Journal of Excellence for Economics and Management Research
ISSN 2572-0171
Vol 09, N°02: (2025)
P 346-366

مجلة الامتياز لبحوث الاقتصاد والإدارة
ISSN 2572-0171
المجلد 09،العـدد: 02 (2025)،
ص 346-366

Bank Strategies in Financing Environmental Projects « An Analytical Study of First Abu Dhabi Bank and the China Development Bank »

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Received: 27/8/2025 **Accepted**: 30/11/2025 **Published**: 17/12/2025

Abstract: This paper examines the role of banks in financing environmental projects, with a particular focus on the strategies implemented by First Abu Dhabi Bank (FAB) and the China Development Bank (CDB). Through a combined theoretical and analytical approach, the study explores how financial institutions integrate environmental considerations into their lending policies, investment decisions, and sustainability frameworks. The findings indicate that both banks have progressively adopted green finance mechanisms—such as green loans, green bonds, and sustainability-oriented investment programs—to enhance their performance, strengthen competitiveness, and align with global sustainability objectives. Despite these advancements, several challenges continue to hinder the full integration of environmental financing, particularly in developing economies. The comparative analysis provides insights and practical lessons that may assist Algerian banks in designing effective strategies to support environmental projects and advance national sustainable development goals.

Keywords: Green finance, environmental projects, bank strategy , sustainable development, green loans.
JEL Classification Codes: G21; G23; Q01; Q42; Q51

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Doi: https://doi.org/10.34118/jeemr.v9i2.4422

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آليات تمويل البنوك للمشاريع البيئية: دراسة مقارنة بين بنك أبوظبي الأول والبنك الصيني للتنمية

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تاريخ الاستلام:2025-08-27 **تاريخ القبول:**2025-11-30 **تاريخ النشر:**2025-12-17

ملخص يهدف هذا البحث إلى دراسة دور البنوك في تمويل المشاريع البيئية، مع التركيز على الاستراتيجيات التي يعتمدها بنك أبوظبي الأول (FAB) والبنك الصيني للتنمية (CDB). تعتمد الدراسة منهجاً يجمع بين التحليل النظري والمقاربة التطبيقية لبحث كيفية إدماج المؤسسات المصرفية للاعتبارات البيئية ضمن سياسات الإقراض وقرارات الاستثمار وأطر الاستدامة. وقد بينت النتائج أنّ كلا البنكين اتجها نحو تبني آليات التمويل الأخضر، مثل القروض الخضراء، والسندات الخضراء، والبرامج الاستثمارية الموجّهة للاستدامة، وذلك بهدف تحسين أدائهما، وتعزيز تنافسيتهما، وتحقيق التوافق مع الأجندات العالمية للتنمية المستدامة. ورغم هذه التطورات، ما تزال عدّة تحديات تعيق الاندماج الكامل للتمويل البيئي، خصوصاً في الدول النامية. ويوفّر التحليل المقارن الذي قامت به الدراسة جملة من الدروس العملية التي يمكن أن تساعد البنوك الجزائرية على تطوير استراتيجيات فعّالة لدعم المشاريع البيئية وتعزيز أهداف التنمية المستدامة الوطنية.

الكلمات المفتاحية :تمويل أخضر، مشاريع بيئية، استراتيجية البنك ، تنمية مستدامة، قروض خضراء.

تصنيفJE G21; G23; Q01; Q42; Q51

(*)المؤلف المرسل

هذا العمل مرخص بموجبرخصة المشاع الإبداعي نسب المصنف – غير تجاري 4.0 دولي.

المعرف الرقمي للمقال(doi): https://doi.org/10.34118/jeemr.v9i2.4422

1. INTRODUCTION

Banks constitute a cornerstone of the global financial system, as they mobilize savings, channel financial resources, and provide the liquidity necessary for economic stability and growth. Through their traditional functions—such as lending, deposit management, and investment services—banks facilitate capital formation, business expansion, and financial intermediation across various sectors (خوجة، 2002). Over the past decades, however, their role has expanded beyond conventional economic functions, as financial institutions increasingly integrate environmental and social considerations into their strategic and operational frameworks.

Financing has long been recognized as a primary driver of economic activity, enabling firms and individuals to innovate, expand, and enhance competitiveness. In recent years, however, the concept of financing has shifted from a purely economic function toward a more comprehensive approach that incorporates environmental sustainability. Green finance has emerged as a crucial mechanism for directing financial resources toward environmentally beneficial projects such as renewable energy, biodiversity protection, waste management, and sustainable agriculture (رابح، 2008). These projects not only help mitigate climate change and preserve natural ecosystems but also generate employment opportunities and strengthen long-term economic resilience.

In response to global challenges related to climate change, resource depletion, and environmental degradation, many banks have adopted strategies to integrate sustainability into their financial practices. These strategies include offering preferential green loans, issuing green bonds, developing clean-technology investment programs, and embedding environmental risk assessments into lending criteria. Such measures support banks in improving long-term performance, fulfilling corporate social responsibility commitments, and aligning with international sustainability agendas (Samsul Alam, 2023).

In Algeria, the banking sector plays a vital role in financing development projects, including those that contribute to environmental protection. Nevertheless, despite the recognized importance of green finance, its adoption in the Algerian context remains limited due to structural challenges, regulatory gaps, and insufficient institutional awareness (Bara, 2024). Examining international experiences therefore provides valuable insights for enhancing green financing mechanisms within the national banking sector.

