World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(REVIEW ARTICLE)

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# Exploring the role of international development banks in promoting green financing mechanisms

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World Journal of Advanced Research and Reviews, 2025, 26(02), 2498-2513

Publication history: Received on 18 March 2025; revised on 29 April 2025; accepted on 01 May 2025

Article DOI: https://doi.org/10.30574/wjarr.2025.26.2.1539

## Abstract

This research examines International Development Banks (IDBs) while they implement green financing programs to support renewable energy projects and climate adaptation along with energy efficiency projects in developing regions. The study examines three geographic blocs to show how IDB strategic initiatives lead to both successful and unsuccessful outcomes. IDBs develop environmental emissions reduction and community resilience development through combined financial approaches that incorporate both green bond programs with concessional loans as well as blended finance to produce employment opportunities while advancing economic growth. Policy-makers play a vital role in determining IDB effectiveness through their commitment to ensure frictionless procedures and open governance systems with appropriate mechanisms to engage the private sector. IDBs operate differently from private sector financial institutions through public funding that lowers private investment risks and expenses for multiple business sectors across various industries. The evaluation methods focusing on success track two essential factors: environmental emission cuts alongside economic growth and social welfare advancement for assessing effects. Significant achievements by IDBs persist despite ongoing challenges related to limited funding availability and regulatory barriers affecting their operational effectiveness. The research provides three essential recommendations that stress public-private relations enhancement and institutional proficiency development and technological systems for overseeing projects. Accurate government regulations established according to international climate targets should force private companies to either make strategic investments or enhance their sustainability reporting and risk management programs. Wider implementing measures will enhance the effectiveness of IDBs to drive transformative growth in green finance..

**Keywords:** International Development Banks; Green Financing; Sustainable Development Goals (Sdgs); Renewable Energy; Emissions Reduction; Climate Adaptation.

## 1. Introduction

Through its definition green financing moves money to environmental benefit projects whose objective is carbon reduction alongside energy efficiency improvements and sustainable development enhancement. A UNEP report explains that through green financing organizations direct money streams originating from banking along with micro-credit insurance and investment sectors towards sustainable development targets [1]. This funding solution acts as an essential tool to fight climate change and establish sustainable financial growth. The importance of green energy financing grows rapidly because it contributes to achieving Sustainable Development Goal 7 (SDG 7) and Sustainable Development Goal 13 which works against climate change. The energy sector needs attention because it produces worldwide greenhouse gas emissions exceeding two-thirds thus making it essential for achieving these targets. Climate mitigation depends on three core environmental pathways: renewable energy implementation, improved energy efficiency performance and universal access to sustainable power networks [2]. Research investigations during recent

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times demonstrate the potential effectiveness and advantages of green financing to reach these objectives. The use of Organization for Economic Co-operation and Development (OECD) economies over 2000-2020 showed that green finance drives substantial advancement of SDG 7 and SDG 13 by enabling access to clean energy alongside promoting climate action according to [3]. The expanding green bond market signifies growing investments toward environmentally-friendly projects according to [4] who expect the market value to reach US27.4 billion. The essential foundation of green financing serves to reach global sustainability objectives.

The definition of green financing allows financial resources to flow toward projects which achieve carbon reduction goals and improve energy efficiency while enhancing sustainability. According to the UNEP report green financing enables organizations to manage money flows starting from banking and micro-credit and insurance and investment sectors toward sustainable development targets ([1]). Sustainable financial growth together with climate change mitigation depends on this important funding mechanism. Green energy funding continues to gain importance because it supports the attainment of Sustainable Development Goal 7 (SDG 7) and Sustainable Development Goal 13 that fights climate change. Countries must focus on energy sector reforms since climate pollution from this sector exceeds two-thirds of global emissions therefore requiring immediate action to achieve these targets. Renewable energy implementation together with improved energy efficiency performance and universal access to sustainable power networks form the three essential environmental pathways for climate mitigation ([2]). Research studies conducted in recent times have proven that green financing can successfully deliver these goals. Green finance through Organization for Economic Co-operation and Development (OECD) economies during 2000-2020 created notable progress toward achieving SDG 7 and SDG 13 through its dual role in delivering clean energy and climate change action as reported by [3]. [4] predicts that green bond market value will reach US27.4 billion as the market continues its expansion according to World Economic Forum (2020). Eco-friendly funding stands as the vital basis to fulfill worldwide goals promoting sustainability.

IDBs operate as essential financial organizations dedicated to boosting economic development alongside sustainable regional progress. Examples of notable IDBs include the World Bank as well as the European Bank for Reconstruction and Development (EBRD) and the Inter-American Development Bank (IDB). The institutions provide monetary and methodological support and policy mentorship for projects which enhance economic advancement and reduce poverty while boosting sustainability practices. IDB operates within a funding circle dedicated to attracting capital for major public projects since private entities often avoid these initiatives due to high-risk elements and long duration for repayment. As key institutions, IDBs contribute to sustainable development through loans and grants and guarantees which collectively enable infrastructure financing and support education and healthcare initiatives besides environmental programs. The EBRD has committed to dedicating more than 40% of its financial resources to green financing that supports Paris climate targets according to [5]. During the recent years IDBs explicitly intensified their sustainable development emphase by integrating their activities with the United Nations Sustainable Development Goals (SDGs). Through their funding operations IDBs fundamentally contribute to climate change mitigation projects and renewable power initiatives along with sustainable construction programs. The World Bank has incorporated environmental and social safeguards into its project financing to promote results that maintain sustainability and inclusivity [6]. The Inter-American Development Banks works together with national governments along with private sector organizations and civil society groups to shape development policies that cater to specific member state requirements. The joint efforts between these development partners boost intervention success rates while maintaining sustainability through projects that align with local needs.

The role of IDBs toward sustainable development is vital yet they face various obstacles in their operations. The assessment exposed major weaknesses in the process of gathering green finance resources while showing poor local development linkages and inadequate usage of innovative financial products which include green bonds. Studies show IDBs make good progress with their renewable energy financing but the development of equity-based and inclusive programs remains insufficient [5]; [6]. These challenges intensify because of geopolitical tensions alongside regulatory barriers and insufficient impact assessment frameworks. The primary intention of this research is to gauge the role of IDBs in sourcing funds for green financing along with their contribution to SDGs 7 and 13 as well as their barriers in promoting green energy projects. This analysis evaluates the adoption of green bonds and blended financing as well as the working relationships between IDBs and local governments and private sectors aimed at supporting these initiatives. This research addresses an academic void on IDB performance standards by providing both academic and operational strategies that enhance IDB functional efficiency. These initiatives display strategies which boost resource collection capability and establish operational alignment to sustainability goals and establish creative funding tools for climate response and renewable energy switching.

## 2. Conceptual Review

### 2.1. Mechanisms for green financing

In Green finance refers to financial flows (from national, international and private sources) to green initiatives and projects associated with environmental sustainability, prevention of environmental degradation, and a low carbon economy. They should support investments which help to achieve an ecological balance, for example lower emissions of greenhouse gases, the development of renewable energy, and of energy efficiency. This approach is in line with the over-arching goal of sustainable development as articulated in the United Nations Sustainable Development Goals (SDGs), that is, the agreed SDG 7 (Affordable and Clean Energy), SDG 13 (Climate Action) and SDG 17 (Partnerships for the Goals) [7]. Green financing instruments are promoted by International Development Banks (IDBs) including the World Bank, the Asian Development Bank (ADB), and the African Development Bank (AfDB). They play a catalytic role in terms of capital mobilization, risk mitigation, designing financial instruments to support investment in sustainable infrastructure, and climate change-resilient ventures in developing economies ([8]; [9]).

