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Feasibility Study for Development of a Green Bonds Market in Ghana

APRIL 2021

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1. Introduction & Executive Summary

Given Ghana's significant endowment of renewable energy resources and broad need for infrastructure investment, an active and developed green bond market would play a significant role in supporting sustainable development, helping the country achieve its Nationally Determined Contributions (NDCs) and meeting the "Ghana beyond Aid" agenda. The objective of this assignment was to conduct a comprehensive study of the potential to develop a green bond market in Ghana, and thus to understand the hurdles preventing issuers from coming to market; identify an existing pipeline of green projects and barriers to further pipeline development; and assess local investor appetite for the green bonds. The findings of the study will be used to identify appropriate and actionable initiatives to develop and deepen the green bond market.

In this report, we review the current state of the Debt Capital Market (DCM) in Ghana and the active issuances, both sovereign and corporate. We then assess the state of development of Green Finance in Ghana, the viability of using the DCM to support sustainable development and highlight how green bonds could be used to achieve the country's NDCs. We also benchmarked Ghana against other Sub-Saharan African (SSA) countries with active green bond markets to identify key market development actions. In our analysis of the potential for green bonds in Ghana, we provide key stakeholder takeaways from interviews held as part of the stakeholder engagement, which formed the basis of our data for the report in addition to information gathered through desk research. Finally, we provide an analysis of key takeaways - including key hurdles to be addressed, recommend actionable initiatives that could be implemented to drive the green bond market in Ghana - and a short and medium-term potential pipeline derived from conversations with local stakeholders.

FSD Africa and LHGP carried out a workshop with market stakeholders on the development of the green bonds market in Ghana to discuss findings of this feasibility study.

Green financing in Ghana is still nascent. Several initiatives have been introduced in the past to support Ghana's Green Economy (GE) including the Environmental Fiscal Reform Policy (EFRP), National Climate Change Policy (NCCP), National Climate Change Adaptation Strategy (NCCAS) and the National Climate Change Master Plan (NCCMP) . As the deadline for the achievement of the Sustainable Development Goals (SDGs) fast approaches, the Government of Ghana (GoG) is keen to explore how best to finance the SDGs including the option of using green bonds . Green Bonds are debt securities issued by financial, non-financial, or public entities where the proceeds are used to finance projects with a positive environmental impact – both adaptation and mitigation activities are eligible.

[1] Ghana Green Economy Assessment Report
[2] UN: Exploring the potential of Green Bonds for SDGs financing in Ghana.

Key constraints to issuing of green bonds in Ghana including among others:

1. Relatively small and shallow DCM: with few corporate issuers, there is limited demand for non-Sovereign issuance let alone green bonds amongst the investor base, though this is starting to shift. The secondary market for bonds is limited making mark-to-market valuation a challenge.

2. Lack of clarity in the market: whilst there is significant awareness of green bonds, few market participants have a deeper understanding of green bonds both across issuers and investors, including green eligibility criteria and the benefits of issuing a green bond.

3. Lack of existing guidelines or regulations: there are no guidelines for green bond issuance in Ghana, local issuance guidelines have been shown to support labelled debt issuance by providing additional information to the local market.

4. Lack of a developed pipeline of eligible projects: few market participants have been able to identify a pipeline of eligible projects, this is primarily due to the novelty of the product and the relatively low technical capacity in the market today, however there is significant latent potential across several issuers.

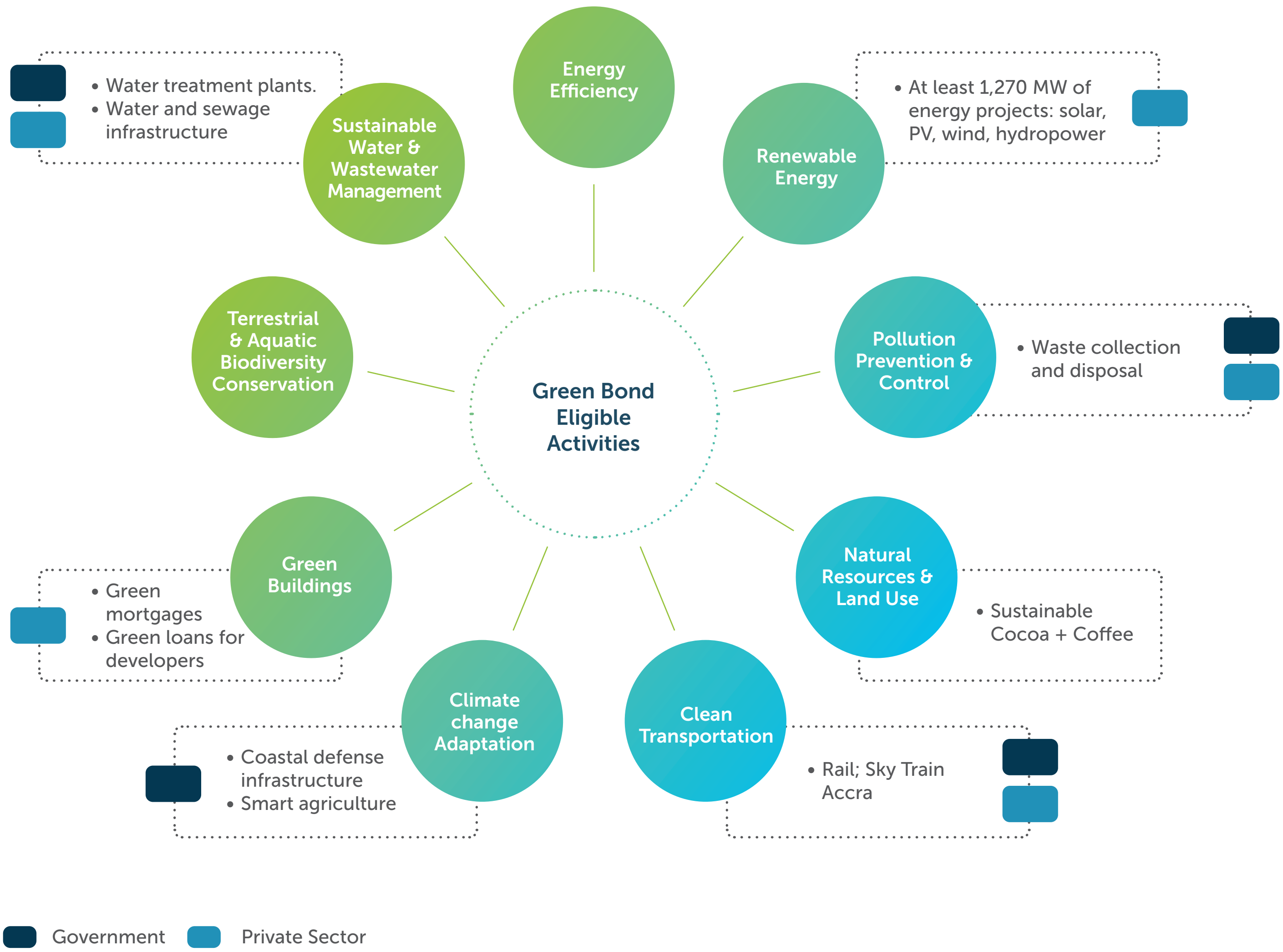
5. No requirement for credit risk ratings: Ratings are not a requirement to issue a bond in Ghana. Many institutional investors in Ghana do not have adequate capacity to assess, identify and quantify credit and market risks associated with investment in debt instruments. This has previously hampered market development.

Feedback from engagements with stakeholders - Financial institutions, government entities, guarantee providers, investors, potential issuers, and intermediaries - confirms debt issuance hurdles in the country, including lack of understanding of green eligible assets, uncertainty on pricing, perceived lack of pipeline, and a lack of supporting policies or guidelines. As is the case in other emerging markets, these challenges further drive the demand for offshore investments, with local investors opting for the stability of foreign currency issuances over domestic issuances.