Against this backdrop, the present study investigates the strategies adopted by two leading international financial institutions—First Abu Dhabi Bank (FAB) and the China Development Bank (CDB)—in integrating environmental considerations into their financing activities. By analyzing these models, the study seeks to extract lessons that can guide Algerian banks in developing effective environmental financing strategies.

Accordingly, the study addresses the following central research question: **What role do banks play in supporting and financing environmental projects?**

The objectives of the study are to:

• Explore the role of banks in financing environmentally oriented projects.

• Identify the key mechanisms and instruments used in environmental banking finance.

• Demonstrate how modern banking functions extend beyond traditional lending and deposit mobilization.

Highlight the role of environmental projects in promoting sustainable development.

Methodologically, the study adopts a descriptive and analytical approach, combining a theoretical examination of green finance with a comparative analysis of FAB and CDB over the period 2017–2024. This integrated framework enables the derivation of practical recommendations that can be applied within the Algerian banking sector.

2. Theoretical Framework(literaturereviews):

2.1. Banking Finance: Concepts and Importance

2.1.1. Definition of Banking Finance

Banking finance refers to the provision of financial resources through the banking system, primarily in the form of credit facilities. Loans represent one of the most significant sources of funding for national economic development, as they support the establishment of new enterprises, the expansion of existing ones, and the mitigation of liquidity constraints (حريز، 2014). By offering short-term, medium-term, and long-term credit, banks play a pivotal role in meeting the financial needs of key sectors such as agriculture, industry, commerce, and services.Commercial banks, in particular, rely heavily on short-term credit instruments, given that most of their financial resources originate from short-term deposits. As noted by لطفي) 2005), these credit instruments constitute a central component of banks' investment portfolios and serve as a primary source of revenue. Through this mechanism, banks facilitate production cycles, support investment activities, and enable enterprises to maintain competitiveness in rapidly evolving markets

2.2.2. Importance of Banking Finance

The importance of banking finance extends beyond the mere provision of capital. It functions as a vital catalyst for economic activity by enabling resource mobilization, expanding productive capacity, and supporting both consumption and investment (خوجة، 2002). The key functions of banking finance include:

• **Production Financing:** Large-scale investment projects often require substantial capital that exceeds the capacities of individual investors. Banks bridge this gap by granting loans that enable enterprises to initiate operations or expand their productive activities.

• **Consumer Financing:** Banks allow consumers to acquire durable goods that exceed their current income levels, thereby stimulating economic demand and supporting industrial sectors that depend on consumer spending.

• **Settlement and Payment Services:** By providing mechanisms for payment clearing and settlement, banks reduce transaction costs, enhance financial efficiency, and facilitate both domestic and international trade flows.

Through these functions, banks act as intermediaries between savers and investors, ensuring the efficient allocation of resources and contributing to overall economic stability.

2.2. Environmental Projects: Concepts and Types

2.2.1. Concept of Environmental Projects

The emergence of environmental projects is closely linked to the global shift toward sustainable development, a concept that gained international prominence at the 1992 Rio de Janeiro Earth Summit. This paradigm emphasizes the integration of economic growth, environmental protection, and intergenerational equity. Within this framework, environmental projects are defined as initiatives—whether productive or service-oriented—that aim to generate environmentally friendly outputs while preventing, mitigating, or reversing ecological degradation (الأشوح، 2003).

These projects incorporate environmental considerations as a fundamental pillar of development. They encompass activities designed to protect natural resources, reduce pollution, preserve biodiversity, and promote sustainable production processes. By prioritizing environmental sustainability, such projects contribute to ecological balance, enhance quality of life, support public health, create employment opportunities, and improve the overall well-being of both current and future generations (بابكر، 2004).

2.2.2. Types of EnvironmentalProjects

Environmental projects encompass a wide range of activities that vary in scope, objectives, and environmental impact. According to حريز) 2014), these projects can be classified into several key categories:

• **Renewable Energy Projects:** Initiatives that promote the use of solar, wind, geothermal, and other renewable energy sources. Such projects contribute to diversifying the energy mix and reducing reliance on fossil fuels.

• **Green Infrastructure:** Environmentally friendly buildings, sustainable transportation systems, eco-efficient urban planning, and the integration of smart city technologies.

• **Natural Resource Management:** Projects focused on conserving water resources, protecting forests, preserving biodiversity, and preventing soil degradation.

• **Waste Management:** Recycling initiatives, waste-to-energy technologies, hazardous waste treatment, and efforts that promote circular economy practices.

• **Sustainable Agriculture:** Organic farming, water-efficient irrigation systems, environmentally sound production techniques, and practices that minimize the use of chemical inputs.

These diverse categories highlight the essential role of environmental projects in advancing sustainable development goals, reducing ecological risks, and supporting the transition toward a green and resilient economy

2.3. Environmental Banking Finance

2.3.1. Concept of Environmental Banking Finance

Environmental banking finance refers to the set of financial mechanisms and instruments adopted by banks to support projects that generate clear environmental benefits. These projects may include renewable energy development, energy efficiency improvements, pollution control, waste management, sustainable agriculture, and biodiversity conservation. Environmental banking finance aims to align financial decision-making with environmental sustainability while ensuring long-term economic viability (Shipalana, 2023).

This shift in banking practice represents a transition from traditional financing models—focused primarily on profitability—to a more balanced and responsible framework that integrates environmental and social considerations. By adopting green finance policies, banks not only contribute to environmental protection but also enhance their reputational capital, mitigate environmental risks, and secure sustainable profitability (طابل، 2012).