Key green financing tools include green bonds, green loans, sustainability-linked finance, climate funds, and carbon markets. Green bonds Green bonds are debt instruments issued for projects with a clear environmental return, such as renewable energy construction, energy efficient buildings and clean transportation. The total volume of green bonds exceeded $1 trillion for the first time in 2020, which reflects the expanding importance of climate-aligned investment products to investors [10]. The IDBs have been in the forefront of activity in issuing green bonds – often on a significant scale – and deploying these funds in the priority sectors which make a direct contribution to the Paris Agreement and national climate action plans [8].

The same is true of green loans, which are based on Green Loan Principles and provide capital to borrowers pursuing environmentally friendly projects. These have become popular both with development banks and private investors, largely because they are clearly focused on the environment and the use of proceeds is well-specified [11]. Sustainability-linked loans and bonds They also differ from green or project-linked bonds and loans, in that they are not contingent on particular projects, but the ESG score of the borrower as a whole. They induce borrowers to meet higher ESG standards by conditioning the covenants of a loan to the attainment of predetermined ESG standards [12].

IDBs also contribute to international climate funding reservoirs, like the Green Climate Fund, that help to leverage public and private financing to implement large scale climate mitigation and adaptation infrastructure. Such investment finances infrastructure, ecosystem protection and local resilience efforts in affected areas [13]. Market based mechanisms such as carbon markets and ETSs put a price on carbon emissions, driving industry to minimise their environmental impact. IDBs could serve to support the development of CPMs, such as through assisting the introduction of regulatory frameworks and capacity-building for countries to implement, or take part in, a CPM [14].


**Figure 1** IDB and Sustainable Development Interconnected Mechanism

The increasing significance of green financing tools is reflected in their mainstreaming in IDB strategies, financial markets and policy reforms. The mass of green bonds and loans has continued to expand even as investors increasingly cast their attention to emerging products, such as sustainability-linked instruments and blended finance. These developments help the financial sector to integrate ESG factors in the investment process, increase transparency, as well as contribute to normalizing sustainable finance [4]. As IDBs grow their green financing books, these mechanisms are playing a critical role in addressing the climate finance challenge and advancing global sustainability targets. They are instruments to

bridge green intention and financial action: they help transform investment decisions into not only economic but also long-term environmental and social performance. Thus green finance instruments, led and supported by IDBs, are indispensable to global transition to sustainable, inclusive development.

This circular diagram illustrates how International Development Banks (IDBs) drive sustainable development through interconnected mechanisms—financing instruments (e.g., green bonds), green financing applications (e.g., renewable energy), and their outcomes in climate adaptation and economic growth. It highlights a continuous feedback loop where project success informs further financial innovation and investment priorities [8].

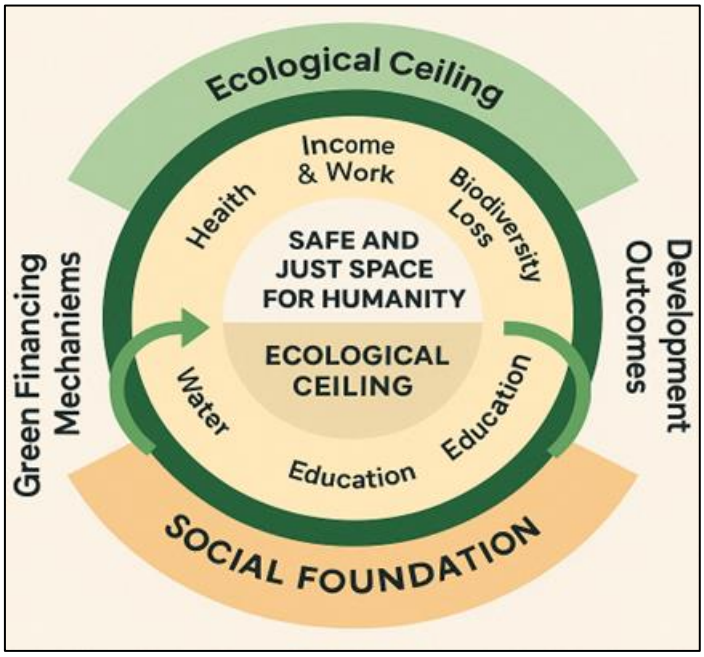


**Figure 2** Green Financing Mechanism for Social Foundation

This doughnut economics diagram illustrates the balance green financing mechanisms aim to achieve—meeting social foundations (e.g., health, education, work) without breaching the ecological ceiling (e.g., biodiversity loss, water use). The space between represents the safe and just space for humanity, where IDB-supported green finance can drive sustainable development outcomes [15].

### 2.2. International Development Banks (IDBs)

International Development Banks (IDBs) are crucial in driving green financing through capital mobilization for green initiatives, especially in developing economies. They are part of a global system of financial and technological CO2 sinks that cure the world by sinning less. In fact, the growth of green, social and sustainability bonds have been supported by the World Bank since issuance of its first green bond in 2008, thereby diversifying the development financing channels [8]. However, despite these contributions, IDBs face big challenges to scale up green finance. Emerging markets face a backdrop of regulatory gaps and a lack of sufficient incentives for local companies to pursue ambitious climate targets that limits the supply of green finance. According to a report by the International Finance Corporation (IFC), financial firms face challenges in increasing their green finance offerings in these market regions due to low market incentives and inadequate regulatory frameworks [16]. Further compounding the challenges is the complexity involved in accessing development and climate finance. The complex procedures required for accessing funds from such multilateral development banks and international financial institutions can delay the expedient delivery of climate projects, particularly in Least Developed Countries and Small Island Developing States [17]. To tackle these issues, the need for reforms of IDBs is widely recognized. Improving the effectiveness of green financing initiatives could be achieved by increasing the availability of information, simplifying access to funding, and promoting closer collaboration with private sector investors. According to the World Resources Institute, IDBs need reforms, not only more dollars, to adequately respond to current climate and development finance needs [18]. Despite the progress IDBs have made in facilitating green financing, they face regulatory, procedural and partnership challenges that need to be addressed to amplify their impact. Scalebility of green finance and realization of global sustainability objectives requires systemic reforms and extensive collaboration with private sector agents.

