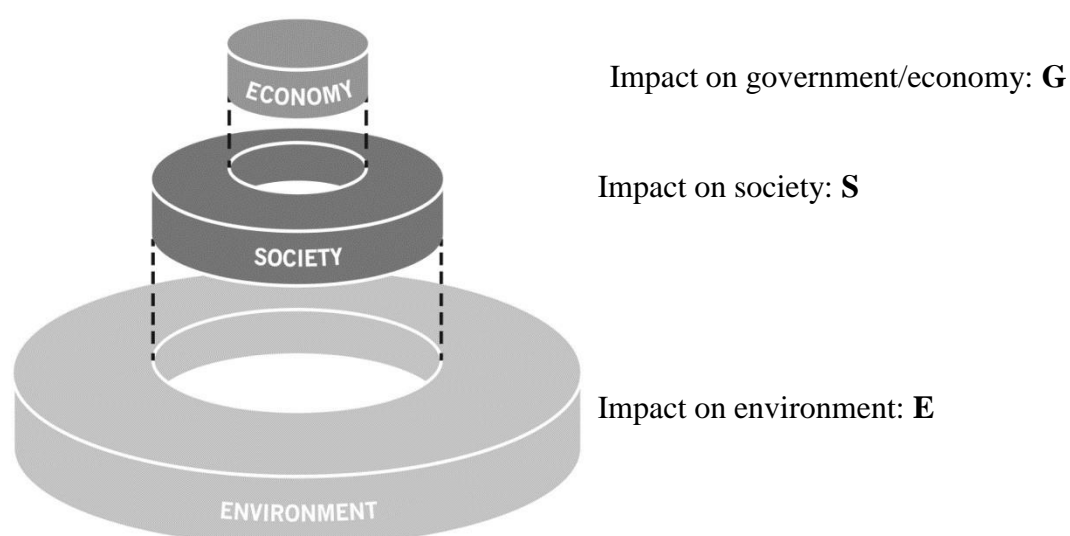


Figure 1.1 Stages of sustainable finance. Source: Schoenmaker (2017)

Sustainable finance requires a transformation from the conventional finance systems. The transition is barricaded by factors such as, short-termism (consequences of traditional economic activities on the environment and society are usually experienced in the long term, incompatible to the short-term limit induced by the traditional financial systems, and the insufficient private effort. Such a cause can be considerably achieved by the application of principles for responsible investment as guided by UN. United Nations Sustainable Development Goals (UNSDGs) has specified the following stages of sustainable finance:

1. Impact on environment, emphasizing the investment of green finance by companies, aiming to reduce the emission of carbon dioxide and to enhance the advancement of technology to mitigate environmental challenges.
2. Impact on society, considering the financial consequences on investment in companies focusing on human management operations and to provide capital for humanitarian welfare activities in spheres such as employment, education and health.
3. Impact on governance, focusing in company investment by shareholders that comply with recognized international standards of workers wellbeing.

2.1.4 Theories of sustainable finance

The theories are the priority theory of sustainable finance, the resource theory of sustainable finance, the peer emulation theory of sustainable finance, the life span theory of sustainable finance, the positive signaling theory of sustainable finance, and the system disruption theory of sustainable.

The peer emulation theory of sustainable finance

The peer emulation theory of sustainable finance argues that economic agents take similar actions, or adopt similar policies and strategies, of the peers they emulate in pursuit of sustainable finance goals. The peer emulation theory of sustainable finance suggests that, when there are no uniform standards to guide action towards sustainable finance, economic agents resort to adopting similar policies or actions taken by the peers. This implies that economic agents will pursue specific sustainable finance goals

because the peers they emulate are doing so or have already done so in the past. Emulating one's peers makes sense when economic agents share similar perspectives and views on sustainability (Cowett, 2008). The tendency to emulate ones' peers in the pursuit of sustainable finance goals is stronger when two or more economic agents have similar societal, political and economic ideologies and aspirations (Ditlev-Simonsen & Midttun, 2011). For example, countries that share the same ideals on climate change will most likely adopt similar sustainable finance policies and actions towards achieving their individual sustainable finance goals.

The life span theory of sustainable finance

This theory is adapted from Vernon's product cycle hypothesis (Vernon, 1979). The life span theory of sustainable finance argues that interest in sustainable finance is affected by the life span of sustainable finance products, services, instruments, schemes, policies or activities. It argues that sophisticated economic agents know that sustainable finance products, services, instruments, schemes, policies or activities (hereinafter 'sustainable finance products') have a life cycle which begins with the introduction of sustainable finance as a new concept, the growth of sustainable finance, the maturity of sustainable finance, and the decline of sustainable finance. The knowledge that economic agents have about the life cycle of sustainable finance products, enables them to make independent predictions about the estimated life span of a specific sustainable finance products; and based on that prediction, economic agents are able to reach a decision on whether to make a short-term commitment, long-term commitment or no commitment at all to sustainable finance. This means that the extent of support for sustainable finance by economic agents, and the extent of their support for the transition from traditional/mainstream financing to sustainable financing, depends on the perceived life span of a specific sustainable finance products by economic agents.

The implication of the life span theory of sustainable finance is that economic agents may reduce their support for sustainable finance or make only a short-term commitment to sustainable financing if they believe that a given sustainable financing

product will be short-lived or if they believe that the sustainable finance agenda will soon fade away just like other development schemes have faded away in the past.

The positive signaling theory of sustainable finance

The system disruption theory of sustainable finance argues that pursuing sustainable finance goals may disrupt the structure of the traditional/mainstream financial system and can disrupt businesses that rely heavily on traditional/mainstream financing. The disruption caused by the transition to sustainable finance, depending on its severity, may lead to resistance from affected economic agents, or a general lack of public support for the sustainable finance agenda. Under this theory, the potential disruption to the existing system (traditional/mainstream finance) arising from the transition can compel economic agents to make a decision on whether or not to support or join the transition to sustainable finance. Economic agents will base their decision on whether the perceived benefits of sustainable finance outweigh the costs, and whether the resulting disruption will significantly affect their business, income or means of livelihood.

The theory acknowledges that the transition to sustainable finance is not smooth, and can disrupt traditional/mainstream finance. The implication of the theory is that sufficient information should be disclosed about how the transition to sustainable finance will take place and which systems or structures will be discontinued, if any, in preparation for the transition. Full information disclosure will undoubtedly help economic agents in reaching a decision on whether to support the transition to sustainable finance. Information should also be disclosed about whether any new systems or structures will be created and how the change will affect businesses that heavily rely on traditional/mainstream finance to fund their business operations and activities. Information should also be disclosed about what will be done to compensate economic agents affected by the transition. Providing full information disclosure can help in making the transition smooth while at the same time offering compensation to those affected by the disruption caused by the sustainable finance transition.

2.2 Empirical review

The study of previous work brought clear guidelines in the preparation of the study. Previous journals, reports and theses related to the topic of the study provided many techniques, methods, information, ideas, tools, and so on that passed light in the preparation of the study. The past researchers make the path for present and future study. Thus, related paths have been found after the study of previous work on the similar or related topics. Review of previous work covers;

- i. Review of international articles
- ii. Review of Nepalese studies
- iii. Review of previous theses

2.2.1 Review of international articles

Pradnyani et al. (2024) determined the influence of sustainable banking on financial performance which is mediated by credit risk. The research was conducted on conventional commercial banks that have annual financial reports and sustainability reports registered on the IDX with a sample of 252 banks for 2017-2022. Based on the analysis, it was discovered that sustainable banking has a positive effect on financial performance and a negative effect on credit risk, and sustainable banking has a positive effect on financial performance by reducing credit risk. This means that sustainable banking that pays attention to non-financial factors, namely the preservation of the natural environment, can improve financial performance. The research contribution states consistency in environmental control to achieve environmental sustainability in line with the principles of profit, people and planet by making banking policies that contribute to environmental sustainability.

Singh (2024) examined whether social performance moderates the linkage between financial risk and sustainable financing in microfinance institutions. The empirical study used unbalanced panel data of 2,694 worldwide microfinance institutions from 2009 to 2019. In the first step, the study inspected the impact of social performance and risk on financial performance, proxied as return on assets and operational self-sufficiency. In the second stage, moderated hierarchical regression was applied to test

whether social performance moderates the relationship between risk and financial performance. Lastly, the study confirmed the significant moderation effects with slope tests. The study detects robust evidence that financial risk is negatively related to sustainable financing. Though social performance exhibits a weak positive link with financial performance in silos, the evidence of its moderating effects on risk is mixed and significant. Social performance indicators, such as the borrower retention rate and female representation, positively moderate the relationship between financial risk and financial performance. The study documented that social performance impacts financial risk and operational self-sufficiency through risk moderation.

Judijanto et al. (2024) examined the relationship of sustainability with risk management sectors in banking, based on several visual network analyses. Initial findings delineate thematic clusters focusing on green banking, financial performance, and the impact of technological advancements such as fintech. An investigation into the temporal progression of research themes from 2017 to 2021 highlights a significant shift from foundational concerns about financial stability to more nuanced discussions integrating sustainability and economic inclusivity. Additionally, the research identifies potential gaps in the literature, particularly around the integration of Islamic banking with green practices and the management of environmental and climate-related risks. Analysis of author collaborations within these thematic areas reveals a robust network of scholars, characterized by both dense, focused groupings and broader, interdisciplinary linkages. This study underscores the dynamic and evolving nature of academic discourse in sustainable finance, suggesting promising areas for future research.

Suttipun (2023) investigated the pattern and level of environmental, social and governance (ESG) performance of listed companies in the alternative capital market of Thailand, and to test for the relationship between ESG performance and corporate financial risk. The population and sample data are comprised of all the listed companies in the alternative capital market in Thailand, namely, the Market for Alternative Investment (MAI). Content analysis by scoring is used to quantify ESG performance in annual reports during the period 2017–2021, while corporate financial risk is measured by the ratio of debt on equity. Descriptive analysis, correlation

matrix, and multiple regression are used to analyze the data of this study. The result finds a negative relationship between ESG performance and corporate financial risk. The signaling theory demonstrates an explanation proposing that the increase of ESG performance can reduce corporate financial risk. Therefore, top-management and shareholders should pay attention to ESG responsibility because it can decrease risk as well as enhance sustainable development.

Al- Qudah et al. (2023) investigated the financial risks associated with green lending and whether an increasing in green lending will decrease the non-performing loans ratio (NPLR) of UAE banks, based on the period 2015–2020 dataset of 23 UAE's banks. To achieve this objective, a regression technique was used that includes a two-stage least square regression analysis and random-effect regression analysis to test if the increase in green credit ratio can reduce the NPL ratio in a sample of UAE's banks. The current study can be considered the first empirical attempt that conducted on the banking sector in UAE, to discover the variables that might have a direct impact on the NPL ratio. The results revealed that the ratio of green loans has a negative impact on the NPL ratio, as much as the return of equity, while the quality of credit, inefficiency, and the bank size have a positive impact on NPL ratio. But as was not as expected, the study found that the impact of solvency ratio has a negative significant on the NPL ratio. Finally, the current study introduced a new value to the current literature about the impact of green lending policies and provides a new perspective which supports the financial sustainability in UAE.

Liu and Huang (2022) examined the relationship between sustainable financing and financial risk management of Chinese financial institutions, using data from Chinese banks. Financial risk management is a comprehensive measure of operating performance, asset quality and capital adequacy ratio. The structural vector autoregression model determines the relationship between two variables. The positive shock of sustainable financing business negatively impacts the financial risk management of banks. In contrast, positive shock of banks' financial risk management positively affects sustainable financing. Further subdivision of the sample revealed that sustainable financing does not always negatively impact the financial risk management of large state-owned banks. However, the positive shock of

financial risk management reduces urban banks' green credit proportions. The results are consistent whenever compared between the empirical outcome of the entire sample and the sample consisting of national joint stock bank accounts. This comparison helps eliminate the possibility of a biased outcome as a major portion of the sample is from a national joint-stock bank account. Apart from data limitations, the results of the sub-sample test are influenced due to the difference in deposit and loan interest rates, as well as different ownership structures of banks.

Vagin et al. (2022) analyzed the perspectives of sustainable development amid the COVID-19 pandemic and crisis in 2021, backed by financial risk management and corporate social responsibility. To achieve this goal, the study used the methods of regression analysis, horizontal and trend analysis, and variation analysis. As a result, it was proven - for the first time - that in isolation, investments and corporate social responsibility do not contribute positively to sustainable development. In addition, the study determined the absence of the outflow of investments from the world economy during crises. Based on this, a new approach to crisis management of sustainable development was developed, it was based on stimulating corporate social responsibility, for which the complex recommendations in the sphere of state management are offered. The theoretical significance of the conclusions made consists in specifying the essence of financial risk management of sustainable development, which has to be conducted with a strict connection to and based on corporate social responsibility. The practical significance of the developed new approach and offered recommendations on its practical implementation consists of strengthening the scientific and methodological provision of economic crisis management of COVID-19 and the maximization of its contribution to sustainable development to support the Decade of Action.

Zhang et al. (2022) investigated the impact of green banking activities on green financing and banks' environmental performance, and examined the effect of green financing on the relationship between green banking activities and environmental performance of private commercial banks (PCBs) in Bangladesh. The convenience sampling technique was used to collect primary data from bankers of PCBs in Bangladesh, and a final sample size of 352 was recorded. To assess the relationship

among the study variables, the structural equation modelling (SEM) approach was employed. The empirical results revealed that green banking activities exhibit a significantly positive effect on banks' environmental performance and sources of green financing, and that sources of green financing significantly influence banks' environmental performance. Additionally, it was observed that green financing mediates the association between green banking activities and banks' environmental performance. Furthermore, the study identified customers' insufficient awareness towards green banking, high investment costs, technical obstacles, lack of capable and competent staff in appraising green credits/loans, and difficulties and complexity in assessing green projects as major challenges affecting the development of green banking in Bangladesh.