Stakeholder engagement was also used to gauge the potential pipeline available for green bond issuance in Ghana. Whilst most stakeholders had heard about green bonds, few had sufficient understanding or knowledge of the product to carry out a real assessment of pipeline within their business activities or those of their clients. As such the pipeline in Ghana remains relatively theoretical today.

Despite the lack of market development, there is significant opportunity for pipeline in Ghana: several key areas for investment align with the green bond principles, as well as Ghana's National Priorities. These areas include water and wastewater treatment infrastructure and services, green buildings, sustainable agriculture, renewable energy, real estate, transportation, clean water, and energy efficiency among others.

Figure 1: Ghana-specific projects and activities aligned with Green Bond eligibility



Furthermore, there is a strong alignment between Ghana's priorities under the NDCs, national Development Plan and green-bond market development:

Table 1: Ghana NDC Sectors and Green Bond Eligible Activities

Mitigation	Adaptation
Energy: RE, rural lightning, clean cooking, energy efficiency in energy generation	**Agriculture and food security:** Resilient agriculture
Transport: Mass transportation	**Sustainable forest** resource management
AFOLU: Sustainable forest resource use	**Resilient infrastructure** in built environment
Waste: Urban solid waste management	Climate change and health
Industry: Energy efficiency, Green Cooling Africa Initiative	**Water resources:** Integrated water resources management
	Resilience for gender and the vulnerable

We also note that several issuers were looking for direct pricing benefit from issuing a green-labelled debt instrument; whilst some pricing benefit has been documented for large, highly rated issuers in developed markets, this effect is still highly uncertain in emerging markets and with lower-rated issuers. This is fundamentally driven by the level of investor demand for instruments varying across geographies and the credit quality of issuers. We would expect a pricing benefit to be difficult to obtain for early issuance in Ghana, creating a mismatch between issuer expectations, and investors' expectations.

A number of initiatives have been undertaken to date to support market development i) a capacity-building seminar for government officials to increase awareness of green finance and ii) several green bond workshops. These initiatives seek to improve knowledge sharing with regards to green bonds, however, further actions need to be considered alongside these initiatives given the persistent challenges. The findings and resulting recommendations from this assessment are summarised in Table 2 below:

Table 2: Actions to building an enabling environment

Action	Detail
Development of a green bond segment and issuance guidance for Ghana	• Dedicated guidance can help issuers and market operators navigate a new product • Can rely on international standards like South Africa or be more tailored like Nigeria **This is currently being addressed by the Ghana Stock Exchange, which is looking to publish issuance guidelines and set up a segment**
Government support and incentives	• The government should look to take a leadership role in engaging the private sector and sensitizing market participants on green investment opportunities and incentives **The Government is now looking to issue a green bond in 2021/22, to catalyse further issuance.**
Intermediaries to provide leverage the local market	• Consider enhancements such as first-loss capital or partial credit guarantees • For example, GuarantCo provided a 50% partial credit guarantee of the green bond issued by Acorn Holdings Plc in Kenya
Training & capacity building	• Strengthening institutional capacity and dissemination and sharing knowledge with the overall objective of promoting the issuance of green bonds
Increasing investor appetite	• Engagement with investors is key to developing an appetite for the instrument • Key aspects of green bonds such as the lack of additional risk compared with regular bonds, the fact that they provide additional transparency for investors and that they can help hedge portfolios against climate risk, all need to be further socialised
Technical Assistance for green bond framework development and certification/verification	• Issuing a green bond requires the issuer to invest upfront in creating a framework and the internal systems necessary for selection and monitoring, as well as obtaining a second party opinion or verification • Where there is limited internal capacity to develop the framework external support from advisors can be obtained • The creation of a TA facility to help fund the additional cost of issuance could see several issuers explore the instruments more fully

2. Potential for a Green Bond Market in Ghana

2.1 Ghana debt capital markets

The debt capital market in Ghana has historically been dominated by GoG Treasury bonds since its inception. Before 2014/15, the system was essentially an over the counter (OTC) marketplace where banks and asset managers traded securities directly with each other.

Figure 2: Ghana Government Bond Yield Curve

In 2015, the Ghana Fixed Income Market (GFIM) was launched in conjunction with Bloomberg and various stakeholders including the Bank of Ghana, Ghana Stock Exchange and Central Securities Depository, allowing for the electronic trading of debt instruments, while ensuring market surveillance and transparency. Securities such as Izwe Loans, Letshego and Bayport Financial Services were transitioned from the Ghana Alternative Exchange (GAX), which was the prior trading platform, to the GFIM.

Table 3: Ghana Listed Local Currency Bonds

Issuer	Sector	Total
Government	Sovereign	22,466,700,156
Subtotal Sov.		22,466,700,156
ESLA	Energy	1,332,039,450
Letsegho	Financial Services	40,038,759
Bayport Financial	Financial Services	61,050,683
Bonds Savings & Loans	Financial Services	12,291,146
Izwe Loans	Financial Services	9,777,048
Quantum Term.	Energy	6,983,605
Dalex Finance	Financial Services	3,491,803
Daakye Trust Plc	Real Estate	243,130,925
Corporate		1,708,803,422
Grand Total		24,175,503,578

USD equivalent based on Bank of Ghana mid-rate of 5.7277 as of 28 February 2021.

Ghana's capital markets and associated regulations are somewhat developed, with both local and international activity increasing significantly over the past 5 years, however this is concentrated in government transactions, with corporates playing a minor role. The Ghanaian government is fairly active both in the local market and internationally, where it has issued five Eurobonds to date, the most recent a three-tranche USD3 billion issuance in February 2020, including a historic 41-year USD750 million tranche at a coupon of 8.875%[3]. Alongside its traditional international issuances, the government has also signaled the intent to raise USD123 million equivalent in Global Depositary Notes to refinance existing domestic debt. Similar to Nigeria, large local corporates who can reach international investors choose to issue in USD to access a larger and deeper pool of capital, relative to the local investor base, as well as match any foreign currency earnings they may have. Amongst the most active local borrowers are Non-Banking Financial Institution (NBFIs) or Tier 2 banks, which come to market frequently and with very small ticket sizes (less than USD10 million equivalent).

Importantly, there is no regulation pertaining to the need for credit ratings in Ghana. The SEC has guidelines for the licensing of rating agencies to operate in Ghana, however, there is no requirement for issuers to be rated, and as a result, there are currently few rated institutions in Ghana. All of those that are rated are within the financial services sector and are typically group subsidiaries with operations in more developed capital markets where ratings are a pre-requisite. As it currently stands, the Pension Fund guidelines only require evidence of an investment-grade rating for private issuances that are not listed on an exchange, however pension fund appetite is still quite limited. This could be a significant hurdle to corporate bond market development, with local asset managers forming the bulk of domestic investors.

[3] Reuters:https://www.reuters.com/article/ghana-eurobonds/update-1-ghana-sells-3-billion-in-eurobonds-oversubscribed-five-times-idUSL8N2A524G

Table 4: List of Financial Institutions with Public External Credit Ratings

Entity	Agency	Rating
AFB Ghana	GCR	BB+ (GH)
Ecobank Ghana	GCR	AA-(GH)
Fidelity Ghana	GCR	A
UBA Ghana	Fitch	B-

Framework for Resolution of Corporate Bond Defaults

Strong regulation and process for bond defaults is key to providing investors with sufficient confidence to invest in local debt instruments. In recent years, selected defaults on listed bonds, coupled with clean-up in the banking and non-bank financial sector have refocussed investor attention on the absence of a regulated framework for resolution of distressed transactions. This is a factor that has been re-iterated in the feedback from market operators, who have indicated that the implementation of a framework is critical to the longer development of the corporate bond market. FSD Africa conducted a Debt market Diagnostics for Ghana, which indicated the current state and also provided recommendations on how to improve and further develop this market. The recommendations in this study can be implemented to build back confidence in the corporate debt markets.

