

# A Panacea or A Pandora's Box? - Green Bonds financing to Mitigate Climate Change<sup>1</sup>

*Michael Kabai\**

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**Abstract.** Green bonds are amongst the financing options available to private and public entities to support environmentally friendly investments. The main attraction of green bonds is that they finance green projects and offer investors an income stream, assuming that the issuers do not default. However, green bonds are not without their problems. One of the problems with green bonds is the absence of an internationally accepted standard of what constitute green bonds. The absence of an internationally accepted definition has led to issuers and investors deciding what constitutes green bonds. The paper looks at the relationship between green bonds and climate mitigation, particularly whether green bonds can solve climate change mitigation and related issues. The paper contends that while green bonds are not a panacea for climate change, they can play an important role in reducing carbon emissions and thereby mitigate climate change.

**Keywords:** green bond, finance, climate change, sustainability, environment, paris climate agreement.

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\* Michael Kabai, LLB, LLM, MBA, Senior Legal Manager, Financial Sector Conduct Authority, Riverwalk Office Park, Block B, 41 Matroosberg Road, Ashlea Gardens, Extension 6, Pretoria, 0081, Republic of South Africa, email: [khetlha@yahoo.co.uk](mailto:khetlha@yahoo.co.uk), ORCID: <https://orcid.org/0000-0002-4089-1974>.

## 1. INTRODUCTION

In 2007, the European Investment Bank (EIB) issued the world's first green bond and ever since then, green bonds have grown in leaps and bounds across the globe. In a press release issued by EIB, the EIB Vice President was quoted saying, "*green bonds play an increasingly important part in accelerating support for climate-related investment. Over the last decade, the fight against climate change has been strengthened through the contribution of debt capital markets to fund climate solutions....*" (European Investment Bank, 2017).

In 2015, the groundbreaking international measures were concluded with the adoption of the Transforming our World: the 2030 Agenda for Sustainable Development and the Paris Climate Agreement (Ślaus, 2020). Climate change is undeniably the major challenge of the 21st century, and climate scientists do agree that limiting CO2 emissions is vital in reducing temperature rises (Cohen, 2009). According to the Organisation for Economic Cooperation and Development, there is an urgent need to significantly shift and scale up green finance and investment (Organisation for Economic Co-operation Development, 2021). Consequently, governments, businesses, communities and individuals are required to play their parts in climate change mitigation. The introduction of green bonds is making it easier for everyone to play their part.

Green bonds have grown so much in the capital markets and have attracted the attention of investors. Investors have increasingly become aware of the risks associated with climate change, and stakeholders are forcing the investment community to apply environmental, social, and governance policies (ESG). Green bonds address some of these risks associated with climate change. The attraction of green bonds has led to a situation where capital is now moving away from fossil fuel activities into sustainable projects. In addition, the mainstreaming of ESG issues into investment decisions has driven away capital from fossil fuel companies or entities connected with those companies.

## 2. MITIGATING CLIMATE CHANGE

Mitigating climate change entails the reduction of greenhouse gas emissions through

different strategies (Hasheni, 2016). But unfortunately, greenhouse gas emissions are higher than ever, leading to global warming and its drawbacks (Moellendorf, 2014).

The green bonds are envisaged to mitigate climate change by financing green projects. To understand what a 'green bond' is, we should first clarify what a 'bond' is? A bond can be thought of as a promise between its issuer and the investor (Graham, 2016). And when the investor buys a bond in a way, they lend the issuer money for an agreed period. The issuer uses the money for its activities and, in return, commit to repaying the investor with interest. However, green bonds are unique in that they are specifically tailored for green projects. The funds coming from green bonds can only be allocated to low carbon projects such as a renewable source of energy efficiency. That is what makes the green bond special (IRENA, 2020). For example, companies can issue green bonds to fund the latest solar power plants, investment in clean technology, or climate change adaptation projects.

As investors worldwide try to invest their money responsibly, companies are seeing benefits as green bonds offer a way to fund ventures that are otherwise difficult to fund. To ensure success, the impact must be carefully measured, tracking every dollar and cent that has been dispersed and the expected outcome (White, 2002). More importantly, the information must be shared comprehensively and transparently (International Monetary Fund, 2019).