Shi et al. (2021) explored the impact of gross domestic product on the financing and investment efficiency of China's state-owned commercial banks (SOCBs), joint-stock commercial banks (JSCBs), and urban commercial banks (UCBs) from 2012 to 2018. The results show that SOCBs have the highest overall efficiency, followed by JSCBs, then UCBs. The efficiencies of SOCBs, JSCBs, and UCBs in the financing stage are greater than those in the investment stage, indicating that the latter stage brings down overall efficiency. Thus, all commercial banks need to focus on the efficiency of non-performing loans and return on capital. Finally, SOCBs need to strengthen internal controls, reduce non-performing loans and improve return on capital. JSCBs should actively expand its business while controlling costs, and UCBs should optimize its management.

García-Benau et al. (2021) analyzed the link between corporate social responsibility (CSR) and socially responsible investments (SRI) of banks in Spain. The first part of the paper argues that finance urgently needs a 'sustainability approach' to connect the initiatives from the CSR companies with the investor preferences of the SRI capital market. This part is entirely devoted to the 'exchange syntax' of sustainable finance, which refers to the terminology of the distinguished sustainability concepts, their interconnections and the ethical values behind them. Traditional finance is used as a benchmark for describing new developments. The second part of the paper develops further the concept of sustainable corporate finance (SCF), defining it as a multi-

attribute approach to finance the company in such a way that all of the company's financial, social and environmental elements are interrelated and integrated. The core elements of SCF include the mission statement of the company, the relevant ethical framework, assumptions on human behavior and the finance choices on the ownership of the company. The latter aspect will be emphasized as the crucial element of both sustainable (corporate) finance and a sustainable market economy.

Höck et al. (2020) investigated the impact of environmental sustainability on the pricing of credit risk for European corporations. Furthermore, whether or not the credit worthiness of a corporation had a moderating effect on the relationship between the environmental sustainability and the credit risk premium was analyzed. With two exception, all the control variables based on the stock market have the expected impact on the credit default swap (CDS) spread, though only the effect of the stock volatility is significant. These results are logical in view of the structural framework because a bond has limited upside and unlimited downside potential. Hence, bond investors focus more on the possible losses, for which the stock volatility is a better estimator. Moreover, volatility is especially important for firms with a high leverage. The findings proved that more sustainable companies have lower credit risk premiums if they also have a high credit worthiness.

Liang and Renneboog (2020) examined the relationship between of CSR on long term sustainable return. The correlation analysis was used to examine the relationship between CSR and financial performance. The study found a negative correlation between CSR and firm financial performance emphasize economic responsibility as the foremost responsibility of firms. Firms must focus on achieving the basic and ultimate goals of maximizing shareholder profits, and fulfilling legal responsibilities in compliance with laws and regulations through that process is sufficient. Accordingly, CSR activities, ethical responsibilities, and donations reduce the economic profits of shareholders. CSR activities that deviate from economic and legal responsibilities can even negatively affect the maximization of profits and shareholder values, ultimately affecting the profits of stakeholders.

Landi et al. (2020) investigated the effect of corporate social and environmental evaluation on investors' risk perception to explore the potential market risk for public companies that adopt a sustainable and responsible corporate strategy. The study referred to the triple corporate assessment according to environmental, social, and governance (ESG) criteria to check whether ESG factors. In doing so, the study tested the impact of corporate social performance - proxied by an ESG assessment - on corporate financial risk using double risk measurement. The study conducted a five-year longitudinal study (fiscal years 2014–2018) of 222 companies listed on the Standard & Poor's index. The empirical findings show higher investor uncertainty regarding corporate sustainability performance, probably due to the misalignment of objectives between investors and investees. Indeed, an overall ESG assessment corresponds to higher systematic risk for firms, and a corporate environmental rating has an upward effect on the same risk dimension.

Cho et al. (2019) analyzed whether a systematic relationship exists between corporate social responsibility (CSR) performance and corporate financial performance using 191 sample firms listed on the Korea Exchange. The Korea Economic Justice Institute (KEJI) index of 2015 was used to measure CSR performance; profitability and firm value were used to measure corporate financial performance. Return on assets was used as a proxy for profitability, and Tobin's Q was used as a proxy for firm value. The results confirm that CSR performance has a partial positive correlation with profitability and firm value. These results are partly consistent with those of previous studies reporting a positive relationship between CSR and Korean firms' financial performance using the KEJI index before 2011. In the relationship between CSR performance and profitability, only social contribution yields a statistically positive correlation. Analysis of the correlation between CSR performance and financial performance indicators revealed a positive relationship between the growth rate of total assets and corporate soundness and social contribution. Both soundness and social contribution showed a positive correlation with Tobin's Q, the measure of corporate value.

Charline (2019) examined the relationship between corporate reputation, credit risk management and sustained financial performance in financial institutions in North-

Kivu. The study adopted a cross sectional and correlation quantitative design using a sample size of 35 institutions including banks and microfinances; with the Board members, employees, clients and shareholders as the respondents or the unit of inquiry. The data were tested for reliability and validity, analyzed using SPSS version 20 and results presented based on the study objectives. The correlation coefficient analysis revealed significant and positive relationships between corporate reputation, credit risk management and sustained financial performance. This implies that, when the institutions are well reputed in their quality of products, services and management and cautiously observe the credit risk management guidelines of the risk strategy such as risk identification, risk assessment, risk response and risk control, then the institutions are bound to experience greater levels of profitability, maintain sufficient liquidity levels and stable solvency ratios.

Summary of Empirical Review

An empirical review is more commonly called a systematic literature review and it examines past empirical studies to answer a particular research question. After reviewing the various previous works conducted by the various researchers during different time frame, the empirical review can be summarized as:

S. N.	Authors (Date of Publication)	Article	Objectives	Methodology	Findings
1	Pradnyani et al. (2024)	Achieving financial performance through the implementation of sustainable banking and credit risk: Analysis based on natural environment al sustainability	To determine the effect of sustainable banking on financial performance through credit risk	Descriptive analysis, and regression analysis	The sustainable banking has a positive effect on financial performance and a negative effect on credit risk, and sustainable banking has a positive effect on financial performance.

2	Singh (2024)	Social performance, financial risk and financial performance in microfinance institutions	To examine linkage between financial risk and sustainable financing in microfinance institutions.	Correlation and regression analysis	There is negative but significant impact of sustainable financing on financial risk. Social performance indicators, such as the borrower retention rate and female representation, positively moderate the relationship between financial risk and financial performance.
3	Judijanto et al. (2024)	Linkages between financial risk and sustainability in the banking sector: A bibliometric study	To examine the relationship of sustainability with risk management sectors in banking.	Correlation analysis	There exists positive and significant relationship between sustainable financing and financial risk management of Islamic banks.
4	Suttipun (2023)	ESG performance and corporate financial risk of the alternative capital market in Thailand	To investigate the pattern and level of environmental, social and governance (ESG) performance of listed companies in the alternative capital	Descriptive analysis, correlation matrix, and multiple regression	The result finds a negative relationship between ESG performance and corporate financial risk. The signaling theory demonstrates an explanation proposing that the increase of ESG

			market of		performance
			Thailand, and to test for the relationship between ESG performance and corporate financial risk.		can reduce corporate financial risk.
5	Al- Qudah (2023)	The impact of green lending on credit risk: evidence from UAE's banks	To investigate the impact of UAE's Green Credit Policy on the non- performing loan of UAE banks.	Regression analysis	The ratio of green loans has a negative impact on the NPL ratio, as much as the return of equity, while the quality of credit, inefficiency, and the bank size have a positive impact on NPL ratio. But as was not as expected, the study found that the impact of solvency ratio has a negative significant on the NPL ratio.
6	Liu and Huang (2022)	Sustainable financing and financial risk management of financial institutions - Case study on Chinese banks	To examine the relationship between sustainable financing and financial risk managemen	Descriptive analysis, and regression analysis	The positive shock of sustainable financing business negatively impacts the financial risk management of banks. In

			t of Chinese		contrast,
			financial institutions		positive shock of banks' financial risk management positively affects sustainable financing.
7	Vagin et al. (2022)	Financial risk management based on corporate social responsibility in the interests of sustainable development	To study the perspectives of sustainable development amid the COVID-19 pandemic and crisis in 2021, backed by financial risk management and corporate social responsibility.	Regression analysis, horizontal and trend analysis	The study found that an increase of the inflow of investments in the economy by GDP leads to a decrease of the sustainable development index, and an increase of the world giving index leads to a decrease of the sustainable development index.
8	Zhang et al. (2022)	Do green banking activities improve the banks' environmental performance? The mediating effect of green financing	To investigate the impact of green banking activities on green financing and banks' environmental performance	Regression analysis	The green financing had significantly positive association between green banking (GB) activities and banks' environmental performance

9	Landi et al. (2022)	Embedding sustainability in risk management: The impact of environmental, social, and governance ratings on corporate	To investigate the effect of corporate social and environmental evaluation on investors' risk perception to explore the potential market risk for public companies that adopt a sustainable and responsible corporate strategy	Descriptive analysis, correlation and regression	ESG assessment tends to increase firms' risk exposure, denoting an uncertain condition among investors. Focusing on the single ESG factors, we also found that corporate environmental performance has an upward effect on corporate systematic risk.
10	Shi et al. (2021)	The impact of gross domestic product on the financing and investment efficiency of China's commercial banks	To explore the impact of gross domestic product on the financing and investment efficiency of China's state-owned commercial banks, joint-stock commercial banks, and urban commercial	Regression analysis	The results show that SOCBs have the highest overall efficiency, followed by JSCBs, then UCBs. GDP has a significant positive impact on the profitability.

			banks		
11	García-Benau et al. (2021)	Financial risk management and sustainability	To analyze the link between corporate social responsibility and socially responsible investments of banks in Spain	Descriptive analysis, correlation and regression	CSR has positive impact on socially responsible investment.
12	Höck et al. (2020)	The effect of environmental sustainability on credit risk	To investigate the impact of environmental sustainability on the pricing of credit risk for European corporations	Regression analysis	The results of the study showed that the environmental factor has a negative impact on the credit default swap spread.
13	Liang and Renneboog (2020)	Corporate social responsibility and sustainable finance: A review of the literature	To examine the relationship between of CSR on sustainable finance	Correlation analysis	There exists a negative correlation between CSR and firm's sustainable finance because CSR activities, ethical responsibilities, and donations reduce the economic

					profits of shareholders.
14	Cho et al. (2019)	Study on the Relationship between CSR and Financial Performance	To examine the relationship between corporate social responsibility (CSR) performance and corporate financial performance using 191 sample firms listed on the Korea Exchange	Correlation analysis	Analysis of the correlation between CSR performance and financial performance indicators revealed a positive relationship between the growth rate of total assets and corporate soundness and social contribution.
15	Charline (2019)	Corporate reputation, credit risk and sustained financial performance in financial institutions in North Kivu	To examine the relationship between corporate reputation, credit risk management and sustained financial performance in financial institutions	Correlation analysis	The correlation coefficient analysis revealed significant and positive relationships between corporate reputation, credit risk management and sustained financial performance.

2.2.2 Review of Nepalese studies

Bhandari et al. (2024) analyzed the current status of implementation of regulatory framework on green finance in Nepal. Recently, green finance practices are gaining popularity as a key strategy in many countries in the world. However, Nepal, which is

renowned for its natural beauty, suffers from several environmental issues. For instance, international initiatives, of the sustainable development goals (SDGs) of the United Nations (UN), emphasize the alignment of financial flows with sustainable development. The study has adopted a qualitative research method to investigate the practices and barriers preventing Nepalese commercial banks from implementing green finance practices. This study reveals the complex issues specific to Nepal through in-depth interviews with senior executives, risk managers, and sustainability officers. The findings of the study demonstrate several obstacles such as the implementation of regulatory framework, few green investment opportunities, perceived financial risks, a lack of knowledge and experience among banking professionals, and the requirement for strong institutional support and leadership commitment. To get rid of these barriers, it is recommended that Nepal's commercial banks embrace green finance practices widely, fit into the nation's sustainable development objectives and support global environmental efforts.

Tyagi and Ghimire (2024) examined the impact of sustainable finances (governance, environment and corporate social responsibility) on credit risk management among commercial banks in Nepal. The empirical evidence suggests that environmentally sustainable finance and corporate social responsibility are statistically significant to credit risk management. The economic, social and governance sustainable finances are found to be insignificant in influencing credit management. The result of this study allows the regulators, government and practitioners to examine the impact of adopting sustainable finance in commercial banks and the factors that can contribute to better credit risk management.

Subedi and Bhattarai (2024) investigated the impact of green banking adoption on the financial performance and perceived financial performance of Nepalese commercial banks. The main objectives were to identify key factors driving green banking adoption, explore relationships with perceived sustainability, analyze the impact on financial performance, and assess the current state of green banking practices. The research revealed that banks' investments in green banking (green product and services, green investment, green HRM, green business strategy) had a significant impact on the financial performance of commercial banks in Nepal. This suggested

that commercial banks could enhance their performance by investing in green banking practices. The research also identified key factors driving green banking adoption and revealed positive relationships between green banking practices and perceived sustainability in the banking industry. The study contributed significantly to fostering sustainability within the banking sector, empowering banks to enhance their performance while contributing positively to the environment and society.