### 2.3. Financing Mechanisms Used by IDBs

Approaches embedded in Green Financing to overcome sustainable development project challenges by International Development Banks (IDBs). In developing economies, these mechanisms allow IDBs to mobilize resources, mitigate risk, and catalyse investments in projects that provide environmental and social returns. The financing of environmentally sustainable projects is one of the most significant tools that IDBs put in practice, and green bonds are a good example of it. These bonds are issued to raise capital for projects like renewable energy, energy-efficiency and climate-adaption initiatives. By reporting on how they will use proceeds, green bonds are popular with ethical investors. The World Bank, for example, has been at the forefront with nearly $18 billion in green bond issuance in multiple currencies since 2008 and has played a major role in developing the market [8]. IDBs lower the cost of capital and catalyze private sector engagement in funding for green projects when issuing green bonds. Another vital financing vehicle that IDBs deploy are concessional loans. These loans in conditions more favorable than the market conditions are usually lower than the rate of the market or longer than the repayment period in the commercial banks, making the green project financially viable in areas where the commercial financing could not consider the high risk and low return. The Asian Development Bank (ADB) extends concessional loans to finance renewable energy and climate resilience projects, especially in areas extremely susceptible to climate change [11]. These loans fill funding gaps for projects with high upfront costs but significant long-term environmental benefits. Grants and blended finance are other important tools that IDBs leverage. Grants are typically utilized to provide initial funding for feasibility studies, capacity-building, or pilot projects, thereby lowering risk to larger investments. Blended finance - the use of public funds (for example, grants or concessional loans) to leverage private investment, improving the structure of development finance and domestically or internationally reducing risk for private investors. For this reason, the Green Climate Fund is a good example of this – it blends public and private finance to support large-scale climate projects in developing countries, using limited public finance to leverage substantial private sector investment [13]. Green bonds and blended finance concessional loans and grants are critical instruments that allow IDBs to overcome financial obstacles, increase private sector involvement, and fund successful delivery of projects that meet broader sustainability agenda.

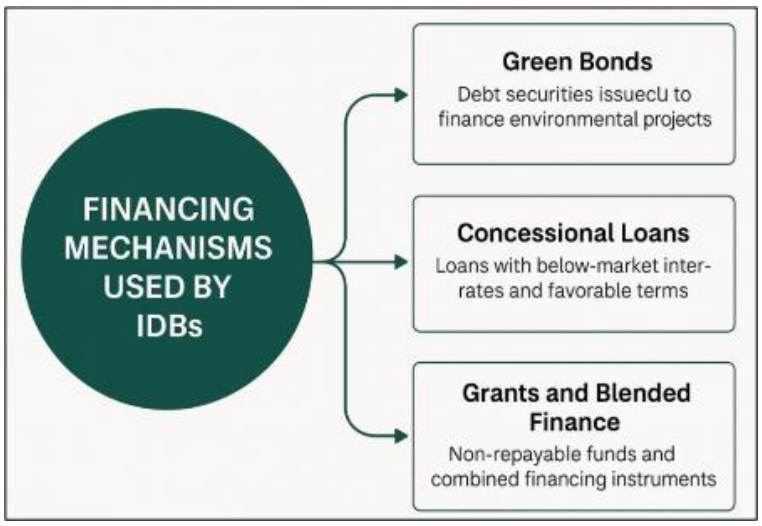


**Figure 3** Financing Mechanism used by IDBs

This diagram illustrates the primary financing mechanisms employed by International Development Banks (IDBs), including green bonds, concessional loans, and grants blended with other financial tools. Green bonds are debt instruments earmarked for environmental projects; concessional loans offer below-market terms to incentivize sustainable investment; and blended finance combines public and private capital to de-risk projects in developing economies [8]; [10].

### 2.4. Project Prioritization and IDB Initiatives

Over 9/10ths of their financing goes toward: renewable energy, energy efficiency and climate adaptation projects that will help the world transition toward global sustainability goals and the inevitable impact of climate change. This is why renewable energy developments take precedence, as they offer cleaner, more sustainable solutions to many of the fossil fuel-driven problems we face, drastically cutting down our carbon footprint. With their work, bilateral development banks (IDBs) such as the World Bank have been heavily investing in projects for solar, wind, and hydropower to support energy access and sustainability. The World Bank, for instance, has financed renewable energy projects in developing nations, disbursing $1 billion annually for solar energy initiatives [8]. Energy efficiency is also a key pillar since it enables

us to reduce energy consumption and emissions while increasing productivity at the same time. IDBs exclusively fund projects that enhance the efficiency of buildings, industrial processes, and urban transport systems. For example, the African Development Bank (AfDB) has initiated programs such as the Energy Efficiency Program for Africa, focused on advancing energy efficiency in residential and industrial sectors through innovative technologies and policy frameworks [19]. Such adaptation projects are needed to help communities cope with climate impacts, like rising sea levels, extreme weather events, and scarcity of water. Investments Include Strengthening Climate Resilience: IDBs are focused on projects that enhance climate resilience, including through infrastructure upgrades, sustainable water management, and agricultural adaptation. Funded by the Asian Development Bank and other IDBs, the projects have been geared towards climate-resilient infrastructure and improved livelihoods in vulnerable areas [13]. Alongside prioritizing projects, IDBs are involved in initiatives and partnerships to scale their impact. For example, the World Bank has partnered with governments and private sector stakeholders to mobilize financing and expertise in large-scale renewable energy projects, such as the Scaling Solar initiative, which aims to accelerate the development of solar energy in Africa ([8]). This often includes technical assistance and capacity-building programs, such as the International Renewable Energy Agency (IRENA) partnership with the African Development Bank aiming to boost the deployment of renewable energy across [52]; [19]. These progressive approaches illustrate the importance of IDBs' work in promoting collaboration to tackle financing gaps and tackling technical challenges. With their partnerships, IDBs leverage resources, share best practices, and coordinate efforts to maximize the impact with these partnerships on their investments, leading to global sustainable development and climate resilience.


**Figure 4** Total Funding by Year and Category**:**

This figure displays the total funding allocated to each project category (Renewable Energy, Energy Efficiency, and Climate Adaptation) from 2022 to 2024. [20]

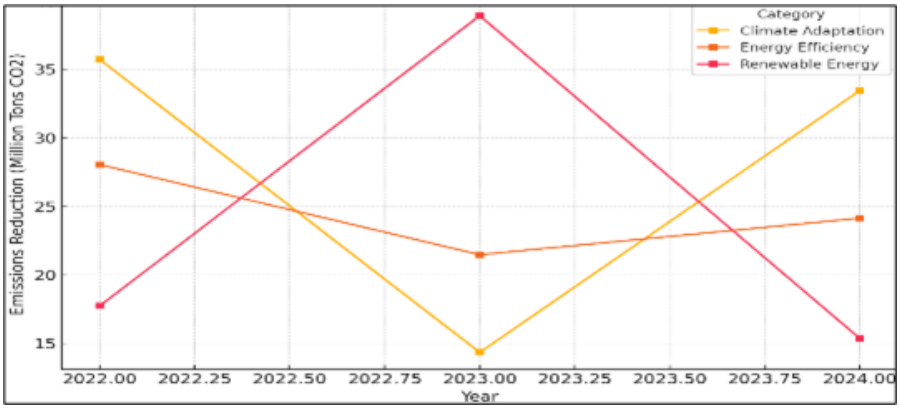


**Figure 5** Total Emissions Reduction by Year and Category

The above figure highlights the cumulative emissions reductions achieved by each category over the same period. [20]