Box 1. PBC Ltd, 2018

Produce Buying Company (PBC) Ltd operates as Ghana's largest cocoa buyer with significant ownership by SSNIT and the Ministry of Finance. Between 2016 and 2018, the Company issued a series of 1-year callable listed notes. At the end of 2018, the Company defaulted on the principal due on one of its notes. The default was attributed to the mismatch between the tenor of the funding and the longer-term investments made into a real estate project as well as a shea-nut processing plant but also reflects a longer-term trend in which the Company relied on market borrowing to support its operations. The Company engaged in bilateral discussions with investors to restructure and reschedule the debt. Initial proposals were rejected, and investors took the Company to court [where the matter remains ongoing].

Box 2. Banking Sector Resolution Exercise

In August 2017, the Central Bank disclosed that it had unearthed several weaknesses in the banking sector including solvency challenges, liquidity challenges, regulatory breaches, among others, some dating back to 2015. In response, the Bank of Ghana (BoG) took a stronger supervisory stance to restore confidence in the banking sector, revoking licenses of nine insolvent lenders and 23 Tier-2 institutions. To date, the Government has approved funding of about GHC 16.4 billion to help recapitalize the industry and safeguard depositors' funds. The non-pension fund managers are reported to have been heavily exposed to the sector, with the liquidity challenges of the investees exacerbating underlying weaknesses related to over-exposure to other illiquid and unregulated private corporate bonds, with limited corporate governance and financial reporting standards. The more stringent regulation and oversight of allocation of pension fund assets insulated them in the aftermath of the clean-up exercise, up in which several fund managers have had their licenses revoked in the face of these liquidity challenges.

2.1.1 Impact of COVID-19 on the Ghanaian Economy

The COVID-19 pandemic has proven to be an unprecedented disruptive force across the globe, essentially shutting down both developed and developing economies into recession. According to International Monetary Fund (IMF), the impact of the pandemic has slashed Ghana's GDP growth by over 86% - declining from 6.5% in 2019 to 0.9% in 2020. After initially cutting the policy rate by 150bps to 14.5% in response to the pandemic, the Bank of Ghana has maintained the rate to temper inflation concerns. As a result of the pandemic, treasury yields have largely fallen across short-term durations. For instance, 364-day treasury bill rates declined from levels of approximately 15.1% as of March 2020, to roughly 14.5% as of October 2020[4]. The country is also expected to sustain a shortfall of over GHS2.2bn (USD395m) in non-oil tax revenues, significantly hampering the government's ability to conduct fiscal operations and to support the ailing economy amidst job losses. Specifically, Ghana has proceeded to take the following corrective steps in setting up a Coronavirus Alleviation Programme (CAP) to facilitate economic recovery:

Figure 3: Ghanaian Economic Recovery Approach

Ghana Stabilisation fund cap lowered (USD 300 m -> USD 100 m	Amend Petroleum Revenue Management Act to release funding from Heritage Fund; CAPEX expenditure reduced by GHS 1.2 bn	Policy Rate reduced by 150 bps to 14%; regulatory reserve ratio dropped from 10% to 8%	Amendment of BoG ACT to allow GoG to borrow from the BoG	GHS 3 bn syndicated facility from banks to support key industries; 6-month moratorium on principal; 200 bps decrease on interest rates

Prior to the pandemic outbreak, the GoG had been considering plans for the issuance of a sovereign green bond. Working closely with United Nations Development Programme (UNDP), Climate Bonds Initiative ("CBI"), market operators, and the government hosted a "Green Bond Bootcamp" capacity-building seminar for officials to increase awareness of green bonds and climate finance in general. However, as it stands, the government currently has no specific green bond framework or policies in place but has expressed interest in the development of these rules.

Market update: In April 2020, the IMF Executive Board approved the disbursement of USD1 billion to be drawn under the Rapid Credit Facility for Ghana to address the COVID-19 pandemic. Ghana was the first country in Africa to receive the COVAX vaccines at the end of February 2021. The Vaccination campaign started on March 1, 2021, with the President receiving his shot[5].

[4] Bank of Ghana
[5] https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#G

2.2 Green Finance in Ghana

Since the inception of his administration in 2017, President Nana Akufo-Addo has consistently communicated the need for Ghana to become more climate-resilient and to lower carbon emissions, thus honoring commitments to the Paris Agreement and the United Nations SDGs. Key policy documents such as the National Climate Change Adoptions Strategy and the National Master Plan against Climate Change (2015-2020) outline Ghana's national strategy and priorities around combating climate change. To date, there have been no green bond issuances in Ghana. Section 3.5 below provides more detail on the challenges in bringing about a green bond in the debt capital markets.

Ghana's Paris Agreements targets require up to USD22.6 billion of investment across several key sectors, including, Renewable Energy, Mass Transportation and Freight, Wastewater, Sustainable Agriculture, Forestry, and Real Estate. Whilst the Government of Ghana has started allocating budget to the SDGs and the INDCs, significant private sector investment is necessary – at least 16% of the overall NDC costs are earmarked for private capital. To this end, the GoG and its Ministries have already identified green bonds as a tool that could help achieve several of Ghana's ambitions, and have made significant progress towards issuing the first green bond in the country.

It is our view that many of the priority projects identified by the GoG could be financed through a green bond, including but not limited to:

- Railway transport - passengers and freight
- Wastewater treatment plants
- Solid waste management and recycling
- Rural off-grid electrification
- Electric grid expansion (if connected to renewable energy)
- Sustainable housing/ buildings

The key sectors for opportunity and estimated associated size are outlined further in Section 3.3 of the report.

Climate Finance in Ghana: A Nascent Market

While the potential of green bonds is well understood, especially as regards the potential financing of Ghana's sustainable development goals, to date, there have been no green bond issuances in Ghana - whether sovereign or corporate. There have been several capacity-building workshops that have been hosted by the government, alongside the UNDP and market players such as CBI. In 2019, FSD Africa hosted two workshops on green bonds and finance for market participants and other stakeholders including members of the government, regulators, pension funds managers, banks, and other asset managers. Further market engagement is required in this regard, with broader backing from the government, including via entities such as the Ministry of Finance and Bank of Ghana. In addition, bodies such as the Bankers Association and Association of Ghana Industries will prove to be critical stakeholders in ensuring the success of green bonds in Ghana.

While climate finance remains new to Ghana, there have been some attempts in the banking sector to explore what the International Finance Corporation (IFC) refers to as "green banking." In 2019, the IFC approved an investment of up to USD40 million in Republic Bank (Ghana) Limited, 25% of which was earmarked for Small-Medium Enterprise (SME) lending for climate-smart projects. This investment will contribute to addressing SDGs 8 and 11, which deal with decent working and economic growth and sustainable cities and communities, respectively. According to the IFC, the growth of climate finance has faced challenges primarily due to: i) constraints of inadequate long-term funding; and ii) lack of dedicated incentives for developers.

Market Updates:

- In early 2021, the GoG announced their interest in issuing labelled debt – specifically a green bond and are currently planning an issuance for 2021;
- Around the same time, the GSE announced its intention to publish Green, Social and Sustainability Bond issuance guidelines for the Ghanaian market, and the creation of a dedicated segment on the exchange.

We believe both activities will further enable the development of the green bonds market.

Changes to the Existing Pension Fund Regulations

Anticipated changes to the Pension Fund Regulations are expected to boost appetite for labelled debt by increasing exposure caps where Green or Social bonds are issued. In addition, pension funds and asset managers are increasingly looking to incorporate environmental, social, and governance considerations into their investment policies.

Ghana's Sustainable Banking Principles

To better enable the country to achieve the goal of becoming "Ghana Beyond Aid", the Bank of Ghana – in conjunction with the Bankers Association, Environmental Protection Agency (EPA) and with the support of the IFC – launched the Sustainable Banking Principles. This set of rules was designed to encourage the implementation of ESG considerations and policies in the decision-making of commercial banks. In addition to the seven principles (Table 5 below), the initiative further released five sector-specific Guidance Notes that cover Agriculture & Forestry, Mining and Oil & Gas, Construction & Real Estate, Power & Energy, and Manufacturing.