Acharya and Sah (2024) analyzed the impact of green credit distribution by banks on bank performance and identify factors that can influence green credit. The study has used a panel data regression method. The findings indicated that green credit does not have a significant influence on credit risk, as measured by the NPL. The distribution of more green credit allocations does not result in a decrease in bank credit risk. Additionally, sustainable business borrowers do not exhibit better debt repayment performance compared to the non-sustainable business category. Banks that allocate a significant portion of their credit distribution to green initiatives tend to experience a decline in their profits. Bank size has a positive impact on the allocation of green credit, with larger banks dedicating a greater portion to the distribution of green credit. Larger banks possess more capital and extensive networks, making them better equipped to address potential risks compared to smaller banks. The study recommended that the government make corrections to existing green financing programs, to cultivate a green credit ecosystem in Nepal.

Pokharel (2024) analyzed the responsibility shown by banking and financial institutions of Nepal towards the society under their obligations. The banking industry is a relatively late responder to the challenges of CSR, entering into environmental issues then moving on to social issues. Compliance regarding reporting practices has been improving. About 40 percent of the commercial banks (CBs) have reported breakdown of CSR expenses by CSR heads and 31 percent CBs have shown breakdown of CSR expenses by province in annual reports. However, the sector has not yet completely adopted the reporting standards as directed. Examining CSR activities and its rules is necessary with its growing volume and relevance. In reality, it's important to assess how genuinely dedicated BFIs are to CSR and to see if they've managed to maintain a balance among different stakeholders.

Mishra (2023) investigated the current state of green banking practices along with the factors influencing the adoption in commercial banks in Nepal. The findings from the data analyzed through SPSS software revealed the descriptive findings indicate that among the five independent variables, Brand image has the highest mean value indicating that it is perceived as the most important factor influencing the adoption of green banking practices. This is followed by financial benefits, regulatory policies, environmental interest, and stakeholder's demand. Furthermore, the dependent variable, adoption of green banking practices, suggesting that respondents agree that the adoption of green banking practices is influenced by the independent variables, including stakeholder's demand, regulatory policies, environmental interest, financial benefits, and brand image. The study highlighted the importance of brand image as the most influential factor, with the highest mean score among the variables examined. Additionally, it indicated that there was a moderately positive environment for green banking practices among Nepalese commercial banks.

Vaidya and Budhathoki (2023) examine the relationship of sustainability with credit risk management of banks and financial institutions in Nepal. The study used data published by the NRB, where the 'A' class banks have allocated credit for agriculture, hydro-power projects, the tourism sector, and small and medium enterprises (SMEs) under green financing, where agriculture covered 11-13 percent of the total credit portfolio, while the remaining three sectors credit portfolios varied from 2018-19 to 2022-23. The paper also found that the banks have not invested in waste management under the green financing program. Hence, an immediate diversification of credit portfolio under green financing by 'A' class banks and transparent green financing reporting is needed, with better climate-related disclosure adjoined with the credit disbursement by BFIs.

Timilsina (2023) explored the influence of the green financing activities on bank's performance related to environment protection. A panel regression model was applied to identify the relationship between green financing activities on sustainable improvement in environment. The study represented that environmental supporting strategies and policies posed a major influence the bank's environmental performance.

Results of the study recommended the part of banks to encourage the sustainable environmental technologies as significantly important to increase bank's performance and reputation in customers mind for banks.

Sharma (2023) analyzed the impact of sustainable finance mediated by company risk on company performance for the period 2022-2023. Corporate risk is calculated using the NPL ratio. The population in this study are banking companies listed on the Nepal Stock Exchange during the 2022-2023 period. The data used in this study is secondary data obtained from ESRM report. This research method uses the PLS research method. The results of the study show that sustainable finance has a significant negative effect on company risk and corporate risk has a negative impact on company performance. Also, sustainable finance mediated by company risk has a significant positive effect on the company's performance.

Bhatt et al. (2023) investigated the financial risks that associated with green lending and whether an increasing in green lending will decrease the non-performing loans (NPL) ratio of Nepalese commercial banks, based on the period 2022-2023. To achieve this objective, a regression analysis was used to test if the increase in green credit ratio can reduce the NPL ratio. The results reveal that the ratio of green loans has a negative impact on the NPL ratio, as much as the return of equity, while the quality of credit, inefficiency, and the bank size have a positive impact on NPL ratio. But as was not as expected, the study found that the impact of solvency ratio has a negative significant on the NPL ratio.

2.2.3 Review of previous theses

Paudel (2024) investigated the relationships between credit default risk, leverage risk, liquidity risk, and investment risk and their connection to the governance system of Nepalese cooperative societies. The research hypothesis tries to explore that these financial risks are not significantly associated with the governance system of cooperatives. The findings reveal a significant connection between the governance system of cooperatives and credit default risk, leverage risk, and investment risk. However, liquidity risk does not demonstrate a substantial link with the governance

system, suggesting the influence of additional factors. These results underscore the pivotal role of effective governance in mitigating financial risks within cooperative societies. Interestingly, the lack of a significant connection between liquidity risk and the governance system implies that other factors are at play in influencing liquidity risk. These insights provide valuable guidance for policymakers and cooperative management, facilitating the enhancement of governance and risk management strategies, and ultimately contributing to the sustainability of cooperative societies in Nepal. The evaluation involves a comprehensive analysis of financial risks and the governance system in Nepalese cooperative societies, utilizing data from a sample of 126 cooperative societies in Kathmandu.

Tiwari (2024) analyzed 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 utilized ESRM reports published by NRB in 2078/79 and 2079/80. The study examined 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.

Gautam (2024) examined the situation of green banking practices at the moment and the influences on their implementation in Nepal's commercial banks. Brand image has the highest mean value among the five independent variables, suggesting that it is thought to be the most significant factor influencing the adoption of green banking

practices, according to the descriptive findings from the data examined using SPSS software. The demands of stakeholders, financial gains, environmental interest, and regulatory rules come next. Adoption of green banking practices is also the dependent variable, indicating that respondents concur that the independent variables such as stakeholder demand, regulatory policies, environmental interest, financial benefits, and brand image have an impact on the adoption of green banking practices.

Shrestha (2023) examined the financial performance of cooperative societies in Nepal emphasizing on liquidity, leverage, and risk management. Employing a robust methodology encompassing descriptive, financial ratio, correlation, and regression analyses, the study is centered on cooperatives in Kathmandu. The sample, carefully selected to represent approximately ten percent of total cooperatives, is derived from a combination of primary and secondary data sources. The analysis extends to various dimensions including organizational structure, loan investment procedures, and credit risk management practices within these cooperative societies. Through regression models, the study uncovers significant relationships between financial performance indicators such as return on assets, net profit margin, net interest margin, and return on equity, and a multitude of factors. One of the key findings underscores the critical importance of effectively managing leverage and liquidity to bolster cooperative profitability. It provides valuable insights into effective strategies for optimizing leverage and liquidity within these cooperative societies, which can serve as a roadmap for enhancing their sustainability and resilience in the face of economic challenges.

Maharjan (2023) investigated the effects of corporate social responsibility, environmental protection, and governance on credit risk management in Nepali commercial banks. Credit risk management appears to be statistically significantly impacted by corporate social responsibility and ecologically sustainable finance, according to empirical data. The sustainable financial aspects of governance, economics, and society are found to have little bearing on credit management. The study's findings enable policymakers, regulators, and practitioners to investigate the effects of commercial banks implementing sustainable finance as well as the elements that may improve credit risk management.

Pandit (2023) examined the effect of sustainable finance on business performance within the 2022–2023 timeframe through the mediation of corporate risk. The NPL ratio is utilized to determine corporate risk. The banking companies listed on the Nepal Stock Exchange in 2022–2023 comprise the study's population. The secondary data used in this analysis came from the ESRM report. PLS is the research approach used in this study. As demonstrated by the study's findings, corporate risk has a detrimental influence on business performance, and sustainable finance significantly reduces company risk. The performance of the company is also greatly enhanced by sustainable finance that is mediated by company risk.

2.3 Research gap

Various studies have been conducted in the past on sustainable financing and its impact on financial risk management of banks in different countries with diverse purposes and results. Though many research works have been done in the past, Pradnyani et al. (2024); Singh (2024); Bhandari et al. (2024); Judijanto et al. (2024); Subedi and Bhattarai (2024); Pokharel (2024); Tiwari (2024); Vaidya and Budhathoki (2023); Timilsina (2023); Bhatt et al. (2023); Pandit (2023); Liu and Huang (2022); Zhang et al. (2022); Shi et al. (2021); García-Benau et al. (2021); Höck et al. (2020); Liang and Renneboog (2020); Landi et al. (2020); Cho et al. (2019); Charline (2019) lack micro-level analysis and found applying either environmental or societal aspects of sustainable financing, and had ignored the governmental aspect. Paudel (2024); Pokharel (2024); Pradnyani et al. (2024); Singh (2024); Shrestha (2023); Maharjan (2023); Vaidya and Budhathoki (2023); Al- Qudah et al. (2023); Shi et al. (2021); Charline (2019) studying the sustainable financing and financial risk management are limited to sample commercial banks of a country. Focusing on the above point this study attempts to analyze the sustainable financing including environmental, societal and government aspects and its impact on financial risk management of all commercial banks in Nepal through quantitative correlation and multiple regression technique.

CHAPTER III

RESEARCH METHODOLOGY

The process used in research to gather data and information, analyze it, and draw conclusions using various facts and figures is known as research methodology. It also discusses tools for data analysis. From choosing the topic to work on to making recommendations, it motivates and directs the researcher (Adhikari and Pandey, 2017). This section answers how were the data collected and analyzed.

3.1 Research design

The blueprint for the study is the research design. It provides a structure for finishing the research project from start to the end (Adhikari & Pandey, 2017). The study was undertaken to examine and ascertain the impact of sustainable financing on financial risk management of commercial banks in Nepal. Considering the objectives, descriptive, correlational and casual-comparative research design have been used in the study. The descriptive research design describes the condition that already exists and casual-comparative research design explains the changes in one variable (dependent variable) caused due to the changes in another variable (independent variable), correlational research design is used to determine the relationship of one variable with others, and casual-comparative research design is used to examine the impact of one or more variables on other variable.

3.2 Population and sample, and sampling design

A population is the entire collection of all observations of the interest for the research and to make easier to the study, representative portion of the population is selected which is known as sample. As of July, 2024 A.D., 20 'A' class commercial banks are listed by NRB which is the population of the study (FIU-Nepal: Annual Report, 2024). Out of 20 commercial banks, all commercial banks are selected for the purpose of the study using total population sampling method.

3.3 Nature and sources of data, and the instrument of data collection

The study has used secondary sources of data to collect various data and information. The necessary material is obtained from libraries, websites, and previous studies pertaining to the study. The necessary data are gathered from NRB directives, annual reports, and publications of the chosen banks to examine the impact of sustainable financing on financial risk management of commercial banks in Nepal from FY 2021/22 to 2022/23.

3.4 Methods of analysis

Various statistical tools and techniques such as mean, mode, standard deviation, variance, coefficient of variation, correlation and regression are used to analyze the data.

3.4.1 Mean

A group of two or more integers can be averaged mathematically using the mean (\bar{X}). To the number of observations in the sample, it is the average of the sum of the total values. Entire data set, nearly in the middle of the two extremes, is represented by it. Because of this, a measure of central tendency is commonly referred to as the mean. the mean may not accurately represent the central tendency, and alternative measures like the median or mode may be more appropriate.

$$\text{Mean } (\bar{X}) = \frac{\sum X}{n}$$

Where, X = Value of ratios of each independent or dependent variable

n = Number of years

3.4.2 Standard deviation

Since the standard deviation (σ) met the most of the requirements for a suitable measure of dispersion, it is the absolute measure of dispersion that has the

disadvantage of other measures of dispersion. As the square of the deviation is subtracted from the arithmetic mean, the standard deviation is defined as the positive square root of the mean. Variability increases with increasing standard deviation and vice versa. Put differently, it aids in the analysis of data quality with respect to variability.

$$\sigma = \sqrt{\frac{\sum (X - \bar{X})^2}{n}}$$

Where, X = Value of ratios of each independent or dependent variable

\bar{X} = Mean value of ratios of each independent or dependent variable

n = Number of years

3.4.3 Coefficient of variation

The coefficient of standard deviation measurement refers to the relative measure of dispersion depending on the standard deviation. More consistency and uniformity are achieved with fewer CVs, and vice versa. While CV may compare two variables separately in terms of their variability, only standard deviation is inappropriate when comparing two pairs of variables. It is expressed as a percentage, and is defined as the ratio of the standard deviation to the mean.

$$CV = \frac{\sigma}{\bar{X}} \times 100$$

Where, σ = Standard deviation of ratios of each independent or dependent variable

\bar{X} = Mean value of ratios of each independent or dependent variable

3.4.4 Correlation

The statistical method that allows us to characterize the degree of linear relationship between one variable and another is correlation analysis (Bajaracharya, 1996). A positive or direct correlation is present when there is a similar deviation in both variables' values, i.e., an increase or decrease in the value of another variable. Conversely, an inverse correlation, often known as a negative correlation, occurs

when the values of the two variables vary in the other direction, that is, when the values of alternate variables rise or drop.

$$r = \frac{\sum (X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum (X - \bar{X})^2} \sqrt{\sum (Y - \bar{Y})^2}}$$

Where, X = Value of independent variable

\bar{X} = Mean value of independent variable

Y = Value of dependent variable

\bar{Y} = Mean value of dependent variable

3.4.5 Regression

In order to determine the relative movement, regression analysis uses two different kinds of variables. The terms "dependent" and "independent" refer to variables whose values are affected or that need to be anticipated, respectively, and which impact values or are utilized in predictions. An extension of basic regression, multiple regression analysis involves the use of two or more independent variables to forecast the value of a dependent variable (Bajaracharya, 1996). The multiple regression analysis uses two or more independent variables rather than just one to predict the value of a dependent variable. In the study, capital adequacy ratio (CAR) and non-performing assets ratio (NPA) are the dependent variables measuring the financial risk management, and contribution of commercial banks to gross domestic product (GDP), number of Environmental and Social Risk Management (ESRM) training programs/seminars conducted, allocation of fund in the budget for ESRM training programs/seminars and total number of transactions subject to Environmental and Social Due Diligence (ESDD) are the independent variables.

