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Department of Business Administration

GREEN BANKING PRACTICES IN IRAQ: A QUALITATIVE PHENOMENOLOGICAL INQUIRY INTO ADOPTION, ADVANTAGES, AND OBSTACLES

Master Thesis

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Turkish Abstract	**:**	Bu çalışma, Irak'ta yeşil bankacılık uygulamalarının benimsenmesini, avantajlarını ve zorluklarını nitel ve fenomenolojik bir araştırma yoluyla incelemektedir. Çevresel sürdürülebilirlik küresel olarak önem kazandıkça, bankacılık sektörü, çevre dostu uygulamaları finansal operasyonlara entegre ederek Sürdürülebilir Kalkınma Hedefleri'nin (SKH) ilerletilmesinde önemli bir rol oynamaktadır. Ancak, Irak'ta yeşil bankacılığın kapsamı ve niteliği hakkında çok az şey bilinmektedir. Bu araştırma, Irak bankalarının yeşil bankacılığı nasıl benimseyip uyguladıklarını, sundukları yeşil ürün ve hizmet türlerini, algılanan faydaları ve bu süreçte karşılaşılan engelleri incelemeyi amaçlamaktadır. Çalışma

ayrıca, bankacılık profesyonellerinin Irak bağlamında yeşil bankacılığın sürdürülebilir kalkınmaya katkısını nasıl algıladıklarını da incelemektedir. Fenomenolojik bir araştırma tasarımı kullanılarak, Irak'ta üç hiyerarşik düzeyde (üst düzey yöneticiler, orta düzey yöneticiler ve uzman düzeyindeki personel) seçilen on bankacılık profesyoneliyle yarı yapılandırılmış görüşmeler yapılmıştır. Bu tabakalı yaklaşım, yeşil bankacılığın hem stratejik hem de operasyonel açıdan kapsamlı bir şekilde anlaşılmasını sağlar. Görüşme verilerini analiz etmek ve katılımcı deneyimleri genelindeki ortak temaları ve içgörüleri belirlemek için Braun ve Clarke'ın altı aşamalı çerçevesinin rehberliğinde tematik analiz kullanılmıştır.

Bulguların, Irak'taki yeşil bankacılık uygulamaları hakkında ayrıntılı bir anlayış sunması ve benimsenmelerini kolaylaştıran veya engelleyen faktörleri vurgulaması beklenmektedir. Çalışma, gelişmekte olan ülkelerde sürdürülebilir finans üzerine ortaya çıkan literatüre katkıda bulunmakta ve finans sektöründe çevresel sorumluluğu teşvik etmeyi amaçlayan politika yapıcılar, bankacılık kurumları ve paydaşlar için pratik içgörüler sunmaktadır.

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Istanbul – 2025

DECLARATION

I hereby declare that in the preparation of this thesis, scientific ethical rules have been followed, the works of other persons have been referenced in accordance with the scientific norms if used, there is no falsification in the used data, any part of the thesis has not been submitted to this university or any other university as another thesis.

Ali Malik Falih AL-JILEEZI

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THE DIRECTORATE OF SOCIAL SCIENCES INSTITUTE

The thesis study of Ali Malik Falih AL-JILEEZI titled as Green Banking Practices in Iraq: A Qualitative Phenomenological Inquiry into Adoption, Advantages, and Obstacles has been accepted as MASTER THESIS in the department of Business Administration by our jury.

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SUMMARY

This study explores the adoption, advantages, and challenges of green banking practices in Iraq through a qualitative, phenomenological inquiry. As environmental sustainability gains prominence globally, the banking sector plays a pivotal role in advancing the Sustainable Development Goals (SDGs) by integrating eco-friendly practices into financial operations. However, little is known about the extent and nature of green banking in Iraq. This research aims to investigate how Iraqi banks adopt and implement green banking, the types of green products and services they offer, the perceived benefits, and the barriers faced in this process. The study further examines how banking professionals perceive the contribution of green banking to sustainable development within the Iraqi context.

Using a phenomenological research design, semi-structured interviews were conducted with ten banking professionals in Iraq, selected across three hierarchical levels: senior executives, middle managers, and specialist-level staff. This stratified approach ensures a comprehensive understanding of green banking from both strategic and operational perspectives. Thematic analysis, guided by Braun and Clarke's six-phase framework, was employed to analyze the interview data, identifying common themes and insights across participant experiences.

The findings are expected to provide a nuanced understanding of green banking practices in Iraq, highlighting the factors that facilitate or hinder their adoption. The study contributes to the emerging body of literature on sustainable finance in developing countries and offers practical insights for policymakers, banking institutions, and stakeholders aiming to promote environmental responsibility in the financial sector.

Keywords: Green Banking, Environmental Sustainability, Banking Sector, Phenomenology, Iraq

ÖZET

Bu çalışma, Irak'ta yeşil bankacılık uygulamalarının benimsenmesini, avantajlarını ve zorluklarını nitel ve fenomenolojik bir araştırma yoluyla incelemektedir. Çevresel sürdürülebilirlik küresel olarak önem kazandıkça, bankacılık sektörü, çevre dostu uygulamaları finansal operasyonlara entegre ederek Sürdürülebilir Kalkınma Hedefleri'nin (SKH) ilerletilmesinde önemli bir rol oynamaktadır. Ancak, Irak'ta yeşil bankacılığın kapsamı ve niteliği hakkında çok az şey bilinmektedir. Bu araştırma, Irak bankalarının yeşil bankacılığı nasıl benimseyip uyguladıklarını, sundukları yeşil ürün ve hizmet türlerini, algılanan faydaları ve bu süreçte karşılaşılan engelleri incelemeyi amaçlamaktadır. Çalışma ayrıca, bankacılık profesyonellerinin Irak bağlamında yeşil bankacılığın sürdürülebilir kalkınmaya katkısını nasıl algıladıklarını da incelemektedir.

Fenomenolojik bir araştırma tasarımı kullanılarak, Irak'ta üç hiyerarşik düzeyde (üst düzey yöneticiler, orta düzey yöneticiler ve uzman düzeyindeki personel) seçilen on bankacılık profesyoneliyle yarı yapılandırılmış görüşmeler yapılmıştır. Bu tabakalı yaklaşım, yeşil bankacılığın hem stratejik hem de operasyonel açıdan kapsamlı bir şekilde anlaşılmasını sağlar. Görüşme verilerini analiz etmek ve katılımcı deneyimleri genelindeki ortak temaları ve içgörüleri belirlemek için Braun ve Clarke'ın altı aşamalı çerçevesinin rehberliğinde tematik analiz kullanılmıştır.

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Anahtar Kelimeler: Yeşil Bankacılık, Çevresel Sürdürülebilirlik, Bankacılık Sektörü, Fenomenoloji, Irak

TABLE OF CONTENTS

SUMMARY ..... **i**
ÖZET ..... **ii**
TABLE OF CONTENTS ..... **iii**
ABBREVIATIONS ..... **vi**
LIST OF TABLES ..... **vii**
LIST OF FIGURES ..... **viii**
PREFACE ..... **ix**
INTRODUCTION **1**

CHAPTER ONE
GREEN BANKING

1.1. The Concept of Green Banking 5
1.1.1. Products and services offered by green banking 7
1.1.2. Difference between green banking and regular banking 7
1.1.3. Green banking strategies 9
1.1.3.1. Green Banking through internal operating activities 9
1.1.3.2 Financing green projects 9
1.1.3.3 .The role of banks in assessing the environmental impact of projects 9
1.2. Global Trends and Practices in Green Banking 10
1.2.1 International regulatory frameworks and initiatives 10
1.2.1.1 Green banking principles 10
1.2.1.2 Principles of the Equator 11
1.2.1.3. Principles of the UNEP funding initiative 12
1.2.1.4. Green bond principles 12
1.3. Green Banking Application in the World 13
1.3.1. China's experience 13
1.3.1.1. The Evolution of Green Banks in China 15
1.3.1.2 Environmental and social indicators 17
1.3.2. India’s experience 17
1.3.2.1. Indian banks initiatives 20
1.3.2.2. Environmental and social indicators 22
1.3.3. Russia’s experience 23
1.3.3.1. Environmental and social indicators 24
1.3.4. Brazil’s experience 25
1.3.4.1. Environmental and social indicators 26
1.4. Innovative Green Products & Services 27
1.5. Green Banking and the SDGs 28
1.5.1. Sustainable development goals 28
1.5.1.1 Sustainable development goal 7: affordable and clean energy 29

1.5.1.2. Sustainable development goal 9: industry, innovation and infrastructure 30
1.5.2.3 Sustainable development goal 12: responsible consumption and production 30
1.5.2.4. Sustainable development goal 13: climate action 30
1.5.2.5. Green exchange contributions to sdgs 1 and 11 31

CHAPTER TWO
GREEN BANKING IN IRAQ

2.1. Overview of the Iraqi Banking Sector 33
2.1.1. Government banks 34
2.1.2. Foreign banks 36
2.1.3. Private Banks 37
2.2. Environmental Policies and Regulatory Landscape in Iraq 39
2.2.1 Public environmental policies in Iraq 39
2.2.2 Special laws on the environment in Iraq 41
2.2.3 Environmental policies of banks in Iraq 42
2.3. Adoption of Green Banking Practices in Iraq 43
2.3.1.The Role of Financial Regulators and Central Banks in Promoting Green Finance 44
2.4. Challenges and Barriers to Implementation 45
2.5. Opportunities and Role in Achieving Sustainable Development Goals (SDQs) in Iraq 47
2.6. Research Gap and Justification for the Study 47

CHAPTER THREE
METHODOLOGY

3.1. Research Design 50
3.1.1 Phenomenology as a research design 50
3.2. Participants 50
3.3. Interview Process 52
3.3. Data Analysis 54
3.4. Ethical Considerations 55
3.5. Trustworthiness of the Research 55

CHAPTER FOUR
FINDINGS

4.1. Summary of Findings from the Thematic Analysis 57
4.2. Theme 1: Conceptualizing Green Banking 60
4.2.1. Eco-friendly services 60
4.2.2. Green services 61

4.2.3. Link to sustainable development....61
4.3. Theme 2 : Practical Adoptions in Banks.... 61
4.3.1. Digital transformation....62
4.3.2. Green financing products....62
4.3.3. Operational sustainability measures....63
4.4. Theme 3 : Benefits of Green Banking 63
4.4.1. Environmental protection....63
4.4.2. Financial benefits....64
4.4.3. Reputational benefits....64
4.5. Theme 4: Barriers to Implementation 64
4.5.1. Infrastructure gaps....65
4.5.2. Awareness & cultural resistance....65
4.5.3. Training & capacity deficits....65
4.5.4. Financial costs....66
4.5.5. Policy and bureaucracy....66
4.6. Theme 5: Institutional and Policy Framework.... 66
4.6.1. Reliance on central bank directives....67
4.6.2. Weak internal policies....67
4.6.3. Need for incentives and regulations....67
4.6.4. Collaboration gaps....67
4.7. Theme 6: Customer Awareness and Attitudes.... 67
4.7.1. Positive response from youth....68
4.7.2. Resistance from traditional customers....68
4.7.3. Low general awareness....68
4.7.4. Promotional challenges....69
4.8. Theme 7: Green Banking & Sustainable Development.... 69
4.8.1. Environmental protection....69
4.8.2. Economic diversification....69
4.8.3. Job creation & entrepreneurship....69
4.8.4 Social benefits....70

CONCLUSION AND RECOMMENDATIONS.... 71
REFERENCES.... 75
APPENDIXES.... 84
RESUME.... 88

ABBREVIATIONS

MENA	**:**	Middle East and North Africa
SDGs	**:**	Sustainable Development Goals
UNEP	**:**	The United Nations Environment Programme
UNEP FI	**:**	United Nations Environment Programme Finance Initiative
UNDP	**:**	United Nations Development Programme
USAID	**:**	United States Agency for International Development

LIST OF TABLES

Table 1. Comparison between regular and green bank……..……..…8
Table 2. Green bond policies in China….....….....15
Table 3. The dates of adoption of green banking by banks operating in India.....…19
Table 4. Challenges facing India in the transition towards green banking……..….20
Table 5. Iraqi government banks……..……....33
Table 6. Foreigner banks (Commercial & Islamic)……..…….....35
Table 7. Local commercial private banks.....36
Table 8. Environmental and Sustainable Development Agreements ……..….38
Table 9. The Central Bank of Iraq's initiative in supporting SD……39
Table 10. Information about participants……..…… 48
Table 11. Information about interviews and participants……....50
Table 12. Codes identifying conceptualizing green banking……..……...54
Table 13. Codes identifying practical adoption in banks……...……54
Table 14. Codes identifying benefits of green banking.....55
Table 15. Codes identifying barriers to implementation……...…….55
Table 16. Codes identifying institutional and policy framework……...……56
Table 17. Codes identifying customer awareness and attitutes…….....56
Table 18. Codes identifying green Banking & sustainable development……..……57

LIST OF FIGURES

Figure 1. Annual carbon dioxide emissions in China from 2000 to 2021……13
Figure 2. The largest banks in the world for the year 2019…….14
Figure 3. The level of commitment of Chinese banks to green banking indicators….17
Figure 4. The classification of the green currency…….……18
Figure 5. The level of commitment of Indian banks to green banking indicators……22
Figure 6. The pollution index according to the country for the year 2022……..23
Figure 7. The countries that burn the most gas in the world from 2012 to 2020…….23
Figure 8. The level of commitment of Russian banks to green banking indicators….24
Figure 9. The level of commitment of Brazilian banks to GB indicators…….26
Figure 10. The Sustainable Development Goals…….....…..28

PREFACE

First of all, I would like to express my deep gratitude to my supervisor, the Asst. Prof. Aslıhan ÜNAL whose guidance, encouragement, and constant support have been invaluable throughout the journey of this letter. Your vision and guidance have shaped not only this research, but also my personal and academic growth.

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This journey has been full of learning, growth, and invaluable memories, and I am truly grateful to everyone who was a part of it.

INTRODUCTION

Today, the world is facing serious environmental challenges that have negative effects on economic development and society, as the developing and developed countries of the world are working towards improving and supporting green projects and investment, and studies indicate that the damages resulting from climate change have quadrupled since 1980, and this shows the need for national and international efforts to deal with these risks and challenges

Iraq faces serious challenges in the environmental fields, as it is the fifth most affected country in the world by the issue of climate changes such as desertification, drought, dust storms and pollution, and the Iraqi Ministry of Environment predicted that dust would rise to 300 days in 2050 (Iraqi Ministry of Environment, 2022).

The financial system can also play a major role in reducing the risks of climate change by directing finance towards environmentally friendly products because Iraq suffers from high temperatures and negative climate changes such as desertification, drought, and others The process of greening banking services can be the way through which banks can contribute significantly to saving the environment by providing green finance, because banks are the link between the entities with surplus and those with deficits and are a major source of financing for companies and individuals and have a spread at all levels of society, so they can exert enormous power in controlling environmental damage. Banks are seen as an institution that does not have a significant environmental impact, due to being a financial institution, however, a deeper understanding of the activities of banks indicates that their environmental impact is very significant and the impact of banks on the environment can be divided into two aspects: Firs one is the direct effects of drains on the environment: through the internal activities of the drains (e.g., the use of external papers and generators). Second one is the banks' indirect effects on the environment through external activities (such as lending and investments in environmentally polluting fields).

Green banking involves following financial and commercial policies internally and externally that do not pose a danger to the environment, and instead help protect it, it is necessary to urge banks to play a proactive role to save the environment from damage and degradation and protect it for future generations, which is one of the most

important goals of sustainable development. Green and sustainable banking is an important step in preserving the environment and improving the quality of life

Green banking has emerged as a pivotal strategy for aligning financial systems with environmental sustainability goals. In developing countries, however, the adoption of green banking practices remains limited due to regulatory gaps, insufficient awareness, and infrastructural challenges (Rahman et al., 2022). While global financial institutions have made significant strides in green finance, developing nations often struggle with integrating these practices effectively (Ur Rehman et al., 2023).

In the context of Iraq, the implementation of green banking is still in its nascent stages. Islamic banks in the country have shown potential in promoting environmental sustainability through corporate governance mechanisms (Issa et. al., 2022). However, a comprehensive understanding of green banking adoption, benefits, and challenges within the Iraqi banking sector remains underexplored.

The COVID-19 pandemic has further highlighted the importance of sustainable banking practices, with increased attention on green finance and sustainability in academic literature. Despite this growing interest, there is a notable lack of theoretical frameworks guiding green banking research, particularly in developing countries (Goswami, 2024).

This study aims to fill the existing research gap by exploring the experiences and perceptions of banking professionals in Iraq regarding green banking practices. By employing a qualitative phenomenological approach, the research seeks to provide insights into the adoption processes, perceived advantages, and obstacles faced by Iraqi banks in implementing green banking, thereby contributing to the broader discourse on sustainable finance in developing economies.

The previous study by (Al-Waeli ,2023) shows that Iraq is the most fragile country in the Middle East and North Africa (MENA) region, which has witnessed serious climate shifts over the past few years such as drought, agricultural insecurity, water inadequacy, and high salinity. Although some steps have been taken to mitigate climate change in Iraq, represented by government initiatives and the Central Bank of Iraq, there is no trend towards building a green financial system.