Table 5: Sustainable Banking Principles

1	Environmental and Social Risk Management (ESRM)
2	Internal Environmental Social and Governance in banking operations
3	Corporate Governance and Ethical Standards
4	Gender Equality
5	Financial Inclusion
6	Resource efficiency, Sustainable Production and Consumption
7	Reporting

2.3 Benchmarking Against Other Countries

Four other countries in SSA have seen successful green bond issuance; Nigeria, Kenya, Namibia and South Africa. The development of a green bond market has been markedly different in each one of these countries, highlighting the fact that there is no one-size-fits-all approach to market development. Table 6 below looks at the different pre-existing and purpose-made conditions in each of these countries to highlight the different approaches which Ghana could take to developing this market.

Table 6: Green Bond Benchmarking

Criteria	Ghana	Kenya	Nigeria	South Africa
Green Bond Market				
Amount issued to date	N/A	USD41m	USD136m	USD1.6bn
Multiple Issuances	N/A	No	Yes	Yes
Corporate Issuers	N/A	Yes	Yes	Yes
Sovereign Issuer	N/A	No	Yes	No
Are there listing requirements specifically for green bonds on the stock exchange?	No	Yes	Yes	Yes
Is there a Green segment in the stock exchange?	No	No	No	Yes
Are market stakeholders receptive to the green Bond concept?	Yes	Yes	Yes	Yes
Is the investor base receptive?	N/A	No	Yes	Yes
Have there been widespread efforts to build interest and capacity?	Somewhat	Yes	Yes	Yes
First Issuance				
Date	N/A	Sept 2019	Dec 2017	July 2017
First Issuer	N/A	Acorn Holdings	Federal Gov't of Nigeria	City of Cape Town
First Bond Size		USD41m	USD30m	USD143m
Tenor (years)	N/A	5	5	10
Issuance Coupon	N/A	12.25%	13.48%	10.17
Was the first green Bond supported by Development Finance Institutions (DFIs)	N/A	Yes	Yes	No

Criteria	Ghana	Kenya	Nigeria	South Africa
Government				
Has the government created its own definition of a green bond/taxonomy	No	No[6]	Yes	No
Has government issued a green bond?	N/A	No	Yes	No
Incentives				
Is there a fiscal incentive for green issuance?	N/A	Yes	No	No
Is there a fiscal incentive for green projects?	N/A	Yes	No	No
General Debt Capital Market (DCM) considerations				
Are there credible corporate issuers?	Yes	Yes	Yes	Yes
Is the local DCM well regulated?	Somewhat	Yes	Yes	Yes
Is the local DCM active?	Somewhat	Yes	Yes	Yes

Kenya's green bond market has had two issuances, both by Acorn Holdings. Significant effort has been made to popularise the instruments, however the current mismatch in issuer and investor expectations with regards to the cost of capital are preventing further supply. Kenya's Green Bond Programme was launched in March 2017 by a consortium of local and international entities: the Kenya Banker's Association, the Nairobi Securities Exchange, CBI, FSD Africa and FMO, to encourage issuance and investment in green bonds. The Kenya National Treasury and IFC also worked together to create awareness amongst market participants on green bonds[7]. FSD Africa is currently supporting the government in a sovereign issuance targeted for Q1 2021 by assisting the Kenya national treasury in conducting a green verification exercise, which will determine the size and tenor of a potential issue.

The first corporate green bond was issued in September 2019, a USD 41 million five-year medium-term note by Acorn Holdings, a real estate development firm specialising in environmentally-friendly student accommodation[8]. The Bond received technical assistance from FSD Africa, received a guarantee by GuarantCo and was anchored by Emerging Africa Infrastructure Fund (EAIF). In February 2021, Acorn Holdings listed its two Real Estate Investment Trusts (REITs) raising USD22 million. FSD Africa supported the transaction and GRESB certification is to be completed in April 2021. However, further issuance in Kenya, especially ones independent of DFI support, are dependent on the local debt capital markets re-opening: since a series of defaults in 2017, and subsequent interest rate caps, the debt capital markets have been de-facto inactive, with investors requiring higher returns than issuers can secure bilaterally from the bank market.

Key takeaway: A functioning debt capital market – i.e. one with appropriate legislative protection for investors, which has a degree of transparency and good governance through encouraging credit ratings, is relatively liquid and offers yields that investors deem commensurate with the level of risk - is necessary to foster issuance. Some of these hurdles can be overcome through financial

6 As per the NSE Rules, eligible projects may fall under the categories identified in the international Green Bond Principles, the Climate Bonds Taxonomy (see Annex B) and the National Policy on Climate Finance (see Annex C) and other National Green Strategies and Policies."
7 Unbundling of the green bond market in the economic hubs of Africa
8 https://www.climatebonds.net/2019/10/first-green-bond-kenya-acorn-usd40m-climate-bonds-certified-financing-green-buildings

engineering, for example through the use of guarantees to enhance the credit quality of an issuer enabling it to raise capital at a lower cost than investors would otherwise deem appropriate, but whilst these solutions are useful when introducing a new product or other systemically important issuance, they are not sustainable in the long term.

The Nigerian green bond market was initially spearheaded by the government and subsequently taken up by the private sector. The Nigerian Green Bond Guidance was created by the government in 2016, after which the first green bond was issued by the Federal Government in 2017. This was preceded by a coordinated awareness campaign including investment seminars, media coverage, and dedicated platforms such as Nigerian Green Bond Week.

As a result, the five-year, USD30 million green bond was well received with proceeds being used to fund green projects in energy, transport, and water amongst others. The green bond market has been active since then, with the Federal Government of Nigeria (FGN) issuing a follow-up green tranche, as well as two corporate bonds from Access Bank and North-South Power, gaining interest and confidence from both local and international investors. The number of subscribers has increased including retail investors, indicating financial inclusion and deepening of the domestic financial market. FSD Africa was instrumental in helping the FGN bring these issuances to market through its engagement with the government, alongside Corporate Bonds Initiative ("CBI"). Specifically, FSD Africa partnered with FMDQ to provide technical support to issuers, training to local verifiers in developing an innovative curriculum and e-learning platform for the wider market. FSD Africa and CBI further collaborated to produce The Green Bond Toolkit, a guide and reference for issuing green bonds in Africa.

Key takeaway: The government, alongside market intermediaries, can play a significant role in both paving the way for issuance and in creating interest in new instruments amongst investors.

South Africa's green bond segment was the earliest to be established in Africa and has been driven by non-sovereign issuance – with the Johannesburg Stock Exchange playing a key role in driving marketing for the instruments. Unlike Nigeria however, the entirety of the green bonds in South Africa have been issued by corporates and municipals. The JSE established a Green (now Sustainability) segment to make it easier to list and trade thematic instruments, with specific listing requirements and guidance help issuers understand the issuance process – they were also instrumental in raising awareness of green bonds and gathering stakeholders to discuss the segment ahead of the first issuance. The first green bond in the country was issued in 2014 by the City of Johannesburg, however this is largely disregarded by the market as it did not align with the international standard for transparency and reporting, with the de-facto first true green bond being an issue by the City of Cape Town in 2017.

Key takeaway: The stock exchange can play a strong role in encouraging issuance, alignment with international standards and credibility are important.

Table 7: African Green Bond Issuances (as of October 2020)

Country	No. Green Bonds	Amount (USD)	First Issuance	Use of Proceeds
Kenya	1	41 million	Sept 2019	Buildings/Housing
Namibia[9]	1	5 million	Dec 2018	Energy, transport, water, waste, land use, adaptation
Seychelles[10]	1	15 million	Oct 2018	Land use and marine resources (Blue bond)
Nigeria	4	136 million	Dec 2017	Energy, transport, water, land use
Morocco	4	356 million	Nov 2016	Energy and buildings
South Africa	6	1.6 billion	Apr 2014	Energy, buildings, transport, water, waste
Total	17	2.1 billion	-	

Source: Climate Bonds Initiative

For Morocco, the Green Bond Guidelines were developed in partnership with the IFC. Five issuances have been carried out successfully, totalling approximately USD420 million[11]. Lessons to be learned from Morocco include a need for continuous awareness and knowledge sharing among the market players, alignment with best-practice international standards, leveraging on precedent transactions, and the fact that comprehensive guidelines should give rise to transactions to create a market.