The study is guided by the following regression equations:

$$\text{CAR} = a + b_1 \text{GDP}_{\text{CB}} + b_2 \text{ESRM}_{\text{NT}} + b_3 \text{ESRM}_{\text{AF}} + b_4 \text{ESDD}_{\text{NT}} \quad (1)$$

$$\text{NPA} = a + b_5 \text{GDP}_{\text{CB}} + b_6 \text{ESRM}_{\text{NT}} + b_7 \text{ESRM}_{\text{AF}} + b_8 \text{ESDD}_{\text{NT}} \quad (2)$$

where,

a = Intercept

GDP_{CB} = Contribution of commercial banks to gross domestic product

$ESRM_{NT}$ = Number of ESRM training programs/seminars conducted

$ESRM_{AF}$ = Allocation of fund in the budget for ESRM training programs

$ESDD_{NT}$ = Number of transactions subject to ESDD

b_1 = Coefficient of GDP_{CB} in terms of CAR

b_2 = Coefficient of $ESRM_{NT}$ in terms of CAR

b_3 = Coefficient of $ESRM_{AF}$ in terms of CAR

b_4 = Coefficient of $ESDD_{NT}$ in terms of CAR

b_5 = Coefficient of GDP_{CB} in terms of NPA

b_6 = Coefficient of $ESRM_{NT}$ in terms of NPA

b_7 = Coefficient of $ESRM_{AF}$ in terms of NPA

b_8 = Coefficient of $ESDD_{NT}$ in terms of NPA

3.5 Research framework and definition of the variables

Identification of dependent and independent variables makes theoretical framework clear. A theoretical framework is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas (Hughes, 2019). After reviewing the previous article conducted by the various past researchers, the study has identified contribution of commercial banks to gross domestic product (GDP), number of Environmental and Social Risk Management (ESRM) training programs/seminars conducted, allocation of fund in the budget for ESRM training programs/seminars and total number of transactions subject to Environmental and Social Due Diligence (ESDD) as independent variables and capital adequacy ratio and non-performing assets ratio as dependent variables.

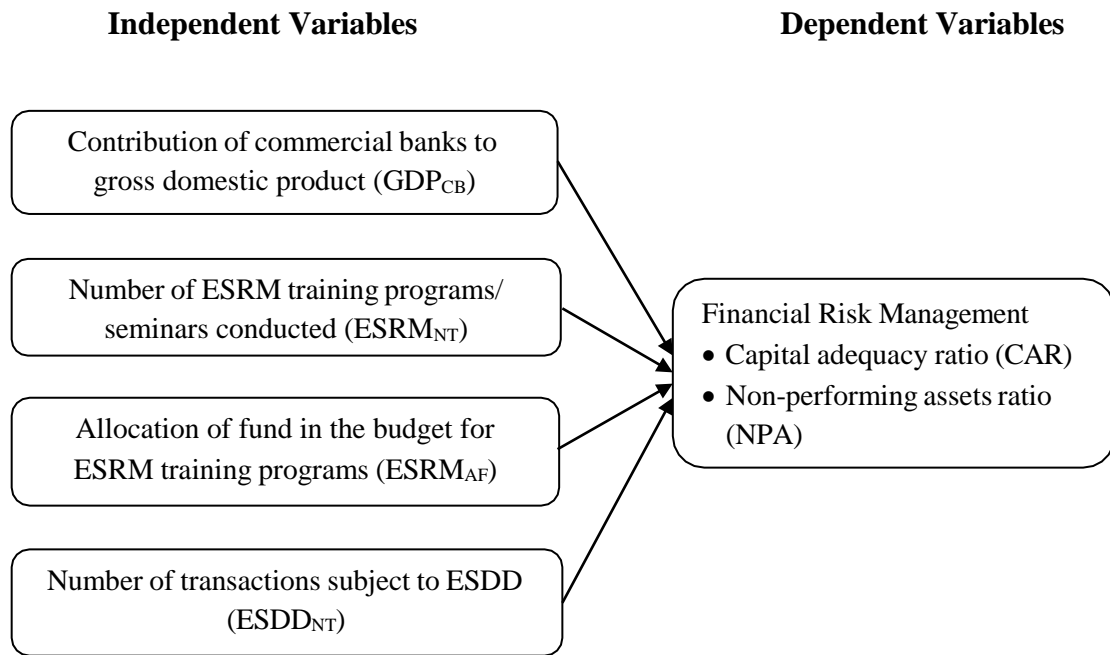


Figure 3.1 Research framework of the study. Source: Pradnyani et al. (2024); Tyagi and Ghimire (2024); Liu and Huang (2022); Shi et al. (2021); Cho et al. (2019)

A. Dependent variables

The variable whose value is influenced or is to be predicted is called dependent variable. The important aspect of the study is to analyze an impact of sustainable financing on financial risk management. Therefore, dependent variables are capital adequacy ratio and non-performing assets ratio.

Capital adequacy ratio

Capital adequacy ratio (CAR) is a measure of bank's capital amount expressed as a percentage of its risk-weighted credit exposure calculated as the ratio of total capital fund to total risk weighted exposure. It is a metric utilized to measure capital adequacy of the bank. It takes into account the most important financial risks-foreign exchange, credit and interest rate risks, by assigning risks weightings to the institutions assets (Adhikari & Pandey, 2017).

$$\text{CAR} = \frac{\text{Tier 1 Capital} + \text{Tier 2 Capital}}{\text{RWA}}$$

where,

Tier 1 = Core Capital

Tier 2 = Supplementary Capital

RWA = Risk Weighted Assets (Exposures)

Non-performing assets ratio

A non-performing asset (NPA) is a term used to categorize loans or advances that are either in default or in arrears used to measure the assets quality of the bank. Arrears occur when principal or interest payments are delayed or not made on time, while default happens when the lender determines that the loan agreement has been breached and the borrower is incapable of fulfilling their obligations (Adhikari & Pandey, 2017). Banks with high levels of non-performing loans are unable to lend to households and companies.

$$\text{NPA Ratio} = \frac{\text{Non-performing assets (loan)}}{\text{Total loan and advances}}$$

B. Independent Variables

The variable which influences the values or is used for prediction is called independent variable. To analyze an impact of sustainable financing on financial risk management, the study has considered contribution of commercial banks to gross domestic product (GDP), number of Environmental and Social Risk Management (ESRM) training programs/seminars conducted, allocation of fund in the budget for ESRM training programs/seminars and total number of transactions subject to Environmental and Social Due Diligence (ESDD) as independent variables.

Contribution of commercial banks to gross domestic product (GDP_{CB})

Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time

period. As a broad measure of overall domestic production, it functions as a comprehensive scorecard of a given country's economic health (Fernando, 2024). The contribution of commercial banks to GDP in Nepal is one of the measures of sustainable financing.

Number of ESRM training programs/seminars conducted (ESRM_{NT})

As per the ESRM guideline 2022, BFIs need to report if ESRM policy as well as procedure/manual has been formulated and approved by BOD with date of approval. The commercial banks also need to report about the number of ESRM related training, seminar, workshop and other programs conducted during the fiscal year. It falls under the employee trainings and capacity building section of ESRM report of commercial bank.

Allocation of fund in the budget for ESRM training programs/seminars (ESRM_{AF})

As per the ESRM guideline 2022, BFIs also need to report about the funds allocated for ESRM related training, seminar, workshop and other programs during the fiscal year quarterly. It also falls under the employee trainings and capacity building section of ESRM report of commercial bank.

Number of transactions subject to ESDD (ESDD_{NT})

As per the ESRM guideline 2022, BFIs also need to report about the number of transactions performed related to Environmental and Social Due Diligence (ESDD) during the fiscal year. ESDD is a management tool used to identify the social and environmental aspects of any business that plays an important role in decision making process prior. It involves the systematic identification, quantification and assessment/evaluation of environmental and social risks associated with a proposed transaction.

CHAPTER IV

RESULTS AND DISCUSSION

The chapter deals with analysis of data through various financial and statistical tools. Presentation and interpretation of data is the main body of the chapter. The data are presented in appropriate format, then analyzed and discussed. The main sources of data are secondary data. In this chapter, collected data related to sustainable financing, and its impact on financial risk management of Nepalese commercial banks is presented in different tables and diagrams to make the analysis simple and easy to understand.

4.1 Results

The study deals with the sustainable financing and its impact on financial risk management of Nepalese commercial banks. Sustainable financing and financial risk management status of Nepalese commercial banks over the 2 years has been analyzed. Mean, standard deviation, coefficient of variation, etc. statistical tools have also been used to analyze the sustainable financing and financial risk management more effectively.

4.1.1 Contribution of commercial banks to gross domestic product (GDP_{CB})

Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period. As a broad measure of overall domestic production, it functions as a comprehensive scorecard of a given country's economic health (Fernando, 2024). The contribution of commercial banks to GDP in Nepal is one of the measures of sustainable financing. In the last fiscal year of 2078/79, A-class commercial banks in Nepal earned a total of Rs 56.48 Arba. The profit earned by 20 commercial banks was 0.99 percent of the entire GDP. This is how banks directly contribute to GDP. However, there are other ways through which banks again contribute to the economy through the indirect channel.

Table 4.1

Contribution of commercial banks to gross domestic product (in %)

Commercial Banks	Fiscal Year	
	2078/79 (2021/22)	2079/80 (2022/23)
Agriculture Development Bank	0.0450	0.0231
Citizens Bank International Limited	0.0405	0.0326
Everest Bank Limited	0.0493	0.0589
Global IME Bank Limited	0.1003	0.1173
Himalayan Bank Limited	0.0478	0.0273
Kumari Bank Limited	0.0521	0.0089
Laxmi Sunrise Bank Limited	0.0306	0.0400
Machhapuchhre Bank Limited	0.0341	0.0284
Nabil Bank Limited	0.0862	0.1122
Nepal Bank Limited	0.0592	0.0601
Nepal Investment Mega Bank Limited	0.0768	0.0652
Nepal SBI Bank Limited	0.0330	0.0344
NIC ASIA Bank Limited	0.0853	0.0778
NMB Bank Limited	0.0667	0.0564
Prabhu Bank Limited	0.0385	0.0049
Prime Commercial Bank Limited	0.0564	0.0179
Rastriya Banijya Bank Limited	0.0870	0.0629
Sanima Bank Limited	0.0424	0.0456
Siddhartha Bank Limited	0.0588	0.0554
Standard Chartered Bank Nepal Limited	0.0456	0.0607
Total	1.1356	0.9900
Mean	0.0568	0.0495
SD	0.0205	0.0300
CV	0.3611	0.6051

Source. Appendix 1

Table 4.1 shows contribution of commercial banks to gross domestic product (GDP_{CB}) of Agriculture Development Bank (ADBL), Citizens Bank International Limited (CBIL), Everest Bank Limited (EBL), Global IME Bank Limited (GIBL), Himalayan Bank Limited (HBL), Kumari Bank Limited (KBL), Laxmi Sunrise Bank Limited (LSBL), Machhapuchhre Bank Limited (MBL), Nabil Bank Limited (NABIL), Nepal Bank Limited (NBL), Nepal Investment Mega Bank Limited (NIMBL), Nepal SBI Bank Limited (NSBL), NIC ASIA Bank Limited (NICA), NMB Bank Limited (NMB), Prabhu Bank Limited (PBL), Prime Commercial Bank Limited (PCBL), Rastriya Banijya Bank Limited (RBBL), Sanima Bank Limited (SANIMA), Siddhartha Bank Limited (SIDBL) and Standard Chartered Bank Nepal Limited

(SCBNL) over the two fiscal year 2021/22 and 2022/23. The contribution of commercial banks to GDP in fiscal year 2021/22 and 2022/23 was 1.1356 percent and 0.99 percent respectively. GIBL was the highest contributor among all commercial banks to GDP in both fiscal years 2021/22 and 2022/23 with 0.1003 percent and 0.1173 percent respectively. In contrast, Laxmi Bank Limited, who has been merged with Sunrise Bank Limited and PBL were the lowest GDP contributor with 0.0306 and 0.0049 percent in fiscal year 2021/22 and 2022/23 respectively.

4.1.2 Number of ESRM training programs/seminars conducted (ESRM_{NT})

Training programs or seminars in ESRM are typically designed to help individuals or organizations manage and mitigate the environmental and social risks that arise from their operations, projects, or investments. These risks could include impacts on natural resources, communities, human health, and social stability. As per the ESRM guideline 2022, BFIs need to report if ESRM policy as well as procedure/manual has been formulated and approved by BOD with date of approval. The commercial banks also need to report about the number of ESRM related training, seminar, workshop and other programs conducted during the fiscal year. It falls under the employee trainings and capacity building section of ESRM report of commercial bank.

Table 4.2

Number of ESRM training programs/seminars conducted

Commercial Banks	Fiscal Year	
	2078/79 (2021/22)	2079/80 (2022/23)
Agriculture Development Bank	1	0
Citizens Bank International Limited	1	2
Everest Bank Limited	2	2
Global IME Bank Limited	2	16
Himalayan Bank Limited	3	2
Kumari Bank Limited	1	4
Laxmi Sunrise Bank Limited	2	0
Machhapuchhre Bank Limited	3	1
Nabil Bank Limited	4	6
Nepal Bank Limited	1	2
Nepal Investment Mega Bank Limited	3	1
Nepal SBI Bank Limited	3	1
NIC ASIA Bank Limited	0	2
NMB Bank Limited	16	13
Prabhu Bank Limited	2	3
Prime Commercial Bank Limited	7	10
Rastriya Banijya Bank Limited	0	0
Sanima Bank Limited	7	7
Siddhartha Bank Limited	3	2
Standard Chartered Bank Nepal Limited	0	0
Total	61.00	74.00
Mean	3.0500	3.7000
SD	3.6198	4.5201
CV	1.1868	1.2217

Source. Appendix 2-3.

