La Finance Verte au service du Développement Durable : Étude de cas du Maroc

Green Finance for Sustainable Development: Morocco as a Case Study

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Résumé : La réalisation des objectifs de développement durable est actuellement entravée par des contraintes écologiques, sociales et économiques. Cette perspective reconnaît l'importance de la finance verte dans la réalisation de la durabilité en orientant les investissements vers des projets ayant un impact environnemental et social positif. L'objectif de cet article scientifique est d'explorer l'interconnexion entre le développement durable et la finance verte. Il passe ensuite en revue les avancées du Maroc en matière de finance verte, ainsi que les réglementations et les initiatives déployées pour promouvoir des pratiques financières respectueuses de l'environnement. Cette étude utilise une approche exploratoire pour analyser et combler les lacunes de la littérature existante. Les résultats présentés attirent l'attention des parties prenantes sur la nécessité d'intégrer la finance verte dans les politiques de développement durable au Maroc, en identifiant les avantages et les défis rencontrés. Cette étude fournira des informations essentielles pour guider les futures stratégies d'investissement au Maroc, et ainsi accélérer la transition vers une économie durable, tout en relevant les défis complexes associés à la transparence et à la réglementation.

Mots-clés : Finance verte, Développement durable, Politiques publiques, Maroc.

Abstract: The achievement of sustainable development goals is currently hampered by ecological, social and economic constraints. This perspective recognizes the importance of green finance in achieving sustainability by directing investments towards projects with a positive environmental and social impact. The objective of this scientific article is to explore the interconnection between sustainable development and green finance. It then reviews Morocco's advances in green finance, as well as the regulations and initiatives deployed to promote environmentally-friendly financial practices. This research study uses an exploratory approach to analyze and fill gaps in the existing literature. The results presented draw stakeholders' attention to the need to integrate green finance into sustainable development policies in Morocco, by identifying the benefits and challenges encountered. This research study will provide essential information to guide future investment strategies in Morocco, and thus accelerate the transition to a sustainable economy, while addressing the complex challenges associated with transparency and regulation.

Keywords: Green finance, Sustainable development, Public policy, Morocco.

1. INTRODUCTION

Green finance, an epistemological paradigm, is rooted in the interactions between the biosphere, as an environmental entity, and finance and investment, as economic and monetary entities (Lindenberg, 2014). In the panorama of sustainable prosperity, its visible contribution plays a driving role in the global economic fabric (Yang et al., 2022). In this context, green finance, which focuses on integrating environmental, social and governance (ESG) principles into financial activities, emerges as an effective solution for sustainability, mainly in that it helps build a low-carbon economy (Zhang, 2023). Financial instruments intrinsic to green finance include green loans, green bonds, sustainable investment funds and insurance products aligned with environmental and social criteria (Koval et al., 2022). By promoting responsible financial practices, green finance strives to reconcile economic interests with the global order, while embracing the societal community as a whole (Dikau and Volz, 2021). Socially responsible investment (SRI) and impact investing are examples of this approach (Fahim and Mahadi, 2022). Green finance dates back to 1919 in the United States. Its notable rise over the past decade has followed the course of the adoption of investment practices conducive to sustainable development (Berrou et al., 2019). The aim is to direct investment resources towards more sustainable and less ecologically costly activities. The impregnation of a sense of ecological urgency, both globally and nationally, is the driving force behind the implementation of a clear green finance policy (Wang and Wang, 2021).

At international level, the emergence of this ecological consciousness stems from several factors (Ivanova et al., 2021). (Gilchrist et al., 2021; Akomea-Frimpong et al., 2022; Ning et al., 2023) have noted the emergence of a global convergence in favor of the advent of a paradigm focused on environmental and socio-economic sustainability. This trajectory is intrinsically reinforced by the Rio Declaration, also known as the Earth Summit, which anchored the foundations of a symbiosis between the environmental domain and the vectors of societal development (Handl, 2012). In its wake, Agenda 21 emerged as a forward-looking compass, prescribing the parameters of a sustainable approach at local level (Danneels, 2016). At the same time, the development of the United Nations Framework Convention on Climate Change gave inescapable impetus to the need for radical reductions in greenhouse gas emissions, paving the way for subsequent ratification of the Kyoto Protocol (United Nations, 2015; Mor et al., 2023). In addition, the Intergovernmental Panel on Climate Change (IPCC) raised international awareness of the crucial implications of climate change (Lux et al., 2023).

These concomitant actions converged with the inauguration of the agenda 2030, erecting a scholarly architecture through its seventeen Sustainable Development Goals (SDGs). This visionary charter has given rise to a multidimensional synthesis of objectives, elaborating a roadmap for global transformation, articulated around a balanced symbiosis between human aspirations and the inherent limits of the earth's biosphere (Shulla and Leal-Filho, 2023). Despite the universal scope of the fight against the false appearances of sustainability, it would be preferable to promote a standardized regional method of green finance, seeking integration, following the example of the African Union (Taghizadeh-Hesary et al., 2022) and the European Union (Brühl, 2021).