Environmental banking finance has thus become an essential component of modern financial systems, reflecting global trends toward climate-resilient and environmentally friendly economic development

2.3.2. Mechanisms of Environmental Banking Finance

Commercial banks can employ a variety of mechanisms to finance environmental projects. According to Samsul Alam (2023), these mechanisms include:

• **Green Loans:** Preferential loans offered at reduced interest rates or on favorable terms to support green projects such as renewable energy installations, sustainable agriculture, and eco-industrial initiatives. Green loans encourage both individuals and firms to invest in environmentally friendly activities.

• **Green Bonds:** Debt instruments specifically issued to finance projects with measurable environmental impacts. Examples include solar farms, wind parks, water treatment facilities, and biodiversity conservation programs. Green bonds have become one of the most effective tools for mobilizing large-scale capital for sustainability projects.

• **Direct Investments:** Banks may invest directly in companies or ventures that develop clean technologies, renewable energy systems, or pollution control solutions. These investments help accelerate innovation and promote the growth of green industries.

• **Crowdfunding Support:** Some banks facilitate or participate in collective financing platforms for environmental projects, enabling broader community engagement and resource mobilization.

• **Environmental Finance Programs:** Structured financing programs targeting specific environmental sectors such as water conservation, marine ecosystem protection, industrial pollution reduction, or sustainable urban development.
• **SME Green Financing:** Banks can support small and medium-sized enterprises (SMEs) through specialized credit lines that promote eco-innovation, green entrepreneurship, and low-carbon business models.
• **Social and Environmental Finance Initiatives:** Financing projects that combine social and environmental objectives, such as clean water provision, waste reduction in low-income areas, or green housing solutions

2.4. Previous Studies :

A substantial body of literature has examined the growing role of banks and financial institutions in integrating environmental considerations into their operations and adopting green finance mechanisms. The following studies represent key contributions relevant to the present research:

• **Henni (2024):** Henni investigated the role of international financial institutions in financing environmental projects, emphasizing the importance of incorporating environmental criteria into investment decisions. The study concluded that while global institutions play a significant role in advancing environmental financing, Algerian banks remain limited in their engagement due to regulatory and structural constraints (Henni, 2024). This finding aligns with the present study's observation regarding the underdevelopment of green finance in Algeria.
• **Bara (2024):** Bara examined the transition toward a green economy, focusing particularly on the rise of green capital markets and the growing significance of green bonds. The study emphasized that green bonds have become a vital instrument for financing renewable energy and reducing carbon emissions. Additionally, it recommended strengthening international cooperation to support national green finance ecosystems (Bara, 2024). This aligns with the present research, which highlights the importance of institutional collaboration in financing environmental projects.
• **Gupta (2015):** Gupta explored the evolution of green banking practices in India, illustrating how commercial banks adopted environmentally friendly procedures and developed innovative green financial products. The study concluded that transitioning from conventional banking to sustainability-oriented practices is essential for achieving long-term environmental and economic goals (Gupta, 2015). These findings are consistent with the current study's emphasis on the strategic importance of integrating sustainability into banking operations.

Synthesis of Previous Studies :

Collectively, these studies highlight a global trend toward institutionalizing green finance as a core component of modern banking. They underscore the necessity of:
• Embedding environmental considerations into financial decision-making,
•Designing innovative green financial instruments,

• Strengthening regulatory and institutional frameworks, and
• Fostering international collaboration to enhance national green finance capabilities.

However, the literature also reveals a persistent gap between developed and developing economies, particularly in terms of regulatory readiness, technical capacity, and the availability of financial incentives. This gap reinforces the relevance of examining international experiences—such as those of the China Development Bank (CDB) and First Abu Dhabi Bank (FAB)—to draw lessons applicable to the Algerian context.

3. The Application Framework(methodology):

The present study adopts a descriptive and analytical methodological approach to examine the strategies employed by the China Development Bank (CDB) and First Abu Dhabi Bank (FAB) in financing environmental projects. This approach allows for the integration of theoretical foundations with empirical evidence, providing a comprehensive understanding of green finance practices and their applicability to the Algerian context.

The methodology of this study rests on three main pillars:

- **Documentary Research:**

  The study relies extensively on secondary data collected from a variety of credible sources, including:

  • Annual and sustainability reports of FAB and CDB
  • Green finance frameworks published by both institutions
  • Academic literature on green banking and environmental finance
  • Reports issued by international organizations (World Bank, IMF, OECD)
  • Relevant journal articles on renewable energy, sustainable development, and environmental policy

  This approach enables a detailed examination of institutional strategies, financing instruments, and project outcomes across both banks.

- **Comparative Analysis:**

  A structured comparative approach is employed to examine the financial models, strategic priorities, and green financing mechanisms adopted by CDB and FAB.

  The comparison focuses on:

  • Institutional structure and ownership
  • Scope of operations (national vs. global)
  • Types of environmental projects financed
  • Financial instruments used (green loans, green bonds, sustainability funds)
  • Long-term sustainability commitments

This analytical comparison aims to highlight similarities and differences between the two institutions, providing insights into best practices and lessons that may guide Algerian banks.