Previous studies in the same field indicate that Iraqi banks have significant human and financial capabilities to preserve the environment, but these capabilities have not been invested due to the administrations' lack of interest in environmental aspects, weak coordination between the Central Bank and the Ministry of Finance, the lack of clear strategic plans to adopt green banking services in Iraq, and the weakness of the green banking culture (Abboud et al., 2023)

The results of the study conducted by **(**Salman, 2016) also showed that there is no accurate and clear understanding of the "research sample of the concept of sustainable banking", and there are no annual reports related to sustainable banking. The absence of government support for banks to move towards green banking services, as this study was entitled Measuring the Attitudes of Iraqi Banks Towards the Application of Sustainable Banking.

The research problem arises from the severe environmental challenges Iraq faces due to climate change and increasing environmental pressures. Iraq records some of the highest global temperatures each year, while its contribution to mitigating negative environmental impacts remains limited. Additionally, both banks and customers in Iraq have a low level of awareness regarding green banking. Therefore, the study examines whether green banking can contribute to achieving global sustainable development goals and reducing environmental damage within Iraq. In this context, the main aim of the research is to explore the adoption of green banking practices in Iraq by examining the experiences, perceptions, advantages and challenges faced by banking professionals, and to assess the role of green banking in supporting the Sustainable Development Goals (SDGs), explore the perceived benefits of implementing green banking from the perspective of banking professionals, examine the main challenges and barriers hindering the adoption of green banking in Iraq, assess the potential contribution of green banking practices to the achievement of the SDGs in the Iraqi context.

The research seeks to answer the foloowing resarch question:

Main Research Question:

How are green banking practices adopted and tested by Iraqi banking professionals?

Sub-questions:

What types of green banking products and services are currently being implemented in Iraqi banks?

What are the benefits that banking professionals associate with adopting green banking practices?

What are the main challenges and obstacles faced by Iraqi banks in implementing green banking?

In what ways do banking professionals view green banking as contributing to the achievement of the Sustainable Development Goals?

To address these questions, the study adopts a qualitative superficial approach, where the data will be collected through semi-structured personal interviews with ten employees at different levels in Iraqi private and government banks. The study was limited to a sample of Iraqi banks. The time frame of the study included the period during which the researcher conducted the theoretical analysis and the period spent preparing the practical component in selected Iraqi banks and government companies affiliated with the Ministry of Electricity.

The importance of this study lies in its ability to generate rich insights based on experience in an emerging field in the Iraqi banking sector.As sustainability has become a global necessity, understanding how green banking is evolving in Iraq can inform policymakers, financial institutions, and development organizations. The findings may also support the creation of frameworks and strategies to promote environmentally responsible banking practices across the region.

CHAPTER ONE

GREEN BANKING

The first chapter examines the concept of green banking as a banking approach that integrates environmental and social dimensions into financial work with the aim of supporting sustainability. It showcases the most important green products and services such as green finance, loans and bonds for renewable energy projects and low-emission activities. The difference between green banks and conventional banks is also highlighted in that the former adopts ESG criteria in lending decisions, while conventional banks focus only on financial indicators. The chapter discusses the most prominent green banking strategies such as promoting transparency, managing environmental risks, and directing financing towards sustainable projects.

This approach is related to supporting sustainable development projects in the fields of clean energy, sustainable cities, responsible consumption, and climate action, in line with the Sustainable Development Goals, especially Goals 1, 7, 9, 11, 12, and 13. The chapter also reviews international frameworks and initiatives, foremost of which is the UNEP Financing Initiative, which has set standards that help banks integrate sustainability into their policies. It also showcases the experiences of prominent countries: China has developed an advanced system of green banks based on environmental and social indicators, India has adopted banking initiatives that support renewable energy, and Russia and Brazil have worked to strengthen environmental indicators in the work of banks.

The chapter concludes that green banking has become a pivotal tool in the transition towards a sustainable economy, and that its success depends on the integration of government policies, international initiatives, and banks' commitment to promoting environmentally responsible finance.

1.1. The Concept of Green Banking

The history of eco-friendly banking dates back to the early 1970 when investors around the world began to focus on environmental and social dimensions in their investment decisions, as the World Bank appointed the first environmental specialist in 1971 to include environmental topics in credit and investment decisions (Hasnain,

2015). The concept of green banks is attributed to the Turbodos Bank, which was established in 1980 in the Netherlands and started with environmental sustainability in the banking sector, and in 1990, Turbodos Bank launched a Green Fund to finance environmentally friendly projects (Sharifi and Hossein,2015).

Green banking services are pollution-free banking services, as these banks have environmentally friendly operating tools, and the products issued by this bank are also environmentally friendly, as they are responsible for their internal and external operations, which include green finance in various industries, and therefore there must be innovation for products that support the environment and apply this by increasing environmental awareness among individuals. (Mehedi et al., 2017)

Green banks aim to address broad environmental issues, including climate conditions and air quality. Caring for the environment also means preserving natural resources for future generations. The core concept of green banking is to protect the environment, as well as financial and material resources, and to use these resources efficiently and responsibly. By implementing green banking practices, it is possible to contribute to sustainable development and ensure that future generations can benefit from these resources. (Ahuja, 2015).

Green banking is a way for environmentally and socially responsible banks to pursue green banking practices, as green banking practices are mutually beneficial to banks, industries and the economy and support the promotion of sustainable development between countries. (Lakshminarayanan, 2011)

Green banking is a new concept in banking practices, as it was not known to many banks in the past, and the color green refers to environmental accountability, and in 1980 as mentioned in the general concept, green banking first appeared in a Dutch bank called Tridos. (Shaumya, & Arulrajah, 2016)

Green banking is defined as the provision of services by banks in an environmentally friendly way, where money is invested in a way that has a positive impact on the environment, and we can say is the effort made by banks to make industries free from negative impact on the environment. (Sahoo and Nayak, 2007)

Green banking is also used to promote environmentally friendly activities with a lower carbon footprint, and this is done through two points, the first is the use of green business in the daily operations within the bank through reliance on clean energy

(renewable energy) and the second is the adoption of environmentally responsible financing by assessing the environmental risks of the project before making a financing decision and supporting and promoting the growth of the project green initiatives and projects (Islam and Das, 2013)

Green finance is defined as achieving an environmental balance between services and environmental sustainability on the one hand. On the other hand, the preservation of the environment and the permanence of its resources in a way that ensures that consumers' needs for goods and services are met (Muschette, 2000).

According to the researcher of this thesis, green banking is a banking approach that depends on reducing the impact of banking activities and supporting environmentally friendly projects, and this approach is modern and different from the traditional approach taken by some traditional banks, as this modern approach seeks to achieve a balance between economic growth and environmental protection.

1.1.1. Products and services offered by green banking

Green banks offer a variety of environmentally friendly products and services, the most important of which is electronic banking (Sarker, 2017). Customers can conduct their transactions through the bank's website and green credit cards to donate a percentage of their purchases to an organization that fights climate change, provide several green loans for the purchase of cars, and encourage them to buy electric cars at a low interest rate (savu, 2012).

Green Banking offers electronic deposit acceptance services. Green banking services may include accepting electronic deposits, providing zero-emission vehicle loans, and offering eco-friendly credit card programs. Commercial and investment banking services can also involve financing environmentally friendly projects and issuing green securities. In addition, green investment management may include green financial funds, sustainable investment funds, and emission reduction funds. Other services include providing sustainable insurance products and implementing green marketing practices (Noureen, 2007).

1.1.2. Difference between green banking and regular banking

There are many similarities and differences between regular and green banks in terms of loans, development, the method of verifying future damages, social

responsibility, the goal and standards, as studies indicate that there are many differences between regular and green banks (Noureen, 2020).

Conventional banks and green banks differ in concept, as the concept of conventional banks is the bank that deals in cash credit and its basic work is to accept deposits to be used in banking operations, while the concept of green banks is a monetary institution that focuses on environmental and natural factors with the aim of preserving the environment, and it adopts social responsibility in all its daily activities, reducing the effects and emission of carbon, and integrating sustainability standards in the bank's products and services. Differences and similarities between traditional banks and green banks in terms of laws, loans, objectives, business, etc. are illustrated in the Table 1 (Abboud et al., 2023).

Table 1. Comparison between regular and green banks

Similarities and Differences	Green banks	Regular banks
Loans	Granted to sustainable development projects only.	Granted to various projects in general
Laws	Adheres to and is subject to all laws and regulations issued by the Central Bank and the Ministry of Finance	Adheres to and is subject to all laws and regulations issued by the Central Bank and the Ministry of Finance
Environment	Among its priorities is concern for preserving the environment and climate and giving greater weight	Preserving the environment and climate is not among its priorities
Development	Focuses primarily on developing resources	Focus primarily on making profits
Verifying future damage	Works to verify the damage that a project may cause in the future before starting the project	Does not focus on verifying future damage
Business	Its business involves sustainability principles.	Its business does not involve sustainability principles
Social responsibility	Its business involves social and environmental responsibility	Its business involves social responsibility
Degree of commitment to society and the environment	Committed by seriously ensuring that customers adhere to and follow environmental safety instructions in their projects	Committed without seriously ensuring that customers adhere
Impact	Reduces carbon emissions and reduces deforestation	Does not care about that
Awareness	Preserving the environment and the future and current climate.	Maintaining market position

its goal	Ethical Social	Social
Standards	Following ethical, environmental, and financial standards	Following financial standards.

Source: Al-Suhrawardi, H., Jijan, F., and Jawad L. (2024), The Role of Green Banking in Promoting Social Responsibility to Achieve Sustainable Development. Al-Qadisiyah Journal of Literature and Educational Sciences 24(4) https://iasj.rdd.edu.iq/journals/uploads/2025/05/11/dc0af7315c4ed7fcd090745cec232ee8.pdf

1.1.3. Green banking strategies

Green banking strategies are the policies and practices used by banks to reduce pollution and preserve the environment from rising carbon dioxide.The following is a set of strategies for green banking (Abboud et al., 2023)

1.1.3.1. Green Banking through internal operating activities

Banks must adopt appropriate methods in their internal activities such as the use of renewable energy and automation to reduce carbon footprints and in the past years many banks have worked to shift From paper to electronic transactions and the goal of green banking is to use resources in a way that leads to the protection of the environment through the best use of these resources to ensure the rights of future generations in the future and not for a short and limited period (Noureen , 2020)

1.1.3.2 Financing green projects

The term green finance refers to banks that provide financial assistance for environmentally responsible projects, the purpose of which is to provide financial assistance for green technology, pollution reduction projects to reduce carbon emissions, and priority is given to financing green activities and environmentally friendly energy projects such as wastewater treatment plants, waste disposal plants, environmentally friendly gas plants, renewable energy projects and green car projects (Ben Omar, 2022)

1.1.3.3 .The role of banks in assessing the environmental impact of projects

It is essential to conduct an environmental audit before financing any investment project, encourage investment in projects related to recycling, agriculture and waste disposal by reducing interest (interest rate on loans), granting soft loans to homeowners to install solar energy systems, providing customers with an option to

invest and contribute to environmentally friendly projects to invest in areas that combine environmental and social concerns (Bhardwaj and Malhotra ,2013).

1.2. Global Trends and Practices in Green Banking

There are many green banking trends and practices in the world, including green finance, working to integrate environmental, governance and society standards, digital transformation to reduce environmental impact, innovation in products and services, education and awareness, and the trend towards managing climate risks and reducing those risks. The Hong Kong and Shanghai Bank Limited (HSBC) has allocated more than $1 million to invest in green projects by 2030 and is the bank interested in green finance and sustainability (Ben Omar, 2022).

1.2.1 International regulatory frameworks and initiatives

Regulatory frameworks and initiatives help create a balance between environmental protection and profit, and the following are a number of regulatory initiatives and an explanation of their principles such as the Equator Principles, the Principles of the United Nations Program Financing Initiative, and the Green Bond Principles (Bukhari et al., 2019).

1.2.1.1 Green banking *principles*

Green banking is based on general principles in social, environmental and financial aspects (Ben Omar, 2022):

- Principle 1: Imposing restrictions on companies that pose a threat to the environment and society
- Principle 2: companies are obliged not to negatively affect society and the environment.
- Principle 3: Companies must respect human rights in their activities
- Principle 4: Instead of competition, encourage cooperation between institutions to face challenges
- Principle 5: To ensure that they reach the main goals, companies are obliged to review the progress made.
- Principle 6: Provision of low-cost services for the purpose of enhancing financial inclusion

1.2.1.2 Principles of the Equator

A set of criteria that financial institutions rely on to assess environmental and social risks in financing major projects Developed to ensure that project financing is in line with the principles of environmental sustainability and community protection (Equator Principles Association, 2020)

- Principle 1: Review and Categorization: The project is classified based on the size of the risks and environmental damage caused by the project and thus leads to negative climate change, and we have three categories (Equator Principles Association, 2020).

Category I: Projects with high risks

Category II:Projects whose risks can be addressed

Category III: Projects without Risks

- Principle 2**:** Environmental and Social Assessment Finding solutions to reduce, mitigate and remediate risks
- Principle 3**:** Applicable Environmental and Social Standards The project is evaluated for the applicable criteria as follows:

A. Projects located in specific countries must comply with the laws of those countries

B. Projects located in unspecified countries must comply with IFA laws and World Bank guidelines.

- Principle 4: Environmental and Social Management System and Equator Principles Action Plan
- Principle 5: Stakeholder Engagement Demonstrate effective stakeholder participation
- Principle 6**:** Grievance Mechanism.
- Principle 7: Independent Review.
- Principle 8**:** Covenants
- Principle 9: Independent Monitoring and Reporting
- Principle10: Reporting and Transparency The report helps the client to take the necessary action in his project, assess the environmental impact and know the risks and impacts that the project may cause

1.2.1.3. Principles of the UNEP funding initiative

The United Nations Environment Programme (UNEP) is a United Nations organization responsible for responding to global issues related to the environment, and one of the objectives of this organization is to promote international cooperation, promote sustainable development, and provide support for decision-making related to the environment There are six key principles provided by UNEP for environmentally and socially responsible banking (UNEP Finance Initiative, 2019):

- Principle 1: Alignment The business strategy must be aligned with and contribute to the needs of individuals and the goals of society. As outlined in the Sustainable Development Goals, the Paris Climate Agreement, and the National and Regional Frameworks Related

- Principle 2: Impact and Target Impact This principle means that banks must contribute to reducing the negative impacts on individuals and the environment and increasing the positive impacts, as well as improving the activities of banking products and services that help achieve these goals

- Principle 3: Customers Banks need to be accountable in their operations with customers to encourage sustainable practices and enable economic activities that create shared prosperity for current and future generations

- Principle 4: Stakeholders Banks should proactively and periodically engage relevant stakeholders in order to achieve community goals

- Principle 5: Governance and Culture It is based on implementing the commitment and applying these principles through effective governance and spreading a responsible and green banking culture.

- Principle 6: Transparency and Accountability Banks must be transparent in all their operations, as well as periodically review individual and collective operations in order to achieve the goals of society

1.2.1.4. Green bond principles

Green bond principles are a set of principles set by the International Financial Markets Association in order for the framework to be transparent. As it can be said that they are debt instruments that are used to finance environmentally friendly projects

and sustainable projects. The aim of these principles is to give confidence to the investor that his money will not go to projects that do not protect the environment, and there are several projects, including sustainable transportation systems, solar energy projects, etc. It contains four main principles as follows (ICMA Paris, 2025):

- Principle 1. Use of returns: The use of funds taken from investors should be in green projects.
- Principle 2. Project evaluation: There must be clear environmental standards
- Principle 3. Revenue management: Monitoring and using the proceeds in environmentally friendly projects only.
- Principle 4. Reporting: Reporting on revenues, where those revenues have been used, and reports on environmental progress

1.3. Green Banking Application in the World

In this section, we will discuss the experiences of some countries such as China, India, Brazil and Russia, as these countries are considered to have a very high pollution rate and very large emissions of carbon dioxide. We will discuss how banks in these countries have developed and transformed into green banks, and we will study the extent of banks' commitment in these countries to green banking indicators, and what are the most polluting industries in these countries, and what are the names of banks operating in these countries that follow green banking, and what are the initiatives of the central banks in these countries.

1.3.1. China's experience

Annual carbon dioxide emissions have witnessed a significant increase in the period between 2000 and 2021 (as shown in Figure 1), and this negative rise has several reasons as a result of the economic growth, industrial development, and civilizational expansion that occurred in China during the past twenty years. 50 percent of carbon dioxide emissions come from the industrial sector in China, 40 percent comes from the energy sector, and 8 percent comes from the transportation sector. (Sandalow, 2019).

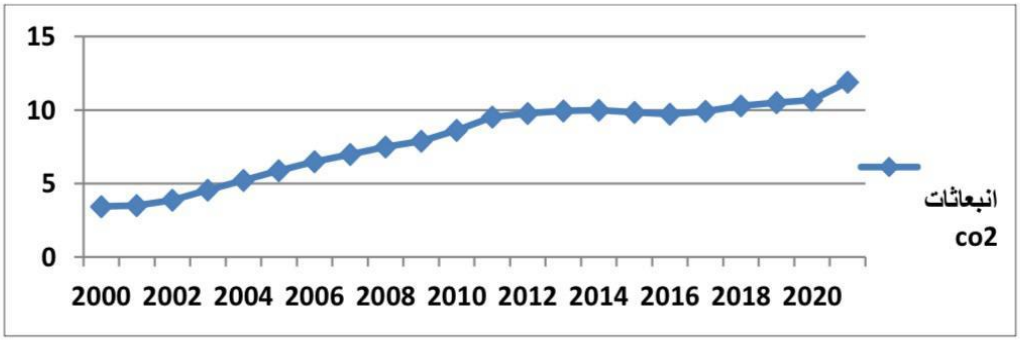


Figure 1. Annual carbon dioxide emissions in China from 2000 to 2021 (metric tons)

Source: International Energy Agency. (2022). Global Energy Review: CO_2 emissions in 2021.https://iea.blob.core.windows.net/assets/c3086240-732b-4f6a-89d7-db01be018f5e/GlobalEnergyReviewCO2Emissionsin2021.pdf

China is currently the largest emitter of carbon dioxide emissions in the world, as carbon dioxide emissions in 2020 were estimated at 10.67 billion metric tons, and in 2022, it increased by more than 11.9 billion metric tons, as China's share in carbon dioxide emissions for the year 2000 reached 13.63 percent, rising to 25.85 percent in 2010, and ten years later, in 2020, the percentage reached 30.65 percent. (Sandalow, 2019).