The Republic of Seychelles launched the world's first sovereign blue bond – a bond dedicated to marine and ocean-based projects – which raised USD15 million from international investors, demonstrating the potential for countries to harness capital markets for sustainable finance. The World Bank assisted in developing the blue bond with the collaboration of three investors: Calvert Impact Capital, Nuveen, and the U.S. headquartered Prudential Financial, Inc.

Namibia achieved its first green bond issue via Bank Windhoek, which raised USD5 million for green lending, and placed the institution as the first commercial bank to issue a green bond in the SADC region. The green bond was listed on the Namibia Stock Exchange and is in line with UNCTAD's Sustainable Stock Exchange Initiative, which seeks to promote responsible investment and increase the capacity of corporates to improve their environmental, social, and governance standards.

The Government of Ghana should look to continue taking a leadership role in engaging the private sector and sensitizing market participants on green investment opportunities and incentives. The Ghanaian Ministry of Finance in collaboration with relevant domestic and international institutions (e.g. the IFC, CBI, UNDP, FSD Africa) should continue to embark on rigorous training on risk assessment and green data collection.

Outside of Sub-Saharan Africa, there have been several sovereign green bonds issued recently, including a recent issuance by the Arab Republic of Egypt:

6 Private placement by Bank Windhoek – 66mm NAD in Dec 2018
Seychelles issued a blue bond.
IFC - Green Bonds in Morocco

Table 8: Other Sovereign Issuances

Issuer	Moody's Rating	CCY	Type	Maturity	Coupon (%)
Arab Republic of Egypt	B2	USD	Eurobond	5	5.25
Federal Republic of Germany	Aaa	EUR	Local	10	Zero
Republic of Hungary	Baa3	EUR	Eurobond	15	1.75
Republic of Indonesia (Sukuk SPV)	Baa2	USD	Eurobond	5	2.30
Republic of Italy	-	EUR	Eurobond	24	1.5
Federal Republic of Nigeria	B2	NGN	Local	6	14.50
Kingdom of Sweden	Aaa	SEK	Local	10	0.13
Republic of France	Aa2	EUR	Local	22	1.75
Republic of Chile	A1	EUR	Eurobond	20	1.25

2.4 Criteria for Project Inclusion

Green Bonds are broadly defined as "Use of Proceeds" bonds: i.e. bonds in which the way the proceeds will be used is identified and specified at the time of issuance. Typically the proceeds are ringfenced or earmarked for those purposes within the issuer's treasury function.

To be an internationally credible "Green Bond" issuers can align with three different guidelines or taxonomies:

1. The Green Bond Principles (GBPs)

The GBPs are a set of guiding principles that explain what criteria a bond must meet to be labelled green. They guide eligible uses of proceeds – though at a relatively high level – as well as on processes that the issuer must have in place to achieve a green label. These processes include:

- The process for the selection of projects or activities to be financed through the green bond – e.g. is there a committee that screens projects against the Use of Proceeds criteria for eligibility?
- The process for management of the proceeds and tracking the proceeds through the treasury functions of the issuer – i.e. can proceeds be reliably allocated to eligible activities;
- The reporting expectations: green bond issuers are encouraged to report on the allocation of the proceeds to their investors and on the impact that is being achieved through the activities financed, for example, the carbon emissions abated through the generation of renewable energy.

Additionally, the GBPs encourage issuers to obtain a Second Party Opinion on their frameworks and issuance to provide independent assurance to investors that the bond is in line with the principles.

2. The Climate Bonds Standards (CBS)

The CBS is a taxonomy with associated clear and prescriptive standards published by the Climate Bonds Institute, a Non-Governmental Organisation looking to support the expansion of the green bond market. The standards go into more detail with regards to the uses of proceeds than the GBPs, and additionally provide quantitative thresholds and other guidance for several technologies and sectors. Bonds issued in line with the CBS can obtain certification of being compliant by CBI-authorised certifiers, this acts as a form of assurance similarly to the Second Party Opinion for the GBPs. Like the GBPs the CBS requires issuers to explain their internal processes with regards to allocation of proceeds and commit to ongoing reporting.

3. The EU Green Bonds Standard:

Whilst the standard has yet to be agreed upon and formalised, it is expected that this will reference the EU Taxonomy for sustainable investment. To qualify as environmentally sustainable under the EU Taxonomy, projects must meet four criteria:

- Contribute substantially to at least one of the six environmental objectives of the EU Taxonomy Regulation:
    - Climate change mitigation
    - Climate change adaptation
    - Sustainable use and protection of water and marine resources
    - Transition to a circular economy
    - Pollution prevention and control
    - Protection and restoration of biodiversity and ecosystems
- Not significantly harm any of the above objectives (DNSH);
- Comply with minimum social safeguards as laid out in the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights
- Comply with Technical Screening Criteria for each objective (the criteria define what "substantial contribution" and DNSH mean in practice)

Bonds which meet the Taxonomy criteria will be able to use the EU Green Bond Standard label and be deemed "Taxonomy aligned".

Currently, the taxonomy can be used to assess any type of asset, and the degree of alignment can be apportioned to that asset. It is yet to be fully deployed for Green Bonds, however some second opinion providers do reference the EU Taxonomy technical criteria as the standard thresholds for certain technologies, for example.

For projects mentioned by stakeholders to be included in the pipeline database, these must be aligned with the GBPs and/or the CBS (in as far as sufficient information is available). Given that no institution in Ghana has a pipeline already identified for a green bond, the criteria was kept at relatively high sectoral level, further investigation and individual asset assessment is required to ensure that individual assets would indeed be compliant with specific criteria.

The sectors include:

- **Housing and Social Infrastructure:** Green real estate – energy-efficient buildings;
- **Renewable energy:** captive generation for C&I, solar home systems financing, transmission and distribution (we excluded conversion of HFO to natural gas as this isn't internationally eligible but may be applied locally);
- **Agriculture:** regenerative agriculture, drip irrigation systems, biodiversity considerations;
- **Waste Management:** waste collection, recycling, waste processing; and
- **Water Supply and Sanitation:** water and sanitation infrastructure such as wastewater treatment plants.

3. Stakeholder Engagement and Key Messages Feedback

3.1 Summary Feedback

Whilst there is significant variability in the degree of interest in green Bonds and the perception of feasibility of a market developing in the short term, the majority of stakeholders interviewed were already aware and/or interested in green bonds.

The key takeaways from the conversations had to date can be summarised as follows:

Broad Stakeholder Interest

- Issuers: there is broad interest by potential issuers, particularly the Financial Institutions (FI), in seeing this market develop and in issuing themselves, finding non-FI potential issuers has been more difficult (Importantly: several FIs in Ghana have received "green loans" from DFIs but not been able to on-lend successfully, primarily due to a lack of identified pipeline).
- Many potential issuers were interested in better understanding the potential for a DFI anchor or for receiving credit enhancement, and better understanding the potential investor pool for a green bond and the effect that might have on uptake/pricing.
- Government: the GoG had intended to issue a green bond in 2020, but had to shelve plans due to COVID and the elections. It is expected that the government will be the most likely first issuer of a green bond, especially following their recent announcement.
- The stakeholders that were interviewed were divided on whether there is a need for a sovereign issuance to kick-start the market, with some thinking it would be strictly required, and others (particularly commercial banks) being content to proceed with their own issuance if conditions permitted;
- Investors: the majority of investors interviewed were familiar with green bonds, however the degree of appetite varied as there was a broad perception that green bonds would require a pricing premium;
- A small subset of investors in Ghana have begun exploring ESG factors and incorporating them into their investment processes – these investors were very interested in accessing green bonds;