- **Analytical Synthesis:**

The study synthesizes theoretical insights with empirical findings, integrating them into a coherent framework that identifies applicable lessons for the Algerian banking sector. This synthesis facilitates the translation of international experiences into practical recommendations for policymakers, financial institutions, and stakeholders involved in environmental financing

Table 01: Overview of the China Development Bank and Abu Dhabi Bank

Feature	Abu Dhabi Bank	China Development Bank (CDB)
Full Name	First Abu Dhabi Bank PJSC	China Development Bank (CDB)
Type	Commercial Bank	State-owned Policy Bank
Established	1968, formed by merging First Gulf Bank and Abu Dhabi National Bank in 2007.	1994
Headquarters	Abu Dhabi, United Arab Emirates	Beijing, China
Branch Network	Extensive in the UAE and international branches in Saudi Arabia, Egypt, Lebanon, and the UK.	Extensive network in China and international representative offices.
Products and Services	Savings accounts, current accounts, personal loans, mortgages, credit and debit cards, investment services, wealth management, commercial banking, and Islamic banking.	Financing infrastructure projects, supporting strategic industries, and enhancing international cooperation.
Target Audience	Individuals, companies, and institutions in the UAE and globally.	Chinese government, companies in strategic industries, and international partners.
Owner	Privateshareholders	Chinesegovernment
Assets	$1.1 trillion (2022)	$4.5 trillion (2023)
Net Profit	$2.4 billion (2022)	$180 billion (2023)

Source : Compiled by the author based on data from First Abu Dhabi Bank Annual Report (2022) and China Development Bank Annual Report (2023)

This table compares FAB and CDB in terms of their institutional structure, ownership, services, and financial performance. The differences in ownership and mandates significantly influence their respective strategies for financing environmental projects.

3.1. Study of the China Development Bank :

Table 02: Statistics on Projects Funded by the China Development Bank

Project	Location	Year	Funding Method
NianghaiHailian Photovoltaic Power Station	Shanghai	2014	Loan
Gansu Wind Farm	Gansu	2019	Loan
Industrial Energy Efficiency Upgrade Program	China	2010	Loans + Green Bonds
Central Heating System Project	Northern China	2012	Loans
Beijing Metro	Beijing	2008	Loans
Electric VehicleManufacturing	China	2015	Loans + Venture Capital
Water Pollution Control	China	2011	Loans + Green Bonds
Forest Protection	China	2008	Loans + Fund Management
Taizhou Offshore Wind Power Station	Zhejiang	2021	Loan
ZongbaHydropower Station	Sichuan	2022	Loan
Building Efficiency Upgrade Program	China	2023	Loans + Green Bonds
Smart Heating Networks	China	2024	Loans + Venture Capital
Carbon-Electric Transportation Network	China	2022	Loans + Fund Management

Source: Compiled by the author based on China Development Bank Annual Reports (2008–2023) and CDB Green Finance Reports

This table highlights the wide range of projects financed by the CDB, spanning renewable energy, clean transportation, industrial efficiency, water treatment, and biodiversity protection. The projects illustrate the bank's long-term commitment to environmental sustainability

The China Development Bank (CDB) stands as one of the largest development banks in the world and a global leader in green finance. Its mandate extends beyond traditional banking functions to include the implementation of national and international development strategies. Over the last two decades, CDB has become a central actor in financing projects that balance economic growth with environmental sustainability.

3.1.1. Notable Environmental Projects Funded by CDB

- **Renewable Energy:**

- *Jinshawan Solar Power Station (Qinghai Province):* The world's largest solar facility, with a capacity of 2.2 GW.
- *Zhangbei Wind Power Station (Hebei Province):* The largest wind power station in Asia, with a capacity of 1.05 GW.
- *Three Gorges Hydropower Project (Hubei Province):* A flagship renewable energy project showcasing China's long-term commitment to clean power.

- **Pollution Control and Environmental Protection:**
  - *Taihu Lake Sewage Treatment Project:* The world's largest sewage treatment project, leading to measurable improvements in water quality.
  - *Air Pollution Control Project (Jing-Jin-Ji Region):* Targeted reductions in air pollution across Beijing, Tianjin, and Hebei Province.
  - *Qilian Mountains Biodiversity Project:* Protection of unique ecosystems and endangered species in Western China.

These projects highlight the diversity of CDB's financing portfolio, ranging from energy generation to environmental restoration and pollution reduction.

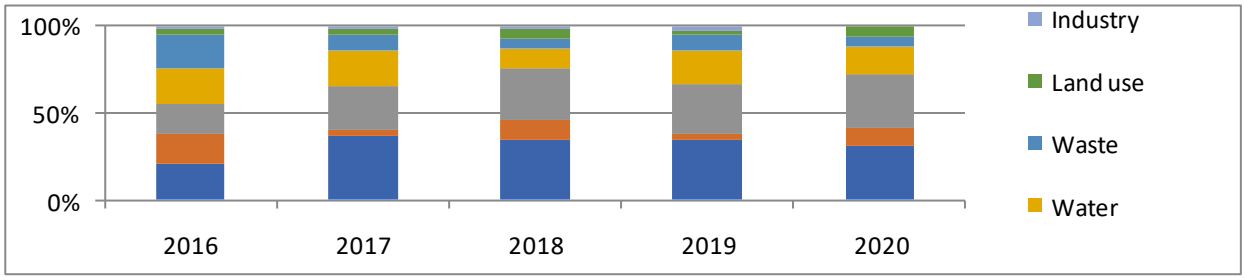
3.1.2. Green FinancingMechanisms of CDB

To implement its environmental strategy, CDB employs a wide array of financing instruments:

- **Green Bonds:** Issued to support renewable energy, sustainable water management, biodiversity conservation, and clean transportation projects.
- **Green Loans:** Preferential lending instruments, often featuring interest rate incentives, to stimulate investment in environmentally friendly projects.
- **Direct Investments:** Capital allocation to companies developing clean technologies and green industries.
- **Fund Management:** Creation and administration of specialized funds dedicated to environmental protection and ecological conservation.