One year later, in 2021, it reached about 33 percent, more than a quarter of global emissions, and this shows that China is the most polluting country in the world, and the largest source of these carbon emissions in China is the burning of coal due to greenhouse gas emissions, as half of the annual global consumption of coal is burned in China and more than half (Liu, 2022)

Reforming and greening banks is crucial because of the size of Chinese banks. According to S&P Global Market Intelligence's (2020) annual global banking rankings (as presented in Figure 2), China's largest banks continued to grow in 2019 and consolidated their positions as the world's four largest banks, the so-called "Big Four" (the Industrial and Commercial Bank of China Limited, China Construction Bank, Agricultural Bank of China Limited, and Bank of China Limited). Their combined assets reached $14.821 trillion, a 7.52% increase from the previous year's ranking. Other Chinese banks also saw strong asset growth compared to their global peers. China has 15 banks in the world's top 100.

Ranking the world's 100 largest banks

Pro forma for recent and pending acquisitions

Current rank^	Previous rank^^	Current vs. previous	Company (ticker-exchange)	Headquarters	Accounting principle	Total assets (US$B)
1	1	NC	Industrial & Commercial Bank of China Ltd. (1398-HKG)	China	IFRS	4,324.27
2	2	NC	China Construction Bank Corp. (939-HKG)	China	IFRS	3,653.11
3	3	NC	Agricultural Bank of China Ltd. (1288-HKG)	China	IFRS	3,572.98
4	4	NC	Bank of China Ltd. (3988-HKG)	China	IFRS	3,270.15
5	5	NC	Mitsubishi UFJ Financial Group Inc. (8306-TKS)	Japan	Japanese GAAP	2,892.97
6	7	▲	HSBC Holdings PLC (HSBA-LON)	U.K.	IFRS	2,715.15
7	6	▼	JPMorgan Chase & Co. (JPM-NYSE)	U.S.	U.S. GAAP	2,687.38
8	8	NC	Bank of America Corp. (BAC-NYSE)	U.S.	U.S. GAAP	2,434.08
9	9	NC	BNP Paribas SA (BNP-PAR)	France	IFRS	2,429.26
10	10	NC	Crédit Agricole Group	France	IFRS	2,256.72

Figure 2. The largest banks in the world for the year 2019

Source : S&P Global Market Intelligence. (2020). The world's 100 largest banks, 2020. https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/the-world-s-100-largest-banks-2020-57854079

1.3.1.1. The Evolution of Green Banks in China

In the past years, China has developed a national green credit system, where proposals have been published collectively from the People's Bank of China, the Banking Development Commission of China, and the Ministry of Environment of China on the implementation of policies and regulations on environmental protection from credit risks, where Chinese banks contributed 240 billion US dollars to the fossil fuel industry from 2016 to 2019, where the Big Four banks in China are among the largest financiers of coal in the world (China Industrial and Commercial Bank Limited, China Industrial and Commercial Bank Limited, China Agricultural Bank Limited, China Construction Bank). More than a trillion US dollars have been financed over the next ten years for foreign infrastructure through the Belt and Road Initiative (Abboud et al., 2023).

When China joined the World Trade Organization, China's central government made gradual reforms in the Chinese banking sector, as China has a semi-state-owned banking system. (WWF 2015). After the launch of the guidelines for the establishment of the green financial system in China, and with high-level guidance supporting the development of green products, green finance is considered as an area for profitable growth in the long term, and that the first-to-do bank has a competitive advantage over other banks, as green finance has developed rapidly in China (Barnes and Han ,2013).

Banks began to take an interest in environmental banking laws in 1995, and when the green finance policy was launched, the market was quick to respond and expanded after 2015 after a gradual development. The first green environment policy was launched in 1995, and the process of greening banks in China was carried out in several stages According to the following Table 2: (Escalante et al.,2020)

Table 2. Green bond policies in China

Release Date	Bank Name	Policy Document	Main Contents
1995	People's Bank of China	Notice on issues related to improving "environmental protection" in credit policy	Guiding banks on how to better include environmental variables in credit decisions
2007	China Banking Regulatory Commission	Views on energy efficiency and emissions reduction	Specific guidance on how banks can contribute to the achievement of the National Environmental Goals
2012	China Banking Regulatory Commission	Notice of Green Credit Guidelines Issuance	The first comprehensive policy to promote the greening of banks
2013	China Banking Regulatory Commission	Notice of Submission of Green Credit Statistics	Establishment of a statistical system for the "Community Research Center" for 21 major banks
2014	China Banking Regulatory Commission	Green Credit Application KPI Notification	Developing quantitative and qualitative indicators to evaluate performance
2016	National Development and Reform Committee	"Guidelines for the Establishment of a Green Financial System"	Comprehensive policy for the green financial system as a whole
2017	People's Bank of China	Notice on the Enhancement of Credit Assets and Guarantees in the Central Bank Calendar	Financial Incentives for Green Banking in the People's Bank of China's Permanent and Medium-Term Lending Facility"
2019	China Banking and Insurance Regulatory Commission	Guidelines for the Development of High Quality in the Banking and Insurance Industries	Instructions on how to include ESG factors in credit

Source: Escalante et al.,(2020). Green Banking in China – Emerging Trends With a spotlight on the Industrial and Commercial Bank of China (ICBC)CPI Discussion Brief August 2020 , p : 9

1.3.1.2 Environmental and social indicators

According to (The World Wildlife Fund ,2015) report five environmental and social indicators that show the extent of the commitment of the Chinese banking sector are listed as follows (and presented in Figure 3):

(A) The first indicator: "Self-adherence to environmental and social standards in banking" Commitment Level: Medium – High

(B) Second Indicator: "Managing Investment Flows Towards Green Investment" Commitment Level: Medium – High

(C) Third Indicator: "Regulating the Environmental and Social Risk Management Process in the Credit Process" Commitment Level : Intermediate

(D) Fourth Indicator: "Report on Environmental and Social Concerns in the Banking Sector" Commitment Level : Intermediate

(E) Fifth indicator: "Application of Environmental and Social Regulations in the Banking Sector" Commitment Level : Intermediate

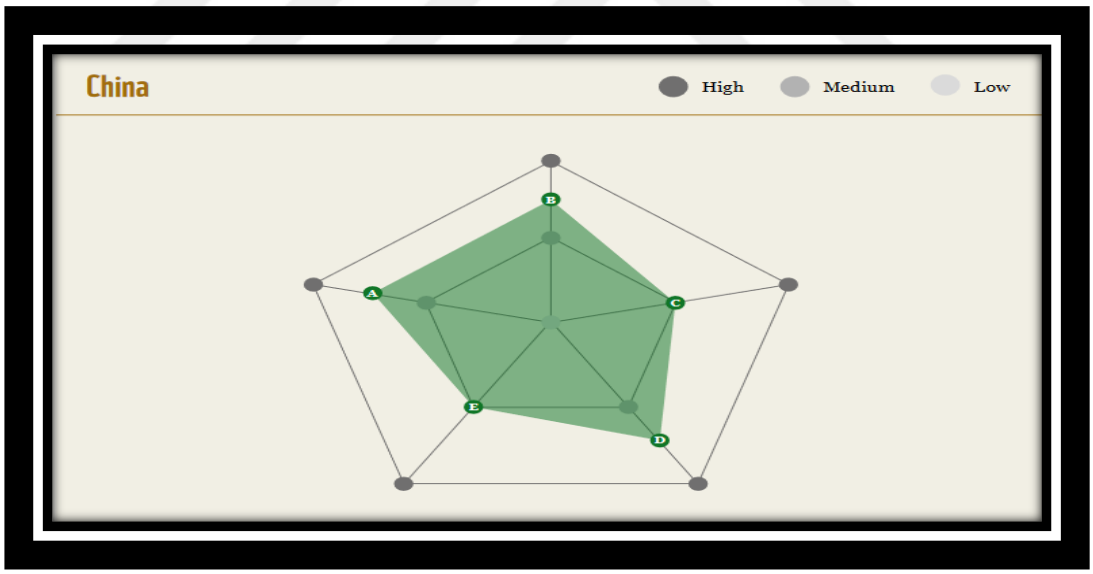


Figure 3 . The level of commitment of Chinese banks to green banking indicators

Source : The World Wildlife Fund (2015) Financial market regulation for sustainable development in the BRICS countries, p .32

1.3.2. India's experience

India, the second largest producer of greenhouse gases, or greenhouse gases, are gases present in the atmosphere and retain heat and negatively affect the climate, and three Indian cities are ranked among the ten most polluting cities in the world. In the

past two decades, India's industrial sector has achieved significant growth, which has been limited by challenges, especially those related to the environment, to reduce pollution as well as carbon emissions that negatively affect the environment. The Indian government has developed a set of legislations and laws to reduce pollution problems, and these laws and legislation help to encourage environmentally friendly industries (Hana, et al., 2021).

The Most Polluting Industries of Indian Cities are as follows (Chakrabarty, 2011):

- Metal Industries
- Paper Industries
-Insecticide industries
-Fertilizer Industries
-Sugar Industries

Indian banks have reduced paperwork within banks at all levels and introduced online banking services, in addition to providing the advantage of solar-powered ATMs in all locations, and mobile banking services have been provided as these initiatives help reduce operating costs and delays and thus increase customer satisfaction (Dipika, 2015).

Inclusion of criteria for classifying Indian banks as being environmentally friendly It has been called the "Green Currency Classification", where under the criteria of this classification, banks are judged on the basis of carbon emissions resulting from their various operations, as well as the amount of recycling, refurbishment, and reuse of materials used in furnishing their place, as well as the systems used in computers, printers, and networks (Hana, et al., 2021)

Figure 4 illustrates the criteria for classifying the currency as green through a set of items mentioned above.

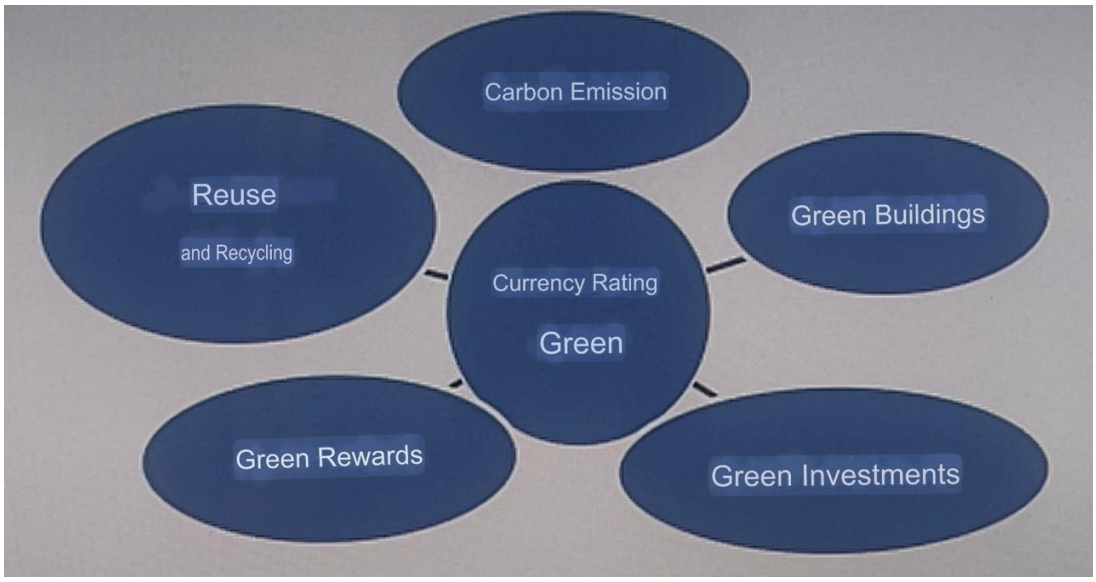


Figure 4. The classification of the green currency

Source: (Institute of Development and Research in Banking Technology, 2013)

India started implementing green practices more than 30 years ago, and this shows the Indian government's efforts in preserving the environment and reducing pollution.

Table 3. The dates of adoption of green banking by banks operating in India

Name of Bank Operating in India	Green Banking Adoption Date
Union Bank of India	1996
Groupe Citi INC, HSBC, ING Vyasa, RBS, Banque Royale du Canada, Syndicate Bank, Standard Charted	2003
Oui Banque, Corporation Bank	2005
Banque Ameriques, JP Morgan	2006
ICICI, OBC, SBI	2007
Bank Of Baroda, Karnataka Bank, Industrial Bank, Dena Bank	2008
HDFC, Indian Overseas, Indus land Bank, PNB, ABN Amro, Karur Vyasa, Andhra bank	2009

Banque de l'Axe, Kotak Mahendra, South Indian Bank	2010
Banque Canara, IDBI, EXIM	2011
IDFC	2013

Source: Dipika (2015) Green Banking in India: A Study on the Various Strategies Adopted by Banks for Sustainable Development (NCETEMS 310)

1.3.2.1. Indian banks initiatives

Initiatives by the Central Bank and some Indian banks to support green banking are listed below.(Hana, et al., 2021: 409)

1. Reserve Bank of India: This bank has launched a green banking policy by building windmills in many areas of India with the aim of regenerating clean energy

2. National Bank of Punjab: This bank used several policies to be among the green banks, for example, reducing energy consumption to reduce harmful emissions and moving towards green buildings. (Chakrabarty,2011)

3. Bank of Baroda: This bank has financed clean projects, for example, projects that generate energy from the sun and wind, thus reducing carbon emissions(Hana, et al., 2021)

4. Bank Canara: This bank provided banking services through mobile phones and providing banking services through the Internet, thus this bank enjoys banking services that are provided remotely that in turn, leads to customer satisfaction(Hana, et al., 2021)

5. ICICI Bank Ltd: This bank has launched an initiative called Go Green, which includes activities such as providing green services and selling green products (Chakrabarty,2011) .

6. HDFC Bank Limited: This bank works to manage waste and reduce the use of paper(Dipika, 2015)

7. Kotak Mahindra Bank: The bank launched a "Think Green" Campaign: This bank launched several campaigns, including the orientation towards agriculture and reducing the use of paper. (Barua , 2020).

8. Indusind Bank: The ATMs owned by this bank run on solar energy and thus reduce carbon dioxide emissions(Dipika, 2015)

9. Yes Bank: This bank supports alternative energy and clean technologies.

10- Axis Bank: This bank encourages its customers to use electronic data to reduce the use of paper, in addition to the establishment of an office of Axis House Company in Mumbai, where it was designed and constructed as a green building, and received the platinum rating by the US Green Building Council, and Axis Bank has adopted sustainable lending practices to control and control pollution. (Barua , 2020)

Most common challenges that banks face in transition to green banking are presented on Table 4.

Table 4. Challenges facing India in the transition towards green banking

General Challenges	Special Challenges
Lack of technologies necessary to embark on green banking	Lack of clarity in the definition of green economic activities
No previous experience and lack of green culture	Not including environmental factors when determining project costs
Type of Green Projects Required for the Long Term	Mixed information on the greening of the financial sector
Lack of modern financial instruments	Limited historical information on the risks of green finance

Source : Jena, L. P., & Purkayastha, D. (2020, July 1). Accelerating green finance in India: Definitions and beyond. Climate Policy Initiative. https://www.climatepolicyinitiative.org/publication/accelerating-green-finance-in-india-definitions-and-beyond/

The Reserve Bank of India discusses green banking in two dimensions (Dikau and Collins, 2017). The first dimension concerns the implementation of green banking practices, where the Reserve Bank issues guidelines to banks on e-business and

paperless banking. The second dimension relates to the application of environmental and social norms when granting loans; however, in this area, the Reserve Bank of India does not provide specific regulations or guidelines.