Sectoral Relevance

- Whilst many potential issuers expressed interest, very few had gone beyond a high-level overview of eligible activities as it pertained to their own business activities/loan portfolio, as such much of the sectors and projects flagged were highly speculative;
- A few sectors which were repeatedly flagged as areas that stakeholders thought had potential were:
    - Green buildings (part of the affordable housing drive in Ghana): some issuers are interested in exploring financing "green" developer loans and green mortgages;
    - Off-grid renewables: whilst the grid has too much capacity, there is still significant room for investment in the off-grid and captive space – several entities flagged this a key sector for issuance, though individual projects/loans would need to be pooled into one issuance;
    - Agriculture: potential issuances by large agricultural entities and SOEs were flagged repeatedly;

Sectoral Relevance (continued)

- There is further potential for green bonds financing waste management, sanitation, and wastewater treatment – all key issues for Ghana – however, this would be more aligned with a sovereign issuance;
- Further comments in this regard underscored some of the key challenges inherent in sectors such as real estate (land costs, title issues);
- Lack of long-term capital at the banks has been flagged as a good potential motivator for issuance: there is a need for infrastructure investment and the associated longer tenor capital to finance it, a green bond could unlock that for FI issuers

Perceived Hurdles

- Pricing: there is a general perception amongst both issuers and investors that green bonds must issue at a premium / provide discounted capital – whilst some issuers, particularly highly rated issuers in developed markets, have benefitted from premia, whether this materialises is subject to investor appetite and bond characteristics.
- Need for DFI support/perceived lack of local investor appetite: linked to the previous point but also stemming from a lack of understanding of what the investor appetite would be, there is an expectation/intention amongst the issuers that a DFI either provide anchor investment or credit enhancements, several interviewees mentioned the perceived need for a guarantee or other form of credit enhancement to attract investors into green bonds.
- Local DCM not attractive: some potential issuers have quoted the local markets as not attractive and believe that they could do better internationally/off-shore if they were to issue (though again would need support) – this is reflected in the current size of the corporate bond market;
- Lack of clarity as to eligible assets/uses of proceeds: whilst many potential issuers are interested in exploring the concept, none have dedicated significant resources (perhaps except for two FIs and the government) to assess the alignment of their businesses/portfolios with the Green Bond Principles or other standards – additional support is required to ensure this happens;
- Lack of clarity on the practical processes associated with issuance: similarly, issuers do not have a clear view of what is required for issuance and the process which needs to take place.
- Lack of pipeline: arising from the fact that there is little clarity on project eligibility and investor appetite for the instruments, there is no clear and ready pipeline of projects which could be financed.

3.2 Investor Appetite

The pension funds are the main purchasers of debt securities in Ghana and as such their interest in green bonds will be key to a local issuance. In line with other institutional investors in SSA, the local guidelines and regulations for investors are very conservative, and local asset managers tend to rely on government debt and high-quality international assets, with limited appetite for higher risk assets and local corporate debt.

Table 9: Key Investors in the Local Capital Market

Investor	#	AUM GHS bn	AUM USD bn
SSNIT	1	9.32	1.64
Private Pension Managers	76	12.88	2.27
Total Pension Fund Assets	77	22.20	3.91
Fund Managers*	122	16.65	2.93

Table 10: Relevant Pension Fund Bond Market Guidelines

Permitted Investments for Pension Funds	Maximum
Bonds, bills, and other securities issued or guaranteed by the Bank of Ghana or Government of Ghana	60% 35% > 2 years
Local Government bonds or debt instruments	Sector / 15% Issuer / 5%
Bonds, debentures, redeemable preference shares, and other debt instruments issued by corporate entities and listed on a registered stock exchange	Sector / 35% Issuer / 5%
Bonds and other debt securities issued by listed companies	Sector / 30% Issuer / 5%

Source: NPRA, Guidelines on Investment of Pension Scheme Funds, 2016

Some investors in Ghana have signaled interest in green bonds, however investor appetite and confidence can be further improved (if need be) through the use of credit enhancements for the bonds: improving the credit quality of the issuance may make these more attractive to the local investor cohort. GuarantCo, a subsidiary of the Private Infrastructure Development Group ("PIDG"), has previously provided a guarantee for corporate bond issuance in Ghana when Quantum Terminals came to the capital markets to raise USD10 million in 2018, however, there are no local guarantors in the market.

With the above said, the institutional investor space in Ghana is supportive of green bonds and there are some progressive actors:

The NPRA has been reviewing its guidelines for investment, and it is expected that these will raise caps to single issuers where a green bond is purchased – a significant show of support for the instruments.	Individual asset managers are keen to purchase green bonds and have been engaging with intermediaries and potential issuers.	Some particularly progressive asset managers have suggested they would consider some trade-off on price for a Green issuance, granted that the credit quality as acceptable.

3.3 Estimated Size of Opportunity in Terms of Potential Bond Issuance

3.3.1 Summary of the potential pipeline

It is important to note that significant additional work must be done to help potential issuers understand their potential pipeline, most of the "projects" listed below are speculative ideas and not concrete pipeline.

Whilst several interviewees suggested that there would be potential pipelines in the Renewable Energy sector, or within government assets and planned expenditure, few to none were able to provide quantified opportunities.

There is significant latent potential in the sectors where Ghana needs investment the most, such as wastewater treatment and water infrastructure, however no institution was considering investments and issuance for these activities.

Table 11: Potential Pipeline Summary

Sector	Opportunity	GB Eligible	Size (USD mm)	Timeline	Public/ Private	Status	Potential Issuer
Renewable Energy	Self-help Electrification Programme - construction of transmission lines and customer connections	Yes – if linked to renewable energy (expected to be)	115	12-48 months	Currently Public	Planned, unallocated	Financial Institution/ Government
	741MW Solar Projects	Yes	963	2030 plan	Private (expected)	Planned, unallocated	Financial Institution
	327MW Wind Projects	Yes	719	2030 plan	Private (expected)	Planned, unallocated	Financial Institution
	122MW Biomass/ Waste to Energy	Yes	366	2030 plan	Private (expected)	Planned, unallocated	Financial Institution
	200MW Hydro Power	Yes	600	2030 plan	Private (expected)	Planned, unallocated	Financial Institution
	12MW Hybrid MiniGrids	Yes	16	2030 plan	Private (expected)	Planned, unallocated	Financial Institution
	10MW solar captive power for Shea butter produce	Yes	13	12 months	Private	Speculative	Financial Institution
Green Housing	Green loans for developers – loans for construction of green housing units	Yes (if buildings have certification or meet standards like EDGE)	12*	6-12 months	Private	Speculative	Financial Institution
	Green mortgages – mortgages for green home purchases	Yes (if buildings have certification or meet standards like EDGE)	13.5*	6-12 months	Private	Speculative	Financial Institution
Transportation	Rail	Yes, if electric	2,000	N/A	Unclear	Planned	Financial Institution/ Government
	Sky Train Accra	Yes, if electric	2,300	N/A	Unclear	Planned	Financial Institution/ Government
Wastewater treatment	Plant in Takoradi/ Tamale	Yes	24	6-12 months	Public	Underway	Financial Institution/ Government
Total			7,400				

*This is a conservative estimate based on a total of 4,500 new units being built and sold per year and converting 5% to green in one year.

3.3.2 Key sectors of interest

While Ghana's proportion of GDP that is attributable to extractive sectors (specifically oil & gas and gold) has grown over the last decade, the country still relies heavily on the agriculture sector and its major exports of cocoa, cashew nuts, and pineapples. The following sectors are climate-sensitive and would benefit most especially from the introduction of a green bond market.

Renewable Energy

RE is arguably the easiest candidate sector for green bond issuance, however this has not figured prominently in stakeholder conversations primarily due to the over-capacity on Ghana's grid at present. Ghana's current installed (operational) generation capacity stands at c. 5,172 MW, comprising 69% thermal, 30% hydro, and 1% renewable (solar) generation. Following years of insufficient supply, due in large part to a shortage of fuel for existing facilities, the country now has a surplus in terms of installed capacity and is likely to maintain a surplus for the foreseeable future as a result of in-construction and committed plants. Besides, as a result of serious power deficits between 2013 and 2016, the GoG entered into several emergency power deals based on short to medium-term contracts with private power producers based mainly on simple cycle gas turbine and engine technology. These include Karadeniz, AKSA, Ameri, and Early Power. As a result, and with the recovery of water levels in the hydro dams, Ghana is expected over the next 3 to 5 years, to have an oversupply of capacity in its grid.