In Morocco, the awakening of an ecological conscience has been underway since 1992, when His Majesty King Mohammed VI set out his vision underpinning the erection of a new societal paradigm, built on the foundation of environmental preservation, at the Rio Summit (Benmahane, 2018; Ainou et al., 2023). Similarly, at the World Congress on Sustainable Development, held in Johannesburg from August 26 to September 4, 2002, His Majesty reiterated his call for sustainable development centered on human beings and environmental protection (Benslimane, 2022). Building on this commitment, the environmental field was also regenerated following the constitutional metamorphosis of 2011, equipping Morocco with democratic governance mechanisms. The Moroccan Constitution enshrines the principles of sustainable growth and the preservation of natural resources (art. 31), the safeguarding of national natural treasures (art. 35) and the recognition of the role of NGOs and the legitimacy of civil society in preserving the environment and combating global warming (art. 12). In addition, framework law 99-12 relating to the National Charter for the Environment and Sustainable Development will be implemented, in parallel with the preparation of the National Sustainable Development Strategy and its action program (Guaadaoui et al., 2021).

This scientific article has two main objectives. On the one hand, it is a contribution to the literature on the causal link between green finance and sustainable development. However, it differs from the literature by analyzing, in a reciprocal sense, the influence of green finance on sustainable development, while describing the obstacles created by the current context. Indeed, many studies focus on the unidirectional correlation between green finance and environmental benefits, leaving aside the field of study specifically devoted to the reciprocal dialectic. In this respect, many works have highlighted the positive impact of green finance on development sustainability (Wang and Zhi, 2016; Nawaz et al., 2021; Liu et al., 2022), but some of them argue that this ecological benefit is controversial (Sinha et al., 2021). On the

other hand, it aims to explore, through a detailed identification of operational discontinuities relating to the implementation of green finance, the specific progress made in the Moroccan context, in conjunction with regulatory measures and initiatives introduced to promote financial behavior that is intrinsically in line with environmental imperatives. In order to achieve these objectives, an exploratory approach was undertaken to analyze the dynamic synergy that exists between the sustainable development paradigm and the emerging field of green finance. Next, a detailed analysis was undertaken to examine the specific advances characterizing the green finance sector in the Moroccan context. In this sense, we focused primarily on an in-depth analysis of the regulatory frameworks in force and the concrete initiatives that have been deployed to promote and catalyze financial practices that adhere to environmental precepts.

2. LITERATURE REVIEW ON GREEN FINANCE

Interest in green finance has grown considerably in recent times, manifesting itself in a variety of financial initiatives. Notable examples include Bendigo Bank's green home loans in Australia, green mortgage programmes supported by Dutch banking institutions, Radobank's climate credit card in Europe, NRB Bank's solar financing, Bank of America's environmental home ownership programme, and VanCity's clean air car loan products in Canada. Academic interest in green finance remains limited, although a number of research papers have been published recently. These examine topics such as private sector participation in green finance (Taghizadeh-Hesary and Yoshino, 2019), the role of green finance in achieving the UN Sustainable Development Goals (Meena, 2013; Dörry and Schulz, 2018), green finance issues (Sachs et al., 2019), the involvement of central banks in green finance (Volz, 2017), the evolution of the sustainability-oriented financial sector (Weber and ElAlfy, 2019), the definition of green finance and its interconnections with other alternative financing instruments (Lindenberg, 2014; Berrou et al., 2019), such as digital finance and social finance (Ozili, 2021a). In this context, (Zhang et al., 2018) have shown the lack of a universally accepted definition of green finance, highlighting the need for further research, particularly in developing countries.

In Europe, research on green finance tends to be political reports, leaving a scientific gap. The European Commission report (2017) reveals that green finance modalities adopted in Europe include green bonds, green loans and green equity investments. In addition, (Breitenfellner et al., 2020) examine the green market in Austria. They forecast an estimated annual investment

of €17 billion in the Austrian green economy for the period 2021-2030, suggesting that public resources will prove insufficient and that private capital will have to be mobilized to finance green initiatives. (Falcone and Sica, 2019) survey Italian biomass producers, highlighting the institutional and financial barriers they face, despite the availability of green financing options. These challenges include uncertainty about government policies, minimal commitment to the biomass sector from financial service providers, the short-term focus of green financial instruments and lack of knowledge about available financing solutions. In the UK, the Climate Bond Initiative (CBI, 2019) reveals that some companies have benefited from the opportunities offered by green finance, while others have not even embraced it due to a lack of knowledge and awareness and limited access to transparent data. (CBI, 2019) recommends stimulating the evolution of the UK financial sector towards green finance and reassessing existing financial regulations with a view to identifying incentives to encourage this evolution. In the Netherlands, the New Pathways report (2020) recommends that at least 70% of funds be allocated to eligible green projects such as renewable energy, biodiversity conservation and organic farmland. Between 2000 and 2009, more than €7.3 billion was invested in 6066 projects by individual investors. In Russia, (Damianova et al., 2018) highlight the need to introduce appropriate incentives to encourage the participation of private investors in the development of green finance. However, the latter face various challenges, including the lack of a public coordinating agency to bring together stakeholders involved in green finance, the lack of green projects due to modest carbon emission reduction targets and the weak implementation of existing environmental regulations. (Damianova et al., 2018) suggest various recommendations, including a review of sustainability commitments, an assessment of green finance needs with an exploration of the potential impact of the transition to a low-carbon economy on macroeconomic and financial stability, the creation of a coordinating body representative of key stakeholders and the integration of a green agenda into the mandates of public policy-making institutions. In Ukraine, (Sokolova et al., 2019) reveal that the Ukrainian government lacks significant interest in the green economy, which prompted non-governmental organisations to initiate the creation of the Ukrainian green bank "Ukrgasbank", which has somewhat broadened the prospects for green finance in Ukraine. Finally, (Chuah, 2020) analyses the EU's green shipping financing mechanism and points out that, however green it may be, any financing mechanism is subject to contractual and political constraints. This calls into question the intrinsic effectiveness of green finance.