1.3.2.2. Environmental and social indicators

This section presents the key indicators used to evaluate the commitment level of the Indian banking sector to environmental and social standards (The World Wildlife Fund, 2015). The indicators and their corresponding commitment levels are as follows (also presented in Figure 5):

(A) The first indicator: "Self-adherence to environmental and social standards in banking" Commitment Level : Poor – Medium

(B) Second Indicator: "Managing Investment Flows Towards Green Investment" Commitment Level: Medium – High

(C) Third Indicator: "Regulating the Environmental and Social Risk Management Process in the Credit Process" Commitment Level : Intermediate

(D) Fourth Indicator: "Report on Environmental and Social Concerns in the Banking Sector" Commitment Level : Intermediate

(E):"Application of Environmental and Social Regulations in the Banking Sector" Commitment Level : Intermediate (The World Wildlife Fund, 2015:28)

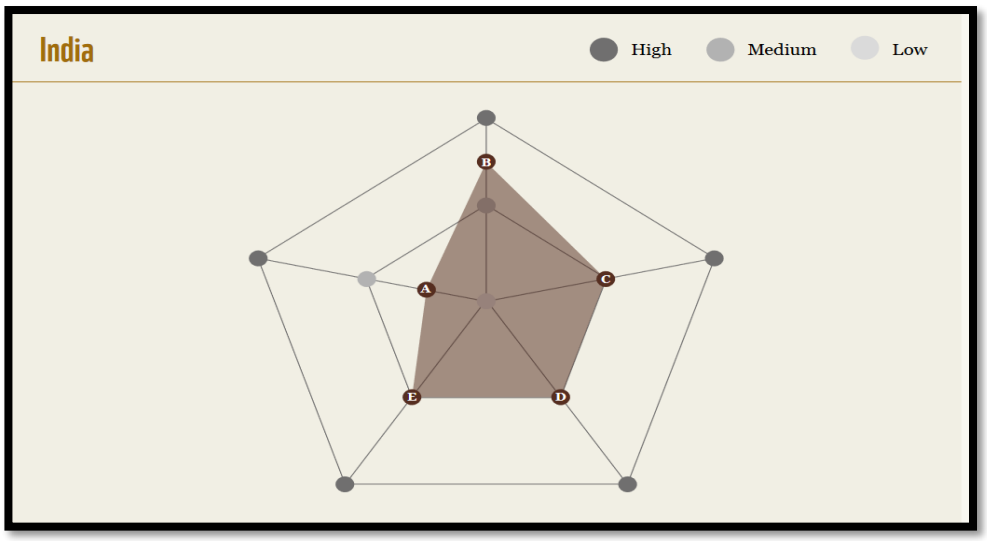


Figure 5. The level of commitment of Indian banks to green banking indicators

Source : The World Wildlife Fund,(2015) Financial market regulation for sustainable development in the BRICS countries, p 28

1.3.3. Russia's experience

Russia is a resource-rich country with great potential in the production of major commodities such as steel, iron, oil and gas, and agricultural products, and due to these products, there is a significant consumption of energy Russia has also started to cooperate with some international organizations such as the United Nations Environment Program to move towards green finance and green economy in order to promote inclusive and sustainable development, and this cooperation started due to the high use of fossil fuels (Alahverdi and Poorhatami, 2020).

The Russian state is also seeking to increase attention to the environment because Russia is one of the most polluting countries, according to the global data of the (Numbeo ,2022). The ranking of Rusia is presented on Figure 6.

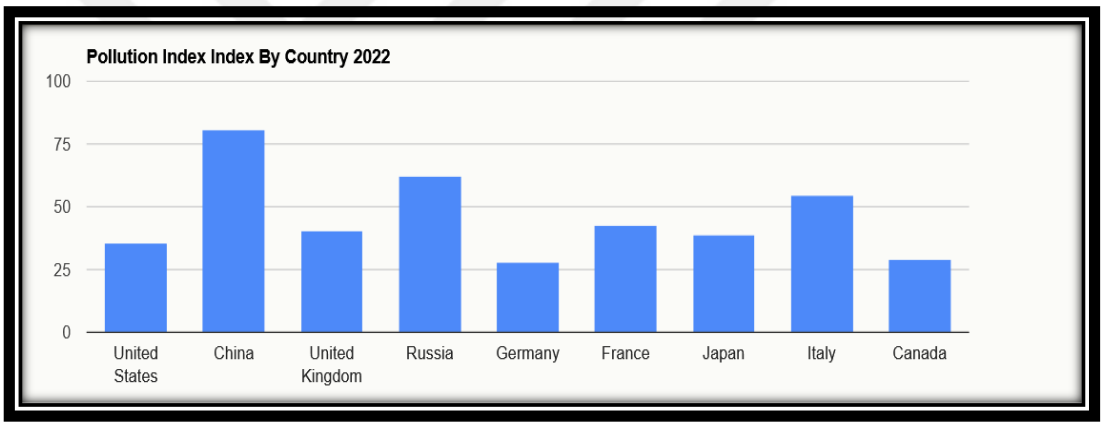


Figure 6. The pollution index according to the country for the year 2022.

Source: Numbeo.(2022). Pollution Index by Country 2022. Retrieved November 9, 2025, from https://www.numbeo.com/pollution/rankings_by_country.jsp?title=2022&displayColumn=0

The Russian President directed the implementation of the proposals of the Green Finance Department, and Russian banks also directed to issue bonds such as (Sber bank) (VTB) and vnesheconom (But no bonds have been issued so far due to the lack of legal and regulatory clauses (Kondyukova et al., 2018).

The Russian legal documents regulating banking do not contain environmentally-oriented definitions or regulatory treatments (Shershneva & Kondyukova, 2020).

According to the report issued by the World Bank's Global Gas Flaring Reduction Partnership Russia has been "a leading gas flaring country in the world over the past years (World Bank, nd.) as depicted in Figure 7.

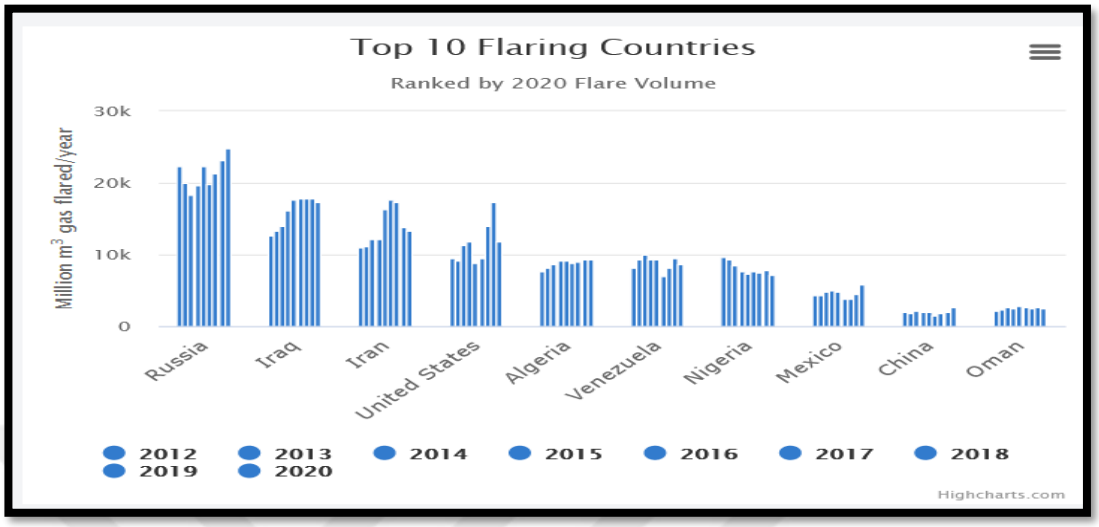


Figure 7. The countries that burn the most gas in the world from 2012 to 2020.

Source: World Bank. (n.d.). Global Gas Flaring Data. Retrieved November 9, 2025, from https://www.worldbank.org/en/programs/gasflaringreduction/global-flaring-data

1.3.3.1. Environmental and social indicators

The extent of the Russian banking sector's commitment to environmental and social standards can be assessed using the following indicators (also shown in Figure 8) (The World Wildlife Fund, 2015, p. 45):

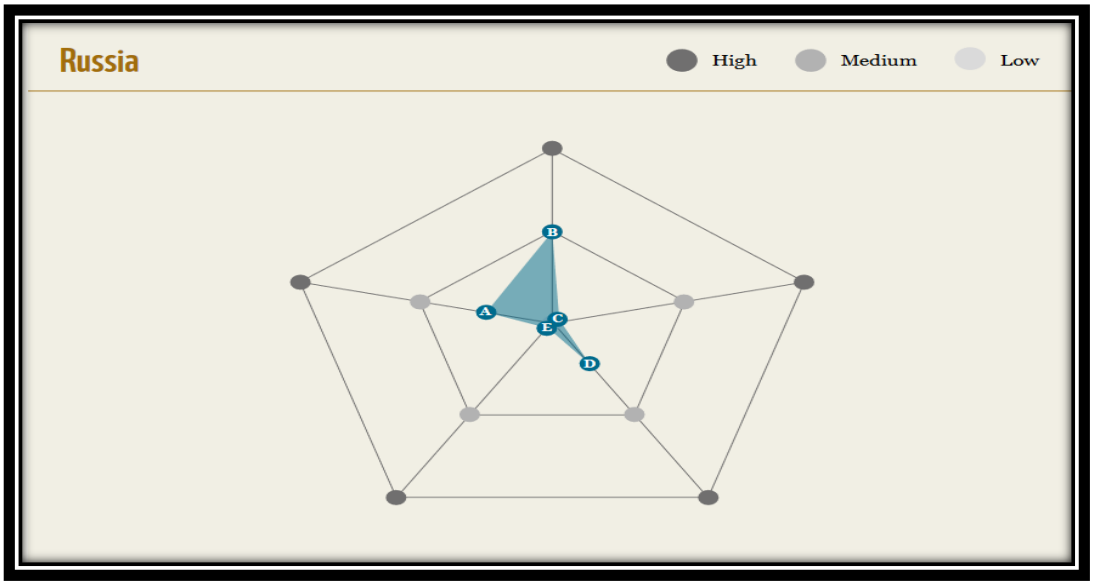
(A) The first indicator: "Self-adherence to environmental and social standards in banking" Commitment Level : Low – Medium

(B) Second Indicator: "Managing Investment Flows Towards Green Investment" Commitment Level : Intermediate

(C) Third Indicator: "Regulating the Environmental and Social Risk Management Process in the Credit Process" Commitment level : Low

(D) Fourth Indicator: "Report on Environmental and Social Concerns in the Banking Sector" Commitment Level : Low - Medium

(E)Fifth Indicator: "Application of Environmental and Social Regulations in the Banking Sector" Commitment level : Low(The World Wild Life Fund, 2015)



Figure(8) .shows the level of commitment of Russian banks to green banking indicators.

Source : The World Wildlife Fund (2015). Financial market regulation for sustainable development in the BRICS countries, p 24

1.3.4. Brazil's experience

Brazil's significant progress in green exchange is due to the Central Bank of Brazil (CBB) offering environmental and social risk regimes, and the Bank of Brazil has provided a regulatory and stimulus framework for the development of a new methodology for green finance flows, which accounted for 9.5% of the bank's total inflows in 2014. (UNEP FI , 2016)

The financial sector in Brazil has also made great progress in the past years, as social and environmental issues have been integrated into business decisions in banks, and the State of Brazil has been at the forefront of international sustainability agreements for the financial sector, for example, the principles of responsible finance, the principles of responsible investment, and the principles of break-even. (Febraban, 2014).

Brazil is now one of the largest green markets in Latin America, with US$9 billion issued in the form of green bonds and sustainable locally and internationally in 2020 (Knoch and Van der Plasken ,2020).

Brazil has followed a path of voluntary and mandatory green service delivery, driven by the need for stronger efforts in environmental conservation and sustainable development (International Finance Corporation, 2017).

The main reason for Brazil's interest in green exchange is because of the result of the destruction of the Amazon forest, which has led to an increase in environmental pollution. (Canepa,2021).

1.3.4.1. Environmental and social indicators

The commitment of the Brazilian banking sector to environmental and social standards can be assessed using the following indicators (The World Wildlife Fund, 2015):

(A) The first indicator: "Self-adherence to environmental and social standards in banking" Commitment Level: Medium – High

(B) Second Indicator: "Managing Investment Flows Towards Green Investment" Commitment Level: Medium – High

(C) Third Indicator: "Regulating the Environmental and Social Risk Management Process in the Credit Process" Commitment Level : Intermediate

(D) Fourth Indicator: "Report on Environmental and Social Concerns in the Banking Sector" Commitment Level: Medium – High

(E) Fifth Indicator: "Application of Environmental and Social Regulations in the Banking Sector" Commitment Level : Intermediate (The World Wild Life Fund, 2015).

The commitment level of Brazilian banks to green banking indicators are also shown on Figure 9.

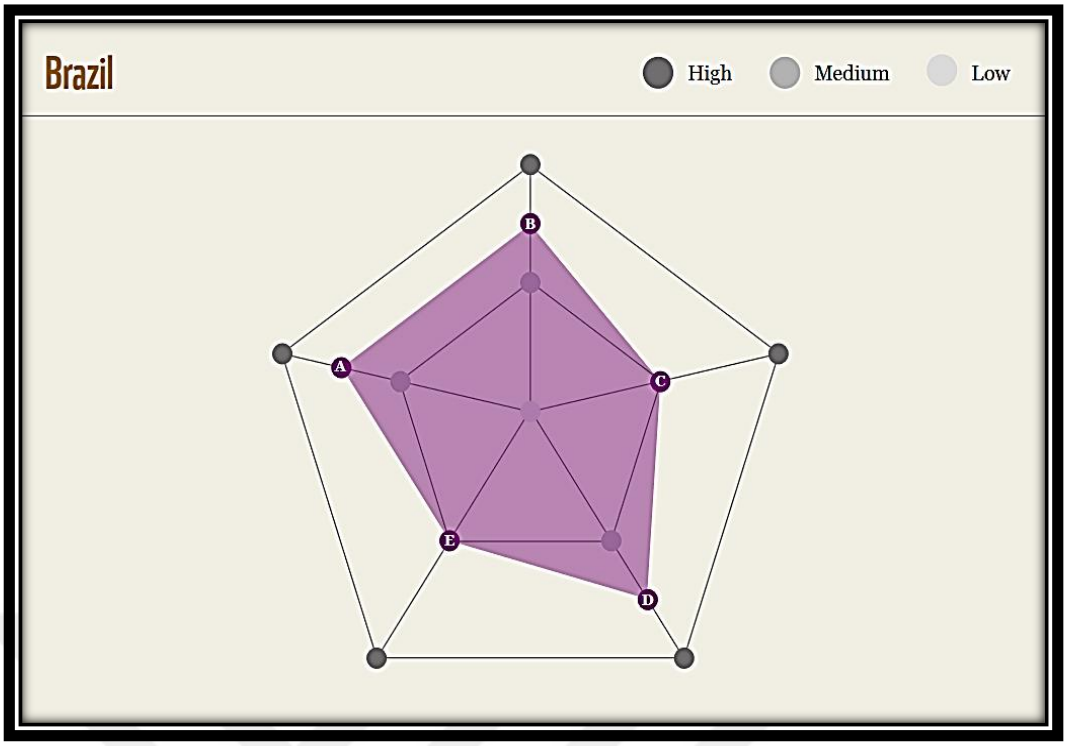


Figure 9. The level of commitment of Brazilian banks to green banking indicators.

Source :The World Wildlife Fund (2015). Financial market regulation for sustainable development in the BRICS countries, p 20.

1.4. Innovative Green Products & Services

There are many innovative products and services offered by green banking with a focus on environmental protection. The most commonly used ones are listed below.

1. Online Banking: Customers of the bank or other financial institutions can conduct financial transactions electronically through the financial institution on the web. (Reddy et al , 2017)

2. Green mortgages: Banks can afford to switch a house from conventional energy to green energy by providing green mortgages, as this feature provides customers with new homes that are energy efficient. (ICF Consulting Canada, 2007)

3. Auto loans are loans that encourage the purchase of cars at lower interest rates than the market, as they must be at least 0.25% lower than the average car loan, which indicates higher efficiency in fuel consumption. (Jarrah and Salem, 2021)

4. Green credit cards allow holders of these cards to earn points that can be redeemed for environmentally friendly charitable contributions by donating money to

a non-profit and environmentally friendly organization, and these cards provide an excellent incentive for consumers to use their green card for expensive purchases. (Kandavel ,2013)

5. Construction loans: In North America, loans have started to emerge for commercial (green) buildings, which are characterized by low energy consumption and reduced pollution from traditional buildings. (ICF Consulting Canada, 2007) .

6. Green Reward Verification Accounts: This is done by receiving electronic statements or paying electronic invoices. (AUBHI, 2016)

1.5. Green Banking and the SDGs

Sustainable development can be defined on several levels, as sustainable development at the cultural level means improving and developing the level of thinking of individuals and human groups through attention to education, the promotion of arts, literature, media and communication (IFC, 2017) . At the social level, social development refers to meeting the basic needs of members of society and continuously improving their quality of life. It seeks the well-being of individuals through access to adequate housing, a decent standard of living, sufficient and appropriate nutrition, and the provision of essential services in areas such as energy, water, and health. At the environmental level, sustainable development means caring for the environment and working to protect it from negative human practices through awareness and inter-education. (Lehman, 2022).

1.5.1. Sustainable development goals

The Sustainable Development Goals (SDGs), also referred to as the Global Agenda, are a set of 17 goals established by the United Nations under the framework titled Transforming Our World: The 2030 Agenda for Sustainable Development. These goals were adopted in the resolutions of the United Nations General Assembly in September 2015 and came into effect in January 2016. The SDGs constitute a global vision and call to action aimed at eradicating poverty, protecting the planet, and ensuring that all people enjoy peace and prosperity by 2030. Although each goal has its own specific sub-targets, they are interrelated and collectively comprise 169 targets in total (Central Bureau of Statistics – Republic of Iraq, 2017). Figure 11 illustrates the

Sustainable Development Goals (SDGs), which represent the United Nations' global agenda for sustainable development by 2030.



Figure 10. The Sustainable Development Goals (SDGs)

Source: Klapper, L., El-Zoghbi, M., & Hess, J. (2016). Achieving the Sustainable Development Goals: The role of financial inclusion. CGAP.