The discovery of oil and gas off the coast of Takoradi in recent years has fuelled the growth of new thermal IPPs, predicated on significant quantities of associated and non-associated gas from the Jubilee, TEN and Sankofa fields. In addition to new thermal capacity, the government has set ambitious targets for renewable energy projects to add to the 43 MW of solar capacity, including the 225 MW Ayitepa and 50 MW Ada wind projects.

Potential for inclusion in green bond pipelines still exists for the sector, however, including through:

- The priority renewable energy projects identified by the government in their investment plan to 2030 (listed previously).
- The financing of transmission infrastructure expansion (assuming it's from renewable sources).
- Financing of the captive generation sector for commercial and industrial user-producers.
- Through funding of off-grid solutions where access to energy still has a significant gap.

Agriculture

Traditionally one of the most critical sectors in the Ghanaian economy, the agriculture sector is a key contributor to GDP and employment. However, its share has declined over the last decade, falling from 31% in 2009 to 17% in 2019. Nevertheless, with crops, livestock, fisheries, and forestry sub-sectors, over 36% of the labour force is engaged in agriculture as the sector continues to represent a strategic priority to the government. Agricultural greenhouse gas (GHG) emissions are the second-largest contributor to Ghana's total emissions, representing 40%.

The challenge of mitigating GHG emissions presents an opportunity in the sector, allowing private sector investors and government to invest in mass forestation programmes. To support this, the Ministry of Food and Agriculture has introduced policies and strategies to support private sector participation in the agriculture and forestry sector. Cocoa, being one of the leading agricultural products in Ghana, has the potential to create more green jobs through the expansion of Ghana's cocoa landscapes and supply chain via sustainable procurement from cocoa buying companies.
Whilst there is potential for investment here, such as through switching to shade-grown coffee, activities such as this may not be appropriate for issuance from the private sector as they are not

inherently revenue-generating, though they do de-risk cashflows and can enhance yield. As a result, there does not seem to be a viable pipeline of projects in this space in Ghana as of today, and few if any of the entities interviewed mentioned the agriculture and forestry sector (except when referencing government issuances).

Waste Management

Waste generation in Ghana is expected to increase with population growth and urbanization. The Environmental Sanitation Policy quantified the waste generation of the five largest cities in Ghana at about 3,200 tons of solid waste per day, with much of it not safely managed. Waste management is a key sector for investment. The NDC goals recognize that private sector investment into the sector and scaling up compost technology would contribute to Ghana's low carbon goal as methane emission from the waste sector can be recovered and used as fuel. Ghana's action on waste seeks to enhance an alternative to urban solid waste management, improve the effectiveness of urban solid collection (achieve 70-90 %) and improve waste recycling. Private sector participation in the sector has increased in the last few years under public-private partnership arrangements across the waste management value chain. Ghana's energy policy also captures the potential of conversion of municipal, industrial operations, and agricultural waste to energy.

No clear opportunities were identified in this space during the consultation with market stakeholders, but we believe this could be an important sector for green bonds in Ghana if sufficient attention and investment could be drawn to it.

Water Supply and Sanitation

Despite significant investment in infrastructure development over the past 20 years from the government and its partners, many people in Ghana still lack affordable access to safe water. The Ghana Water Company is the main supplier of urban water in Ghana. It operates a centralised water supply system requiring significant capital and stable funding to expand and maintain infrastructure to distribute water – the Company continues to operate at a loss. Although some progress has been made, 20% of the population are without access to safe water supply, whilst water systems still fail prematurely. In line with the Government's priorities under the NDCs, the state-owned Ghana Water Company has been implementing various initiates to improve the quality of service and supply to the population, including through private sector participation in the sector.

Similar to the waste management sector, wastewater treatment and water infrastructure projects did not feature in the stakeholder conversations held. However, we believe this too could be a significant sector for green bonds subject to identifying potential projects ad associated financiers. This could be both a government expenditure sector or a private sector investment depending on the specifics of the projects.

Housing and real estate

Ghana's housing market remains underserved, with a supply gap of approximately 1,700,000 units, requiring over 100,000 units a year over the next 15 years to address the gap[12]. In particular, affordable housing remains a challenge, leading the Government of Ghana to seek several solutions, including most recently partnering with the United Nations Office for Project Services (UNOPS) to deliver 100,000 affordable units by 2022, at a cost per unit of USD50,000.

According to the Centre for Affordable Housing Finance, nearly 35,000 units are delivered every year in Ghana, indicating an annual supply gap of 65,000 units. This supply includes roughly 4,500 units that are delivered by formal developers in associations such as Ghana Real Estate Developers Association (GREDA), suggesting that a majority of the units being delivered are done by individuals or informal developers. There are varying thresholds regarding the definition of affordable housing

[12] CAHF Housing Finance in Africa: A Review of Africa's Housing Markets Finance, 2019

from a cost perspective, with the cheapest being USD20,000. However, it is clear from engagement with commercial banks that delivering affordable housing at these levels is not realistic at scale, demonstrating instead that more realistic prices are at the USD50,000-60,000 level.

To further address this gap, the Government of Ghana recently announced the creation of the National Housing and Mortgage Scheme (NHMS) and the Affordable Housing REIT. The purpose of these initiatives is to help drive housing demand through lower mortgage interest rates, rent-to-own schemes, and income deductions for civil servants[13]. The NHMS is seeking to attract private sector capital into the space to help support public-private partnerships and encourage entrepreneurship. A particularly attractive opportunity is for developers to incorporate EDGE certification standards in their projects, allowing them to access green finance. Certain commercial banks in Ghana have introduced programmes that will provide developers with green capital to refinance existing projects, construct EDGE certified buildings or implement solar into their project energy mixes. These banks have indicated that typical mortgages for affordable to middle-income housing are currently at around USD80,000.

3.4 Credit Quality Considerations

3.4.1 Credit Ratings in Ghana

Unlike in other regulated markets, there is no requirement for a credit rating to list bonds in Ghana. The government, the main issuer locally, benefits from regular rating assessments and can also tap international capital markets as a result. Local corporates however are rarely rated, due to the lack of regulation both by the SEC and by other institutions such as the NPRA, which requires evidence of investment grade rating only where the issuances are not listed. As a result, investors typically evaluate the credit quality of issuers themselves (or at times commission agencies) on a stand-alone basis, and to some extent, product-specific basis. As a result of the lack of regulation, the structure of an instrument can have greater impact on its appeal to investors.

However, this market context is instructive as pointing towards a potentially effective means of promoting green bond issuances to investors. Given the emphasis on ring-fencing and transparency of use of proceeds, as well as regular commitment to independent evaluation and reporting post-issuance, green bonds could go some way in appealing to investors due to their transparency and in-built disclosure requirements. Whilst emphasising that a green bond assessment is not a credit evaluation, as is outlined in the next section below, some of the typical sector and potential issuer considerations are complementary to these areas of focus.

3.4.2 Specific Credit Quality Considerations for Green Bond Sectors

Fundamentally, the more familiar the investor base is with a particular sector or credit, the easier it is to solicit appetite for investing in the issuance. The practice by market intermediaries is to conduct extensive stakeholder engagement to encourage local investor participation in specific sectors.

In Table 12 below, we highlight some of the key credit considerations for the sectors and issuer types relevant for the green bond market in Ghana.