In Asia, green finance has undergone a remarkable evolution. (Tolliver et al., 2021) revealed a substantial increase in the amount of green finance in Asia in response to growing demand for economic development. Countries such as Japan, China and South Korea have seen a significant increase in the creation of green bonds. Notably, China has become the global leader since 2015, while large financial institutions and development banks in Japan and South Korea have maintained steady growth. However, (Escalante et al., 2020) highlighted a lack of diversity in green bond market participation in other mainland countries. In Hong Kong, the Hong Kong Green Finance Association (HKGFA, 2020) report documents the progress of green finance, highlighting the creation of an inter-agency steering group to accelerate the growth of green finance, aligned with the government's climate strategies. This is accompanied by a self-assessment framework to measure each institution's "green base" and a comprehensive database platform to provide information on sustainable investment options in Hong Kong's securities market. (Volz, 2018) acknowledges that green investments face various barriers in Asia, including difficult investment conditions, an unsupportive regulatory environment, complex authorization procedures, a lack of awareness of environmental risks, insufficient staff training and a deficit in terms of environmental, social and governance (ESG) disclosure requirements. (Volz, 2018) proposes various solutions to improve green finance in Asia, including raising awareness of environmental risks in the financial sector, building skills to manage these risks, improving transparency through ESG disclosure requirements, providing incentives for financing green projects, supporting the development of new market segments such as green bonds and climate risk insurance, and creating long-term local currency refinancing sources for banks to facilitate long-term lending. In India, (Jena and Dhruba, 2020) call for concerted, market-oriented action and stress the need to make the Indian financial sector aware of the benefits of green finance. They recommend the development of policies to encourage green finance and the imposition of penalties for carbon-intensive investments. In Singapore, (Chang, 2019) identifies challenges and proposes solutions to promote green finance. Challenges include the lack of access of small and medium-sized enterprises (SMEs) to the green bond issuance process due to their limited ability to undertake green bond-financeable projects. The domestic green bond market is small in Singapore and transparency is a major challenge. (Chang, 2019) proposes various solutions, including clarifying criteria for "green bonds", increasing disclosure of ESG performance of bond issuers, improving transparency of the quality of financial instruments related to green investments, creating demand for green investments through the creation of

"green pockets", improving and sharing knowledge and capabilities, and encouraging green financial markets and investments.

In North and South America, (CBI, 2017) reveals that the growth of the green bond market in Brazil and Mexico has helped boost interregional trade. The United Nations Environment Program (UNEP, 2019) highlights Argentina's issuance of three green bonds between 2017 and 2018, two from sub-national institutions and one of a financial nature. Furthermore, the Economic Commission for Latin America and the Caribbean (ECLAC, 2017) attests to the remarkable evolution of the green bond market in this region, revealing a mobilization of these bonds of 1.5 billion euros. (Ketterer et al., 2019) stress that it is imperative to harmonize local green standards with international guidelines to avoid confusion. They also recommend the need to provide more information to improve international investors' understanding of the overall performance of the bond market in Latin America. In addition, (Lovells, 2019) points out that the first Mexican green bond in 2015 was aimed at financing wind power projects in Mexico. In 2016, the government of Mexico City became the first local authority in Latin America to issue a local green bond, with the aim of financing climate-resilient infrastructure. The second local green bond was issued in 2017 for US$80 million, earmarked for the construction of a road corridor. Finally, in 2018, Mexico City's third local green bond, worth US$57 million, was issued to support 27 projects dedicated to energy efficiency, as well as the improvement of drinking water supply networks and sanitation infrastructure in certain Mexico City communities. Furthermore, Environment and Climate Change Canada (ECCC, 2018) points out that experts in sustainable finance have recommended that the Canadian government integrate consideration of climate risk into the monitoring, regulation and supervision of the Canadian financial system. They also encouraged the development of the green bond market in Canada, its expansion to other nations and the creation of a global standard for transition finance.