Through these mechanisms, CDB has positioned itself as a **global** reference in sustainable finance, aligning its operations with China's national development strategies as well as international commitments such as the Paris Climate Agreement

Figure 01: Areas of Use for Green Bond Proceeds in the China Development Bank



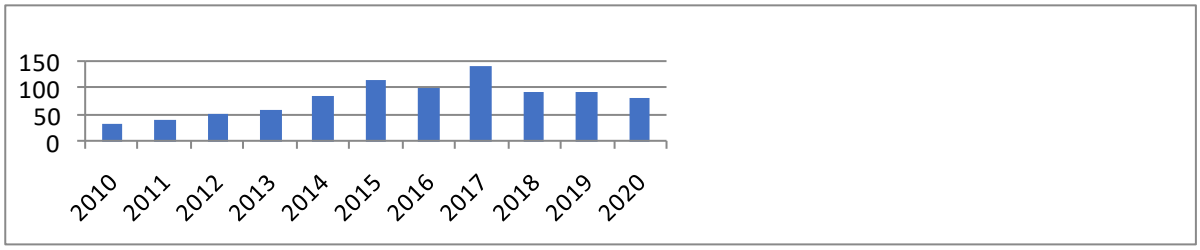
Source: Rmaash Mana Dofi Qarmiya, The Role of Green Financing in Enhancing Economic Growth, Journal of Money and Business Economics, Vol. 07, No. 02, September 2022, p. 215.

This figure illustrates how the China Development Bank allocates the proceeds of its green bonds across various sectors. The main areas of investment include renewable energy, energy efficiency, pollution control, biodiversity conservation, clean transportation, sustainable water management, and environmentally certified buildings. These allocations reflect the bank's strategic priorities in aligning financial flows with environmental sustainability objectives

3.1.3. Investment in Renewable Energy:

Considered one of the prominent areas where China has emerged as a leading country, focusing on extracting alternative energy from non-exhaustible natural sources like solar and wind energy.

Figure 02: Investment in Renewable Energies



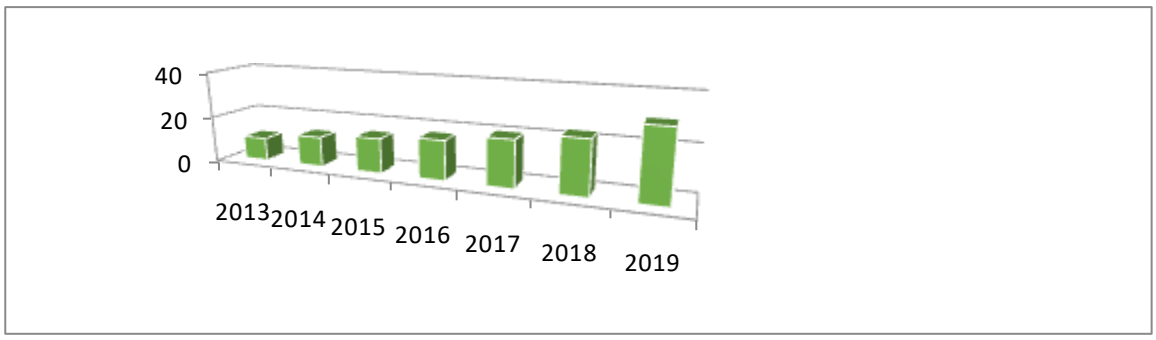
Source: Rmaash Mana Dofi Qarmiya, The Role of Green Financing in Enhancing Economic Growth, Journal of Money and Business Economics, Vol. 07, No. 02, September 2022, p. 218.

This figure presents trends in China's renewable energy investments, with a particular emphasis on solar and wind power. Despite a 12% decline compared to 2019 levels, China maintained its position as the world's leading investor in renewable energy, accounting for 27.5% of total global renewable energy investments. This underscores the country's long-term commitment to diversifying its energy mix and reducing dependence on fossil fuels

3.1.4. Green Loans:

The China Development Bank sets interest rates for green loans similarly to other loan types, implementing interest rate incentives to stimulate private investments funded by these loans.

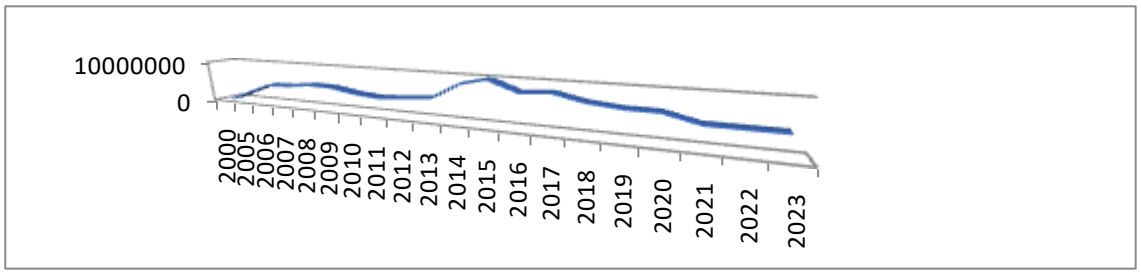
Figure 03: Growth of Green Loan Volume in China (2013-2019)



Source: Rmaash Mana Dofi Qarmiya, The Role of Green Financing in Enhancing Economic Growth, Journal of Money and Business Economics, Vol. 07, No. 02, September 2022, p. 219.