The following section provides an explanation of selected Sustainable Development Goals, specifically Goals 7, 9, 12, and 13 (Lehman, 2022).

1.5.1.1 Sustainable development goal 7: affordable and clean energy

The relationship between green exchange and the seventh goal of the Sustainable Development Goals is strong and integrated, as green exchange is linked to the seventh goal, which is clean and affordable energy by providing financing for renewable energy projects represented by solar energy and energy generated by wind power, as these projects in green exchange aim to achieve the seventh goal of the Sustainable Development Goals (Jeucken, 2001) .

Green Exchange also supports projects that aim to provide clean energy by providing loans or financial support to obtain sustainable energy and avoid

environmental pollution, as green exchange is a key supporter of the seventh goal of sustainable development (Bouma et. al 2001).

1.5.1.2. Sustainable development goal 9: industry, innovation and infrastructure

Many green banks are working on innovations in their internal processes such as paperless transactions to reduce carbon footprints and preserve the environment, and banks can develop innovative environmentally friendly products, thus green banks apply the ninth goal of the Sustainable Development Goals, which aims at the innovation adopted by green banks to preserve the environment (Al-Sayed Ali, 2024).

Stimulating research and development by providing loans for projects in the fields of clean technology and supporting sustainable infrastructure such as clean transportation, green buildings, and renewable energy, where green banking is the first supporter to achieve the ninth goal of the Sustainable Development Goals (Al-Sayed Ali, 2024).

1.5.2.3 Sustainable development goal 12: responsible consumption and production

Green bank works to finance projects that use natural resources very efficiently and without harming those natural resources and preserving them for future generations, as the twelfth goal focuses on recycling. And Green bank works to support and finance these projects and support responsible consumption through the launch of banking products such as sustainable savings accounts or green credit cards that encourage customers to spend money on environmentally friendly services and products. (Shijie Liu , 2017)

1.5.2.4. Sustainable development goal 13: climate action

The thirteenth goal stipulates addressing climate change, tackling carbon emissions and reducing their effects through several ways taken by green exchange, such as supporting projects that work on clean energy, green buildings, low-carbon means of transportation or means of transportation that run on electricity, as well as work on managing natural and climate disasters, and helping green exchange to transition towards a resilient and low-carbon economy. (Dubey, 2019).

Green exchange helps to find effective solutions to address climate changes, biodiversity loss issues, and air quality problems through the products and services provided by green exchange (Noureen, 2020).

1.5.2.5. Green exchange contributions to sdgs 1 and 11

Goal 1: Eradicate Poverty: Green Exchange works to combat inequality and eradicate poverty by protecting the livelihoods of the poor, protecting against climate change and reducing their losses, financing infrastructure to reduce the risk of natural disasters and floods, improving production (Purvis et al., 2018).R educing costs by financing smart and sustainable agriculture technologies, financing small and medium-sized developing enterprises, and creating jobs in rural areas and poor communities (Purvis et al., 2018).

According to (Abboud et al. 2023) the existence of green banking can help achieve the Sustainable Development Goals, whether directly or indirectly, as banks can help society and contribute to the eradication of poverty and hunger (Goals 1 and 2) by providing the necessary financing for small and medium enterprises, reducing interest rates, and working to implement financial inclusion.

In my view, green banking contributes to achieving the first goal of the Sustainable Development Goals, but in an indirect way, and that is halal in supporting sustainable economic growth.

Goal 11: Sustainable Societies: One of the main reasons that called on countries to use the Sustainable Development Goals is equity and social justice, which stipulates ending the difference between rich and poor societies and to keep societies from deteriorating and entering into wars (Flint , 2013).

When poverty is eradicated and social justice is achieved, one of the fundamental foundations for building sustainable societies is achieved. Fair and equal access to resources, opportunities, and a good environment reduces the likelihood of social tensions that may arise from disparities between rich and poor societies. Social justice not only means an equitable distribution of costs and benefits, but also facilitates the maintenance of social, cultural and environmental systems, where tensions can be addressed by equitable means that promote a sense of equity. Even in nature, notions of justice manifest themselves through the processes of competition that lead to the survival of the fittest. Among humans, economic and physical gaps, and the resulting

unbalanced effects on societies, can lead to the depletion of environmental resources and a high risk of conflict, which may develop into wars or acts of terrorism (Flint, 2013).

CHAPTER TWO
GREEN BANKING IN IRAQ

In this chapter, I highlight the topic of green banking in Iraq, focusing on the components of the Iraqi banking sector, which include the Central Bank of Iraq, government banks, private banks, and foreign banks, with reference to the number of banks in each category. We also discuss the environmental reality in Iraq, analyzing the factors that led to the weakness of this reality, in addition to reviewing the public and private environmental policies followed by banks in this field.

The chapter also addresses the challenges and obstacles facing the implementation of green banking in Iraq, most notably the impact of environmental pollution, heavy dependence on oil revenues, and the lack of economic diversification, which hinders the effective development of green exchange initiatives.

The chapter also reviews the role of green banking in achieving sustainable development within Iraq, explaining the importance of sustainable development in preserving the environment and reducing pollution levels, in addition to enhancing economic and social sustainability. At the end of the chapter, the researcher explains the motivations for choosing the research topic, and the reasons for focusing on green banking practices in Iraq, stressing its scientific and practical importance.

2.1. Overview of the Iraqi Banking Sector

The Central Bank of Iraq is one of the oldest banks in the Arab region, as the Central Bank of Iraq was established on November 7, 1947, and its capital is estimated at more than 100 billion Iraqi dinars. The Central Bank has four main branches inside Iraq (Mosul, Erbil, Sulaymaniyah, and Basra) (Abbood ,2022)

Strategic research indicates that the Central Bank has identified a significant problem in the Iraqi banking sector: there is one bank for every 32,000 people, while international standards recommend one bank for every 10,000 people (Central Bank of Iraq, 2025).

The role of the Central Bank is to establish guidelines and supervise the work of digital banks, and one of the main tasks of the Central Bank is to hold periodic meetings with banks to raise the requirements of supervision and answer their

inquiries, and because of this effective role, the total credit in the Central Bank of Iraq and government banks reached 71,288 in 2025, and the inflation rate decreased to less than 2%. (Central Bank of Iraq, 2025)

2.1.1. Government banks

The Iraqi banking system went through several stages from 1867, as the first bank known in Iraq was the Ottoman Bank, then the Shah Nashah Bank of Iran and the British Oriental Bank, then the stage of Iraqi national banking began in 1935, which witnessed the establishment of the Industrial Agricultural Bank, which split after 1940 into two banks: the Agricultural and Industrial Bank. After that, specifically in 1941, the Rafidain Bank was established as the only commercial government bank, then the Central Bank of Iraq in 1947, then the Real Estate Bank in 1948, the Cooperative Bank, the Mortgage Bank, and many Iraqi banks (Central Bank of Iraq, 2022).

Today, the official website of the Central Bank of Iraq indicates that the number of local and foreign banks operating in the country is 78, including 7 government banks (shown in Table 6) and 45 private banks, in addition to 17 or more branches of foreign banks operating in the country. (Central Bank of Iraq, 2021)

In 2004, Iraq enacted the Banking Law No. (94), and based on the methodology of the market economy, the interest rate was liberalized, credit plans were abolished, and foreign banks were opened to work, whether by participating in local banks or opening branches thereof, as well as facilitating the transfer of funds and releasing the freedom of foreign transfers, except in relation to the requirements of the Anti-Money Laundering and Combating the Financing of Terrorism Law (Central Bank of Iraq, 2021).

Table 5. Iraqi government banks

Logo	Name	Start Year	Money capital	Details
	Rafidain Bank	Founded in 1941; 84 years ago	226 billion dinars	The license number and date of "Law No. 33 of 1941". It has 147 branches within Iraq. It includes 8 branches outside Iraq, in (Jordan, Kingdom of Bahrain, Lebanon, United

				Arab Emirates, Britain, and Yemen)
	Al Rashid Bank	Founded in 1988; 37 years ago	2 billion Iraqi dinars	Licence No. and Date, in 1988 under Law No. (52) and became a public company under the Public Companies Law No. (22) of 1997. It has 151 branches in Iraq
	Industrial Bank	Founded in 1941; 84 years ago	175 billion Iraqi dinars	18 branches The Industrial Bank became a public company on 9/3/1998 under the Certificate of Incorporation No. (CS 111).
	Cooperative Agricultural Bank	Founded in 1935; 90 years ago	100 billion dinars	Oldest Iraqi State Bank The Bank has engaged in comprehensive commercial banking after the issuance of Resolution No. (9) of 1996. 15 branches
	Real estate bank	Founded in 1948; 77 years ago	50 billion dinars	License Number and Date "Law No. (18) of 1948" 15 branches

	Iraqi Bank of Commerce	Founded in 2004; 21 years ago	3 billion dollars (3.5 trillion Iraqi dinars	Licence number and date "105/3/9 on 24/1/2004". It has 27 branches in Iraq and has a representative office in the United Arab Emirates, Abu Dhabi, and a branch in the Kingdom of Saudi Arabia, Riyadh
	Al , Nahrain Islamic Bank	Founded in 2015; 10 years ago	150 billion dinars	Leave number and date "12317/3/9 on 17/8/2015

Source: Prepared by the researcher based on the source Central Bank of Iraq. (2021, July 7). The Central Bank encourages the use of renewable energy in Iraq. https://cbi.iq/news/view/1772

2.1.2. Foreign banks

The Iraqi environment today is more secure than before, and as a result, many international banks have entered the Iraqi market and these banks have established their financial projects in Iraq in accordance with the recommendations of the Central Bank and compliance with the regulations in force inside Iraq and obliging the external bank to open an account in the Central Bank (Abbood, 2022). A list of foreign banks operating in Iraq is presented in Table 6.

Table 6. Foreign Banks (Commercial & Islamic)

No	Bank's Name	Capital	Date of Starting
1	Zirrat Bank	50,000,000$	27/02/2006
2	Byblos Bank-Lebanon	50,000,000$	08/06/2006
3	Intercontinental Bank	50,000,000$	08/03/2009
4	BBAC	50,000,000$	21/01/2009
5	Vakif Bank	50,000,000$	16/02/2011
6	Iş Bank	50,000,000$	19/05/2011
7	Credit Libanais Bank	50,000,000$	19/04/2012
8	BankMed	50,000,000$	22/04/2012

9	Bankque Libano- Française	50,000,000$	08/06/2014
10	Standard Chartered	50,000,000$	24/11/2013
11	MEAB Bank of Lebanon	50,000,000$	07/08/2014
12	Frans Bank	50,000,000$	18/03/2014
13	BLOM Bank	50,000,000$	18/03/2014
14	Audi Bank	50,000,000$	16/05/2014
15	Bank Malli	50,000,000$	28/09/2005
16	Parsian Bank	50,000,000$	03/09/2012
17	Islamic Abu Dhabi Bank	59,003,000,000 IQD	06/10/2010
18	Islamic Al-Baraka Bank	60,322,905,000 IQD	04/04/2011
19	Citibank – Authorized Office	751 Million $	21/11/2013
20	Commerz bank Authorized Office	27 Million $	10/12/2014

Source: Abbood, R. H. (2022). Designing strategy maps by the support of balanced scorecard approach to improve the banking projects performance in Iraq (Doctoral dissertation, Istanbul Okan University).

Twenty foreign banks operating inside Iraq were selected from a group of foreign banks operating inside Iraq, and this reflects the openness of the Iraqi banking sector to international banks. This table aims to shed light on foreign banks operating in Iraq and the extent to which Iraqi banks adopt foreign investments, and this difference in banks gives a strong motivation to improve the quality of services through strong competition between Iraqi and foreign banks.

2.1.3. Private Banks

Private banks in Iraq form an important part of the financial sector in Iraq, and the work of these banks is concentrated in insurance, brokerage, deposits and other tasks. Banks participate in the financial system in addition to the stock markets. The financial system is either based on the market basis such as the United States of America or the banking basis such as (Germany, Japan) and that the financial system in Iraq is based on the banking foundation (Central Bank of Iraq, 2021)

Table 8 presents detailed data on twenty-five private banks operating within Iraq, which constitute one of the main pillars of the Iraqi banking sector. These banks

represent a combination of national investments and regional partnerships, and contribute effectively to the economic movement by providing diversified and sophisticated banking services to individuals and businesses.

Table 7. Local Commercial Private Banks

No	Bank's Name	Capital	Date of Starting
1	Baghdad Bank	250 Billion IQD	05/05/1992
2	Commercial Bank of Iraq	250 Billion IQD	12/07/1992
3	IMEIB	250 Billion IQ	28/09/1993
4	IBI	250 Billion IQD	28/09/1993
5	Basrah Bank	75 Billion IQD	03/01/1993
6	United Bank	300 Billion IQD	05/11/1994
7	NBI	250 Billion IQD	28/03/1995
8	Credit Bank of Iraq	250 Billion IQD	16/10/1998
9	DES Iraq	150 Billion IQD	06/04/1999
10	BBK	250 Billion IQD	08/06/1999
11	EBI- Iraq	252 Billion IQD	10/12/1999
12	Sumer Bank	250 Billion IQD	04/11/1999
13	GULF Bank	300 Billion IQD	07/02/2000
14	Warka Bank	105,072 Million IQD	07/02/2000
15	Al Mosul Bank	252 Billion IQD	03/12/2001
16	North Bank	300 Billion IQD	09/03/2004
17	Union Bank	252 Billion IQD	09/03/2004
18	MBI	250 Billion IQD	22/09/2005
19	Mansour Bank	250 Billion IQD	20/02/2006
20	TIB	264 Billion IQD	05/12/2006
21	RTB	250 Billion IQD	01/03/2007
22	Al- Huda Bank	250 Billion IQD	14/01/2008
23	Erbil Bank	265 Billion IQD	23/06/2010
24	IDB	250 Billion IQD	07/04/2011
25	Hammurabi Bank	201 Billion IQD	29/11/2020

Source: Abbood, R. H. (2022). Designing strategy maps by the support of balanced scorecard approach to improve the banking projects performance in Iraq (Doctoral dissertation, Istanbul Okan University).

This table aims to highlight the size of the private banking sector within Iraq, and the vital role these banks play in financing projects, supporting business activity, providing job opportunities, and contributing to financial stability. It also reflects the continuous development of the infrastructure of the local banking sector, and the efforts of private banks in improving the quality of services and keeping pace with the digital transformation in banking.

2.2. Environmental Policies and Regulatory Landscape in Iraq

Iraq is facing increasing environmental pressures as a result of population growth, misuse of natural resources, and the policies of neighboring countries related to water, which have led to a clear deterioration of water resources and the environment. Ignoring the environmental dimension in the planning and implementation of development projects has also caused the emergence of complex environmental problems. The absence of effective legislation and regulation of land and water use contributes to the persistence of harmful practices such as grazing, logging and overfishing. With these challenges, the establishment of the Council for the Protection and Improvement of the Environment and later the Ministry of Environment constituted the first organized institutional framework for environmental action in Iraq (Ministry of Environment, 2024).

2.2.1 Public environmental policies in Iraq

The National Strategy for the Protection and Improvement of the Environment in the Republic of Iraq was prepared in partnership with the United Nations Development Programme (UNDP), funded by the United States Agency for International Development (USAID), and under the supervision of the Iraqi Ministry of Environment, which is responsible for protecting the environment in the country. The Ministry coordinates environmental policies, legislation and measures with the aim of achieving a healthy and sustainable environment that contributes to building a healthy society and a green economy. The strategy addressed five key strategic programs: environmental protection, environmental improvement, climate change, strengthening partnerships, spreading environmental culture, and environmental governance. These programs come within a comprehensive national framework to achieve sustainable environmental development (UNEP, 2016).

The Ministry of Health and Environment has joined a number of environmental and sustainable development agreements that aim to protect the environment, human health, natural resources, biodiversity, cultural and natural heritage and achieve some sustainable development goals (UNDP,2020) Some environmental and sustainable development agreements to which the Ministry of Health and Environment has acceded are presented in Table 9.

Table 8. Environmental and Sustainable Development Agreements Ratified by the Ministry of Health and Environment

No.	Name of the agreement	Joining date
1	United Nations Framework Convention to Combat Desertification	5/11/2009
2	Cartagena Protocol on Biosafety	6/1/2014
3	International Trade in Endangered Species of Wild Fauna (CITES)	5/6/2014
4	Conservation of Migratory Species of Wild Animals (CMS)	8/1/2016
5	Rotterdam Convention on Advance Informed Concerns on the Hazardous Substances Group	7/17/2017
6	Stockholm Convention on Persistent Organic Substances	6/6/2016
7	Basel Convention on Transboundary Movements of Hazardous Wastes	2011
8	Biological Diversity	26/10/2009

Source: Prepared by the researcher based on Report United Nations Development Programme & Ministry of Health and Environment, Iraq. (2020, December 20).

The report of the Ministry of the Environment showed the weakness of the environmental reality in Iraq and its decline for several reasons, including (UNDP , 2020)

1. Failure to implement some of the provisions of environmental and sustainable development agreements

2. The weakness of the procedures of the Ministry of Health and Environment in monitoring and implementing some of the provisions of the agreements.

3. Failure to adopt modern methods and technologies in order to develop the infrastructure and basic infrastructure to be able to implement the provisions of the agreements.