Research interest in green finance in Africa is limited. South Africa is the only African state to have developed an official national strategy for green finance. In December 2017, Nigeria became the first country in Africa and the fourth in the world to issue a sovereign green bond. In 2019, the Green Climate Fund became the first multilateral climate fund in the sub-Saharan African region, followed by the Least Developed Countries Fund and the Clean Technology Fund, managed by the World Bank (Watson and Schalatek, 2019). Morocco and Nigeria have devised national plans to foster sustainable green financing. In South Africa, the Johannesburg Stock Exchange has created a specific segment dedicated to green investments,

while Kenya, thanks to collaboration between the Capital Market Authority and the Nairobi Stock Exchange, has introduced guidelines for green bonds. Seychelles and Namibia announced the issue of blue and green bonds respectively, and Mauritius and Gabon established national roadmaps for the launch of green bonds. The Central African region has begun to develop its green capital market. (Zadek and Flynn, 2013) highlight the increasing flow of green finance from the south to South Africa. This trend can be explained by the presence of sophisticated financial markets, which offer long-term investment opportunities in green projects, thus encouraging investment by financial institutions. In 2012, Nedbank created South Africa's first green bond, issued by the Industrial Development Corporation of South Africa. This bond, open to all investors, generates a fixed interest rate of up to 7.5% over the term of the investment. The funds invested are allocated exclusively to renewable energy projects, contributing to the growth of South Africa's green economy. The United Nations Environment Program (UNEP, 2015) has recommended several policy measures likely to mobilize capital for a green economy in Africa. These include the development of guidelines on green and inclusive credit, the issuance of green bonds and the integration of green equities into African stock exchanges. (Dia, 2019) points out that African countries have begun to experiment with innovative modes of financing, such as participatory financing for clean energy in Uganda and the use of green bonds in Nigeria. However, (Marbuah, 2020) notes moderate growth of the green bond market in Africa, where a small number of states concentrate less than 1% of global issuance, while multilateral development institutions predominate. Recommending a policy direction, the London Stock Exchange Group (LSEG, 2020) suggests that African countries reduce their dependence on the fossil fuel industry, while urging African governments to adapt their public policies in favor of a greener, climate-resilient economy. Government involvement is crucial to the development of African green finance markets, by developing policies that make holding green assets more attractive. Overall, the determining factors for the growth of the green finance market in Africa include effective collaboration between policymakers and the private sector, international cooperation and capacity building, the vitality of the underlying securities markets, improved incentives in the financial markets and the establishment of clear guidelines for qualifying as "green", in line with international standards.

3. MATERIALS AND METHODS

This scientific article analyzes the key interconnections between green finance and sustainable development, focusing on the challenges and opportunities presented by Morocco's economic transition to sustainable green finance. Several publications were analyzed by searching the Web of Science (WOS) and Scopus databases using the keywords "Green finance", "Sustainable development", "Climate change", "Morocco". While maintaining the focus of this study on research concerning green finance as a catalyst for promoting sustainable development at national and international level, it was possible to limit the number of articles reviewed. In order to enrich our database and carry out an in-depth analysis, we have included unpublished documents and administrative reports explaining the state of green finance on an international and national scale.

4. RESULTS

4.1. Green finance: A catalyst for economic and environmental sustainability

The United Nations World Commission on Environment and Development defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The objective of sustainable development lies in the implementation of actions that reconcile social, environmental and economic dimensions (Ruggerio, 2021). However, multiple factors hinder this objective (Belaqziz et al., 2021). Indeed, the balance of the planetary ecosystem is currently in a worrying state of deterioration (Guemouria et al., 2023). This deterioration takes various forms, among which the acute problem of reserves of vital natural resources such as water, soil and natural ecosystems predominates (Baguare, 2008). In addition, climate change and the multiple manifestations of pollution, including air pollution and waste, are key facets of this global challenge (Driouech et al., 2020; Necibi et al., 2021). Faced with these crucial issues, it is imperative to act quickly and decisively (Rafik et al., 2022; Bouchaou et al., 2017). Despite major international and national efforts to stem the environmental crisis, the pace of progress remains largely unsatisfactory for achieving the SDGs (Brouziyne et al., 2022; Epule et al., 2021).

The emergence of green finance is a financial innovation that promotes the precepts of ecological progress (Sachs et al., 2019; Falcone, 2020). Discernment in the selection of financial instruments generates a judicious framework for companies, giving them a relevant

orientation in their development trajectory (Bhatnagar and Sharma, 2022). This approach goes hand in hand with the reduction of the environmental footprint, stimulating financial creativity, while realizing the correlation of financial flows with the objectives of the transition to an economy that includes ecological sustainability (Zhang et al., 2021). At a time when the scale of the market is escaping adequate control, green finance is emerging as a vector for encouraging energy savings, mitigating polluting emissions and promoting sustainable economic growth. The result is a synergistic evolution of green finance and sustainability imperatives (Ozili, 2022).

The green finance sphere covers financial products and services, divided into banking services, including green savings and green loans, investments, incorporating green bonds as well as green investment funds, and climate risk insurance (Azhgaliyeva et al., 2018; Tolliver et al., 2019). Two distinct paradigms delineate the green finance approach (Moret, 2018). The first follows a goal-oriented model, targeting support for economic activities that pay environmental dividends. This type of investment works to transition economic foundations towards sustainable practices, conferring a positive contribution to energy and environmental transition dynamics (Zhang and Lu, 2022). The second approach focuses on mitigating the risks associated with environmental issues, which can have a negative impact on the intrinsic value of financial investments. This perspective calls for an analysis of the adaptive behavior of companies in the face of environmental transition, in conjunction with the dissociation of those who persevere in activities that are deleterious to the environment, such as investments linked to the coal industry (Desalegn and Tangl, 2022). Consequently, it is imperative to reconsider the intrinsic links between the notion of green finance and the imperatives of sustainable development, with a view to adapting this concept towards a configuration more focused on the precepts of green finance.