This figure shows the evolution of green loan issuance in China between 2013 and 2019. Although there was a temporary decline in 2015 and 2016, the overall trend reflects substantial growth. The rebound in subsequent years can be attributed to central bank policies that incentivized banks to channel credit toward environmental protection projects. The data confirms the role of green loans as a key instrument in mobilizing private investment for sustainable development**Green Investments:** Total green investments are calculated based on various factors, including investment in pollution control. The China Development Bank adopted multiple strategies to combat industrial pollution through investments in waste treatment and other areas.

Figure 4: Investment in Industrial Pollution Control



Source: Rmaash Mana Dofi Qarmiya, The Role of Green Financing in Enhancing Economic Growth, Journal of Money and Business Economics, Vol. 07, No. 02, September 2022, p. 221.

This figure highlights trends in China's green investments targeting industrial pollution control. Since 2000, investments have expanded steadily, peaking in 2014 with the establishment of advanced sewage treatment facilities. These investments illustrate the China Development Bank's commitment to addressing industrial pollution by funding waste treatment, cleaner production, and other pollution reduction measures

The case of CDB illustrates how a policy-driven financial institution can mobilize large-scale resources toward environmental objectives. Its diversified portfolio, reliance on innovative green instruments, and alignment with national priorities make it a benchmark for developing countries seeking to finance their own sustainability transitions.

For Algeria, CDB's experience provides valuable lessons in terms of:

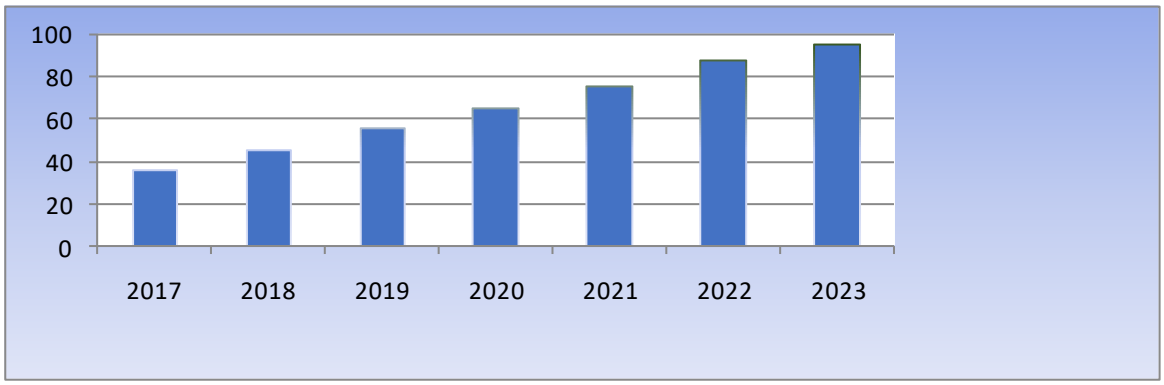
- Structuring green bonds and green loans**.**
- Developing partnerships between banks and government institutions.
- Building long-term financing frameworks that integrate environmental protection into economic development

3.2. Experience of the First Abu Dhabi Bank in Financing Environmental Projects :

First Abu Dhabi Bank (FAB) has established itself as a regional leader in sustainable finance across the Middle East and North Africa (MENA). Through its commitment to provide AED 500 billion in green financing by 2030, FAB has demonstrated its

strategic role in supporting environmental projects that align with both national sustainability agendas and global climate goals**.**

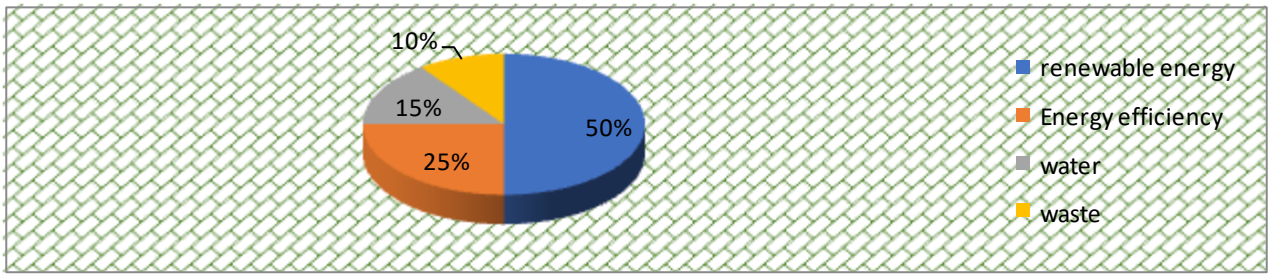
Figure 5: Volume of Environmental Project Financing:



Source: Prepared by me using data from the bank's website (Abu Dhabi First Bank Sustainability Report).

This figure illustrates the steady growth of FAB's financing for green projects across all business sectors. The data reveal a clear upward trend over the past years, with particularly sharp growth observed in 2022 and 2023. This expansion reflects the bank's increasing prioritization of sustainability within its strategic portfolio

Figure 6: Types of Funded Environmental Projects:



Source: Compiled by the author based on First Abu Dhabi Bank Sustainability Report (2022, 2023)

This figure presents the breakdown of FAB's green financing by project type. Renewable energy accounts for the largest share (50%), followed by energy efficiency (25%), water projects (15%), and waste management (10%). The distribution indicates the bank's strong focus on renewable energy, consistent with both regional energy strategies and global sustainability goals