4. Weak procedures for controlling the entry of polluting materials from the border crossings of Iraq

5. Weak coordination between the Ministry of Health and Environment and the relevant ministries

2.2.2 Special laws on the environment in Iraq

Law No (27) of 2009 was issued and published in the Iraqi newspaper Al-Waqa'i in 2010. This law was issued on the basis of what was approved by the Iraqi Constitution, and was ratified by the Presidency Council in its session held on December 13, 2009 This law includes a number of legal articles that aim to protect and improve the environment, by regulating activities that may negatively affect the environment, establishing legal frameworks for oversight, responsibilities and penalties, and encouraging the adoption of environmentally friendly practices. Law No. (27) includes a number of articles as follows (Ministry of Justice Republic of Iraq, 2010).

Article 1: It aims to protect and improve the environment by addressing damages, and preserving public health, natural resources, biodiversity and cultural heritage, in cooperation with the competent authorities, and in order to achieve sustainable development and international cooperation.

Article 7: A council for the protection and improvement of the environment shall be formed in each province in Iraq, headed by the governor, and special instructions shall specify its tasks and mechanism of work. The Council also has the right to host specialists and representatives of various sectors when needed.

Article 8: Planning authorities are obliged to include environmental protection, pollution control, and rational use of resources in all development plans to ensure sustainable development.

Article 9: Entities that cause environmental pollution are obliged to:

1. Use clean techniques to treat pollution, ensure their efficiency, and repair any defect when it occurs, while informing the Ministry.

2. Providing devices to measure and monitor pollutants, and documenting the results in a special record, or allowing the Ministry to measure them if the devices are not available.

3. Establishing a database that includes pollutant percentages to preserve and sustain the environment.

4. Oriented to the use of renewable energy to reduce pollution.

Article 10: First -The owner of a project shall be obliged to submit an environmental impact assessment report before the construction of the project begins, and the report shall include the following:

A. Estimating the positive and negative impacts of the project on the environment, and the impact of the surrounding environment on it.

B. Proposed means of avoiding and treating pollution, with the aim of adhering to environmental instructions and controls.

C. Identify emergency or potential contamination cases, and the necessary preventive measures.

D. Examine possible alternatives to use technology that is less harmful to the environment and rationalize resource consumption.

E. Waste reduction plans, recycling or use whenever possible.

F. Environmental assessment of the project, calculating the cost of pollution compared to production.

Second- the technical and economic feasibility study of the project should include a structured report that includes the above points.Article

Article 11: Entities engaged in activities that impact the environment are prohibited from conducting research or experiments without obtaining prior approval from the Ministry of Environment.

2.2.3 Environmental policies of banks in Iraq

The work of the Iraqi banking system was limited at the beginning of the establishment of the first bank in Iraq (Rafidain Bank) in 1941, and the purpose of its establishment was for government work and not for trade, then the Central Bank was established under Law (72) of 1956. According to the law issued in 2004 No. (56), the

Central Bank of Iraq became the independent institution responsible for monitoring and directing the work of banks in Iraq with the aim of achieving economic stability and financial and monetary stability. The Central Bank monitors the banks to ensure the validity of their business and the extent to which these banks comply with the laws and regulations stipulated by the Central Bank (Central Bank of Iraq, 2021).

In 2020, the Ministry of Finance began to reform and evaluate the banking sector in Iraq through the White Paper Initiative. The Central Bank has also identified the problems facing banks and developed quick and strategic solutions, as explained in the Central Bank's strategy for the years 2016-2020. (Government of Iraq, 2020).

The most important paragraph in the white paper is as follows (Government of Iraq, 2020).

1- Amending and restructuring the system in government banks within a period not exceeding (5 years)

2- Seriousness in developing electronic services and services provided through mobile phones

3- Contracting with international companies to build a global electronic banking system

4- Adopting systems that reduce administrative and financial corruption and are characterized by speed and accuracy at the same time. Banks, institutions, and projects must be more interactive with their external environment in order to be on the right path, because banks and their employees will know how to develop strategies, the results will be better (Abboud et al., 2023)

Previous research has also indicated that there is no clear plan for green policies in banks in Iraq so far, but there is great interest from the Central Bank to move towards green exchange by holding a lot of conferences and presentations on green exchange (Abboud et al., 2023)

2.3. Adoption of Green Banking Practices in Iraq

This research aims to shed light on the level of adoption of green banking in Iraqi banks, by identifying the extent to which environmentally friendly products and services are provided, and studying the role that these banks can play in achieving the Sustainable Development Goals. The data indicate that Iraqi banks have begun to

adopt the concepts of green banking, and have great potential in this field, but these capabilities have not yet been optimally invested (Central Bank of Iraq, 2022).

True adoption of green banks cannot be achieved without the involvement of all actors, including employees, suppliers, customers, shareholders, and other stakeholders. One of the most prominent challenges facing the adoption of this type of banking is the low environmental awareness in the community, in addition to the high costs of implementing green practices (Chan et al., 2018).

In early 2021, the Central Bank of Iraq announced its intention to support green finance initiatives, by focusing on the introduction of production inputs based on clean energy, in compliance with the outcomes of the Paris Climate Conference (Central Bank of Iraq, 2021).

In 2022, the Bank launched a national initiative to transition to renewable energy, led by the Prime Minister and the Supreme Committee for Lending (Central Bank of Iraq, 2022).

The Central Bank of Iraq stresses the need to enhance the participation of banks in community awareness efforts and the dissemination of environmental culture, in order to contribute to achieving a clean and sustainable environment. In this context, he pointed out the importance of providing appropriate financing offers to citizens wishing to buy environmentally friendly products, such as solar energy systems and energy conservation devices (Abdullah et al.2022)

Iraqi banks have also facilitated procedures for citizens wishing to obtain green finance, including the Renewable Energy Loan Initiative, which allows citizens to obtain a loan without requiring their salary to be transferred to the donor bank. This trend highlights the role of the Central Bank in supporting and activating green banking practices, as an important step towards sustainable development (Abdullah & Hameed, 2022)

2.3.1.The Role of Financial Regulators and Central Banks in Promoting Green Finance

The Central Bank of Iraq (CBI) has called on authorized banks to facilitate the procedures for those wishing to obtain loans from the Renewable Energy Initiative, and to adopt new mechanisms that give the borrower from this initiative the right to

choose the lending bank without the need to transfer the localization of his salary, if he has another bank, and to collect the installments due from the borrower through the electronic clearing system. As for non-national borrowers, they will borrow from the banks participating in this initiative, in exchange for guarantees accepted by the lending bank (Central Bank of Iraq, 2022).

Table 9. The Central Bank of Iraq's Initiative in Supporting Sustainable Development through Green Finance

	The economic dimension	the environmental dimension	the social dimension
1	The Central Bank's initiative contributes to sustainable economic growth by encouraging the production of environmentally friendly products	Increasing financing for the energy and electricity sector to benefit from new and environmentally friendly technology to reduce pollution	The initiative aims to provide low-interest loans through which citizens can obtain clean energy at a low price
2	The Central Bank of Iraq's initiative aims to satisfy citizens' basic needs in the field of clean energy	Focus on solar panel technology to preserve other energy sources	Providing the necessary financing to purchase solar panels to contribute to improving the lagging electricity sector
3	The initiative seeks to enhance the liquidity of banks, which will in turn work to grant soft loans to citizens to purchase renewable energy production units	Encouraging banks to increase green investments protects the environment from pollution	Providing easy bank loans to all citizens to purchase clean energy supports the principle of equality and social justice

Source: Abdullah, G. A. & Hameed, T. M. (2022). The role of the Central Bank of Iraq in financing banks to support the purchase of green energy sources and its impact on the dimensions of sustainable development. *Baghdad College of Economic Sciences University Journal (BCESUJ)*, 67(1), 178-190.

2.4. Challenges and Barriers to Implementation

There are many obstacles and challenges facing the implementation of green banking in Iraq, including:

1. The high cost of green projects through the training of employees in the bank, so financial and legal support must be provided to green banks (Ben Omar, 2022).

2. The lack of uniform environmental policies and standards and clear environmental principles in Iraq (Abdul-Amir: 2019).

3. Lack of real encouragement from the government and the fear of the investor from changes in the tax or the rise and fall of the cost of green projects.

4. Iraq is the fifth country most affected by climate change and pollution, so Iraq faces a great challenge in the field of the environment. (Abboud et al., 2023)

5. One of the challenges facing the banking sector in Iraq is the great environmental pollution that occurs in Iraq, as the gas burned by Basra is equivalent to the gas burned by countries (Saudi Arabia, China, India, Canada). (National Audit Office Report, 2022)

6. Many customers are unable to work on modern devices (computers, smart devices) and many rural areas in Iraq that lack development (Kanu et al., 2020).

7. Difficulty in implementing environmental regulations in the banking sector. The process of integrating environmental, social and governance (ESG) data into banking operations is a very difficult challenge that requires the integration of environmental standards in lending and valuation processes Significant investments in technological infrastructure and human expertise. This is a barrier for smaller or less developed banks, as they may not have the necessary resources to implement these changes effectively. (Abdul-Amir: 2019)

8. Weak demand for green products and lack of awareness among customers and companies who do not know what green products are and consider them very expensive, and this point is considered one of the most important challenges facing green banking in Iraq (Abboud et al., 2023)

9. The profits that the investor gets from green projects are very low due to the high costs in those projects, because green projects do not focus mainly on profitability only, but also on the clean environment (Bin Omar, 2022).

10. One of the biggest challenges facing Iraq in implementing green banks is the absence of economic diversification and the heavy dependence on oil in the Iraqi

economy, where oil imports constitute more than 80% of the government budget, and in 2024, oil revenues reached 89% of foreign revenues (Kanu et al., 2020)

2.5. Opportunities and Role in Achieving Sustainable Development Goals (SDQs) in Iraq

Sustainable Development has 17 goals, as we mentioned in the first chapter, and these goals were adopted by all UN Member States in 2015 with the aim of achieving them after 10 years from the date of adoption of the Goals (UNDP, 2019).

Green banking has a major role in achieving many of the Sustainable Development Goals in Iraq (Barua, 2020)

1. Green banks contribute to the achievement of (SDG 11) by providing financing for the construction of sustainable housing complexes in Iraq

2. Green banks have a role in eradicating poverty and hunger, which is (Goal 1, 2) by providing financing and reducing interest to small and medium enterprises

3. Green banking supports the construction of green schools, hospitals, and green banking, which is summarized in SDGs (SDGs, 3, 4).

4. Green banking has a great role in supporting clean energy, which is referred to in (Goal 7) of the Sustainable Development Goals (SDGs) (Abboud et al., 2023).

Sustainable development is a high priority within Iraq because of the difficult environmental conditions. It is of great importance by supporting the non-oil sectors, reducing pollution and emissions, and preserving the environment, and Iraq has international commitments in developing sustainable development in Iraq (United Nations in Iraq, n.d.).

2.6. Research Gap and Justification for the Study

The issue of green banking is of great importance, especially with the environmental challenges facing Iraq, and these gaps include the lack of awareness of the concept of green banking and the extent of its impact on the implementation of sustainable development projects, and the lack of coordination between the authorities responsible for preserving the environment, and there are no motives to invest in the green economy such as (green buildings, renewable energy, sustainable

transportation), and most of the funded projects do not conform to environmental standards.

Although there is a large number of research on the topic of green banking in developed countries (Ben Omar, 2022:40; Nabil, 2019) there is a significant lack of empirical evidence regarding the application of this concept and its impact in the Iraqi context. Most of the previous studies were limited to a limited number of banks such as Al-Rashid Bank, Al-Rafidain Bank, Iraqi Credit Bank, and Ashur Bank, while this research included all banks operating in Iraq in addition to the Ministry of Electricity, which gives it a broader comprehensiveness and greater depth of analysis. One of the most prominent gaps observed in the previous literature is the weak link between green banking and the SDGs, which was addressed in this paper, where it highlighted how green banking contributes to the achievement of a set of sustainable development goals, especially goals (1, 9, 11, 12, and 13), reflecting the potential role of the banking sector in supporting environmental, social and economic sustainability in Iraq.

The results of this research show the importance of informing policymakers, financial regulators, and banking institutions about the current status of adopting green banking in Iraq, in terms of the expected benefits and obstacles in its way, as the research highlights the absence of a clear and integrated national plan to guide the banking sector towards adopting this approach, as the concerned authorities such as the Central Bank of Iraq, the Ministry of Finance, and the Association of Iraqi Private Banks adopt sporadic and individual initiatives, which reflects a weakness in coordination and institutional integration in achieving the Sustainable Development Goals. The research also reveals that Iraqi banks have great human and financial capabilities that qualify them to play an active role in supporting the environment and society and meeting the desires of customers, but these capabilities are not exploited properly due to the lack of interest of banking departments in the environmental and societal aspect within their operational strategies and policies.

While most of the master's theses and doctoral theses in Iraq (Abboud et al., 2023)

(Ben Omar, 2022)(Nabil ,2019), related to the topic of green banking, rely on the questionnaire as a tool for the practical aspect, in this research, personal interviews were used, which is a more accurate and in-depth tool in data collection. Interviews

provide a deeper understanding of participants' experiences and provide the ability to read facial features and nonverbal expressions that contribute to a more accurate interpretation of the answers. The choice of this tool stems from the researcher's desire to determine the extent to which banking departments adhere to environmental guidelines, which makes the use of personal interviews in this context the most appropriate. Qualitative design has been adopted in this research, specifically phenomenological design, because it allows for an in-depth exploration of the participants' real-life experiences, and results in solid inductive knowledge. The objective analysis used allows patterns and insights to emerge from within the data itself, making the results of the study highly expressive of practical reality, away from abstract theoretical assumptions

CHAPTER THREE

METHODOLOGY

This chapter contains the methodological approach adopted in this study, and details the phenomenological research design, contextual background and participant profile, data collection through semi-structured interpersonal interviews, objective analysis procedures, and the ethical considerations that guide the research process.

3.1. Research Design

This study adopts a qualitative research approach to explore the extent to which banks adopt green banking in Iraq, and due to the nature of this study, a phenomenological research design was used to find out the extent to which green banking practices in Iraq are adopted and what are the advantages and obstacles

3.1.1 Phenomenology as a research design

Phenomenological research is done through the collection of in-depth information through inductive and qualitative methods such as interviews, discussions, and observation in participation, as phenomenology is concerned with the study of experience from the perspective of the individual, where phenomenological research seeks to describe instead of interpretation and start from a perspective free of previous hypotheses or ideas. (Husserl, 1970)

Phenomenological research aims to understand experiences as people themselves feel. The researcher begins to let go of his preconceived notions so that he can see the participants' experience more clearly. It then listens to the participants with high concentration and collects their data containing important information. The researcher then puts this information into phrases that explain what is repeated or highlighted in their experience. Everyone's way of expressing must be respected to reach a true understanding. Finally, the researcher provides a clear description of what the experiment is as seen by its owners (Hycner ,1985)

3.2. Participants

The researcher used the purposeful sampling method in selecting participants, as the targeted sample is one of the basic selection methods in qualitative research, as(Patton,1990) indicates that it allows the selection of participants with the most

relevant experience to the phenomenon, which ensures greater depth of data. (Creswell, 2013) confirms this trend, explaining that the researcher selects individuals who are able to explain better. The two scientists believe that the value of this sample lies not in the number but in the richness of the information provided by the participants. Thus, the targeted sample helps the researcher to build a deep and specialized understanding of the phenomenon under study, where participants who have high experience and long years of work in the field of banking and have rich information related to the research were selected because the goal is to obtain useful information. Information about participants are presented in Table 10.

Table 10. Information about participants

Participant	Academic achievement	Workplace	Specialized in
P1	PhD	Ashur Bank	Board Member of Ashur Bank and Director of the Department of Investment and Business Management at the Faculty of Business Economics, Al-Nahrain University
P2	Bachelor	National Bank of Iraq	National Bank of Iraq employee and supporter of the transition to sustainable digital services
P3	PhD	Central Bank	External consultant at the Central Bank of Iraq and a faculty lecturer at the Faculty of Business Economics who previously worked as an advisor at the Turkish University of Aydin
P4	Bachelor	Al, Rasheed Bank	Deputy Director of Al-Rashid Bank in Baghdad and Provides Electronic Financial Services to Customers
P5	Bachelor	National Bank of Iraq	Employee of the National Bank of Iraq and a key responsible for the development of the business of government companies
P6	Bachelor	Al, Rasheed Bank	Supports the use of digital solutions instead of traditional ones.

P7	Bachelor	Al, Rasheed Bank	Director of Business Development of Government Companies at Al-Rasheed Bank through the use of e-commerce and reducing Paper Use in Banking
P8	Bachelor	National Bank of Iraq	Principal Officer in Government Business Development at the National Bank of Iraq and his role is centered around the provision of traditional financial services with a focus on following recent developments, including green banking initiatives
P9	Bachelor	Al, Rasheed Bank	His work at the bank is based on the payment system, which is based on the shift from paperwork to electronic payment.
P10	Bachelor	Al, Rasheed Bank	His role in the bank in issuing documentary credits and remittances for the government sector, and with regard to the bank's green services, we try as much as possible to reduce inquiries and books through papers and rely on official emails between contracting parties

3.3. Interview Process

The method of data collection was through semi-structured interviews with a group of targeted samples, the number of samples was 10 participants, and most of the participants were from the higher levels in banks, including bank managers, assistant managers, and employees,

The main questions in the interview included 9 questions, and each question included sub-questions (probes). The questions included describing the role of the employee in the bank, the duration of his knowledge in banks, what is his role in green banking initiatives, and how the participant defines green banking services in his own words, where did the participant first hear about green banking services. What are the main benefits expected from using green banking, financial, environmental, and reputational benefits, and do customers respond positively. What are the main obstacles and difficulties in implementing green banking, and is there any resistance from stakeholders, and do the institutions for which the participants work provide any training courses on the subject of urban banking and sustainable development, and is

the support sufficient if it is lacking by the management of banks and the Central Bank, and what is the opinion of the participant, can green banking achieve the goals of sustainable development in Iraq? At the end of the questions, give the participant the space to answer through the following question, what are the participant's expectations about future directions? of Iraq and what policies the participant sees suitable for Iraq in the coming years to achieve green banking and achieve the Sustainable Development Goals. The interview form is provided in Appendix 1.