The growth of bond markets provides opportunities to finance the implementation of the Sustainable Development Goals and green economy projects (Curley, 2014). Moreover, green bonds can help promote ESG in the financial and other sectors. They can stimulate financial, regulatory, and economic policy reforms to boost green growth and help countries make the transition towards becoming low carbon economies (United Nations Environmental Programme, 2015). The direct impact of green bonds on the environment largely depends on the quality and performance of the underlying projects financed by the proceeds (Organisation for Economic Co-operation Development, 2017).

The World Bank provides information on the portfolio's predicted impact. For example, two energy-saving projects in China are expected to save 12.6 million tons of CO<sub>2</sub> equivalent year thanks to US\$400 million in green bond financing (World Bank, 2015). In addition, multilateral development banks have devised a standardized framework for reporting on the impact of renewable energy and energy efficiency projects financed with revenues from green bonds, allowing for more rigorous monitoring of overtime (International Capital Markets Association, 2020).

The quality of the projects can be reinforced through the more profound integration of environmental and climate components into the project design. As time passes, markets can give motivations for doing so, but straightforwardness, established standards, assessment, reporting and verification and oversight are required (Unger, 2021).

Ultimately, the work of regulators, investors and intermediaries is to increase transparency, and reporting needs to continue to launch complementary financial products such as green indexes, investment trusts and ratings (International Monetary Fund, 2019). In addition, mandatory disclosure and third-party verification of information presented to investors and the general public will help green bonds to become more recognizable products (Bachelet, 2019).

In an attempt to construct verification systems, countries are starting to set requirements and create coordination bodies. For example, China is establishing a Green Bonds Standards Committee, a regulatory supervision body that oversees the practices of bond verifiers (Baeumler, 2012). Additionally, the European Union (EU) is exploring the possibility of developing EU green bond standards and creating an official EU Green Bonds Label. These steps certainly help formalize the green bond market; however, variability in standards across regions carries its risks (Lehmann, 2021). As the market matures, harmonizing regional systems into a clear set of international standards would be advantageous.

Green bonds, by definition, should have a positive impact on the environment, but

additional steps can be taken to improve their social impact.

Stakeholders ought to not as it dynamically improved Green Bond Principles to adequately address environmental impacts and concerns and adopt reporting of social outcomes in line with international standards.

Numerous governments still lack in the issuance of green bonds (Ketterer, 2019). However, green bond financing can draw in new types of investors. To address climate change, governments and companies around the globe will need to make a concerted effort, and green bonds will increasingly become part of the solution (Migliorelli, 2019).

Green bonds are an add-on to resource mobilization efforts to fund green projects and should in no way be regarded as a panacea for the financing of green projects. Owing to their small market size and low market depth, green bonds can only be used as an add-on to a portfolio. Everyone wants green bonds to be perfect, but they are so far from perfect.

### 3. CHALLENGES FACING GREEN BONDS

Green bonds can bring hope, but they can also turn out to be Pandora's box.

#### 3.1. General issues relating to Green Bond

In its write-up, the United Nations Development Programme (UNDP) identifies certain challenges associated with green bonds (United Nations Developmental Programme, 2016), and they include:

- 3.1.1. ***Disagreements when it comes to what constitutes a 'green bond' as there is no universal definition of the concept, which creates uncertainty.*** Despite their impressive growth, the absence of a universally accepted definition of a green bond and commonly recognised standards and regulations are shortcomings (Clifford, 2020).
- 3.1.2. ***Many non-governmental organisations have also raised the issue of transparency and proper reporting. In many jurisdictions, the degree of transparency and level of reporting is not uniform and is basically voluntary.*** The International

Capital Market Association publishes guidelines every year called Green Bond Principles (International Capital Markets Association, 2021). One of the principles deals with the transparency and disclosure and promotion of integrity to assist with issues relating to reporting and transparency. However, the problem with these principles is that they are voluntary, and project managers are not compelled to adhere to them to issue a green bond (Economic Commission for Latin America and the Caribbean, 2017).