Table 04: Financing Tools

Financing Tool	**Description**	**Benefits**	**Conditions**
Green Loans	Conventional loans offered at reduced interest rates for sustainability projects	Competitive profit margins Flexible repayment terms Access to sustainability	Compliance with sustainability criteria Strong feasibility studies Adequatefinancialguarantees

		expertise	
Green Sukuk	Sharia-compliant Islamic bonds used to finance environmentally friendly projects	Attractive to sustainability-oriented investors Competitive financial returns Alignment with sustainable development goals	Sharia-compliant structure Environmentally qualified projects Approved investors
Consulting Services	Expert advisory services to identify, design, and implement green projects	Accurate sustainability assessments Tailored financing arrangements Effective project management	Client commitment to sustainability goals Willingness to implement green projects Transparency and cooperation
Green Funds	Investment funds dedicated to financing sustainable initiatives	Opportunities to participate in green projects Leverage FAB's sustainability expertise Long-term investment returns	Minimum capital investment Acceptance of investment risks Long-termcommitment

Source : Compiled by the author based on First Abu Dhabi Bank Sustainability Report (2022, 2023) and FAB Green Bond Framework (2022)

This table highlights FAB's diverse range of green financing instruments. These tools not only provide financial support but also position FAB as a regional leader in sustainable finance, helping it attract environmentally conscious investors and clients

3.2.1. Financial Commitments :

FAB has pledged to mobilize AED 500 billion for sustainability projects by 2030. This commitment:

- ✓ Reinforces FAB's role as a pioneer in green financing in the MENA region.
- ✓ Supports national strategies for achieving the UN Sustainable Development Goals (SDGs).
- ✓ Contributes to reducing carbon emissions and minimizing environmental footprints

3.2.2. Strategic Partnerships

FAB actively collaborates with international organizations, governments, and private sector actors to expand the reach of its green financing initiatives. These partnerships foster:

- Knowledge transfer and capacity building.
- Development of innovative financial products.
- Increased investment in environmental infrastructure projects.

3.2.3. Notable Environmental Projects Financed by FAB

- **Solar Energy:**
  - *Noor Solar Farms (Abu Dhabi):* A USD 2.4 billion project with a 1.177 GW capacity. FAB contributed USD 650 million in financing.
  - *Mrawan Solar Power Station (200 MW, Abu Dhabi).*
  - *Suweihan Solar Power Station (1,177 MW, Abu Dhabi).*
  - *Dhofar Solar Power Station (2,400 MW, Abu Dhabi).*
- **Green Buildings:**
  - *Etihad Towers 1:* The world's first LEED Platinum-certified tower.
  - *Abu Dhabi International Airport:* The first airport designed with LEED Gold certification.
  - *Abu Dhabi National Exhibition Centre:* The first LEED Gold-certified exhibition center in the Middle East.
- **Water Projects:**
  - *Suweihan Solar Desalination Plant:* The world's first commercial-scale solar desalination project.
  - *Shaghara Desalination Plant (210,000 m³/day).*
- **Food Security and Agriculture:**
  - *Abu Dhabi Green Farms Project:* Promoting sustainable agricultural production.
  - *Desert Fish Farming Project:* Supporting sustainable aquaculture in arid zones.

3.2.4. Case Example: Noor Solar Farms

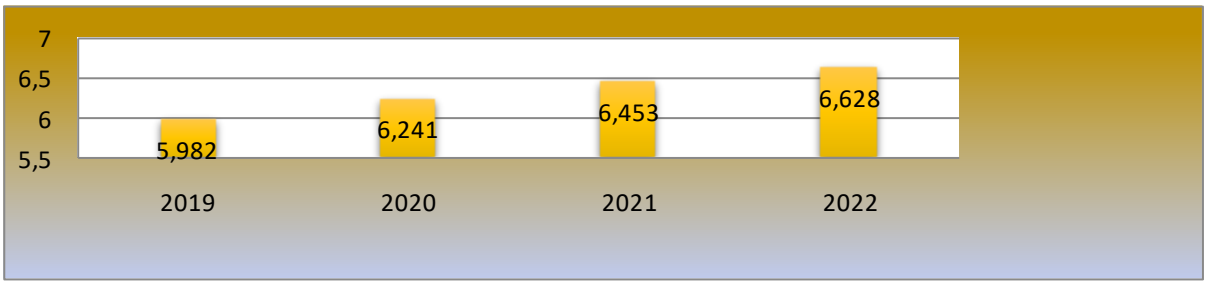
- **Project Name:** Noor Solar Farms
- **Location:** Abu Dhabi, UAE
- **Total Cost:** USD 2.4 billion
- **Production Capacity:** 1.177 GW
- **OperationalSince:** 2019

3.2.5. Financing and Impact:

- FAB provided a USD 650 million loan, supported by a 25-year fixed-price power purchase agreement from the UAE government.
- Since 2019, the project has generated 1.177 GW of clean electricity annually.
- In 2020, it reduced CO_2 emissions by 1.2 million tons.
- In 2021, it produced energy equivalent to 350 million barrels of oil.

- In 2022, it created over 1,000 jobs, contributing to local socio-economic development.

Figure 08: Annual Production Data of the Plant



Source: using published information from the project's website.

This figure presents annual data on the performance of the Noor Solar Farms project. Since becoming operational in 2019, the plant has consistently generated 1.177 GW of clean electricity. Its impact includes substantial reductions in greenhouse gas emissions (1.2 million tons of CO_2 avoided in 2020), significant contributions to energy substitution (equivalent to 350 million barrels of oil in 2021), and the creation of 1,000 jobs in 2022. These outcomes underscore the project's dual contribution to environmental sustainability and socio-economic development

3.3. Comparison of the Strategies of the Two Banks :

A comparative analysis of the China Development Bank (CDB) and First Abu Dhabi Bank (FAB) highlights both convergences and divergences in their approaches to financing environmental projects.