The participants were contacted through a review of the banks, I explained to them the topic of my thesis and what is required of them, and after obtaining verbal approval from the bank manager, the interview took place inside the bank and in person. But I had two interviews that were not inside the bank but at Al-Nahrain University with P3 and P1 and the interviews were not recorded due to the high security measures in the banks inside Iraq, but I got the official seals and official signatures of some banks and the average of each interview was 50 minutes. Information about the 10 personal interviews are presented in Table 11.

Table. 11. Information about interviews and participants

Participant	Gender	Position/Role	Experience	Interview Mode (In-person / Online)	Language of Interview (Arabic/Eng.)	Interview Duration (Minutes)
P1	Male	Board Member	More than ten years	in person	Arabic	50 minutes
P2	Male	Bank employee	More than four years	in person	Arabic	40 minutes
P3	Female	Bank Advisor	More than ten years	in person	Arabic	55 minutes
P4	Female	Bank employee	More than ten years	in person	Arabic	50 minutes
P5	Male	Department Manager	Six years	in person	Arabic	60 minutes
P6	Male	Bank employee	Nine years	in person	Arabic	40 minutes
P7	Male	Department Manager	More than ten years	in person	Arabic	50 minutes
P8	Male	Department Manager	Six years	in person	Arabic	60 minutes
P9	Male	Bank employee	Eight years	in person	Arabic	55 minutes
P10	Male	Bank employee	More than ten years	in person	Arabic	40 minutes

3.3. Data Analysis

The study follows thematic analysis as outlined by Braun & Clarke (2006). This method identifies patterns, themes, and recurring issues in the data. The following six steps (Braun & Clarke, 2006) was followed in conducting thematic analysis.

- In-depth data – Read interview transcripts repeatedly to understand their content accurately.
- Raw code generation – Extract recurring ideas and important phrases from data.
- Discover potential themes – Synthesize symbols into broader themes or themes.
- Revision of themes – Review topics to ensure their internal harmony and consistency.
- Formulation and naming of final topics – Identify key findings based on what participants have raised.
- Final Report Preparation – Presenting topics in an integrated and structured analytical narrative.

Brown and Clark define objective analysis as a flexible approach to qualitative data analysis that aims to identify recurring patterns and meanings within data. The researchers believe that the strength of this method lies in its suitability for different theoretical approaches, which makes it available in both psychological and social studies. Braun & Clarke emphasizes that objective analysis is not just a coding technique, but an interpretive process that requires deep engagement with data. (Braun & Clarke, 2006)

The quality of objective analysis does not depend on the number of markers or distinct units identified by the researcher in the data, but on the depth of understanding provided by the analysis and the consistency of the resulting interpretation. The true criterion of quality, according to them, is the researcher's ability to construct a clear and coherent interpretation of how he or she moved from the original data to the meanings he or she came up with. The researchers emphasize that it is high-quality analysis that reveals the diverse and complex aspects of the participants' experiences and provides a deeper understanding of the phenomenon studied without oversimplifying the data and losing its meaning. (Braun & Clarke, 2013)

3.4. Ethical Considerations

The ethical considerations listed below have been ensured in the research.

- Ethical aproval form form the IGU Ethical Committee was obtained.
- The researcher conducted the interviews with the concent of the participants
- To ensure confidentiality, the participants' identities were anonymized and represented by codes in the text (e.g., P-1 for Participant 1).
- Prior to the interviews, participants were informed about the purpose of the study and the methodological approach employed.

3.5. Trustworthiness of the Research

The study adopted Lincoln and Guba's (1985) framework to ensure the trustworthiness of the research, encompassing credibility, transferability, dependability, and confirmability.

- Credibility: To ensure the credibility of the data, semi-structured interviews were conducted with employees, branch managers, and assistant managers representing different job levels within banks, allowing for diverse insights on the topic of green banking. The answers were also reviewed and read repeatedly to verify their accuracy, in addition to returning some participants to confirm the correctness of the understanding and interpretations, which enhanced the accuracy and validity of the data.

- Transferability: The study provided a detailed description of the banking context in Iraq, including the nature of the participants' work, their responsibilities, and the regulatory environment in which they operate. This allows researchers or practitioners in similar contexts to assess the applicability of the findings. Thus, despite the specificity of the Iraqi environment, the findings can be useful for studies or applications in other banking environments facing similar challenges and opportunities in the field of green banking. This enhances transferability and provides the study with added value that transcends its local context.

- Dependability: The study was keen to follow clear and structured research procedures from the selection of the participants to the analysis of the data, with each step accurately documented, a complete record was kept that included the questions asked during the interviews and the researcher's analytical observations during data

collection and processing. This documentation makes the research steps transparent and traceable, and allows other researchers to understand the study methodology and reapply it in similar contexts if necessary, enhancing the reliability of the results and facilitating their evaluation.

- Confirmability: To reduce researcher bias and ensure that the results reflect the actual views of the participants the study focused on analyzing the data as expressed in the interviews without imposing subjective interpretations or preconceived conclusions A comprehensive record of the researcher's observations was also kept that includes all the analytical decisions made during the coding and organization of the topics, allowing for a clear tracking of how the results were reached. In addition emphasis was placed on using direct examples from participants responses to support each explanation, ensuring that the results are based on the data itself and not on the researcher's point of view. In this way it is possible to assess and verify the credibility of the conclusions and this enhances the reader's confidence that the analysis reflects the real experiences and knowledge of the participants in the subject of green banking in Iraq.

CHAPTER FOUR
FINDINGS

This section presents the findings of the thematic analysis. Each theme, along with the codes that constitute it, will be explained in detail. The researcher's thesis will be supported by illustrative quotes from the participants

4.1. Summary of Findings from the Thematic Analysis

As a result of the thematic analysis, 7 themes were identified:

THEME 1. Conceptualizing green banking

The theme represents how participants define and frame the meaning of green banking in Iraq. The theme consists of 3 codes. The codes that form the theme are presented in Table 12.

Table 12. Codes identifying Conceptualizing green banking

Theme	Codes
Conceptualizing green banking	• Eco-friendly services • Green services • Link to Sustainable Development

THEME 2 . Practical adoption in banks

The theme represents specific practices and initiatives currently implemented in Iraqi banks under green banking. The theme consists of 3 codes. The codes that form the theme are presented in Table 13.

Table 13. Codes identifying practical adoption in banks

Theme	Codes
Practical Adoption in Banks	• Digital transformation • Green financing products • Operational sustainability measures

THEME 3. Benefits of green banking

The theme represents perceived advantages of adopting green banking for environment, banks, and customers. The theme consists of 3 codes. The codes that form the theme are presented in Table 14.

Table 14. Codes identifying benefits of green banking

Theme	Codes
Benefits of green banking	• Environmental protection • Financial benefits • Reputational benefits

THEME 4. Barriers to Implementation.

The theme represents challenges and difficulties banks face in implementing green banking practices. The theme consists of 5 codes. The codes that form the theme are presented in Table 15.

Table 15. Codes identifying barriers to implementation

Theme	Codes
Barriers to Implementation	• Infrastructure gaps • Awareness & cultural resistance • Training & capacity deficits • Financial costs • Policy and bureaucracy

THEME 5. Institutional and policy framework

The theme represents the role of institutions, Central Bank, and government in shaping and supporting green banking. The theme consists of 4 codes. The codes that form the theme are presented in Table 16.

Table 16. Codes identifying institutional and policy framework

Theme	Codes
Institutional and Policy Framework	• Reliance on Central Bank directives • Weak internal policies • Need for incentives and regulations • Collaboration gaps

THEME 6. Customer awareness and attitudes

The theme represents how customers perceive, adopt, or resist green banking services. The theme consists of 4 codes. The codes that form the theme are presented in Table 17.

Table 17. Codes identifying customer awareness and attitudes

Theme	Codes
Customer Awareness and Attitudes	• Positive response from youth • Resistance from traditional customers • Low general awareness • Promotional challenges

THEME 7. Green banking & sustainable development

The theme represents how green banking contributes to Iraq's broader sustainability goals (environmental, economic, and social). The theme consists of 4 codes. The codes that form the theme are presented in Table 18.

Table 18. Codes identifying Green Banking & Sustainable Development

Theme	Codes
Green Banking & Sustainable Development	• Environmental protection • Economic diversification • Job creation & entrepreneurship • Social benefits

4.2. Theme 1: Conceptualizing Green Banking

Green banking is a set of banking activities and products that aim to reduce the negative environmental impact and support environmental sustainability, as the concept consists of two important aspects, the first is the environment, where green banking contributes to protecting the environment and combating climate change. The second aspect is technology, which means the transformation of electronic transactions

One interviewee summarized this by stating, “Green banking means all activities, services and financial products offered by the Bank with the aim of supporting sustainable development and reducing negative environmental impact. (Interview 1)”

4.2.1. Eco-friendly services

Eco-friendly services are activities that aim to meet people's needs while minimizing the impact on nature. It relies on resource conservation pollution reduction, and the use of renewable energy These include sustainable transportation, recycling, ecotourism, and organic farming These services aim to protect the environment and support a more sustainable lifestyle

Reflecting this, one interviewee stated, “Eco-friendly services support sustainable development by financing projects related to renewable energy water treatment, and recycling, as well as encouraging green entrepreneurship by providing soft loans to small and innovative projects in the environmental field (Interview 5)”

4.2.2. Green services

Green services are solutions that use technologies and systems that reduce resource consumption and reduce pollution It includes clean energy, advanced waste management and the design of energy-efficient buildings. These services aim to reduce emissions improve the quality of life and support sustainable development.

In line with this, one interviewee described green banking as “Green Banking is the services provided by banks to customers, which are mostly electronic, such as electronic payment cards and account management software linked to the payroll card (Interview 1)”

4.2.3. Link to sustainable development

Green Banking supports sustainable development by directing financing to projects that reduce pollution and save energy, and by encouraging environmental investments, it helps banks protect resources and achieve more balanced economic growth, making them a key partner in achieving sustainable development.

This role is highlighted in the interviews, where one participant stated, “Green banking contributes to the achievement of the Sustainable Development Goals in Iraq by financing renewable energy projects, reducing dependence on fossil fuels, and encouraging electronic transactions that reduce paper and energy consumption. It also helps spread environmental awareness among individuals and businesses, supporting the green economy and creating new jobs in sustainable fields (Interview 2).”

Additionally, social sustainability efforts were noted: “In the social field, supporting education and health projects for local communities, promoting financial inclusion, and supporting social entrepreneurship in terms of social sustainability (Interview 6).”

4.3. Theme 2 : Practical Adoptions in Banks

Iraq is witnessing a growing trend towards the implementation of green banking through the development of environmentally conscious banking products and services. Banks are seeking to reduce the use of paperwork and encourage customers to adopt electronic channels to achieve greater efficiency in the use of resources. Banks also finance environmentally friendly projects such as renewable energy, water treatment,

and recycling, with the aim of supporting the diversification of the national economy and reducing dependence on oil Banks provide concessional loans to small enterprises and environmental innovations, which contribute to the creation of new jobs and the promotion of local development In addition campaigns are organized to raise environmental awareness among employees and customers, in order to promote a culture of sustainability and social responsibility

4.3.1. Digital transformation

Digital transformation is the process of using modern technology to improve the way organizations work and provide faster and more efficient services. This includes the adoption of digital systems instead of paper, the use of data and artificial intelligence to improve decisions and facilitate online communication and services. Digital transformation aims to raise quality, reduce costs, and improve the user experience across sectors.

In line with this, one interviewee explained, “Digital transformation in banks aims to develop banking services through the use of modern technology, such as applications and electronic channels, to facilitate and speed up transactions and reduce the use of paper. This transformation contributes to improved efficiency, enhanced financial inclusion, and increased security and service for customers. (Interview 8)”

4.3.2. Green financing products

Green finance products, such as green bonds and loans, are specialized financial mechanizms used to raise capital for environmentally friendly projects. These instruments aim to support the transition to sustainable, low-carbon economy. They also serve as a key driver for integrating environmental factors into investment decisions, thereby promoting sustainable development globally.

A good example of this in practice can be seen in Iraq, where banks actively contribute to green initiatives. As one interviewee explained, “Iraqi banks provide interest-free loans to customers to install renewable energy systems in their homes to dispense with the electricity grid and support the purchase of electric or hybrid vehicles to reduce carbon emissions. (Interview 10)”

4.3.3. Operational sustainability measures

The operational sustainability of green banking revolves around implementing the "green bank" concept to reduce the bank's internal environmental footprint. Key actions include a complete shift to digital banking to minimize paper usage and the application of stringent energy efficiency standards in buildings and branches. This commitment aims to solidify the bank's environmental responsibility alongside its green finance activities.

Supporting this approach, one interviewee emphasized that “Operational sustainability measures focus on rationalizing energy and water consumption, reducing waste, promoting digital transformation to reduce paper, supporting green buildings and sustainable transportation, spreading environmental awareness and financing environmentally friendly projects to achieve sustainable development. (Interview 10)”

4.4. Theme 3 : Benefits of Green Banking

The benefits of green banking are multiple and interrelated, as it encourages banks to invest money in environmentally sustainable projects such as clean energy, which contributes to protecting the environment and reducing pollution. It also supports and diversifies economic sectors that focus on sustainability, such as waste management, to achieve a balance between economic growth and environmental protection. Green banking fosters innovation and opens up new markets through environmental and entrepreneurial financing. In addition, it supports digital transformation and reduces the use of paper, increasing resource efficiency and reducing waste. It also contributes to the creation of new job opportunities and raising environmental awareness and social responsibility among individuals and companies.

4.4.1. Environmental protection

Environmental protection refers to the set of efforts and actions aimed at conserving natural resources and reducing pollution and damage caused by human activities These efforts include protecting air, water, and soil preserving biodiversity rationalizing the use of resources and treating waste with the aim of ensuring a healthy and balanced environment for humans and the sustainability of resources for future generations.

In this context, green banking plays a crucial role. As one interviewee noted, "Green banking is an important strategic step, as it links banking to environmental and social responsibility and gives financial institutions an effective role in supporting a sustainable economy and reducing the interplay (Interview 2)"

4.4.2. Financial benefits

Green banking provides important financial benefits, as it reduces costs by supporting energy-efficient projects, attracts investors and customers who care about sustainability, mitigates risks associated with pollution and environmental legislation, in addition to banks, may obtain government incentives and improve their reputation, which contributes to increasing their profits and financial stability.

Reflecting these advantages, one interviewee stated "The benefits of financial green banking lie in financing sustainable projects such as renewable energy and recycling diversifying income sources, reducing operational costs through digital transformation creating new jobs and promoting long-term financial stability (Interview 7)"

4.4.3. Reputational benefits

The financial reputation of green banks improves the confidence of customers and investors, which increases the attraction of deposits and investments and gives them a competitive advantage It also provides better partnership opportunities, enhancing the Bank's long-term stability and profitability.

Supporting this, one interviewee highlighted that "The reputational benefits of green banking banks lie in enhancing trust and respect among customers and investors attracting new customers and additional investments as well as strengthening relationships with the local community It also gives the bank a competitive edge and reaffirms its commitment to social responsibility and sustainability raising its position locally and internationally. (Interview 4)"

4.5. Theme 4: Barriers to Implementation

The difficulties facing green banking in Iraq are divided into 5 sections according to the answers from personal interviews, where banks and financial

institutions face these difficulties in the transformation towards sustainable financing for environmentally friendly projects

4.5.1. Infrastructure gaps

Infrastructure gaps that hinder the implementation of green banking in Iraq include weak and inadequate old energy grids to accommodate renewable energy sources, as well as a lack of funding and facilities to support green projects.

As one interviewee pointed out, “One of the most important challenges is the weak and slow internet service in Iraq, and consequently the delay in work at times, and there are some employees who find it difficult to practice these modern systems and prefer traditional work to paperwork (Interview 1)”

Similarly, another interviewee noted that “The most prominent obstacles are the weakness of the technological infrastructure in some regions, thus increasing the risk of data breaches, loss of customer trust, the need for greater customer awareness, and sometimes the presence of resistance from traditional stakeholders who prefer paper or classic methods (Interview 2)”

4.5.2. Awareness & cultural resistance

The implementation of green banking in Iraq has faced challenges due to poor environmental awareness among citizens and a lack of information about the benefits of green finance There is also cultural resistance to new practices due to the accustomed to traditional methods of banking and financial transactions.

This situation is reflected in the interviews, where one participant stated “Based on the answers in the personal interviews, it is shown that the concept of green banking is not widely spread and green banking is in its early stages, and there is a great resistance to the shift towards green banking from some traditional stakeholders who want to preserve the old processes and resist the transition to new models (Interview 3)”

4.5.3. Training & capacity deficits

There is a lack of experiences and studies on green banking in Iraq, as most banks still adopt traditional methods. This indicates an urgent need to expand piloting and develop clear mechanisms for the effective implementation of green finance.