- 3.1.3. ***The fact that across the world, the retail investment is still limited in that green bonds are not sufficiently integrated into mainstream funds, indices and other products.*** Green bond market has grown significantly in recent years, but still not sufficiently integrated into the mainstream funds, indices and other products. However, the market data shows the demand for green bonds is increasing for a broader range of investors (Bos, 2020).
- 3.1.4. ***The cost of issuing green bonds are prohibitive hopefully, in the future, the costs will come down (United Nations Development Programme, 2016).*** Despite their high issuance costs, many investors still prefer green bonds instead of plain vanilla bonds due to the benefits attributed to green bonds issuances (Sangiorgi, 2021).

### ***3.2. Monitoring and evaluation***

As indicated above, the issuance and ongoing costs associated with green bonds could be very expensive compared with plain vanilla bonds. These costs have to factor in additional costs relating to tracking, monitoring and reporting processes, etc. Monitoring and evaluation are important to investors in that if the issuer fails to adhere to the agreed conditions of the bonds, the investor can have recourse in the form of a penalty (KPMG, 2015).

The fact that there is no universal definition of what constitutes a green bond is an issue on its own. Additionally, there are currently no stringent requirements to monitor and evaluate whether the funds geared for

green projects are used appropriately. All these issues combined may leave issuers open to condemnation and allegations of greenwashing (Thompson, 2021). For example, it has been alleged that the funds from the green bonds were used to finance an airport and the Spanish energy giant, Repsol, in order to renovate its refineries which means the company will keep operating longer (Lee, 2022). Therefore, monitoring and evaluation are critical in building investors' confidence in green bonds

### ***3.3. Risks***

Where there are rewards, there are also risks, and green bonds are no exception. Green bonds are fixed-income debt instruments similar to any other bond (Schmittmann, 2021). Default by the issuer is the primary risk of debt. Default risks are particular to an issuer or bond and the ability to generate enough cash to repay capital and interest over a while. In regulated markets, a default can have long-term effects on a company's credit rating (Franklin, 2020).

When structuring a bond, both the issuer and the investor should factor in additional risks. In the same way that variable interest rates or indices are associated with bonds (e.g. Libor). There are options such as secondary instruments (e.g. currency forwards and futures) that are available to assist in mitigating these risks, but they come at a price.

Assessing the environmental benefits of green bond issuers has been a key issue since the market started to grow. However, the reputational risk for green bond issuers, i.e. when bonds labelled as "green" but not actually "green" are discovered, remains substantial and can jeopardize investor confidence (Sarraf, 2020).

If the green bond is issued abroad, additional risks, including changes in foreign market regulations on capital flows, and exchange rates, should be accounted for. Plus, in the long term, offshore markets may draw liquidity away from the domestic market. However, these additional risks are often lower than those incurred in issuing bonds in underdeveloped markets.

## **3. CONCLUSION**

Green bonds are neither a panacea nor a Pandora's box but an important vehicle to support efforts to reduce global warming.

Green bonds can be a viable tool to reduce emissions and adapt infrastructure to the effects of climate change. Governments should encourage green bonds' issuance, sales, and growth and provide incentives such as tax cuts to attract investors. For example, according to the KPMG Green Tax Index, South Africa was ranked the thirteen out of twenty-one countries to use tax as an incentive to drive the green growth agenda (ahead of Australia, Singapore, and Finland) (KPMG, 2013).

Institutional investors want to take a step further, not only concentrate on the volume of exposures to environmental, social or corporate controversies, not only to select the best profiles in terms of ESG strategies but really

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want to know access, and to calculate what is the actual impact is in terms of the environment of the investment which are done by the corporates. This is evident in both equity markets and fixed income markets.

There is an opportunity for financial institutions to develop new financial instruments that allow opportunities to draw climate-friendly technology into the market. The financial community needs to engage with governments to shape policy to make greener investment possible. So really, for the industry to show policymakers how they can pave the way for the kind of investments that need to take the climate-friendly direction that we need to take.

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