3.3.1. Similarities

- **Priority for Renewable Energy and Efficiency:** Both banks place strong emphasis on financing renewable energy and energy efficiency projects. This reflects their recognition of the importance of transitioning toward low-carbon economies.
- **Adoption of Green Instruments:** Each bank utilizes innovative financial instruments such as green loans, green bonds, and specialized funds to support sustainability-oriented projects.
- **Commitment to Sustainability Initiatives:** Both institutions actively participate in regional and international sustainability initiatives, underscoring their responsibility toward global environmental goals and public awareness

3.3.2. Differences

- **Institutional Orientation:**
  - **CDB:** Operates as a state-owned policy bank, with a global and policy-driven mandate. Its environmental financing strategies are strongly aligned with China's national development priorities and its international expansion strategy (e.g., Belt and Road Initiative).
  - **FAB:** Functions as a commercial bank, integrating sustainability into its competitive business model. Its initiatives primarily target the UAE's domestic market while also contributing to regional projects.

- **Geographical Scope:**
  - **CDB:** Finances projects both within China and internationally, making it a global player in green finance.
  - **FAB:** Focuses primarily on the national and regional level, particularly within the UAE and the MENA region.
- **Strategic Priorities:**
  - **CDB:** Allocates financing to large-scale infrastructure projects, biodiversity conservation, and pollution control.
  - **FAB:** Concentrates more heavily on renewable energy (particularly solar power), water projects, and green buildings

3.3.3. Synthesis

The comparison shows that while both banks share common goals in promoting sustainability, their institutional frameworks and strategic orientations shape their approaches:

- **CDB** demonstrates how a policy-driven bank can mobilize large-scale global financing to integrate environmental considerations into long-term development strategies.
- **FAB** illustrates how a commercial bank can position sustainability as a competitive advantage, combining profitability with environmental responsibility.

For Algeria, these insights suggest two complementary lessons:

- The **CDB model** offers a framework for policy-driven financing that could inspire government–bank partnerships in environmental projects.
- The **FAB model** provides an example of how commercial banks can integrate green financing into their portfolios, enhancing competitiveness while addressing sustainability challenges.

4. RESULTS AND DISCUSSION

The findings of this study indicate that both First Abu Dhabi Bank (FAB) and the China Development Bank (CDB) have progressively integrated environmental priorities into their financing strategies. FAB has primarily emphasized renewable energy projects at the national level, providing targeted green loans and participating in awareness programs. In contrast, CDB has adopted a broader international approach, financing large-scale infrastructure and clean energy projects across several countries.

The analysis confirms the first hypothesis, which suggested that banks are increasingly adopting green finance mechanisms to enhance competitiveness and align with sustainability goals. However, the results also reveal structural and regulatory challenges that limit the effectiveness of these mechanisms, particularly in developing economies. This partially confirms the second hypothesis regarding the uneven progress in implementing green finance strategies.

Compared to previous studies, these results support the notion that green finance has become a vital component of modern banking practices. Nevertheless, the findings highlight a gap in the Algerian context, where green finance remains underdeveloped due to insufficient regulatory frameworks, lack of incentives, and limited awareness among stakeholders.

5. CONCLUSION

The present study has examined the role of banks in supporting and financing environmental projects, with a particular focus on the experiences of the China Development Bank (CDB) and First Abu Dhabi Bank (FAB). The findings indicate that modern banking has evolved beyond traditional financial intermediation to incorporate environmental and social considerations as integral components of strategic and operational frameworks. Environmental banking finance enables the mobilization of resources for projects that contribute to renewable energy development, waste management, sustainable agriculture, and biodiversity conservation, thereby promoting sustainable development and long-term economic resilience.

The comparative analysis of CDB and FAB demonstrates that institutional structure, strategic priorities, and the adoption of innovative green financial instruments are critical factors for successful environmental finance. These experiences offer valuable lessons for countries such as Algeria, where the adoption of green finance remains limited due to regulatory gaps, structural constraints, and insufficient institutional awareness.

Recommendations

- **Enhance the integration of environmental considerations into financial decision-making:** Banks should include environmental risk assessments as a core component of lending and investment processes to ensure sustainable financing and reduce climate-related risks.
- **Develop innovative green financial instruments:** Encourage the use of green loans, green bonds, and sustainability funds tailored to the needs of various environmental projects.
- **Promote international collaboration:** Learn from successful international experiences to adopt best practices while adapting them to local contexts.
- **Strengthen institutional and technical capacities:** Provide training on green finance tools and environmental project evaluation, and support research on sustainable finance.
- **Integrate sustainability into corporate social responsibility (CSR):** Focus on projects that combine social and environmental benefits to maximize positive impacts on communities and the economy.
- **Develop a supportive regulatory and legislative framework:** Implement clear policies and laws that encourage banks to invest in environmentally sustainable projects.

- **Establish specialized financing mechanisms:** Create dedicated credit lines and funds for environmentally innovative SMEs to foster green entrepreneurship.
- **Raise institutional and national awareness:** Organize workshops and awareness programs for banks and investors on the benefits of green finance.
- **Strengthen partnerships with international institutions:** Attract funding and expertise from global financial organizations to support viable national environmental projects.
- **Implement monitoring and evaluation systems:** Develop mechanisms to assess the environmental, social, and economic impacts of financed projects, ensuring maximum benefits and informing future policies

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