Table 4.2 shows the number of ESRM training programs/seminars conducted by the commercial banks in Nepal over two different fiscal years 2021/22 and 2022/23. The total number of ESRM training programs/seminars conducted by the commercial banks in Nepal in fiscal year 2021/22 and 2022/23 are 61 and 74 respectively. Among all commercial banks, NMB has conducted much more ESRM training programs/seminars through 16 and 13 ESRM training in fiscal year 2021/22 and 2022/23 respectively. However, RBBL and SCBNL have not conducted any ESRM training programs/seminars in both fiscal years. In an average, the commercial banks have conducted 3.05 and 3.70 ESRM training programs/seminars in fiscal year 2021/22 and 2022/23 respectively.

4.1.3 Allocation of fund in the budget for ESRM training programs/seminars

The allocation of funds in the budget for ESRM initiatives help improve the organization's ability to manage environmental and social risks, ensuring compliance with regulations and promoting sustainable practices. As per the ESRM guideline 2022, BFIs also need to report about the funds allocated for ESRM related training, seminar, workshop and other programs during the fiscal year quarterly. It also falls under the employee trainings and capacity building section of ESRM report of commercial bank.

Table 4.3

Allocation of fund in the budget for ESRM training programs/seminars (in Rs.)

Commercial Banks	Fiscal Year	
	2078/79 (2021/22)	2079/80 (2022/23)
Agriculture Development Bank	500,000	650,000
Citizens Bank International Limited	-	449,500
Everest Bank Limited	16,000	220,000
Global IME Bank Limited	-	480,000
Himalayan Bank Limited	-	-
Kumari Bank Limited	9,040	-
Laxmi Sunrise Bank Limited	26,500	-
Machhapuchhre Bank Limited	-	4,398,000
Nabil Bank Limited	-	-
Nepal Bank Limited	200,000	465,560
Nepal Investment Mega Bank Limited	500,000	400,000
Nepal SBI Bank Limited	42,239	33,900
NIC ASIA Bank Limited	-	30,000
NMB Bank Limited	249,289	4,038,420
Prabhu Bank Limited	-	-
Prime Commercial Bank Limited	110,019	408,361
Rastriya Banijya Bank Limited	-	-
Sanima Bank Limited	2,097,238	459,402
Siddhartha Bank Limited	48,794	178,157
Standard Chartered Bank Nepal Limited	-	-
Total	3,799,119	12,211,300
Mean	189,956	610,565
SD	475,516	1,254,196
CV	2.5033	2.0542

Source. Appendix 2-3.

Table 4.3 shows the allocation of fund in the budget for ESRM training programs/seminars by the commercial banks in Nepal over two different fiscal years 2021/22 and 2022/23. The total fund allocated by the commercial banks in Nepal for ESRM training programs/seminars in fiscal year 2021/22 and 2022/23 are Rs 3,799,119 and Rs 12,211,300 respectively. Among all commercial banks, SANIMA has allocated much more budget amounting Rs 2,097,238 in FY 2078/79 and MBL has allocated much more budget amounting Rs 4,398,000 in FY 2079/80. However, HBL, NABIL, PBL, RBBL and SCBL have not allocated any budget for ESRM training programs/seminars in both fiscal years. In an average, the commercial banks have allocated Rs 189,956 and Rs 610,565 budget for ESRM training programs/seminars in fiscal year 2021/22 and 2022/23 respectively.

4.1.4 Number of transactions subject to ESDD (ESDD_{NT})

The number of transactions subject to ESDD refers to how many deals or projects need to go through the environmental and social due diligence process, and it helps determine the scope and scale of risk management for environmental and social factors in these transactions. As per the ESRM guideline 2022, BFIs also need to report about the number of transactions performed related to Environmental and Social Due Diligence (ESDD) during the fiscal year. ESDD is a management tool used to identify the social and environmental aspects of any business that plays an important role in decision making process prior. It involves the systematic identification, quantification and assessment/evaluation of environmental and social risks associated with a proposed transaction.

Table 4.4

Number of transactions subject to ESDD

Commercial Banks	Fiscal Year	
	2078/79 (2021/22)	2079/80 (2022/23)
Agriculture Development Bank	0	0
Citizens Bank International Limited	170	209
Everest Bank Limited	78	274
Global IME Bank Limited	4,763	1,610
Himalayan Bank Limited	0	0
Kumari Bank Limited	0	458
Laxmi Sunrise Bank Limited	27,510	25,362
Machhapuchhre Bank Limited	113	782
Nabil Bank Limited	23	89
Nepal Bank Limited	0	21
Nepal Investment Mega Bank Limited	317	1,322
Nepal SBI Bank Limited	109	82
NIC ASIA Bank Limited	0	0
NMB Bank Limited	101	383
Prabhu Bank Limited	7,192	12,355
Prime Commercial Bank Limited	29	51
Rastriya Banijya Bank Limited	0	0
Sanima Bank Limited	5,799	7,238
Siddhartha Bank Limited	178	146
Standard Chartered Bank Nepal Limited	869	923
Total	47,251.00	51,305.00
Mean	2,362.55	2,565.25
SD	6,300.2307	61,68.5664
CV	2.6667	2.4047

Source. Appendix 2-3.

Table 4.4 shows the number of transactions subject to ESDD conducted by the commercial banks in Nepal over two different fiscal years 2021/22 and 2022/23. The total number of transactions conducted by the commercial banks in Nepal subject to ESDD in fiscal year 2021/22 and 2022/23 are 47,521 and 51,305 respectively. Among all commercial banks, Laxmi Bank Limited, which is now merged with Sunrise Bank Limited has conducted much more transactions subject to ESDD in FY 2021/22 with 27,510 transactions and even after merger LSBL has conducted much more transactions in FY 2021/22 with 25,362 transactions in FY 2022/23. However, HBL, NICA and RBBL have not conducted any number of transactions subject to ESDD in both fiscal years. In an average, the commercial banks have conducted 2,362.55 and

2,565.25 transactions subject to ESDD in fiscal year 2021/22 and 2022/23 respectively.

4.1.5 Capital adequacy ratio

A bank's capital level represented as a percentage of its risk-weighted credit exposure is called the capital adequacy ratio, which is determined by dividing the total amount of capital by the risk-weighted sum of the bank's assets (Poudel, 2012). The percentage of capital that a bank must maintain in accordance with regulatory requirements is known as this. Reddy and Prasad (2011) stated the imperative to uphold a designated capital adequacy ratio (CAR) to ascertain the ability of banks to absorb losses and guarantee that, in the worst case, they would still be able to suffer bearable losses. A bank is generally thought to be low risk and likely to fulfill its financial obligations if its CAR is high. Depositor security and financial system stability will increase with a larger ratio. It may be argued that having sufficient capital in a bank helps to increase profitability since it allows the bank to absorb potential losses and avoid bankruptcy or insolvency.

Table 4.5

Capital adequacy ratio (in %)

Commercial Banks	Fiscal Year	
	2078/79 (2021/22)	2079/80 (2022/23)
Agriculture Development Bank	16.34	14.68
Citizens Bank International Limited	13.02	12.32
Everest Bank Limited	11.95	13.32
Global IME Bank Limited	12.72	13.37
Himalayan Bank Limited	11.63	13.22
Kumari Bank Limited	12.98	12.65
Laxmi Sunrise Bank Limited	12.76	13.43
Machhapuchhre Bank Limited	13.47	13.57
Nabil Bank Limited	13.44	12.65
Nepal Bank Limited	15.04	14.49
Nepal Investment Mega Bank Limited	15.99	14.10
Nepal SBI Bank Limited	13.32	12.78
NIC ASIA Bank Limited	13.51	13.39
NMB Bank Limited	13.76	12.80
Prabhu Bank Limited	13.16	12.95
Prime Commercial Bank Limited	13.33	12.28
Rastriya Banijya Bank Limited	13.97	13.65
Sanima Bank Limited	13.75	14.13
Siddhartha Bank Limited	13.09	12.53
Standard Chartered Bank Nepal Limited	16.00	17.12
Mean	13.6615	13.4715
SD	1.2695	1.0995
CV	0.0929	0.0816

Source. Appendix 4-5.

Table 4.5 shows capital adequacy ratio (CAR) of Agriculture Development Bank (ADBL), Citizens Bank International Limited (CBIL), Everest Bank Limited (EBL), Global IME Bank Limited (GIBL), Himalayan Bank Limited (HBL), Kumari Bank Limited (KBL), Laxmi Sunrise Bank Limited (LSBL), Machhapuchhre Bank Limited (MBL), Nabil Bank Limited (NABIL), Nepal Bank Limited (NBL), Nepal Investment Mega Bank Limited (NIMBL), Nepal SBI Bank Limited (NSBL), NIC ASIA Bank Limited (NICA), NMB Bank Limited (NMB), Prabhu Bank Limited (PBL), Prime Commercial Bank Limited (PCBL), Rastriya Banijya Bank Limited (RBBL), Sanima Bank Limited (SANIMA), Siddhartha Bank Limited (SIDBL) and Standard Chartered Bank Nepal Limited (SCBNL) over the two fiscal year 2021/22 and 2022/23. Capital adequacy ratio (CAR) is determined by Nepal Rastra Bank (NRB), and the

commercial banks should maintain the minimum capital adequacy ratio according to the guidelines of the central bank of a country. The minimum capital adequacy ratio (CAR) set by NRB through its unified directives is 10% for all fiscal years for commercial banks operating in Nepal. All the banks have maintained the minimum CAR in all fiscal years. However, the highest and the lowest CAR have been maintained by SCBNL in FY 2022/23 and HBL in FY 2021/22 with CAR value of 17.12% and 11.63% respectively. Banks with high CAR are often seen as low risk and reliable payers of their debts. The stability of the financial system and safety for depositors will increase with a larger percentage.

4.1.6 Non-performing assets ratio

A non-performing asset (NPA) is a term used to categorize loans or advances that are either in default or in arrears used to measure the assets quality of the bank. Arrears occur when principal or interest payments are delayed or not made on time, while default happens when the lender determines that the loan agreement has been breached and the borrower is incapable of fulfilling their obligations (Tuovila, 2021). The non-performing assets ratio, also referred to as the non-performing loan ratio, serves as a critical metric for assessing a bank's loan portfolio. It quantifies the percentage of nonperforming loans in relation to the total outstanding loans maintained by the bank. Non-performing loan reduce bank's earnings and cause losses, which weighs on their soundness. Banks with high levels of non-performing loans are unable to lend to households and companies. This is harmful to the economy as a whole (Segal, 2020). The average non-performing loan of commercial banks is at 1.32 percent as of mid-July 2023 (Adhikari, 2022).

Table 4.6

Non-performing assets ratio (in %)

Commercial Banks	Fiscal Year	
	2078/79 (2021/22)	2079/80 (2022/23)
Agriculture Development Bank	1.68	2.48
Citizens Bank International Limited	1.87	3.19
Everest Bank Limited	0.24	0.79
Global IME Bank Limited	1.22	3.08
Himalayan Bank Limited	0.77	4.56
Kumari Bank Limited	0.96	4.77
Laxmi Sunrise Bank Limited	0.89	2.81
Machhapuchhre Bank Limited	0.84	2.12
Nabil Bank Limited	1.54	3.20
Nepal Bank Limited	1.9	2.85
Nepal Investment Mega Bank Limited	1.47	4.35
Nepal SBI Bank Limited	0.15	2.43
NIC ASIA Bank Limited	0.49	0.80
NMB Bank Limited	1.33	2.72
Prabhu Bank Limited	1.20	4.16
Prime Commercial Bank Limited	1.40	4.23
Rastriya Banijya Bank Limited	2.00	2.94
Sanima Bank Limited	0.35	1.30
Siddhartha Bank Limited	1.03	2.01
Standard Chartered Bank Nepal Limited	0.59	1.17
Mean	1.0960	2.7980
SD	0.5600	1.2132
CV	0.5110	0.4336

Source. Appendix 4-5.

Table 4.6 shows non-performing assets ratio (NPA) of Agriculture Development Bank (ADBL), Citizens Bank International Limited (CBIL), Everest Bank Limited (EBL), Global IME Bank Limited (GIBL), Himalayan Bank Limited (HBL), Kumari Bank Limited (KBL), Laxmi Sunrise Bank Limited (LSBL), Machhapuchhre Bank Limited (MBL), Nabil Bank Limited (NABIL), Nepal Bank Limited (NBL), Nepal Investment Mega Bank Limited (NIMBL), Nepal SBI Bank Limited (NSBL), NIC ASIA Bank Limited (NICA), NMB Bank Limited (NMB), Prabhu Bank Limited (PBL), Prime Commercial Bank Limited (PCBL), Rastriya Banijya Bank Limited (RBBL), Sanima Bank Limited (SANIMA), Siddhartha Bank Limited (SIDBL) and Standard Chartered Bank Nepal Limited (SCBNL) over the two fiscal year 2021/22 and 2022/23.. The highest and the lowest NPA over the period are 4.77% and 0.15%

respectively. KBL has the highest and NSBL has the lowest NPA among 40 observations. The high non-performing loan ratio indicates that bank's assets are not doing well or the loan department is not so conscious while passing loan. Thus, lower ratio will be preferred regarding non-performing loan ratio.