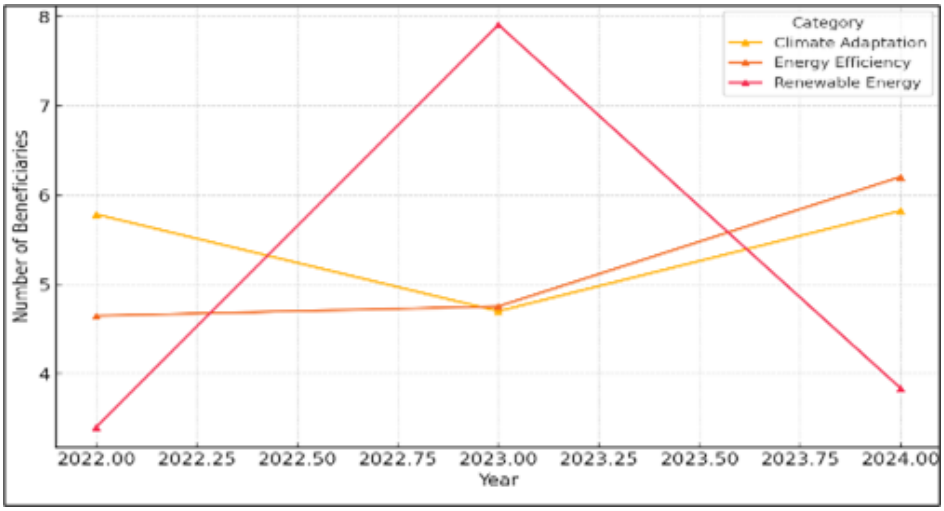


**Figure 6** Total Beneficiaries by Year and Category

This figure shows the total number of beneficiaries impacted by projects in each category. [20]

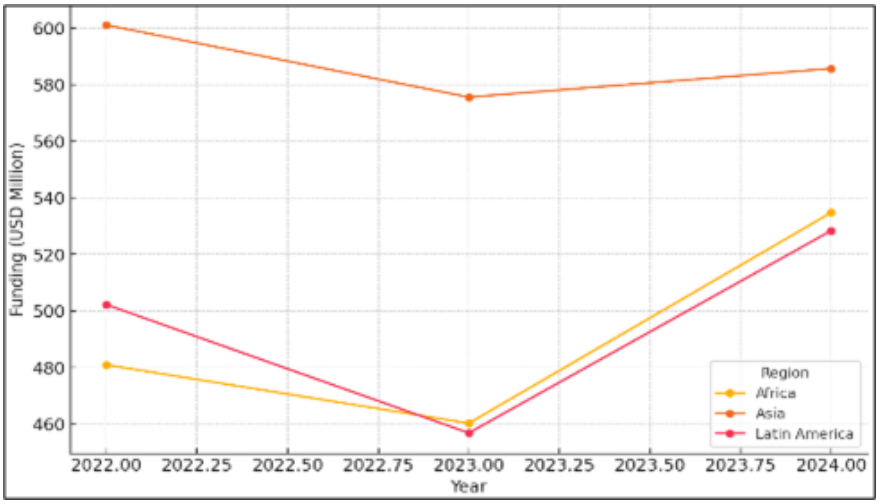


**Figure 7** Regional Funding Trends (2022 - 2024) [20]

The above figure displays renewable energy investment trends through a table and visualization that examine regional changes from 2022 to 2024. Asia leads in renewable energy investment growth because it generates big infrastructure development while receiving increased official backing. The investments in both North America and Europe maintain steady progression thanks to existing well-developed renewable markets which operate under stable policy frameworks. The areas of Africa and Latin America benefit from international concessional financial support to reach enhanced progress despite their diminished growth rates.

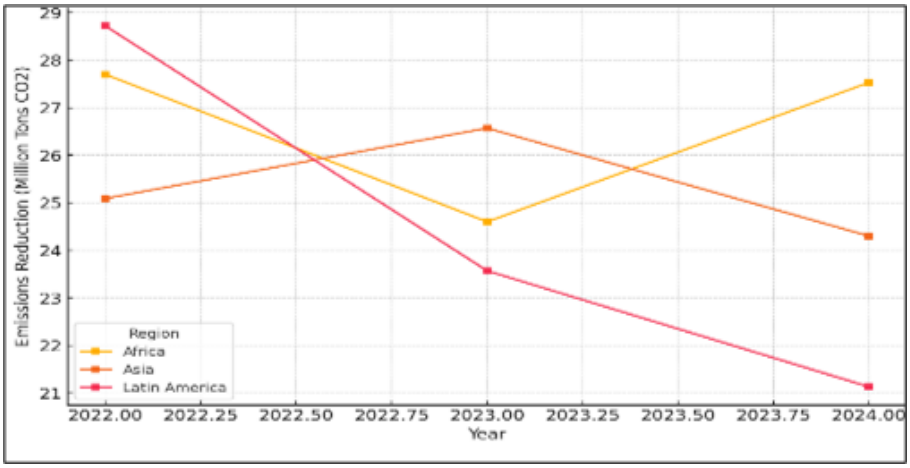


**Figure 8** Regional Emissions Reduction Trends (2022 - 2024) [20]

The graph shows regional emissions reduction changes in Africa, Asia and Latin America spanning from 2022 until 2024 which demonstrated total emissions decreases. The visualization reveals which areas achieved the maximum carbon emission reduction while showing their specific trends throughout 2022-2024. Additional information along with further analysis requires confirmation if needed.

### 2.5. Comparative Analysis

International Development banks ( IDBs) regions comparative overview: A survey of IDBs in Africa, Asia and Latin America and their approaches towards green financing and sustainable development in a comparative context. In Africa, the IDBs, the African Development Bank, amongst others, plays a major role in financing utility-scale renewables to meet energy access gaps. Initiatives like the Desert to Power programme set a target of providing solar energy to millions, substantially lowering carbon emissions while promoting development around the region [21]. In Asia, the Asian Development Bank does energy efficiency and climate adaptation projects while prioritizing urban sustainability and climate resilience in vulnerable areas. Programs such as their climate-smart cities program have integrated advanced technologies and private sector partnerships to improve project outcomes [11]. For instance, in Latin America the Inter-American Development Bank has focused on combating deforestation and supporting renewable energy projects, which also reflect distinct regional features, including the need to conserve biodiversity and meet energy needs [22].

In contrast to the private sector, IDBs typically have wider development mandates and take on broader risk in relation to enabling green financing initiatives. Private sector projects tend toward larger, more financially appealing projects such as utility scale solar and wind farms in stable markets. Unlike IDBs, which are more inclined to fund high-risk, high-impact initiatives in underserved areas, IDBs tend to finance projects with lower risk profiles, closer to bankable projects, like off-grid renewable energy solutions or rural electrification projects. Additionally, IDBs frequently use blended finance instruments to draw private money to green projects by reducing risks and issuing concessional financing. IDB-led frameworks/risk-sharing are used to catalyze private-sector investment in challenging markets [10].

Success metrics for IDBs and private sector initiatives share some convergence but may reflect different priorities. At the same time, emissions reduction is an important metric for both because it's connected to global data targets on the climate. Example projects include the African Development Bank's renewable energy projects across the continent that are used to help reduce emission and serve as benchmarks when compared to similar investments in large-scale solar farms in the private sector [23]. Job creation is another metric that they share, as IDBs often favor projects that create local jobs. For example, the green infrastructure projects of the Asian Development Bank have generated around 12 million jobs in construction and maintenance, as well as developing skills [11]. But the latter is a key area of focus for IDBs who tend to prioritize wider socio-economic outcomes — like increased access to energy and improved productivity — over financial returns. Typically, IDBs employ region-wide strategies to address the unique challenges and opportunities of the areas they are growing in, while private sector initiatives are attracted by the most commercially viable projects. Insisting on emissions reductions alongside job creation and economic growth as success metrics, highlights the complementarity of roles played by IDBs and private sector players in making meaningful contributions towards global sustainability goals.