4.2. The influence of green finance on sustainable development

Several studies have examined the role of green finance and its links to sustainable development. (Long et al., 2022) assert that green finance is an economic enterprise that works to support environmental improvement, consolidate resource use and reduce the impact of climate change. (Chiesa and Barua, 2019) point out that green finance proves advantageous for judiciously managing the risks inherent in the environment, while balancing environmental and economic concerns. Unlike conventional finance, green finance focuses on ecological protection, green industry development and the promotion of sustainable

development (Zhang et al., 2019). (Zhou and Cui, 2019) demonstrate that green finance has a positive impact, promoting environmental improvement and enhancing corporate social responsibility. (Wu et al., 2021) point out that improving financing for environmental planning, combined with the design of financial standards specifically tailored to climate-friendly projects, can make a significant contribution to achieving ESG criteria (Figure 1).

Figure. 1 ESG criteria (AFNOR NORMALISATION, 2019)



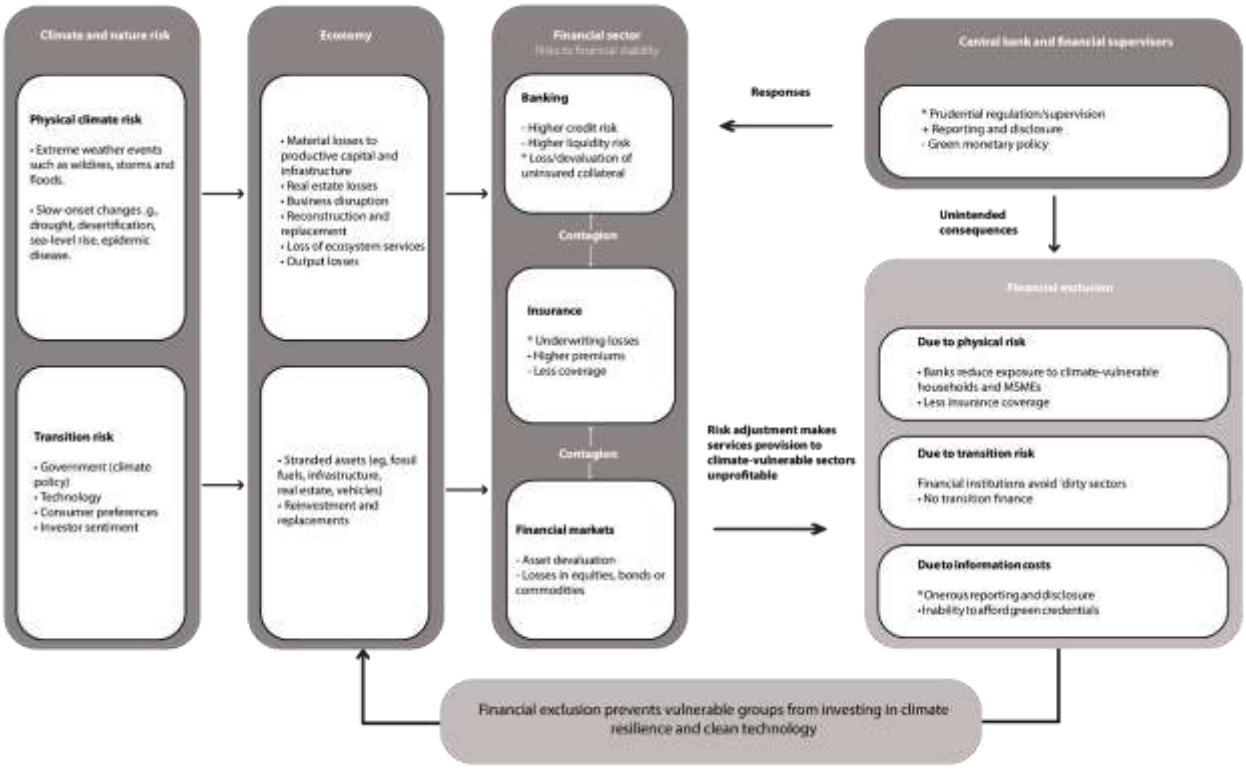
(Muchiri et al., 2022) highlight the contribution of green credit, which can provide financial support for national sustainable development, provided that environmental regulations are complied with. (Zhang et al., 2022) establish that the sustained expansion of green finance can lead to a reduction in coal consumption and significantly galvanize progress towards sustainable energy. (Pang et al., 2022) prove that natural gas has the power to radically reduce carbon emissions in both the short and long term. (Ren et al., 2022) assert that optimizing the planning and formulation of green finance policy contributes to the judicious allocation of resources and the mitigation of environmental externalities. Nevertheless, it should be noted that green finance does not have a positive impact on sustainable development.

(Bhattacharyya, 2022) highlights the heterogeneity inherent in the relationship between the different categories of actors involved in green finance. Furthermore, (Gan and Voda, 2023) reveal that the mechanism underlying green finance could gradually exert a negative influence on environmental and social commitment.