4.1.7 Descriptive statistics

This section deals with the impact of sustainable financing measured in terms of contribution of commercial banks to gross domestic product (GDP_{CB}), number of Environmental and Social Risk Management training programs/seminars conducted ($ESRM_{NT}$), allocation of fund in the budget for ESRM training programs/seminars ($ESRM_{AF}$) and total number of transactions subject to Environmental and Social Due Diligence ($ESDD_{NT}$) on financial risk management measured by capital adequacy ratio (CAR) and non-performing assets ratio (NPA) of commercial banks in Nepal.

Table 4.7

Descriptive Statistics of GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$, $ESDD_{NT}$, NPA and CAR

Variables	N	Indicators	Minimum	Maximum	Mean	Std. Deviation
GDP_{CB}	40	Percentage	0.0049	0.1173	0.0531	0.0040
$ESRM_{NT}$	40	Number	0	16	3.3750	0.6412
$ESRM_{AF}$	40	Rs	0	4,398,000	400,260.48	151,810.56
$ESDD_{NT}$	40	Number	0	27,510	2,463.90	973.2147
CAR	40	Percentage	11.63	17.12	13.5665	0.1860
NPA	40	Percentage	0.15	4.77	1.9470	0.2008

Source. Appendix 1-5.

Table 4.7 shows descriptive statistics of 20 commercial banks over two different years from 2021/22 and 2022/23. The total number of observation (N) was 40 for variable. Descriptive statistics shows that the mean of the GDP_{CB} is 0.0531% with standard deviation of 0.0040% and ranges from 0.0049% to 0.1173%. This implies that value

of GDP_{CB} can vary on both sides by 0.0040%. The mean of the $ESRM_{NT}$ is 3.375 with standard deviation of 0.6412 and ranges from 0 to 16. This implies that value of $ESRM_{NT}$ can vary on both sides by 0.6412. Similarly, the mean of the $ESRM_{AF}$ is Rs 400,260.48 with standard deviation of Rs 151,810.56 and ranges from Rs 0 to Rs 4,398,000. This implies that value of $ESRM_{AF}$ can vary on both sides by Rs 151,810.56. Likewise, the mean of the $ESDD_{NT}$ is 2,463.90 with standard deviation of 973.2147 and ranges from 0 to 27,510. This implies that value of $ESDD_{NT}$ can vary on both sides by 973.2147. The mean of the CAR is 13.5665% with standard deviation of 0.1860% and ranges from 11.63% to 17.12%. This implies that value of BR can vary on both sides by 0.1860%. Furthermore, the mean of the NPA is 1.9470% with standard deviation of 0.2008% and ranges from 0.15% to 4.77%. This implies that value of NPA can vary on both sides by 0.2008%.

4.1.8 Correlation analysis

Six factors have been found by the investigation. Whether there is a positive or negative link between two variables, correlation analysis entails examining and quantifying the degree of that association. A positive or direct correlation occurs when the two variable values vary in the same direction, that is, when the value of one variable increase or decreases. It also indicates whether the relationship is significant or insignificant and the correlation analysis is used to identify the relationship between contribution of commercial banks to gross domestic product (GDP_{CB}), number of Environmental and Social Risk Management training programs/seminars conducted ($ESRM_{NT}$), allocation of fund in the budget for ESRM training programs/seminars ($ESRM_{AF}$), total number of transactions subject to Environmental and Social Due Diligence ($ESDD_{NT}$), capital adequacy ratio (CAR) and non-performing assets ratio (NPA).

Table 4.8

Correlation analysis

Variables		GDP _{CB}	ESRM _{NT}	ESRM _{AF}	ESDD _{NT}	CAR	NPA
GDP _{CB}	Pearson Correlation	1					
	Sig. (2-tailed)						
ESRM _{NT}	Pearson Correlation	0.222	1				
	Sig. (2-tailed)	(0.168)					
ESRM _{AF}	Pearson Correlation	-0.118*	0.583	1			
	Sig. (2-tailed)	(0.047)	(0.077)				
ESDD _{NT}	Pearson Correlation	-0.238*	-0.086	-0.072	1		
	Sig. (2-tailed)	(0.014)	(0.060)	(0.660)			
CAR	Pearson Correlation	0.117	-0.218*	0.007	-0.107	1	
	Sig. (2-tailed)	(0.472)	(0.018)	(0.097)	(0.051)		
NPA	Pearson Correlation	-0.213**	0.136*	0.062	0.005	-0.492**	1
	Sig. (2-tailed)	(0.002)	(0.040)	(0.703)	(0.097)	(0.004)	

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Table 4.8 explains the correlation between various sustainable financing affecting financial risk management of commercial banks in Nepal. The major focus is given to GDP_{CB}, ESRM_{NT}, ESRM_{AF}, ESDD_{NT}, NPA and CAR. ESRM_{NT} and ESRM_{AF} have highest influences in each other with a positive 0.583 correlation score and the correlation is insignificant. The low degree of significant negative correlation can be traced between NPA and GDP_{CB}; ESRM_{AF} and GDP_{CB}; ESRM_{NT} and GDP_{CB}; CAR and ESDD_{NT}; ESDD_{NT} and CAR with correlation value of -0.213, -0.118, -0.238, -0.218 and -0.107 respectively among the variables. On the hand, the low degree of significant positive correlation can be traced between NPA and ESDD_{NT} with correlation value of 0.136 among the variables. The low degree of insignificant positive correlation can be traced between ESDD_{NT} and GDP_{CB}; CAR and GDP_{CB} with correlation value of 0.222 and 0.117 respectively. The moderate negative but significant correlation can be found between NPA and CAR with the correlation value -0.492.

4.1.9 Regression analysis

Whereas in basic regression analysis, a single independent variable is used to estimate the values of a dependent variable, in coefficient analysis, two or more independent variables are used to estimate the values of dependent variables. To determine the relative movement of the variable, multiple regression analysis is helpful. To put it another way, multiple regression analysis uses two or more independent variables rather than just one to predict the value of a dependent variable. In the study, contribution of commercial banks to gross domestic product (GDP_{CB}), number of Environmental and Social Risk Management training programs/seminars conducted ($ESRM_{NT}$), allocation of fund in the budget for ESRM training programs/seminars ($ESRM_{AF}$), total number of transactions subject to Environmental and Social Due Diligence ($ESDD_{NT}$) are the dependent variable and capital adequacy ratio (CAR) and non-performing assets ratio (NPA) are the independent variables.

4.1.9.1 Regression relationship of CAR with GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$

Table 4.9
Result of regression analysis

Model 1: CAR					
Variable	Constant	GDP_{CB}	$ESRM_{NT}$	$ESRM_{AF}$	$ESDD_{NT}$
Coefficient	3.4156	0.0476	-0.2937	0.1466	-0.3370
t-statistic	7.2987	-0.0907	-3.0735	2.0580	2.3551
p-value	0.0000	0.3700	0.0039	0.0463	0.0379
Adjusted R ²	0.3592				
F-statistic (F-value)	3.0077 (0.00459)				
$CAR = a + b_1 GDP_{CB} + b_2 ESRM_{NT} + b_3 ESRM_{AF} + b_4 ESDD_{NT}$					

Table 4.9 shows the model summary for the regression analysis of the capital adequacy ratio (CAR) with GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ of commercial banks in Nepal. The regression result of Model 1, where CAR is the dependent variable reports that the relationship with GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ is positive and insignificant at 5% level of significance with F-value 0.00459. The adjusted R square is 0.3592 which shows the model explanatory power depicted that 35.92% of the changes in the capital adequacy ratio (CAR) in commercial banks be explained by the four variables (GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$) while the remaining percentage can be explained by other factors excluded in the model. The study findings revealed that the beta coefficients of GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ are 0.0476, -0.2937, 0.1466 and -0.3370 respectively. It means that a unit change in GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ lead 0.0476, -0.2937, 0.1466- and -0.3370 unit changes in CAR of sample commercial banks respectively.

There is significant relationship between CAR and all variables except GDP_{CB} since the P value are lower than 0.05 at 5% level of significance for all variables except GDP_{CB} . The calculated test statistic (i.e. t -ratio) between CAR and GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ was -0.9072, -3.0735, 2.0580 and 2.3551 respectively. Since, the tabulated test statistics t at 5% level of significance and $df = 39$ for two tailed test is ± 2.0227 ; there is significant relationship between CAR and all variables except GDP_{CB} because the calculated t-value $|t_{cal}|$ of these variables is more than tabulated t-value $|t_{tab}| = 2.0227$ except for GDP_{CB} . Therefore, both of the test i.e. p-value and t-value conclude there is significant relationship between CAR and $ESRM_{NT}$, CAR and $ESRM_{AF}$; CAR and $ESDD_{NT}$, but insignificant relationship between CAR and GDP_{CB} . The regression model/line is given by following equation:

$$CAR = 3.416 + 0.048 GDP_{CB} - 0.294 ESRM_{NT} + 0.147 ESRM_{AF} - 0.337 ESDD_{NT}$$

This implies that a unit changes in the GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ lead 0.0476, -0.2937, 0.1466- and -0.3370 change in capital adequacy ratio (CAR) of commercial banks in Nepal. The capital adequacy ratio of commercial banks in Nepal has negligible influenced by GDP_{CB} , low degree of positive impact by $ESRM_{AF}$ and low degree of negative impact by the rest variables ($ESRM_{NT}$ and $ESDD_{NT}$).

4.1.9.1 Regression relationship of NPA with GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$

Table 4.10

Result of regression analysis

Model 2: NPA					
Variable	Constant	GDP_{CB}	$ESRM_{NT}$	$ESRM_{AF}$	$ESDD_{NT}$
Coefficient	2.4903	-0.2721	0.1306	-0.1010	-0.1244
t-statistic	4.6653	-2.0186	0.4849	0.9424	-2.9074
p-value	0.0000	0.0416	0.6291	0.3490	0.0048
Adjusted R^2	0.3039				
F-statistic (F-value)	2.0884 (0.04335)				
$NPA = a + b_1 GDP_{CB} + b_2 ESRM_{NT} + b_3 ESRM_{AF} + b_4 ESDD_{NT}$					

Table 4.10 shows the model summary for the regression analysis of the non-performing assets (NPA) with GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ of commercial banks in Nepal. The regression result of Model 2, where NPA is the dependent variable reports that the relationship with GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ is positive and insignificant at 5% level of significance with F-value 0.04335. The adjusted R square is 0.3039 which shows the model explanatory power depicted that 30.39% of the changes in the non-performing assets (NPA) in commercial banks be explained by the four variables (GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$) while the remaining percentage can be explained by other factors excluded in the model. The study findings revealed that the beta coefficients of GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ are -0.2721, 0.1306, -0.1010 and -0.1244 respectively.

There is significant relationship of NPA with GDP_{CB} and $ESDD_{NT}$, since the P value are lower than 0.05 at 5% level of significance for these variables. The calculated test statistic (i.e. t -ratio) of NPA with GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ was -

2.0156, 0.4849, 0.9424 and -2.9074 respectively. Since, the tabulated test statistics t at 5% level of significance and $df = 39$ for two tailed test is ± 2.0227 ; there is significant relationship of NPA with GDP_{CB} and $ESDD_{NT}$ because the calculated t-value $|t_{cal}|$ of these variables is more than tabulated t-value $|t_{tab}| = 2.0227$ except for GDP_{CB} . Therefore, both of the test i.e. p-value and t-value conclude there is significant relationship between NPA and GDP_{CB} , NPA and $ESDD_{NT}$, but insignificant relationship between NPA and $ESRM_{NT}$, NPA and $ESRM_{AF}$.

The regression model/line is given by following equation:

$$NPA = 2.490 - 0.272 GDP_{CB} + 0.131 ESRM_{NT} - 0.101 ESRM_{AF} - 0.124 ESDD_{NT}$$

This implies that a unit changes in the GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ lead -0.2721, 0.1306, -0.1010 and -0.1244 change in non-performing assets (NPA) of commercial banks in Nepal. The non-performing assets of commercial banks in Nepal has low degree of positive impact by $ESRM_{NT}$ and low degree of negative impact by the rest variables (GDP_{CB} , $ESRM_{AF}$ and $ESDD_{NT}$).

4.2 Discussion

The result of the study has found the significant correlation between CAR and $ESRM_{NT}$; NPA and GDP_{CB} ; NPA and $ESRM_{NT}$; NPA and CAR. There is a negative but significant impact of GDP_{CB} on non-performing assets (NPA) and insignificant but positive impact on capital adequacy ratio (CAR). The total number of transactions subject to Environmental and Social Due Diligence ($ESDD_{NT}$) was the most influencing factor of CAR and contribution of commercial banks to gross domestic product (GDP_{CB}) was the most influencing factor of NPA. The study also found negative but significant impact of number of Environmental and Social Risk Management training programs/seminars conducted ($ESRM_{NT}$) on capital adequacy ratio (CAR). The significant positive impact of allocation of fund in the budget for ESRM training programs/seminars ($ESRM_{AF}$) on financial risk management in terms of CAR is also found. There is low degree of impact on financial risk management of Nepalese commercial banks due to sustainable financing.