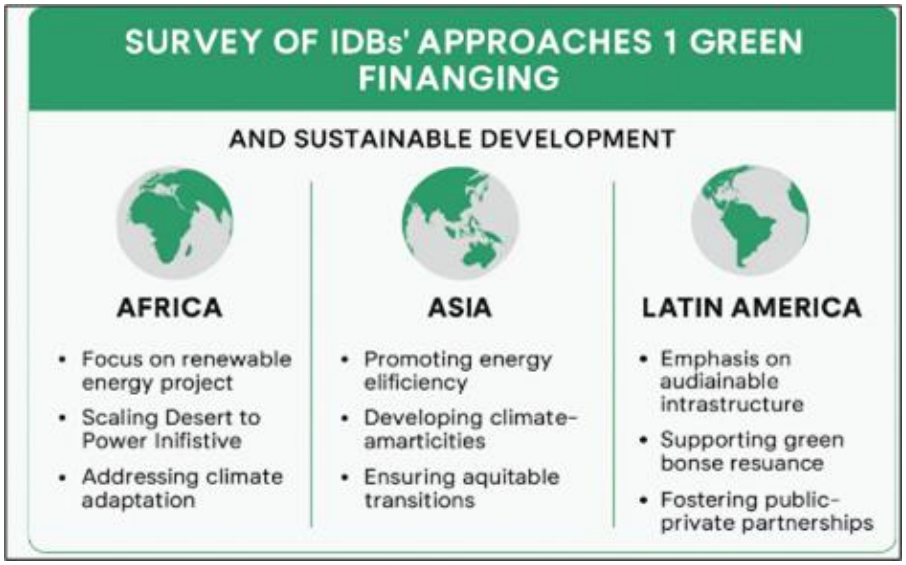


**Figure 9** Comparative Overview of IDB Strategies in Africa, Asia, and Latin America.

The diagram presents a comparative overview of IDB strategies in Africa, Asia, and Latin America. It highlights region-specific priorities—solar expansion in Africa, urban climate resilience in Asia, and deforestation mitigation in Latin America—demonstrating how IDBs tailor green financing to local needs while supporting global sustainability goals ([22]; [23]; [11]).

### 2.6. Challenges, Opportunities and Future Directions

Foreign Development Banks (IDBs) have a good number of challenges as well opportunities to encourage green financing and promote sustainable development. It is crucial to unpack these dynamics to maximize their impact and align their activities with global climate and development goals. Funding limitations continue to be a major issue for IDBs, particularly as the need for green financing rises in developing economies. Several of them are limited in their ability to mobilize significant capital to finance increasing renewable energy, climate adaptation and energy efficiency projects. While there are some attempts to mobilise funding on a large scale using instruments such as green bonds and blended finance, achieving long-term stable financial resources continues to be a challenge, with notable funding gaps remaining. Funding challenges are compounded by limited contributions from donor countries and competition for capital among multiple development priorities [13]. Institutional roadblocks are another challenge, particularly at places with weak governance, limited technical capacity and fragmented regulatory frameworks, which have made IDB operations, even more challenging. Inefficiencies in the project approval process, lack of coordination among stakeholders and insufficient local expertise can hamper project implementation and diminish the effectiveness of IDB-funded initiatives. For example, the African Development Bank has pointed out that the strong legal protections and frameworks needed to deploy green financing effectively are lacking in many African countries [23]. Also, IDBs' role in promoting green financing is also constrained by Policy uncertainties. At the same time, inconsistent policies, regulatory uncertainty, and insufficient market signals for private sector engagement discourage investments in green initiatives. In particular, unstable national policies, which are common in emerging markets, can disrupt project discipline and disincentivize long-term investment in renewable energy and climate resilience efforts [8].

Notwithstanding these challenges, IDBs have much to gain from strengthening their contributions to sustainable development. Green Finance Global investments for such green financing have increased over the past years, making this development a potential path forward for IDBs to diversify their funding basis. Ever-increasing interest in sustainable finance from institutional investors, aligned with the growth of ESG-compliant investments, presents opportunities for IDBs to attract private finance and leverage their impact [10]. Another opportunity is an efficiency improvement in project execution. The IDs can facilitate the implementation of green projects by whipping the services, improving collaboration among stakeholders, and introducing innovative financing mechanisms. With the help of technology and big data analytics, improvements in project monitoring and evaluation could be achieved, and result in better performance of green financing projects [11]. Similarly, increased sustainability provides a vital pathway for IDBs to realign with global climate objectives. By supporting renewable energy, energy efficiency, and climate adaptation, IDBs can potentially play a greater role in helping to achieve the targets of the Paris Agreement and the United Nations' Sustainable Development Goals. The IDBs can further drive sustainable development and climate resilience through collaborations with private sector stakeholders, local governments, and international organizations

[8]. So while there are development banks that might be limited by funding, institutional barriers, or policy uncertainties, the momentum for green financing presents opportunities for growth where investment drives efficiency and sustainability improvements. Maximizing these opportunities will require strategic reforms and stronger partnerships to enhance the impact of IDB initiatives.

.International Development Banks' (IDBs) Future Contributions to Green Financing Mechanisms: In light of the growing global challenges related to climate adaptation, IDBs must play a relevant role in the green finance ecosystem in the medium and long term. One important pathway is to introduce new financial tools and technologies to increase green financing. Digital tools like artificial intelligence and blockchain can also improve transparency and efficiency in green finance operations, which makes more investment projects attractive to private investors. Blockchain, for instance, implements real-time tracking of fund utilization, which increases accountability and arbiters trust among end-users and other stakeholders [11]. They can also promote green bonds, loans linked with sustainable development goals (SDGs) and the blended finance to raise capital on a wider scale for different types of green projects and programs [10]. A key area of future growth would be to strengthen partnerships with private sector stakeholders. IDBs can access additional resources and expertise by collaborating with institutional investors, financial institutions, and private corporations. Through the PPP business model, it is possible to scale RE and EE projects. A more detailed example of this approach can be drawn from the African Development Bank's Desert to Power initiative, which demonstrates how IDBs can partner with the private sector to solve Africa's energy access conundrum using solar energy solutions [19].

Beyond their financing work, IDBs also need to emphasize capacity building and technical assistance for the developing countries whose institutional and regulatory barriers to financial investment they should be helping overcome. Assisting governments in developing clear, stable and transparent policy frameworks that will facilitate the long-term prospects for green investment is the most appropriate response. This also includes training, knowledge sharing and advisory services aimed at enhancing the capacity of local legal and implementation institutions to manage and implement infrastructure projects with green financing [8]. IDB priorities also include improved resilience to climate change. In addition, strategies for the future must scale up investments in climate adaptation projects, especially in the most vulnerable regions. These projects are crucial for climate action in adjusting infrastructure resilience, improving water resource management, and promoting climate-smart agriculture [13]. Lastly, IDBs should continue to integrate themselves with global climate goals like the Paris Agreement and United Nations Sustainable Development Goals (SDGs). These metrics will help improve accountability and inform decision-making by allowing for the measurement of facilitated projects' environmental and social impacts. Integrating ESG principles and sustainability benchmarks in all operational functions can enable IDBs to unleash their contribution towards long-term development goals ([24]). Innovation, collaboration, capacity building, and alignment with global sustainability goals will be crucial for the future role of IDBs in promoting green financing mechanisms in the years to come. While working on these priorities, the IDBs are better positioned as leading partners in sustainable development and climate action.