4.3. The influence of sustainable development on green finance

Other studies have also examined the influence of sustainable development on green finance. (Mohd and Kaushal, 2018) establish that, in the context of the various environmental regulation strategies put in place by governments, the ecological behavior of companies and the intensification of supervision reinforce the role devolved to green finance (Figure 2).

Figure. 2 The green financial system at the service of sustainable development



(Wang et al., 2022) reveal that environmental and social responsibility play a key role in promoting and sustaining the green bond market. (Cen and He, 2018) show that sustainable development integrates ESG criteria to catalyze the growth of green finance. (Cheung and Hong, 2020) highlight how ESG criteria, by boosting investor confidence, generate increased demand for green bonds. (Bei and Wang, 2023) show that investor choices reflect a consideration of ESG criteria, with the latter undeniably exerting a clear influence on green bond issuance. (Ibrahim et al., 2022) assert that the clean energy movement is driving substantial investment in green finance. (Lorente et al., 2023) demonstrate that environmental

regulations have a positive impact on the green finance sector by facilitating access to external financing, whether short- or long-term.

In this context, Morocco finds itself at the crossroads of these two paths, and has an invaluable opportunity at its disposal. This opportunity lies in the possibility of reshaping initiatives already underway with a view to expanding the sphere of responsible finance in the country. By seizing this opportunity, Morocco can optimize the measures it is putting in place to foster the development of eco-responsible finance, which will have a significant impact on the quest for sustainable development on a national and global scale.

4.4. The Moroccan financial sector's commitment to sustainability

The Moroccan financial sector's adherence to the principles of sustainable development, prioritized at COP 22, takes on added importance in the current context of economic recovery. This implies the implementation of excellent practices, with a particular emphasis on transparency, through the use of ESG criteria. ESG criteria are not new to the Moroccan financial market, as they are already mentioned in the Autorité Marocaine du Marché des Capitaux (AMMC) circular no. 03/19, in articles 2.43 et seq. This circular forms the legislative basis for green finance under Moroccan law, an area overseen by the Moroccan Financial Regulatory Authority. Of particular note is article 2.58 of this circular, which stipulates that "(...) the annual financial report must contain an Environmental, Social and Governance report, known as the ESG report". The objective of this report is to enlighten Moroccan public opinion, by highlighting the impact of the issuer's activities on the environment, its relations with employees and external stakeholders, and its corporate governance methods. This report must include both general and specific information. General information includes a description of the issuer's profile, its strategy in terms of social and environmental responsibility, and a methodological note detailing the process of identifying, collecting, processing and compiling extra-financial data, including any shortcomings inherent in this methodology. Specific information is designed to provide Moroccan citizens with a comprehensive understanding of environmental, social and governance issues. With regard to the environmental dimension, the issuer is required to list pollution-generating activities and provide details of its waste reduction policy. A similar requirement applies to the disclosure of ongoing litigation relating to environmental issues. In this context, it should be noted that in February 2021, a substantial cooperation agreement was initialed between the AMMC and the International Finance Corporation (IFC) with a view to raising the ESG

reporting standards of Moroccan companies. In June 2022, training sessions were organized for AMMC teams, focusing in particular on the use of the new ESG reporting assessment and monitoring tool, set up in collaboration with the IFC. Effective compliance with ESG criteria cannot be achieved without mastery and judicious use of the instruments inherent in sustainable finance. To this end, several financial instruments have been used to promote green finance within the Moroccan financial market. In 2016, the AMMC published the first African guide to green bonds. A little later, the regulator instituted a "Sustainability bonds" guide with the aim of developing the growth of the market for sustainable financial instruments. In 2018, the AMMC again published a guide on green and sustainability bonds in addition to another instrument which is the social bond. More recently, the said authority instituted a guide on gender bonds, which are part of social bonds. It should be noted that all these pedagogical guides, which form part of a genuine financial education as instituted by the Moroccan legislator in Article 3 of Law 43-12 on the AMMC, were drawn up with the support of the International Finance Corporation (IFC) and Financial Sector Deepening (FSD) Africa for gender bonds, with the aim of accompanying and encouraging the deployment of the market for financial instruments designed to finance sustainable development.

Despite the progress already made, it remains imperative to intensify initiatives aimed at consolidating the foundations of green finance and sustainable development, in order to provide a more comprehensive response to the pressing challenges of environmental and socio-economic sustainability.

5. DISCUSSION

Several studies have highlighted the complexity of analyzing green finance, focusing on issues such as the lack of consistency in assessing the responsible nature of finance and sustainable development (Sachs et al., 2019; Falcone, 2020; Gilchrist et al., 2021; Akomea-Frimpong et al., 2022; Ning et al., 2023). However, this scientific article underlines that green finance and sustainable development are closely linked in a dynamic of mutual influence. Green finance positions itself as a provider of financial mechanisms to support sustainability initiatives, while sustainable development creates a context conducive to the emergence of financial practices intrinsically oriented towards environmental and societal sustainability. Furthermore, it has been established that the operational challenges inherent in integrating green finance are juxtaposed with the significant advances made in Morocco. This underscores the urgent need to consolidate more robust regulatory frameworks, and to put in

place specific initiatives aimed at encouraging and guiding financial practices in harmony with today's environmental imperatives.