[13] CAHF Housing Finance in Africa: A Review of Africa's Housing Markets Finance, 2019

Table 12: Credit Considerations for Selected Sectors

Sector	Credit Quality Considerations	Green Bond Specific requirements
Agriculture	• Extent of exposure to farming cycles and product risk • Extent of exposure to commodity price fluctuation • Strength of agreements with customers and clients • Strength of distribution and logistics infrastructure • Preference for focus on the processing segment of the market	• Sustainable farming practices; • Inclusion of biodiversity corridors; • Drip irrigation • Organic farming
Commercial Banks	• Loan portfolio quality and underwriting model • Liquidity and availability of funding lines (deposits, placements) • Capital adequacy and shareholder support • Regulatory oversight and compliance	• (underlying project-specific)
Infrastructure Utilities / Waste	• Contractual structure and availability of payment guarantees • Credit quality of underlying off-taker(s) • Political and regulatory risk related to contract cancellation	• Must demonstrate environmentally sound practices in wastewater treatment • Solid waste must be safely managed
NBFIs	• Loan portfolio quality and underwriting model • Liquidity and availability of funding lines (placements) • Capital adequacy and shareholder support • Regulatory oversight and compliance	• (underlying project specific)
Renewable Energy	• Assessment of market demand • Technology and product risk • Regulatory risk and impact on the project viability • Credit quality of underlying off-taker(s) – especially when looking at single off-taker • Contractual structure and availability of payment guarantees • For Solar Home Systems companies, underwriting model, portfolio quality, and collections rate	• Generation and transmission are eligible, as well as off-grid solutions
Real Estate - Commercial	• Access to land for development • Project development cycle and ability to execute • Construction risk, cost overruns and impact on economics • Quality of off-takers and resiliency of rental payments • Quality of facility management and asset maintenance • Regulatory oversight and compliance	• Must be able to demonstrate efficiency, e.g. through recognised certification such as EDGE • Land must be deforestation-free and conflict-free
Real Estate - Residential	• Access to land for development • Track record, project development cycle and ability to execute • Construction risk, cost overruns and impact on economics • Capital structure, capital base and leverage • Access to capital for working capital or other funding needs • Unit costs and customer affordability • Availability of financing to support customer purchases • Regulatory oversight and compliance	• Must be able to demonstrate efficiency, e.g. through recognised certification such as EDGE • Land must be deforestation-free and conflict-free
Sub-Sovereign / State-Owned Entities	• Funding profile and willingness to pay • Structure of repayment mechanism (e.g. sinking fund) • Strength of government guarantee • GoG has implemented a Credit Risk Assessment Framework for internal evaluation of SoEs	• (underlying project-specific)

3.4.3 Considerations for Potential issuers

Corporate Governance

In light of recent events in the Banking Sector, the regulator, the Bank of Ghana, and potential investors have been even more focused on corporate governance of institutions that seek to raise capital from the markets. This encompasses understanding the make-up of the board, an assessment of the management team and the operations of the Company. Also included within this is the assessment of the decision-making process as it relates to use of proceeds as well as repayment of the bond issuance.

Financial Performance

Companies accessing institutional capital need to be able to demonstrate track record of solid financial performance, debt-service history which will inform expectations about the ability to meet scheduled payment on the instrument. Clearly demonstrating how the underlying profile of clients, customers and other off-takers contributes to the sustainability of the Company's financial performance is key to selling the credit story.

Liquidity

In light of recent events in the Banking Sector, the regulator, the Bank of Ghana, and the investor community have been more focused on the underlying liquidity profile of potential issuers coming to market. This is evidenced by the delays that NBFI issuers with existing programmes have experienced in receiving approvals to issue new tranches into the market. In the interim, liquidity has been tested by market investors who have selectively withdrawn deposits and placements, which would ordinarily have been rolled over, to test the strength of issuer balance sheets.

Oversight and Reporting

The regulatory framework is a key consideration for potential investors. The NBFI institutions that have successfully issued in the local market undertake a separate review process by the Bank of Ghana before receiving SEC approval to issue bonds. In other non-bank sectors, more reliance would be placed on the role of the: (a) external counterparties to the Company, including clients, customers; and (b) internal counterparties, such as the quality of the auditors and overall financial reporting framework.

3.5 Hurdles to Issuance and Potential role for FSDA

3.5.1 Green Bond Specific Issues

Lack of market understanding

Discussions with stakeholders reveal that more market education is required to enable the development of a successful green bond market, given the fact that green bonds are a novel instrument in the Ghanaian capital markets. Whilst most people are familiar with green Bonds, very few understand what is eligible as green or the required process, as well as the benefits of issuance. Whilst there has been some engagement already, additional practical workshops would significantly benefit market participants and their ability to make more informed decisions on market participation.

Role for FSDA: Capacity building through workshops and market engagement (N.B. one workshop will be hosted as part of this mandate).

No existing guidance or regulations

As it stands, there are no guidelines for green bond issuance in Ghana, further adding to the lack of clarity market participants currently experience. Other countries have leveraged the creation of a dedicated segment on the Stock Exchange, or the publishing of specific guidelines for issuance to encourage market participation.

Role for FSDA: Working alongside GoG, GSE and SEC to create green bond guidelines or regulations.

Lack of pipeline

Linked to the two points above, whilst many potential issuers are interested in the green bond space, very few can concretely assess their business and portfolios in light of what is eligible. As such, more progressive issuers would benefit from dedicated Technical Assistance in a) assessing their business and identifying activities eligible for a green bond, and b) guiding them through the early stages of framework development and investor sounding.

Role for FSDA: TA to potential issuers in identifying pipeline and early investor sounding.

Pricing uncertainty

While opinions around the viability of green bonds have varied, respondents generally agreed that pricing would present a major factor when considering green bond issuances in Ghana. Issuers were generally looking for indication that there would be investors willing to provide slightly cheaper funding for these issuances, as there is a perception that green projects would lead to lower returns - whilst the rationale behind the lower returns assumption in Ghana remains to be determined, this is not typically the case globally. Conversely, local investors typically expect significant premia over government bonds to absorb the additional risk posed by corporate issuers, as such there is a potential mismatch of investor and issuer expectations on pricing. That being said, some investors did indicate some tentative flexibility. As a result, participation by a DFI in the structure, whether as anchor investor, sole investor or through credit enhancement was brought up several times by both potential issuers and investors.

Role for FSDA: Support local issuers in accessing anchor investors/credit enhancement.

Product Development

While there is a need for more technical capacity in the market when it comes to green finance, there has been some experience of this through DFI loans to financial services firms for on-lending. As a follow-on some financial institutions have expressed interest in developing products such as green mortgages and loans, there is an opportunity to engage in product development via the banking sector, thereby attracting additional climate-friendly international capital. Additionally, there is a gap in the capital markets that can be addressed via the introduction of securitisation guidelines, allowing for more structured transactions with clear use of proceeds and ownership. This will likely require collaboration with the BoG and further market stakeholder engagement and so will be a longer-term initiative.

Role for FSDA: Working with regulators local commercial banks to develop industry-specific products.

3.5.2 General Capital Markets Issues

Ratings

Although the Ghanaian debt capital market is well established in terms of government bonds and, to a lesser extent, corporate bonds, there are currently no rating requirements in place. While this factor had been previously overlooked, it would appear that the demand for a formal rating system has increased following recent defaults by banks and other financial institutions. This has naturally created uncertainty and a level of caution in the domestic investor base, whereby investors are only willing to look at blue-chip financial institutions and multinationals.

Role for FSDA: TA support to the SEC in creating the appropriate rating regulations.

Structure and credit quality

Given the failures of certain issuances, the investor community has called for corporate issuances with more robust underlying structures and improved credit quality. The belief is that regulators could be more prescriptive in outlining stringent guidelines that encourage the utilisation of stronger credit enhancement features. Stakeholder suggestions in this regard have included:

1. Partial or full guarantees
2. Sinking funds
3. Liquidity facilities
4. Over-collateralisation mechanisms

Role for FSDA: TA support to GSE and NPRA to create best practice structure guidelines.

FSD Africa, Nairobi, Kenya
info@fsdafrica.org
@FSDAfrica

www.fsdafrica.org

Lion's Head Global Partners Ldt.
London, United Kingdom
@LionsHeadGP

www.lhgp.com

DFID, London, UK
enquiry@dfid.gov.uk
@DFID_UK

www.gov.uk