### 2.7. Alignment with the Sustainable Development Goals (SDGs)

International Development Banks (IDBs) are contributing to the achievement of all Sustainable Development Goals (SDGs), but especially to SDG 7 (affordable and clean energy), SDG 13 (climate action) and SDG 17 (partnerships for the goals). Inter-American Development Banks (IDBs): IDBs, through targeted mechanisms that promote financing, support sustainable development initiatives related to climate change and energy access in emerging economies. reflecting the spirit of SDG 7, which envisages IDBs to fund renewable energy projects to expand energy access and decrease dependency on fossil fuels. For example: The World Bank has made significant investments in solar, wind and hydropower projects to deliver affordable and clean energy in underserved areas. Through programs like Scaling Solar, many of Africa's developing economies have been able to produce renewable energy at a lower cost and attract private sector investment ([8]). IDBs champion universal energy access through greenhouse gas-neutral energy efficiency projects and off-grid solutions. But at the time the SDG13 was introduced, International Development Banks (IDBs) had just come up in the news with some criticism for not putting enough funding towards climate change mitigation and adaptation projects, however SDG goal SDG 13 begged for urgent climate action alice and idbs responded to the challenge by realigning their loans with the goals of SDG by implementing adaptation and other projects. Through IDBs, the Green Climate Fund funded mitigation and adaptation activities, including the development of climate-resilient infrastructure and sustainable farming methods in vulnerable areas ([13]. These efforts assist emerging economies in building resilience to impacts of climate change while embarking upon low-carbon development trajectories.

Addressing this challenge, SDG 17 emphasizes the critical role of partnerships in advancing sustainable development, and IDBs are pioneers in promoting multi-stakeholder partnerships. And by collaborating with governments, private sector actors, and international organizations, IDBs mobilize resources and know-how to deploy far-reaching green financing schemes. The African Development Bank works with international partners on initiatives like Desert to Power

to deliver renewable energy to millions across Africa ([9]). These partnerships show what IDBs are capable of doing; aligning action and leveraging a broad range of resources for sustainable development. As well as supporting the SDGs, IDBs play a critical role in driving just energy transitions in emerging economies. Energy justice includes the social justice aspects of transformation to clean energy systems. IDBs support projects that address social inclusion through funding and technical assistance that promote workforce development, job creation, and capacity building to the manufacturing and supply sectors of green energy. Programs focused on energy transition at the Asian Development Bank place importance on equitable outcomes, to ensure vulnerable communities are beneficiaries of green energy transitions and that social inequalities are not exacerbated ([11]). The role of IDBs at addressing SDG 7, SDG 13 and SDG 17 on their own, alongside the need for just energy transitions, will be critical for the attainment of SDGs goals for sustainable development in developing economies. IDBs do this by using their financial power and by building partnerships to promote equitable access to energy, develop climate resilience, and share the benefits of sustainable

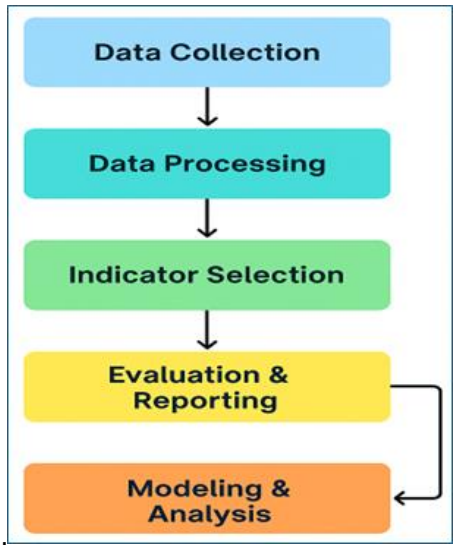


**Figure 10** SDG Indicators Analysis

The SDG Indicator Analysis flowchart illustrates the sequential process used to evaluate progress on Sustainable Development Goals. It begins with data collection and processing, followed by selecting relevant indicators. Evaluation and reporting assess project outcomes, while modeling and analysis guide future planning. This process supports evidence-based decisions in IDB-funded green financing initiatives ([7]).

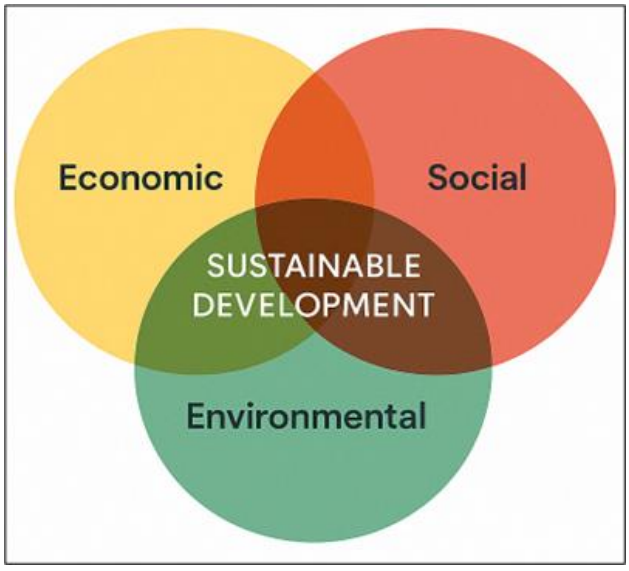


**Figure 11** The Three Pillars of Sustainable Development

The diagram illustrates the three pillars of sustainable development—economic, social, and environmental—showing their interdependence. At the intersection lies true sustainability, achieved when economic growth, social inclusion, and environmental protection are balanced. This framework underpins how IDB-funded green financing projects align development goals with climate resilience and social equity .

### 2.8. Policy Implications

Such reforms with collaboration from the government and strong supportive regulations would accelerate the development of International Development Banks (IDBs) for green financing. IDBs that can augment transparency, expedite funding flows, and utilize innovative financing will be able to maximize their impacts. A stronger recommendation is to accelerate the adoption of the more sophisticated digital technologies available to IDBs including blockchain and artificial intelligence to enhance the transparency and efficiency of fund allocation and monitoring ([11]). Furthermore, tailored applications of blended finance mechanisms can help IDBs unlock private sector investment through de- risking projects and providing offers with competitive risk-adjusted returns ([10]). IDBs can be supported by governments and policymakers, as demand for green financing solutions is ultimately determined by the creation of conducive environments (see Fig. 5). We need governments to develop clarity on policies that reflect the need for global sustainability goals, consistency with those goals, and supporting policies. Stable policies create the certainty essential for mobilising long-term investments in renewable energy, energy efficiency and climate adaptation projects. National governments can provide tax incentives and subsidies for green projects to entice private sector participation while ensuring alignment with national and global climate targets (source: [8]). This alignment can allow for joint ventures in development across regions as both governments and IDBs set: sector-based priorities that will ensure financing goes to construction aligned with local development needs. Strengthening regulatory frameworks is key to achieving a more sophisticated green financing architecture. They should eliminate entry barriers for private investors and facilitate project clearances across firms. Such transparent and legally binding regulations can reduce the risks faced by the green financing projects and reassure investors. The EU's establishment of green finance taxonomies is an example of this, as it defines sustainable investments, providing market transparency and comparability [12]. Such frameworks will be key to help IDB and private investors make sure their operations are aligned with sustainability standards. One way governments and IDBs can complement each other is through capacity building, which builds on the effectiveness of green financing. It can help build their capacity to design, implement and manage green financing projects through training, technical assistance and knowledge-sharing platforms. Working together: Greater partnerships between governments, IDBs and private sector entities lead to more inclusive and contextually relevant green finance initiatives [19]. Given the potential for green financing to play a crucial role in climate action, enhancing the effectiveness of a key multilateral organization like IDB in this area is important — a task that entails changes across multiple fronts. Increasing strategy collaboration and harnessing innovation can help IDBs increase impact on mitigating climate change and providing a pathway for sustainable development.