At first glance, the concepts of green finance and sustainable development reveal contradictory aspirations. On the one hand, an imperative demand for short-term returns, impacted by the perpetual acceleration in the pace of economic exchange; on the other, a quest for sustainability, rooted in concern for future generations. In reality, finance cannot escape the imperative of sustainable development, just as sustainable development cannot ignore the financial dimension. Green finance and sustainable development share a common goal: the promotion of environmental, social and economic sustainability. Their objectives converge to ensure the preservation of natural resources, reduce carbon emissions, promote social inclusion and generate sustainable economic growth. Green finance aims to mobilize financial resources to support projects and initiatives designed to have a positive impact on the environment and society. At the same time, sustainable development also requires monetary support to implement sustainability-oriented policies and programs. Sustainable green finance can help finance sustainable development initiatives. This financial perspective revolves around the development and adoption of specific financial instruments, such as green bonds and environmental impact credits (Bhutta et al., 2022). These instruments enable capital to be channeled into projects that meet the imperatives of sustainable development, such as renewable energies, energy efficiency and sustainable agriculture, among others (Zhao et al., 2022). Green finance and sustainable development focus on the establishment of effective standards, regulations and governance strategies, conducive to building a sustainable society (Fatica et al., 2021). In this context, sustainable green finance promotes transparency, environmental disclosure and compliance with sustainability criteria. Similarly, building a sustainable future requires strong regulatory frameworks and governance mechanisms to effectively support sustainability policies (Sartzetakis, 2021). In addition, companies are encouraged to adopt sustainable practices, invest in environmentally-friendly technologies and integrate social considerations into the way they operate (Flammer, 2021). Green finance can influence both investment decisions and internal corporate policies, while sustainable development becomes a catalyst for innovation and competitiveness. Beyond these contingencies, a heightened awareness coupled with substantial training is required to properly grasp both concepts. Sustainable green finance requires an informed understanding of environmental issues, as well as of the opportunities associated with sustainable investment. At the same time, the rise of sustainable development implies a heightened

awareness of the social, environmental and economic issues that affect citizens, as well as the contributions that everyone can make to the notion of sustainability (Banga, 2019; Guemouria et al., 2023). Green finance and sustainable development are linked by an intrinsic symbiosis that is mutually reinforcing. Green finance provides the financial infrastructure needed for sustainable development to flourish, while sustainable development creates the ecosystem needed for sustainable financial practices to flourish. Together, they contribute to building a more sustainable future, based on environmental, social and economic considerations.

Within this framework, solutions are being developed to refine the field of green finance and thus exert an influence on sustainable development in Morocco. The main drivers are the government, financial institutions, businesses and consumers. As the pre-eminent figure, the Moroccan government is the main catalyst for the progression of green finance. By raising public awareness and providing incentives and subsidies for green finance, it is imperative that it further encourages Moroccan companies to adopt environmentally-friendly production practices. Directions taken in the areas of economic growth, employment and resource allocation are subject to the interdependent effects induced by green finance, generating significant transformations in the economic sphere. Moreover, it is crucial to recognize that the policies developed by the Moroccan government have the potential to shape the investment choices undertaken by Moroccan companies. The new era of renewable energies, with its competitive advantage in terms of environmental sustainability and adaptation to the Moroccan climate, is vulnerable to the fluctuations inherent in fiscal measures, which can exert a marked influence on the levels of investment devoted to innovation in this sector. In this sense, passive incentives in the form of taxes and levies, imposed on Moroccan manufacturing companies, will play a key role in regulating changes within production, taking into account social sustainability and environmental promotion. Furthermore, Moroccan financial institutions, which operate as intermediary entities facilitating companies interested in preserving the environment, will have to further promote sustainable development by providing ecologically-oriented financial services. By providing such services to Moroccan companies, these institutions will reap more tangible benefits, such as commissions generated by innovative products, intermediation fees and credit-related income, as well as more indirect gains, such as increased market share, improved competitiveness and enhanced social status. As a result, they will be encouraged to deploy more environmentally-friendly offerings. It should be noted, however, that the provision of green financial services increases credit risk ratios and costs, entailing expenditure on staff training, product innovation and

promotional activities, factors which temper the eagerness of financial institutions to embark on the innovation of such offerings. In addition, green finance has the capacity to influence the investment trajectories of Moroccan companies, facilitating the realization of future environmentally beneficial projects, such as improving carbon footprints and promoting green energy. The consequence is a harmonious fusion between economic development and ecosystem stability. Before embarking on green production, it is imperative that Moroccan companies think more deeply about government regulations, mitigated revenue parameters and the expenses inherent in implementing projects focused on environmental sustainability. When Moroccan companies opt for traditional production methods, they transfer part of their profits to consumers as pollution compensation. If this pollution compensation balances the revenues generated by conventional methods, Moroccan companies could potentially favor the green production route, considering it the wisest alternative. However, it is crucial to note that the transition to green production is accompanied by an increase in costs, encompassing technological innovation, equipment upgrades and financial investment. Finally, green finance will have to depend more on the evolution of consumption paradigms within the Moroccan population. As these paradigms evolve and Moroccan consumers acquire a better understanding of sustainable consumption, they will be inclined to adopt more environmentally-friendly consumption patterns.