Reflecting this, one interviewee mentioned, “The interviews showed that most of the Iraqi banks provide awareness courses and workshops on the importance of digital services and reducing the environmental impact of introductory trainings on the concept of green banking and its role in supporting sustainable development projects (Interview 2).”

4.5.4. Financial costs

Implementing green banking may require higher upfront costs than traditional banks due to the need for additional assessments, environmental standards, and the development of specialized systems. On the other hand, some research indicates that the difference in the cost of green finance is not necessarily large if the required laws and regulations are adhered to

Supporting this, one interviewee stated, “When applying green banking, the costs increase due to the expenses on courses and workshops related to green banking, as well as the cost of digital transformation and the cost of infrastructure, so green banking is more expensive than traditional banking (Interview 9)”

4.5.5. Policy and bureaucracy

Bureaucratic policies for green banking in Iraq are represented by long and complex administrative procedures to obtain approvals and licenses for green projects This delays the implementation of projects, increases costs, and reduces the attractiveness of green finance to investors and banks alike.

Reflecting this challenge, one interviewee noted, “The Central Bank of Iraq seeks to establish strategies related to green banking, and therefore private and government banks are working to implement these policies, because there are currently no strategies or guidance at the moment, as these products are at the beginning of their entry into Iraq (Interview 5). There is currently no internal strategy, so there are not enough courses to train cadres on green banking, a strategy must be available to achieve the issue because green banking is in its first stage (Interview 7)”

4.6. Theme 5: Institutional and Policy Framework

Years ago, Iraq began to move towards sustainable finance, which is part of the implementation of green banking, and that the institutional and political framework is

still in its early stages, and there are no comprehensive laws that oblige banks to green banking, and the biggest effort is on the Central Bank, which plans the environmental sustainability map through the application of green banking

4.6.1. Reliance on central bank directives

The Central Bank of Iraq has issued directives on the implementation of green banking, and banks are currently following the directives of the Central Bank, but this accreditation is in its early stages and is at the level that obliges banks to implement these directives and initiatives

4.6.2. Weak internal policies

Despite the continuous directives from the Central Bank of Iraq, personal interviews indicate that there is weakness in the internal procedures and policies of the banks and the lack of internal guidance and commitment of the banks operating in Iraq

4.6.3. Need for incentives and regulations

The Central Bank of Iraq incentivizes citizens by reducing the interest rate from 2% to 1% on projects that achieve sustainable development, as well as motivating citizens by facilitating the procedures for obtaining green loans for the purchase of renewable energy

4.6.4. Collaboration gaps

The Central Bank established the legislative framework, but there is a gap between the Central Bank and the banks, this gap is concentrated in the implementation and implementation of the instructions of the Central Bank, and another gap between the work of banks, which is concentrated in the lack of cooperation between the resorts and the non-application of interbank joint products related to green banking, in addition to the weakness of joint disclosure

4.7. Theme 6: Customer Awareness and Attitudes

Customer awareness in Iraq of green banking is still limited, with many lacking information about the benefits and methods of green finance. This lack of awareness affects banks' ability to attract beneficiaries and effectively encourage environmental investments

One interviewee noted, “The majority of customers respond positively, especially young people and tech-savvy people, because green services provide them with speed, ease and security, in addition to feeling that they are contributing to the protection of evidence. However, some traditional clients may need greater awareness and encouragement in order to embrace this shift (Interview 2)”

4.7.1. Positive response from youth

Young people will respond faster to green banking because they are more knowledgeable about environmental issues and new technologies and have a willingness to adopt innovative financial methods Their awareness of the future and sustainability drives them to prefer banking services that support green projects and preserve the environment.

This trend was reflected in the interviews, where one participant noted, “Younger customers are responding quickly, while older customers who are used to traditional methods and need to be aware of it more recently, there has been a particularly better interest among younger age groups between the ages of 25 and 50 years (Interview 4) (Interview 9)”

4.7.2. Resistance from traditional customers

Customer resistance to green banking is staring at several due to lack of awareness and culture Lack of skills Some older people or traditional groups lack the skills needed to use digital banking tools that often promote environmental efficiency such as electronic statements

4.7.3. Low general awareness

On the consumer side, the reasons for the low public awareness are the focus on immediate profits, the lack of awareness, and the sustainable and green economic environmental culture, and it is difficult for the consumer to understand the new products related to green banking. On the other hand, the bank has a major role in spreading the culture of green banking and bridging the gap in the decline in public awareness through educational courses and the promotion of urban products.

4.7.4. Promotional challenges

They prefer to continue with traditional banking products and services because the products offered by green banking are not known to the consumer, and for investors, they find that projects that are not environmentally friendly require very high initial costs with long-term profit, so it is considered a risk for the investor, so they prefer to deal with traditional banks, and this sums up the resistance from the investor and the bank to switch towards green banking

4.8. Theme 7: Green Banking & Sustainable Development

Green banks are an important part of the implementation of the Sustainable Development Goals (SDGs) through the financing of projects that aim to preserve the environment. Green banking is not limited to achieving profit only but also extends to reducing environmental and climate risks.

4.8.1. Environmental protection

Green banking is a key driver of sustainable development, as it works to protect the environment by directing financing and investments towards environmentally friendly projects such as renewable energy and recycling, incorporating environmental standards into credit decisions to reduce pollution and emissions, in addition to banks' adoption of digital processes that reduce the consumption of paper resources and energy

4.8.2. Economic diversification

Green banking is a vital financial tool for achieving sustainable development by financing innovation and environmentally friendly projects, and in doing so, it directly supports economic diversification by creating new and sustainable growth sectors such as renewable energy and clean technology, reducing dependence on traditional sources and making the economy more resilient and less polluting

4.8.3. Job creation & entrepreneurship

Green banking is a powerful driver in creating new and sustainable jobs and supporting green entrepreneurship. This is achieved by directing capital to finance renewable energy and sustainable infrastructure projects, leading to the emergence of green jobs in the manufacturing and maintenance sectors of these technologies. Green

banking also encourages the establishment of startups specializing in resource efficiency and recycling solutions, providing them with the necessary funding and support, thus contributing effectively to achieving the Sustainable Development Goals.

4.8.4 Social benefits

The social benefits of green banking are evident in improving the quality of life for communities by providing a healthier environment. Financing clean energy and sustainable transportation projects reduces pollution and related diseases, thus improving public health. Green banking also supports social justice by ensuring access to basic services such as clean water and affordable energy for all. Furthermore, it contributes to building more resilient and climate-friendly societies by reducing poverty and providing sustainable and equitable employment opportunities that do not deplete human or natural resources. Therefore, it acts as a bridge to social cohesion and long-term well-being.

CONCLUSION AND RECOMMENDATIONS

By analyzing the results of the study and personal interviews, the researcher concluded that the reality of green banking in Iraqi banks is still in its initial stages, as banks lack a clear strategy to adopt green banking practices. Banks have also been found to have little environmental orientation and more traditional than an institutional approach based on a long-term vision. Despite the growing interest of the Central Bank of Iraq in the issue of green banking and sustainable development, the lack of coordination between the Central Bank and banks hinders the effective implementation of green banking, and the lack of environmental awareness among bank administrations, the weak technological infrastructure and the lack of departments specialized in green banking by banking institutions have all contributed to the slow transition to green banking. However, the human and financial capabilities of Iraqi banks, coupled with the clear desire of employees and customers to adopt green practices, represent a strong base for building and developing the green banking experience in Iraq in the future

The study showed that Iraqi banks have not yet realized that adopting the principles of green banking and paying attention to environmental and social aspects can be considered a competitive advantage that contributes to enhancing the bank's position, attracting more customers and achieving future profits, and this indicates the weakness of the green environmental and banking culture among the Iraqi bank administrations, as most banks still adopt traditional work methods as a result of the international sanctions imposed on Iraq as a result of the wars in the past years, which led to their delay in developments Technological and banking innovations needed to implement green banking concepts

It is clear from the results of the research that the Central Bank of Iraq shows a remarkable interest in the subject of green banking and sustainable finance by organizing a large number of seminars, workshops and initiatives aimed at enhancing awareness among the employees of the banking sector, however, it is noted that there is no comprehensive national plan to guide the banking sector towards green banking, as the Central Bank, the Ministry of Finance and the Iraqi Banks Association are implementing individual initiatives, which indicates the weakness of institutional

coordination and the absence of a unified strategic vision among the above-mentioned entities.

The results of the study indicate that the banks included in the research sample are not considered fully green banks, but they are gradually seeking to improve their performance by providing a limited number of products and services of an environmental nature, and it was found that some of these banks still grant credit facilities to companies operating in the environmentally polluting sectors, especially oil and gas companies, which reflects the limited environmental awareness in their financing policies. Most of these banks focus on achieving economic and financial goals and maximizing profits in exchange for less attention to environmental and societal aspects.

The results of the interviews showed that Iraqi banks do not have environmentally friendly buildings and do not use solar energy systems to generate electricity, and their activity in the environmental field is limited to granting limited loans directed to the purchase of clean energy systems. The recommendations of the "White Paper" issued by the Ministry of Finance on reforming, developing and restructuring government banks have also not been implemented, as these banks are still managed in accordance with the directives of the Ministry and the Iraqi government, which limits their ability to keep pace with the requirements of modern green banking.

The researcher predicted that the implementation of green banking in Iraq will bring about a positive transformation in the policies of the banking sector in Iraq Banks will turn to financing projects that are concerned with environmental and sustainability aspects. This will contribute to reducing environmental pollution and reducing dependence on polluting activities. In addition to supporting renewable energy projects and the efficient use of natural resources. This will reflect positively on the protection of the environment and the achievement of sustainable development in the future

The researcher believes that the adoption of green banking will contribute to the development of the performance of the Iraqi banking system. It is expected to enhance transparency and social responsibility for banks. It may also help attract domestic and foreign green investments to the Iraqi market. It enhances investor and international

institutional confidence in the financial sector. This supports economic stability and improves Iraq's long-term growth prospects.

It is important to obligate Iraqi banks, in addition to government and private companies, to establish units or divisions specializing in sustainable development and green banking, to ensure the practical application of green finance principles within their daily activities. Iraq can also benefit from the experiences of countries that have preceded in this field, such as (India, the Netherlands, Russia, and Brazil), by studying their policies and experiences in protecting the environment, reducing climate emissions, and developing the banking sector according to green standards**.**

Iraqi banks are recommended to prepare and publish specialized periodic reports highlighting their role in protecting the environment and achieving societal sustainability, in addition to issuing financial reports that show the amount of spending and investment in green projects. This step will enhance transparency and increase public and investor confidence in banks' commitment to their environmental and social responsibility.

An effective transition towards green banking requires comprehensive institutional coordination between the Central Bank of Iraq, the Ministry of Finance, the Association of Iraqi Banks, and public and private banks, in order to develop a unified national framework for policies and procedures for the application of sustainable banking principles. The joint cooperation between these entities is an essential step to activate environmental and economic initiatives in an integrated and effective manner.

The Iraqi government, in collaboration with relevant international organizations, should support Iraq's transition to green banking by promoting community awareness of the concepts of sustainable development and green finance. This can be achieved by including courses specialized in green banking and environmental development in the curricula of universities and institutes, as well as organizing training workshops and scientific seminars aimed at raising the efficiency of banking cadres and expanding their perceptions in this vital field.

The researcher recommends that banks should adopt the concept of green banking by expanding the financing of environmentally friendly projects. It also

recommends promoting digital transformation to reduce the consumption of natural resources and reduce emissions. The researcher emphasizes the importance of integrating environmental and social sustainability standards into credit and investment policies. It also recommends that the environmental impact of banking activities be measured and disclosed transparently. The development of green financial products contributes to supporting the trend towards sustainable development.

The researcher recommends that regulators develop legislative frameworks and policies that support the implementation of green banking. It also recommends standardization of disclosure and reporting on sustainability to enhance transparency and accountability. The researcher emphasizes the importance of building human capacities through specialized training in sustainable finance. He recommends increasing community awareness of the role of green banking in protecting the environment. In addition, the use of fintech and strategic partnerships is key to promoting the future of green banking.

The researcher recommends the need to conduct more theses and studies about green banking in Iraq and developing countries, as well as in countries that have witnessed wars in recent years, given the great importance of this topic in combating desertification, preserving the environment, and ensuring a safe environment for citizens. The researcher also recommends not to be limited to the research method, whether qualitative or quantitative, and any research tools used, whether they are questionnaires or personal interviews, noting that personal interviews may provide more accurate and comprehensive results, as applied in this thesis. It is also preferable to benefit from the experiences of developed countries that started implementing green banking many years ago, by studying their policies, practices, and the results they have achieved, to use these experiences to improve the applications of green banking in local contexts.

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APPENDIXES

Appendix 1. Interview Form

Dear Participant,

Thank you for agreeing to participate in this research study. This interview is part of a master's thesis conducted by Ali Malik Falih AL-JILEEZI from Istanbul Gelisim University, Institute of Graduate Studies, Department of Business Administration.

The aim of this research is to explore the current state of green banking adoption in Iraq. Specifically, it seeks to understand the types of green banking practices being implemented, the perceived benefits and challenges of such practices, and the potential contribution of green banking to sustainable development goals. By gaining insights from professionals working in the banking sector, this study hopes to provide valuable recommendations for enhancing environmentally responsible banking in Iraq.

The research follows a qualitative phenomenological design, which means it focuses on your lived experiences and personal perceptions related to green banking. The interview will be semi-structured, allowing for open and flexible discussion. Your participation is voluntary, and your responses will be kept strictly confidential and used only for academic purposes.

If you agree, the interview will be recorded to ensure accuracy in data collection. The recordings and any identifying information will be securely stored and anonymized in the final report.

Thank you once again for your valuable time and contribution to this study.

Sincerely,

Ali Malik Falih AL-JILEEZI

Master’s Student

Department of Business Administration

İstanbul Gelişim University

1. Could you please briefly describe your role in the bank and how long you have been involved in the banking sector, particularly with green banking initiatives?

→ Probes:

– What is your specific role with respect to green banking?

– How familiar are you with environmental sustainability practices within your institution?

2. How would you define green banking in your own words?

→ Probes:

– Where did you first hear about it?

– How widespread do you think the concept is in Iraq?

3. Can you describe any green banking practices currently being implemented in your institution?

→ Probes:

– Are there any specific products or services you consider "green"?

– Are these practices formalized or informal?

4. What do you see as the main benefits of adopting green banking?

→ Probes:

– Environmental, financial, reputational?

– Do customers respond positively?

5. What are the major obstacles or difficulties in applying green banking practices in your institution or in Iraq more generally?

→ Probes:

– Policy, awareness, infrastructure, training?

– Any resistance from stakeholders?

6. Does your institution provide any training, guidelines, or formal policies to support green banking practices?

→ Probes:

– Are there any internal strategies or sustainability teams?

– Have you or your colleagues received any specific training on environmental banking or sustainable finance?

– Do you think the institutional support is sufficient or lacking?

7. How do customers respond to green banking initiatives or environmentally friendly services?

→ Probes:

– Are customers aware of these green practices or products?

– Do you observe increased customer interest or trust due to green initiatives?

– Are there any challenges in promoting green banking to customers?

8. In your opinion, how can green banking contribute to sustainable development goals in Iraq?

→ Probes:

– Environmental protection?

– Social or economic sustainability?

9. Is there anything else you'd like to share regarding your experience with or perspective on green banking in Iraq?

→ Probe:

– Future directions or policy suggestions?

Appendix 2. IGU Ethics Committee Approval Form

T.C.
İSTANBUL GELİŞİM ÜNİVERSİTESİ REKTÖRLÜĞÜ
Etik Kurul Başkanlığı

ETİK KURUL KARAR ÖRNEĞİ

Toplantı No	Toplantı Tarihi	Toplantı Saati	Toplantı Yeri
2025 – 13	01.07.2025	14.00	Rektör Yardımcısı Odası

KARAR NO: 2025-13-32: Lisansüstü Eğitim Enstitüsü, İşletme (İngilizce) Tezli Yüksek Lisans Programı 241432187 numaralı Alı Malık Falıh AL-JILEEZI' nin, Dr. Öğr. Üyesi Aslıhan ÜNAL' ın danışmanlığında yürütülen "Green Banking Practices in Iraq: A Qualitative Phenomenological Inquiry into Adoption, Advantages, and Obstacles" konulu çalışması görüşüldü yapacağı anket sorularının, etik kurallara uygun olup olmadığını tespit etmek üzere, İGÜ Etik Kurulumuzun 23.05.2025 tarih ve 2025-10 sayılı toplantısında, İGÜ Etik Kurul Yönergesinin 12(1) maddesine göre değerlendirme yapmak üzere görevlendirilen öğretim elemanlarının raporları incelenmiş olup, ilgili çalışmada yer alan bilimsel araştırmanın etik kurallara uygun olduğuna oy birliği ile karar verildi.

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RESUME

Personal Information

Surname, name : Ali Malik Falih AL-JILEEZI

Nationality : Iraqi

Education

Degree	Education Unit	Graduation Date
Master	Istanbul Gelisim University Institute of Graduate Studies Business Administration	**2025**
Bachelor	Al-Nahrain University Faculty of Business Economics	2022
High School	Al-Mubadaa School	2018

Work Experience

Year	Place	Title

Foreing Language: English

Publications

Hobbies :Interest in the field of project management and working in banks