### 2.9. Theoretical Framework

Theoretical Framework for International Development Banks (IDBs) in Green Financing. Development economics offers an initial perspective to assess various allocation mechanisms of financial resources to sustainable projects that foster economic growth while simultaneously preventing environmental damage. UN declares IDBs well suited to deliver more green financing to developing economies in balancing economic and environmental development goals to overcome market failures and contribute to (sustainable) long-term development (see [8]) Regarding ESG principles, the touch is more than just financial: their principles govern the integration of environmental, social and governance considerations in the process of making financial decisions. These principles are essential for green financing as they help ensure that the projects financed will provide economic returns and substantial environmental and social benefits. The Environmental, Social, and Governance (ESG) principles offer a structured framework to assess projects, helping International Development Banks (IDBs) align their investment decisions with global sustainability objectives, including the Paris Agreement and the Sustainable Development Goals (SDGs) ([12]).

Alternative perspectives come from green finance theories, such as Stakeholder Theory and Public Choice Theory. The need for the consideration of all stakeholders—governments, private investors, communities, and environmental advocates—during the process of green financing was long ago outlined as Stakeholder Theory. This perspective assumes that inclusively made decisions increase project acceptance, effectiveness, and sustainability (Freeman, 1984). As intermediaries, IDBs need to align the interests of stakeholders to ensure that projects are environmentally beneficial and economically viable. Public Choice Theory, in contrast, explains how government and institutional behavior affects the decision making of green financing. It shows how mobilization of resources for sustainable projects can be captured or obstructed by political and regulatory frameworks. This theory emphasizes the importance of transparent and efficient policy frameworks to lure private investments towards such green financing (Mueller, 2020). Many IDBs use this framework as a basis for the design of their interventions to enhance the private sector engagement whilst keeping

regulatory barriers to the minimum. The theoretical basis for this very framework is Stakeholder Theory since it has a direct correspondence with the multi-faceted goals of green financing enabled by IDBs. Since Stakeholder Theory focuses on the stakeholders' diverse interests, it is a helpful theoretical foundation to understand how International Development Banks (IDB) can successfully implement green financing initiatives that serve economic, environmental, and social goals. This theory makes sure that the fair approach promotes collaborative and inclusive environment matching financial instruments with wider development and sustainability objectives.

### 2.10. Empirical Review

greening fields representatives of IDBs the share of played an important role in was green development financing global. From 2020 to 2024, empirical studies show that make a significant contribution to success and also scaffold challenges For instance, [3] at the Organization for Economic Cooperation and Development (OECD) examined how green financing contributes to achieving SDGs in OECD economies and found that IDBs enable significant advances in access to clean energy (SDG 7) and climate resilience (SDG 13). Likewise, a systematic review by the International Finance Corporation [ noted the importance of IDBs in promoting sustainability through supporting green projects via technical assistance and financing. Research on individual IDBs—like the European Investment Bank (EIB)—demonstrate their ability to mobilize climate-related finance. “In support of such efforts, for example, the EIB has pledged up to a trillion euros in climate investment by 2030, illustrating how idb’s can insist on the scale needed for green financing ([12]). Likewise, the World Bank [8] has increased its portfolio of green financing through instruments such as green bonds and guarantees, which are an important source of funding for renewable energy projects and sustainable infrastructure. [17] also notes on procedural hurdles and very strong requirements in accessing climate finance from IDBs, especially in Least Developed Countries and Small Island Developing States. [1 have called for structural reforms that would improve the efficiency of IDBs and their alignment with the goals of the Paris Agreement. Emerging economies' regulatory and market setbacks were also recognized as contributing factors that hindered the efficacy of IDBs in the mobilization of private capital ([16]). Further studies stress the need for IDBs, private investors and governments to work together. The World Resources Institute [27] found that public-private alliances fostered by IDBs have expanded green resource financing with the ability to attract private capital due to provision of public assets. Likewise, an empirical analysis by Aimspress [28] suggested that IDBs are key in bridging gaps in local green finance markets by helping mitigate both funding and expertise risks.

Its role in adopting and incorporating elements of environmental and social governance (ESG) into green financing projects has also been examined. According to the European Commission [14], IDBs play a vital role in promoting ESG-aligned investments, as they guarantee that projects funded by them are contributing to delivering social and environmental benefits in addition to financial returns. Plus, we saw in research on carbon markets and emission trading systems that IDBs play a role in supporting the creation and scaling of these mechanisms and enabling emissions reductions around the world ([8]). Despite IDBs impacts in some regions, their role still remains limited. According to a Reuters report [29]), the key to increasing private sector involvement in green financing projects are transparency on how funds are allocated and risk-sharing mechanisms. Furthermore, the Millennium Woes Foundation [30] emphasized that IDBs need to eliminate bottlenecks in green bond issuance to further expand sustainable finance initiatives. IDBs have often been accused of failing to fund projects that improve access (on a broadly defined basis), involve stakeholders and are transparent in their implementation. Overcoming these challenges will help to ensure IDBs continue to play a transformative role in mobilizing resources for climate action and sustainable development.

## 3. Case Studies

Through many successful projects in developing economies, International Development Banks (IDBs) have demonstrated that they can facilitate sustainable development. Oftentimes, these interventions emphasize creativity, collaboration, and resource mobilization to drive change. But lessons learned from projects, whether they be failures or simply not what was expected, can be valuable in refining future undertakings. One of the more prominent successes is the World Bank’s Scaling Solar initiative in Sub-Saharan Africa. The program has helped bring solar power projects to countries like Zambia and Senegal, delivering affordable, clean energy to millions. The initiative has proved to lower project risks and drew private sector capital through a standardized framework for project development, competitive bidding processes and financial guarantees ([8]). The success of Scaling Solar demonstrates the importance of clear frameworks on risk mitigation for renewable energy projects. Another case study is the African Development Bank’s Desert to Power initiative. As part of this program, 250 million people in the Sahel region will receive renewable energy thanks to the region’s abundant solar resources. The initiative has made considerable advancements to build energy access and strengthen economic resilience in some of the world's most vulnerable communities through partnerships with governments, private investors, and international organizations [19]. It signals that regional collaboration and localized resource leverage for meaningful interventions are the key.