Tyagi and Ghimire (2024), Bhandari et al. (2024), Acharya and Sah (2024), Al- Qudah (2023), Bhatt et al. (2023), Vagin et al. (2022), Landi et al. (2022), García-Benau et al. (2021), Liang and Renneboog (2020) and Charline (2019) who found negative but significant impact of GDP_{CB} on non-performing assets (NPA) is consistent result to the study. The study has also found the insignificant but positive impact of contribution of commercial bank to gross domestic product (GDP_{CB}) on capital adequacy ratio (CAR) of the bank which is consistent to the empirical studies of Singh (2024), Subedi and Bhattarai (2024), Pokharel (2024), Liu and Huang (2022), and Shi et al. (2021). The total number of transactions subject to Environmental and Social Due Diligence ($ESDD_{NT}$) was the most influencing factor of CAR which has been supported by Acharya and Sah (2024), Mishra (2023) and Sharma (2023). Singh (2024), Bhandari et al. (2024), Acharya and Sah (2024), Suttipun (2023), Al- Qudah et al. (2023), Liu and Huang (2022), Vagin et al. (2022), Zhang et al. (2022), Shi et al. (2021), Höck et al. (2020), Cho et al. (2019) have supported on a negative and significant effect of number of Environmental and Social Risk Management training programs/seminars conducted ($ESRM_{NT}$) on capital adequacy ratio (CAR). The study has also found the significant but negative impact of contribution of commercial bank to gross domestic product (GDP_{CB}) and total number of transactions subject to Environmental and Social Due Diligence ($ESDD_{NT}$) on non-performing assets (NPA) of the bank which is consistent to the empirical studies of Singh (2024), Subedi and Bhattarai (2024), Pokharel (2024), Sharma (2023), Vaidya and Budhathoki (2023), Liu and Huang (2022), Shi et al. (2021), Liang and Renneboog (2020), Höck et al. (2020), and Cho et al. (2019).

The result is contrary to Pradnyani et al. (2024), Vagin et al. (2022), Timilsina (2023) and Bhatt et al. (2023) who found a significant positive relationship between total number of transactions subject to Environmental and Social Due Diligence and capital adequacy ratio. Mishra (2023) who found significant impact of GDP_{CB} on CAR and García-Benau et al. (2021) who found positive and significant impact of $ESDD_{NT}$ on CAR is another contradiction to the study. The result is also contrary to Judijanto et al. (2024) and Charline (2019) who found positive but insignificant impact of GDP_{CB} on CAR and to Subedi and Bhattarai (2024) who empirically verified that $ESRM_{NT}$ has negative effect on the financial risk management measured by NPA.

The peer emulation theory of sustainable finance proposes that countries with shared views on climate change are more likely to implement similar sustainable finance practices. This has been supported by findings that align with those of Shi et al. (2021), who examined Chinese financial institutions. Judijanto et al. (2024) explored how sustainability discussions evolved from basic financial stability to inclusive and technological themes which has supported the Life Span Theory's concept of progression through stages. Vagin et al. (2022) addressed how sustainability and financial risk evolved amid the COVID-19 crisis, proposing new crisis-management models, aligning with the theory's dynamic and evolutionary focus. Pradnyani et al. (2024) found that sustainable banking policies aligned with environmental goals improved financial outcomes which suggested institutional maturity as proposed in the Life Span Theory. Singh (2024) and Zhang et al. (2022) discussed how social performance and green banking practices mediate financial outcomes. This reflects the Life Span Theory's notion that ESG integration becomes more complex and impactful in later stages of maturity. Zhang et al. (2022) identified customer awareness and staff competence as barriers—key Life Span Theory elements, which state early-stage sustainable finance suffers from lack of awareness and expertise.

On contrast, Landi et al. (2020) reported that ESG evaluations increase investor uncertainty highlighting persistent skepticism inconsistent with the theory's assumption that markets mature to trust ESG metrics. Cho et al. (2019), Charline (2019) and Suttipun (2023) rely on static or cross-sectional data. The Life Span Theory is inherently longitudinal and assumes finance practices evolve over time, which these studies don't fully capture. Liu and Huang (2022) showing mutual influence between sustainable finance and risk management, they find that large state-owned banks resist changes suggesting an institutional inertia not fully accounted for in the Life Span Theory, which assumes progressive institutional adaptation.

CHAPTER V

SUMMARY AND CONCLUSION

5.1 Summary

Sustainability is now a widely accepted factor in the financial industry. Participants in the market and other stakeholders, however, must agree on the terminology (Subedi & Timilsina, 2023). Nepal Rastra Bank has created a Green Finance Taxonomy in accordance with the Monetary Policy for 2022–2023 in order to promote the flow of domestic green finance in order to support green bonds, climate risk reporting, and capital requirements for the business community. Therefore, the study's goal is to analyze sustainable finance and how it affects Nepal's commercial banks' financial risk management process. Utilizing the purposive sample approach, all 20 commercial banks that are active in Nepal were chosen for the study.

The study has used descriptive research design to analyze the sustainable financing and financial risk management situation of Nepalese commercial banks and casual comparative research design to examine the impact of sustainable financing on financial risk management. Contribution of commercial banks to gross domestic product, number of Environmental and Social Risk Management training programs/seminars conducted, allocation of fund in the budget for ESRM training programs/seminars and total number of transactions subject to Environmental and Social Due Diligence are the dependent variable affecting the financial risk management of the commercial banks. Capital adequacy ratio and non-performing assets ratio are identified financial risk management indicators in the study. Correlation analysis has been used to determine the relationship between the identified variables and multiple regression model has been used to examine the impact of sustainable financing on financial risk management of commercial banks in Nepal.

The study has given the real picture of the sustainable financing and its impact on the financial risk management of commercial banks in Nepal which might be significant

to the commercial banks, its shareholders, depositor and all general public who are interested on this current affair of banking industry. Besides, the study will be equally important to the central bank for they can get valuable suggestions which may be fruitful in taking corrective actions if any deviation is found on the past performance regarding with sustainable financing guidelines. The study might also be significant for other researchers who want get knowledge about the sustainable financing and the financial risk management of commercial banks in Nepal.

The result demonstrated the significant correlation between CAR and $ESRM_{NT}$; NPA and GDP_{CB} ; NPA and $ESRM_{NT}$; NPA and CAR. There is a negative but significant impact of GDP_{CB} on non-performing assets (NPA) and insignificant but positive impact on capital adequacy ratio (CAR). NPA was primarily influenced by contribution of commercial banks to gross domestic product (GDP_{CB}), whereas CAR was mostly influenced by the total number of transactions subject to Environmental and Social Due Diligence ($ESDD_{NT}$). The study also found negative but significant impact of number of Environmental and Social Risk Management training programs/seminars conducted ($ESRM_{NT}$) on capital adequacy ratio (CAR). The significant positive impact of allocation of fund in the budget for ESRM training programs/seminars ($ESRM_{AF}$) on financial risk management in terms of CAR is also found. The influence of sustainable finance on Nepalese commercial banks' financial risk management is minimal.

5.2 Conclusion

The study aimed to analyze sustainable financing and financial risk management position of Nepalese commercial banks. The contribution of all commercial banks to GDP was about 1 percent. The total number of ESRM training programs/seminars and the number of transactions subject to ESDD conducted by the commercial banks along with the budget allocated by the commercial banks for ESRM training programs/seminars are increasing which shows the sustainable financing of commercial banks is sound. Regarding CAR, all commercial banks have maintained the minimum CAR in all fiscal years as per NRB directives and the NPA of all

commercial banks are below 5 percent which shows sound financial risk management of commercial banks in Nepal.

The study also has aimed to examine the relationship between sustainable financing and financial risk management of selected commercial banks in Nepal for which correlation coefficient has been used. $ESRM_{NT}$ and $ESRM_{AF}$ have the highest positive but insignificant correlation which indicates the statistical evidence does not support that this relationship is strong or meaningful enough to be considered reliable in a general sense. The low degree of significant negative correlation can be traced between NPA and GDP_{CB} ; $ESRM_{AF}$ and GDP_{CB} ; $ESRM_{NT}$ and GDP_{CB} ; CAR and $ESDD_{NT}$; $ESDD_{NT}$ and CAR among the variables. On the hand, the low degree of significant positive correlation can be traced between NPA and $ESDD_{NT}$. The low degree of insignificant positive correlation can be traced between $ESDD_{NT}$ and GDP_{CB} ; CAR and GDP_{CB} . However, the moderate negative but significant correlation can be found between NPA and CAR. This relationship is statistically significant, indicating a stronger and more reliable association.

The study also has aimed to examine the impact of sustainable financing on financial risk management of Nepalese commercial banks. In order to achieve the objective, the study has considered CAR and NPA as dependent variables, and GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ as independent variables. GDP_{CB} have negative but significant impact on non-performing assets (NPA). The results also reported insignificant but positive impact of contribution of commercial bank to gross domestic product (GDP_{CB}) on capital adequacy ratio (CAR) indicating the impact does not support that this relationship is strong enough to be considered reliable. However, the number of Environmental and Social Risk Management training programs/seminars conducted ($ESRM_{NT}$) have negative and significant effect of on capital adequacy ratio (CAR). This could lead to a reduction in the bank's available capital or increase its expenses, thereby lowering its CAR.

5.3 Implications

As an essential component of the loan application process, financial risk management is crucial for banks. Maintaining exposure to financial risk helps to protect the bank from the negative consequences of financial risk, hence optimizing bank risk and adjusted risk rate of return. So, it is necessary to study the sustainable financing of commercial banks and examine its impact on financial risk management. The study has observed NPL and CAR for measuring financial risk management, and GDP_{CB} , $ESRM_{NT}$, $ESRM_{AF}$ and $ESDD_{NT}$ for measuring the sustainable financing of the banks over different two fiscal years. Based on major findings, discussions, summary and conclusions drawn from the study, the study has several significant implications on various fields.

Effective financial risk management is the desire of every financial institution. The study has observed the financial risk management of all commercial banks. These commercial banks may improve their performance on financial risk management more efficiently on the following days understanding how these banks and other banks are managing the credit risks which may be fruitful in taking corrective actions if any deviation is found on the past performance regarding with management of financial risk. A significant negative relationship between GDP and NPA suggests that banks and financial institutions should closely monitor macroeconomic indicators like GDP growth to assess potential risks to their asset quality. Furthermore, the study has observed the impact of sustainable financing on financial risk management of the commercial banks to ensure that the sustainable financing affects the financial risk management.

Nepal Rastra Bank (NRB), as a policy maker for the commercial banks and other financial institutions, has made provisions on maintaining the financial risk through its directives. Capital adequacy ratio (CAR) and other monetary instruments are controlled by NRB. These instruments affect the credit risk management of the commercial banks because the commercial banks should abide by the unified directives of NRB. Thus, the study may provide proper homework for NRB to review its directives time-to-time according to the requirement of the economic situation of

the country and workout on formulating more effective policies on credit risk management on upcoming days.

The investors, creditors, bankers, shareholders, depositor and all general public who are interested on this current affair of banking industry can understand the financial risk management, and the relationship between the financial risk management and profitability which help the stakeholders make the investment decisions. The profit is the concern of every investor, and the firm managing the financial risk effectively will be the center of attraction. Investors in the financial sector may also use GDP growth as an indicator of potential changes in NPA levels, which could affect the profitability and stability of banks and other financial institutions. The efficient financial risk management provides the past, present and future ability of commercial banks.

The future researchers who have interest on the sustainable financing and financial risk management area can conduct their research reviewing the study. The study would be important as it provide theoretical as well as conceptual framework of different aspect of sustainable financing and its impact on financial risk management. The researcher can view other indicators of sustainable financing and financial risk management. Except the indicators involved in the research, other measures can also indicate the sustainable financing and financial risk management. Therefore, it could be more interesting to include more indicators to test the relationship. The study has focused on sustainable financing and financial risk management of commercial banks, and was based on all commercial banks while there are many other development banks as well as microfinance. In addition, sustainable financing is not only the factor affecting the financial risk management of commercial banks. Liquidity, dividend policy, working capital, and other financial performance aspects can also be the matter of concerns. Exploring the other aspects of financial risk management is also an interesting expansion for this research.

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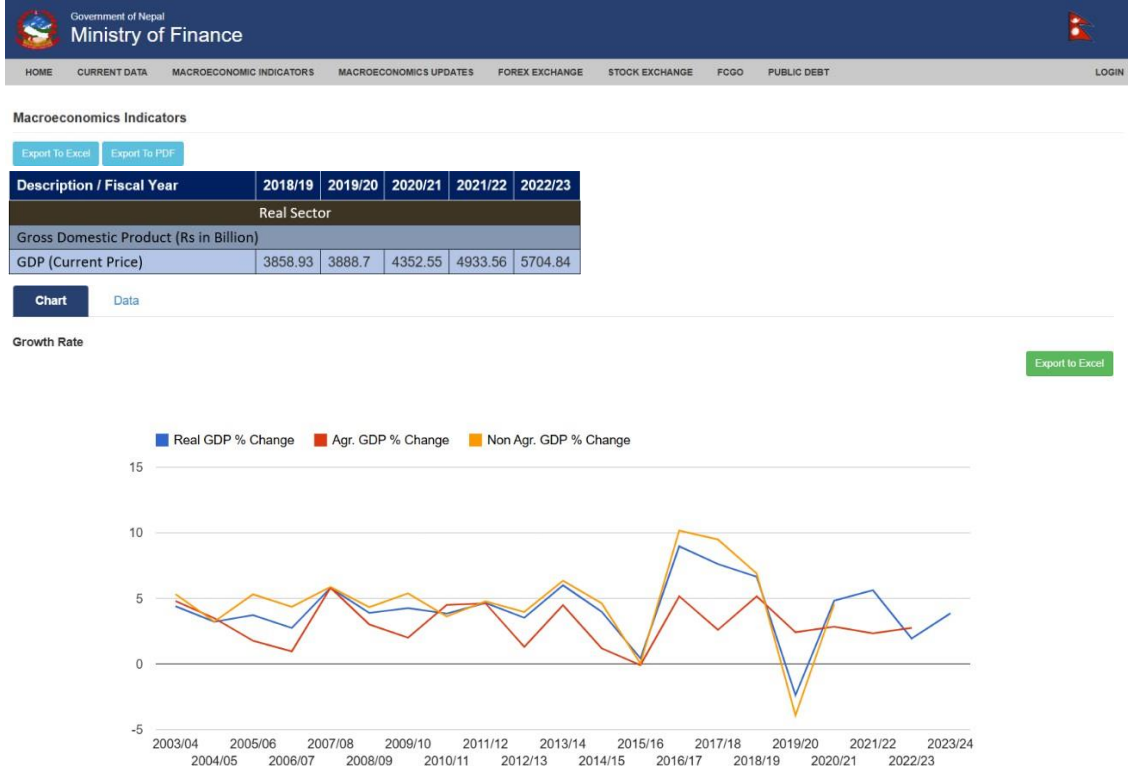
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APPENDICES