This scientific article reveals a number of challenges. Firstly, there is the obstacle of endogeneity. Indeed, the commitments made, such as reducing carbon emissions, investing in renewable energies and recycling production waste, will generate significant expenditure for Moroccan companies. These expenses could prove so prohibitive that they would only be accessible to the most efficient companies, capable of initiating a genuine transformation that respects the ecosphere. The second challenge lies in defining the term "green". Indeed, nations are faced with heterogeneous environmental disorders. For example, the environmental problem that preoccupies China is air pollution, a problem that preoccupies Africa less. Consequently, the degree of economic development and cultural inclinations are adjuvant parameters in the disparity of "green" connotations between nations. In addition to the above-mentioned challenges, this scientific article also highlights various gaps in the existing literature. Indeed, while some studies (Mohd and Kaushal, 2018; Cheung and Hong, 2020; Ibrahim et al., 2022; Lorente et al., 2023; Gan and Voda, 2023) examine the economic impact of green finance and sustainable progress, a gap remains in the study of the actual content of environmental information. This line of investigation is of crucial importance,

given the absence of a single, accepted standard requiring Moroccan and international companies to disclose their environmental performance. Environmental data research, supported by advanced analytics and artificial intelligence processes, will enable regulators to better understand the environmental information that is important to shareholders and other non-financial stakeholders. In conclusion, decision-makers should focus more on a global assessment of the different valuation systems, in order to iron out valuation discrepancies and focus concerns on issues with financial implications for investors. This is a theme that will guide our future research.

6. CONCLUSIONS

Thanks to the interactions between green finance and sustainable development, policy incentives for investment in sustainable development will not only reduce perceived risks, but also increase expected returns. As a result, capital flows will be more easily directed towards markets with strong and clear policies, which could create more opportunities and incentives for investors. Green finance offers investors the opportunity to identify sustainable performance and use this knowledge to establish a dialogue with the entities in which they place their funds. Furthermore, it would be necessary for the World Environment and Climate Agency to consolidate the regulation of disclosure requirements and improve the effectiveness of green finance initiatives. At the same time, accurate market information and clear indicators are needed to boost investor confidence in the financial market. In addition, a business-friendly environment and a solid economic base, including an optimal tax system, a well-deployed trade policy and a stabilized exchange rate, are essential to attract quality domestic and foreign investors. With this in mind, the Moroccan executive has introduced policies related to industrial strategy, environmental protection and other high-level guidelines, aimed at guiding green finance and promoting sustainable development more effectively. In addition, innovations in green financial products, classification systems, disclosure guidelines and government programs at national level have played a major role in promoting sustainable development. However, this study has some limitations that should be acknowledged. Firstly, we have limited our analysis exclusively to the traditional modalities of green finance in the Moroccan context, thus neglecting to explore the prospects inherent in the adoption of alternative instruments that could potentially demonstrate greater effectiveness. Furthermore, this study, which focuses on a holistic approach, neglects to formulate conclusions specifically related to individual companies in Morocco and their

managers. These conclusions could have included aspects such as the isomorphic pressure observed within the different Moroccan industries, as well as recommendations to guide the decisions of Moroccan business leaders. On the other hand, several external limitations could hamper our study. These include the temporal disparities inherent in short- and long-term investments, the short-term perspective adopted by savers and investors, and the limited political support for initiatives to commercialize new technologies. Finally, the reluctance of Moroccan industries to become more involved in the sustainable development sector, driven by concerns about the inability of green finance instruments to stimulate investment, has been amplified by the high transaction costs associated with certifying and monitoring environmental initiatives. In this context, it is imperative to deepen research in the field of green finance. To this end, guidelines for future prospects should be formulated. Future research should include an empirical study to elucidate the intrinsic link between environmental investments and green innovation. This should be accompanied by a quantification of the inherent trade-off between financial risk and expected return, particularly in Morocco, and in a more global context. In addition, greater attention needs to be paid to delineating the boundaries governing private and public sector involvement in green finance. It is crucial to identify the potential synergies resulting from the conjunction of green finance, digital finance and social finance, with the aim of establishing an optimal balance between the implementation of environmental regulations and the promotion of ecological innovation. This will enhance the intrinsic effectiveness of existing environmental regulations. Finally, further research should be considered, focusing on assessing the applicability of the main financial analysis tools. This evaluation should make it possible to determine the profitability and sustainability of projects aimed at preserving the environment. In general, there is still work to be done in the areas of optimal governance, updating policies and adapting them to recurring changes, while at the same time reinforcing the importance attached to scientific research. The need for further research in this area is paramount. The constant aspiration of developed economies to promote green finance-based solutions to the global crisis of environmental sustainability means that we need to understand in depth the strengths and vulnerabilities of this system - what incentives are really capable of driving companies to implement environmentally-friendly investments? - rather than indulging in a rhetorical approach to environmental issues without translating rhetoric into action.

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