Nonetheless, not every IDB initiative is successful in accomplishing its goals. For example, initial portfolios of the Green Climate Fund in Small Island Developing States (SIDS) experienced issues of bureaucratic delays and poor alignment with local needs. As a result of these challenges, implementation timelines stretched on and the effect on intended communities was mitigated ([13]. Those sub-optimal outcomes speak to the need for more engagement from stakeholders, more timely-operational processes, and more localized capacity to better integrate projects into particularly regional priorities. One is a Asian Development Bank renewable energy project in South Asia. Despite its intention to promote access to clean energy, it faced challenges such as lack of regulatory backing and coordinating stakeholders was slow due to lack of interest. The challenges faced by the project showcase the importance of having a robust institutional framework and an environment with a clear understanding of the regulatory process to guarantee the success of IDB investments ([11]). Lessons learnt from these experiences highlight the need for making sure that projects are context-specific and also widely deliberate. Local stakeholders should be involved in the planning and implementation of projects to ensure they meet community needs and foster local ownership. And, streamlining approval processes and increasing technical capacity can decrease delays and improve project results. It is also important to strengthen monitoring and evaluation mechanisms for identifying the challenges and address them during a project implementation. Successful IDB investments leverage clear frameworks, partnerships and risk mitigation, whereas failures/poor projects highlight the importance of stakeholder engagement and strong institutional support. Such information is critical to maximize the effectiveness of future IDB actions to foster sustainable development.

## 4. How can the IDBs help increase the success rate of projects?

Ensuring that IDB projects are successful encompasses multiple factors from tackling operational challenges to improving stakeholder outcomes, to better aligning with local realities. A vital first step is strengthening project planning and design. Comprehensive project feasibility studies ensure the technical, economic and environmental viabilities of the project and project adaptation to the socio-economic and cultural context help to enhance acceptance and project effectiveness [8]. Equally important, you must work collaboratively with stakeholders. Early outreach to local communities, governments and private sector stakeholders encourages ownership and support. Hence, having a strong feedback loop during the project implementation stage would help in making informed decisions. Technical training and partnerships with regional development banks, governments and NGOs to build the capacity of local institutions also enhance their capacity to manage projects and deliver services [19]. Furthermore, it is also important to optimize financial structures. Blended finance models combine concessional funding with investments from the private sector to reduce financial risks and park private investment. Flexible financial products, such as phased disbursements or contingent financing, allow projects to better adapt to changing needs. Additionally, the use of digital solutions such as artificial intelligence and blockchain increase transparency and real-time tracking that aid in early identification of potential problems, and enhanced accountability [11].

And also, conducive environments require attention to tackling institutional and policy barriers. To this end, you can ease bureaucratic permitting and work with governments to create transparent and supportive regulatory frameworks, which will help projects get started and active more efficiently. As well as this, by integrating technology, such as using remote sensing to monitor projects, or Internet of Things for smart infrastructure, innovation can be developed whereby efficiency is maximised and the project is scalable [24]. Reinforcing M&E systems keeps projects aligned. With tools for real-time monitoring and solid frameworks for assessing impact, IDBs can measure performance and create long-term impact. By encouraging risk mitigation strategies including diversified project portfolios and contingency plans that better protect projects from external shocks such as climate events or economic downturns ([13]. “It’s essential for transparency and accountability as we’re building trust and improving continuously and cohesively.” Sustained public reporting on project performance enhances stakeholder confidence, and independent auditing supplies objective perspectives that reveal areas of improvement. Guidelines, 4th edition, 2023 These strategies will enable IDBs to increase project success rates, optimize resource allocation, and deliver impactful results to ensure relevance to global sustainability commitments [27]

## 5. Conclusion

This analysis of International Development Banks (IDBs) demonstrates their pivotal role in advancing green financing and sustainable development, especially in the context of the regional challenges facing African, Asian and Latin American countries. Targeting pollution at its source is a distinct advantage of international development banks (IDB), enabling action, like investments in renewable energy across Africa, urban sustainability in Asia and projects to preserve biodiversity in Latin America while demonstrating significant progress in emissions reduction, job creation and economic growth. The emergence of new financing strategies—the use of green bonds or blended finance—has also enabled states to attract private actors to the table and help generate significant resources to fund major initiatives. But there are still

challenges, including funding constraints, institutional barriers and policy uncertainties which can threaten the success and long-term sustainability of the project. In the practice, IDBs need to keep on reinforcing transparency, engage with stakeholders, develop partnerships with private and academia stakeholders and put new technologies to the service of project results. Local capacities found within public institutions and through public-private partnerships are critical to guarantee inclusive and effective implementation of green initiatives. From a policy perspective, governments must create stable and supportive regulatory environments and induce the private sector to invest in green projects. With clear guidelines, streamlined processes, and targeted fiscal measures, the efficiency of IDB-funded initiatives can be maximized. This in turn will deepen IDBs participation to achieve global sustainability objectives by closing existing gaps and using collaborative approaches. Their unique interventions, along with strong policy backing and the involvement of the private sector, can pave the way for scalable, inclusive green financing solutions that accelerate economic development, decarbonization, and social cohesion.

### *Recommendations*

In addressing the efficacy of green financing, government and private sectors must synergize their efforts. Governments need to provide predictable and robust policy frameworks to help create a conducive operating environment for capital to invest in sustainable projects. These policies must include fiscal incentives (e.g., tax breaks, subsidies, and grants) focused on boosting renewable energy systems, energy efficiency, and climate adaptation initiatives. National frameworks aligned with international strategies, such as the Paris Agreement and Sustainable Development Goals (SDGs), will create coherence and attract funding from other countries. Moreover, rules are required to encourage and expedite project approvals with minimal bureaucracy. Governments must create green finance taxonomies that define what sustainable investments are, so that both national and foreign investors have a roadmap for transparency. Projects can become even more viable and attractive to investors with the introduction of guaranteed purchase power agreements by regulators to buy renewable power. Public-private partnerships (PPPs) are another important instrument for harnessing the expertise, technology, and capital of the private sector. This means establishing dedicated PPP platforms or units to facilitate cooperation, ensure streamlined negotiations, and guarantee fair advantage to all stakeholders.

The private sector plays a key role, too, in developing green financing. Longer-term opportunities in renewable energy, sustainable agriculture and the circular economy require strategic investments. Diversification of investment portfolios and using blended finance mechanisms, in which the use of concessional funds from public sources lowers the risk of investment, make green investments much more financially attractive. Risk management practices help mitigate uncertainty whether they be in terms of regulatory, market or environmental concerns. The private sector should account for full risk exposure, whether direct or indirect, in an investment strategy and leverage insurance products and green bonds to protect against loss and ensure future sustainability. Better sustainability reporting is also an important step toward more transparency and accountability. Use standardized frameworks, like the Global Reporting Initiative (GRI) or the Task Force on Climate-Related Financial Disclosures (TCFD), to report emissions reductions, job creation and other social impacts. Not only does such reporting promote investor confidence, it is a real-world manifestation of Environmental, Social and Governance (ESG) alignment.

This is why we need collaboration between governments and the private sector in order to align goals, share knowledge and overcome barriers to green financing. For example, green finance summits—and other platforms for knowledge-sharing—can facilitate regular dialogue to incentivize innovation and jointly strengthen action. These measures collectively empower governments, corporates, and other private sector players to make full use of synergies to fast-track green financing, and spur a green economy, while also contributing towards sustainability goals on a global scale.

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