Appendix 1

Contribution of commercial banks to gross domestic product



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The ranking of the commercial banks of Nepal on the net profit is presented in the table below:

Net Profit of Commercial Banks

As on Ashad end, 2080 (Mid-July 2023)

(Rs In Arba)

Rank	Commercial Banks	F.Y. 2022/23
1	Global IME Bank Limited	6.69
2	Nabil Bank Limited	6.40
3	NIC ASIA Bank Limited	4.44
4	Nepal Investment Mega Bank Limited	3.72
5	Rastriya Banijya Bank Limited	3.59
6	Standard Chartered Bank Nepal Limited	3.46
7	Nepal Bank Limited	3.43
8	Everest Bank Limited	3.36
9	NMB Bank Limited	3.22
10	Siddhartha Bank Limited	3.16
11	Sanima Bank Limited	2.60
12	Laxmi Sunrise Bank Limited	2.28
13	Nepal SBI Bank Limited	1.96
14	Citizens Bank International Limited	1.86
15	Machhapuchhre Bank Limited	1.62
16	Himalayan Bank Limited	1.56
17	Agriculture Development Bank	1.32
18	Prime Commercial Bank Limited	1.02
19	Kumari Bank Limited	0.51
20	Prabhu Bank Limited	0.28
	Grand Total	56.48

The ranking of the commercial banks of Nepal on the net profit is presented in the table below:

Net Profit of Commercial Banks

As on Ashad end, 2079 (Mid-July 2022)

(Rs In Arba)

Rank	Commercial Banks	F.Y. 2021/22
1	Global IME Bank Ltd.	4.95
2	Rastriya Banijya Bank Ltd.	4.29
3	Nabil Bank Ltd.	4.25
4	NIC Asia Bank Ltd.	4.21
5	Nepal Investment Bank Ltd.	3.79
6	NMB Bank Ltd.	3.29
7	Nepal Bank Ltd.	2.92
8	Siddharth Bank Ltd.	2.90
9	Mega Bank Nepal Ltd.	2.83
10	Prime Commercial Bank Ltd.	2.78
11	Kumari Bank Ltd.	2.57
12	Everest Bank Ltd.	2.43
13	Himalayan Bank Ltd.	2.36
14	Standard Chartered Bank Nepal Ltd.	2.25
15	Agricultural Development Bank Ltd.	2.22
16	Sunrise Bank Ltd.	2.15
17	Sanima Bank Ltd.	2.09
18	Citizens Bank International Ltd.	2.06
19	Nepal Credit and Commerce Bank Ltd.	2.02
20	Prabhu Bank Ltd.	1.90
21	Bank of Kathmandu Ltd.	1.81
22	Machhapuchhre Bank Ltd.	1.68
23	Nepal SBI Bank Ltd.	1.63
24	Laxmi Bank Ltd.	1.51
25	Civil Bank Ltd.	1.38
26	Century Commercial Bank Ltd.	1.35
	Grand Total	67.62

Source. Ministry of Finance, 2021/22-2022/23.

Appendix 2

ESRM Report of Commercial Banks in Nepal – Fiscal Year 2079/80

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

S. No.	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 loan portfolio	Total No. of 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	-	23	
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 Sumris 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	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 Banijya Bank Ltd.	Yes	Yes	Yes	-	-	-	-	-	377	-	-	-	-	
18	Saunima 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	-	-	-	

Source. Nepal Rastra Bank, 2023.

Appendix 3

ESRM Report of Commercial Banks in Nepal – Fiscal Year 2078/79

S.N	ESRM Report of Commercial Bank of Nepal- Fiscal Year 2078/79										Incorporation of Environmental & Social Risk in Core Risk Management				
	Policy Formulation and Governance					Employee trainings and capacity building					Incorporation of Environmental & Social Risk in Core Risk 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 ESRM Officer	Allocation of Fund in the 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 Risk Management	
1	No	No	No	500,000	1	28	-	-	-	-	-	-	-	-	
2	Yes	Yes	Yes	-	-	-	-	5,997	-	5,997	112	-	-	435	
3	Yes	Yes	Yes	181,200	2	40	-	-	-	2,356	89	-	-	-	
4	Yes	Yes	Yes	-	1	1	-	170	38	162	132	14	-	1	
5	Yes	Yes	Yes	18,080	3	6	-	1,070	92	128	12	-	-	8	
6	Yes	Yes	No	16,000	2	4	-	78	5	78	15	-	-	-	
7	Yes	Yes	Yes	-	2	8	-	4,763	51	9,526	181	-	-	141	
8	Yes	Yes	No	-	3	132	-	-	-	676	133	-	-	-	
9	Yes	Yes	Yes	9,040	1	1	-	-	-	36	9	-	-	4	
10	Yes	Yes	Yes	26,500	2	3	-	27,510	37	27,510	85	329	-	1	
11	Yes	Yes	No	-	3	36	-	113	26	113	24	5	-	7	
12	Yes	Yes	Yes	-	2	8	-	120	-	120	19	3	-	3	
13	Yes	Yes	No	-	4	19	-	23	-	103	4	23	-	4	
14	Yes	Yes	No	200,000	1	2	-	-	-	-	-	-	-	-	
15	Yes	Yes	Yes	15,006	1	2	-	-	-	-	-	-	-	-	
16	Yes	Yes	Yes	500,000	3	194	-	317	-	314	18	-	-	-	
17	Yes	Yes	Yes	42,259	3	7	-	109	-	80	16	14	-	-	
18	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	
19	Yes	Yes	Yes	249,289	16	670	-	101	22	52	13	10	-	9	
20	Yes	Yes	Yes	-	2	4	-	7,192	86	7,192	67	-	-	-	
21	Yes	Yes	Yes	110,019	7	63	-	29	-	29	6	-	-	-	
22	No	No	No	-	-	-	-	-	-	-	-	-	-	22	
23	Yes	Yes	Yes	2,097,238	7	248	-	5,799	51	6,535	73	19	-	35	
24	Yes	Yes	Yes	48,794	3	151	-	178	42	178	10	22	-	18	
25	No	No	No	-	-	-	-	-	-	869	123	-	-	-	
26	Yes	Yes	Yes	-	3	8	-	388	11	388	5	29	-	2	

Source. Nepal Rastra Bank, 2022.

Appendix 4

Key Financial Indicators of Commercial Banks in Nepal – Fiscal Year 2022/23

Nepal Rastra Bank
Bank Supervision Department
Key Financial Indicators of Commercial Banks (Provisional)
As on Asadh end, 2080 (Mid-July 2023)

S. No.	Banks	Solvency	Liquidity	NPL (In %)	Prescribed Sector Lending			
		CAR# (In %)	CD Ratio* (In %)		Agriculture (In %)	Hydropower/ Energy (In %)	MCSMI (In %)	Total Prescribed Sector Loan (In %)
1	Nepal Bank Limited	14.49	75.23	2.85	11.60	6.70	22.11	40.42
2	Rastriya Banijya Bank	13.65	75.57	2.94	12.30	7.72	19.01	39.02
3	Agriculture Development Bank	14.68	83.17	2.48	32.21	5.07	26.83	64.11
	Sub Total	14.24	77.56	2.78	18.11	6.61	22.31	47.03
4	Nabil Bank Limited	12.65	87.12	3.20	12.32	6.84	6.13	25.29
5	Nepal Investment Mega Bank Limited	14.10	85.99	4.35	11.56	7.66	5.74	24.96
6	Standard Chartered Bank Nepal Limited	17.12	75.78	1.17	14.26	7.68	1.88	23.82
7	Himalayan Bank Limited	13.22	86.40	4.56	15.45	5.30	4.23	24.98
8	Nepal SBI Bank Limited	12.78	79.37	2.43	17.94	6.90	6.40	31.24
9	Everest Bank Limited	13.32	82.31	0.79	11.75	7.16	3.07	21.99
10	NIC ASIA Bank Limited	13.39	84.24	0.80	13.41	1.64	13.72	28.77
11	Machhapuchhre Bank Limited	13.57	80.61	2.12	9.73	6.75	8.47	24.95
12	Kumari Bank Limited	12.65	88.68	4.77	11.02	8.46	11.15	30.63
13	Laxmi Sunrise Bank Limited	13.43	82.85	2.81	11.78	7.75	8.60	28.13
14	Siddhartha Bank Limited	12.53	79.14	2.01	13.40	7.70	8.21	29.32
15	Global IME Bank Limited	13.37	83.47	3.08	11.04	7.07	8.21	26.32
16	Citizens Bank International Limited	12.32	84.73	3.19	11.24	7.79	11.14	30.18
17	Prime Commercial Bank Limited	12.28	88.72	4.23	11.44	7.31	8.77	27.52
18	NMB Bank Limited	12.80	83.45	2.72	11.39	9.95	11.03	32.38
19	Prabhu Bank Limited	12.95	83.80	4.16	8.45	5.93	6.51	20.89
20	Sanima Bank Limited	14.13	79.03	1.30	11.91	10.44	6.52	28.87
	Sub Total	13.23	83.96	3.01	12.04	7.02	7.84	26.90
	Grand Total	13.37	83.00	2.98	12.89	6.96	9.85	29.70

Source. Nepal Rastra Bank, 2023.

Appendix 5

Key Financial Indicators of Commercial Banks in Nepal – Fiscal Year 2021/22

Nepal Rastra Bank
Bank Supervision Department
Key Financial Indicators of Commercial Banks (Provisional)
As on Ashad end, 2079 (Mid-July 2022)

S. No.	Banks	Solvency	Liquidity	NPL (In %)	Priority Sector			Total Priority Sector Loan
		CAR# (In %)	CD Ratio* (In %)		Agriculture (12% upto Ashadh 2079)	Hydropow er/Energy (6% upto Ashadh 2079)	SME (11% upto Ashadh 2079)	
1	Nepal Bank Ltd.	15.04	87.56	1.90	12.48	6.40	16.22	35.10
2	Rastriya Banijya Bank Ltd.	13.97	85.89	2.00	12.39	6.64	18.77	37.80
3	Agricultural Development Bank Ltd.	16.34	88.78	1.68	31.08	4.61	24.31	60.00
	Sub Total	15.08	87.25	1.86	18.24	5.93	19.71	43.88
4	Nabil Bank Ltd.	13.44	90.13**	1.54	11.29	5.76	7.44	24.50
5	Nepal Investment Bank Ltd.	15.99	85.14	1.47	8.84	8.16	3.47	20.47
6	Standard Chartered Bank Nepal Ltd.	16.00	87.44	0.59	11.00	6.41	1.82	19.23
7	Himalayan Bank Ltd.	11.63	88.80	0.77	18.85	2.10	1.63	22.59
8	Nepal SBI Bank Ltd.	13.32	86.87	0.15	12.56	5.75	6.27	24.59
9	Everest Bank Ltd.	11.95	85.77	0.24	9.24	5.21	7.22	21.67
10	Bank of Kathmandu Ltd.	12.94	88.91	1.96	9.40	5.38	8.69	23.46
11	Nepal Credit and Commerce Bank Ltd.	12.12	86.30	1.93	12.84	5.86	10.66	29.36
12	NIC Asia Bank Ltd.	13.51	86.26	0.49	11.38	1.26	11.02	23.66
13	Machhapuchhre Bank Ltd.	13.47	81.60	0.84	10.96	5.10	9.03	25.08
14	Kumari Bank Ltd.	12.98	85.12	0.96	9.50	5.78	9.60	24.88
15	Laxmi Bank Ltd.	12.76	86.72	0.89	10.38	5.75	5.98	22.12
16	Siddharth Bank Ltd.	13.09	86.78	1.03	11.66	5.45	8.21	25.32
17	Global IME Bank Ltd.	12.72	89.31	1.22	10.78	6.72	6.28	23.78
18	Citizens Bank International Ltd.	13.02	85.12	1.87	12.16	6.13	11.42	29.72
19	Prime Commercial Bank Ltd.	13.33	87.24	1.40	10.39	6.18	7.74	24.31
20	Sunrise Bank Ltd.	12.45	86.77	1.40	12.28	7.63	11.03	30.94
21	NMB Bank Ltd.	13.76	85.55	1.33	12.43	8.28	11.06	31.78
22	Prabhu Bank Ltd.	13.16	78.35	1.20	11.85	5.08	5.80	22.73
23	Mega Bank Nepal Ltd.	12.32	86.96	0.78	11.46	4.99	11.13	27.59
24	Civil Bank Ltd.	16.05	88.15	1.08	11.04	6.00	8.38	25.43
25	Century Commercial Bank Ltd.	13.54	87.73	1.59	10.05	7.18	6.47	23.69
26	Sanima Bank Ltd.	13.75	82.39	0.35	12.01	7.91	5.94	25.85
	Sub Total	13.29	86.34	1.09	11.41	5.68	7.77	24.86
	Grand Total	13.53	86.47	1.20	12.34	5.71	9.39	27.44

Source. Nepal Rastra Bank, 2022.

PAPER NAME

IMPACT OF SUSTAINABLE FINANCING ON FINANCIAL RISK MANAGEMENT OF COMMERCIAL BANKS IN NEPAL

AUTHOR

Aastha Maharjan

WORD COUNT

18090 Words

CHARACTER COUNT

105148 Characters

PAGE COUNT

66 Pages

FILE SIZE

173.5KB

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