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Capacity Building in Green Bonds in Cambodia: Universities Must Play a Key Role to Support the Industry

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This paper discusses, analyzes and focuses on Green Bonds in Cambodia. In order to prepare for long-term net zero engagement with the Government Ministries, regulators, private sector, institutional investors and stakeholders, Cambodia needs to promote and facilitate green financing development and solutions. The objective of the research is to analyze the gap between the Policy of Frameworks on Development of Government Securities objectives and the existing infrastructure and capacity in place. After several face-to-face interviews undertaken in Phnom Penh and desk research, researchers have found that there are still some major challenges to be addressed to promote the Green Bonds in Cambodia and to make it a success. These issues were mostly the same experienced at the earlier stage in Green Bond issuance, particularly in emerging markets, as referred to the research papers cited in our literature references from 2013-2022. The challenges in Cambodia are typical for those in a developing country, however these may be overcome by an enhanced policy framework, with consistent taxonomy and procedures aligned with the international best practices and guidelines, an active and smooth collaboration among market participants, beneficial for the green bond issuance ecosystem, and the required capacity building on technical features and implementation, in order to build trust and recognition of the Green Bond market.

Keywords: *Green Bonds, emerging markets, collaboration, stakeholder engagement*

INTRODUCTION

The Royal Government of Cambodia (RGC) is committed to address the risks of climate change, meeting with the Paris Agreement commitments, and achieving the Sustainable Development Goals (SDG). To achieve these goals significant financing must be directed to climate adaptation, mitigation, and SDG priorities. However, the government cannot do this alone; a range of traditional and innovative financing instruments must be leveraged, allowing for the mobilization of both public and private finance. The Government of Cambodia sees the issuance of Green Bonds as one financing mechanism which can support the achievement of these goals. The issuance of green bonds by both government and the private sector could play a crucial role in directing much-needed funding activities to achieve the SDGs and reach the investment levels required to create low-carbon and climate-resilient communities. As to date, only 9 bonds have been issued in Cambodia since 2019, and mostly corporate bonds (banks, MFI, consumer, telecom) and none of them can be qualified as Green Bond.

The stakeholders are multiple in this nascent capital market: Policy makers, Issuers, Market facilitators, Financial Institutions, and Public. The challenges are well known by the participants; we still have excessive issuance costs, the length of the process to get bond listed is still behind international best practices, and we have a nascent regulatory framework which is getting gradually more consistent and soon be well-aligned with regional and international standards (ICMA, CBI). The other key challenge is the current pipelines of the Green Bonds in Cambodia which remain limited and not yet scalable. Some pipelines rely on private opportunities and the demand or appetite of investors, rather than a pipeline driven by the government or a public-private partnership. Last but not least, the capacity building is a top-priority for the success of Green Bonds in Cambodia. Training, certification and public awareness are essential and will give more confidence for the market participants, especially issuers and investors, and will have a positive impact on the fixed-income appetite of domestic and foreign institutional investors.

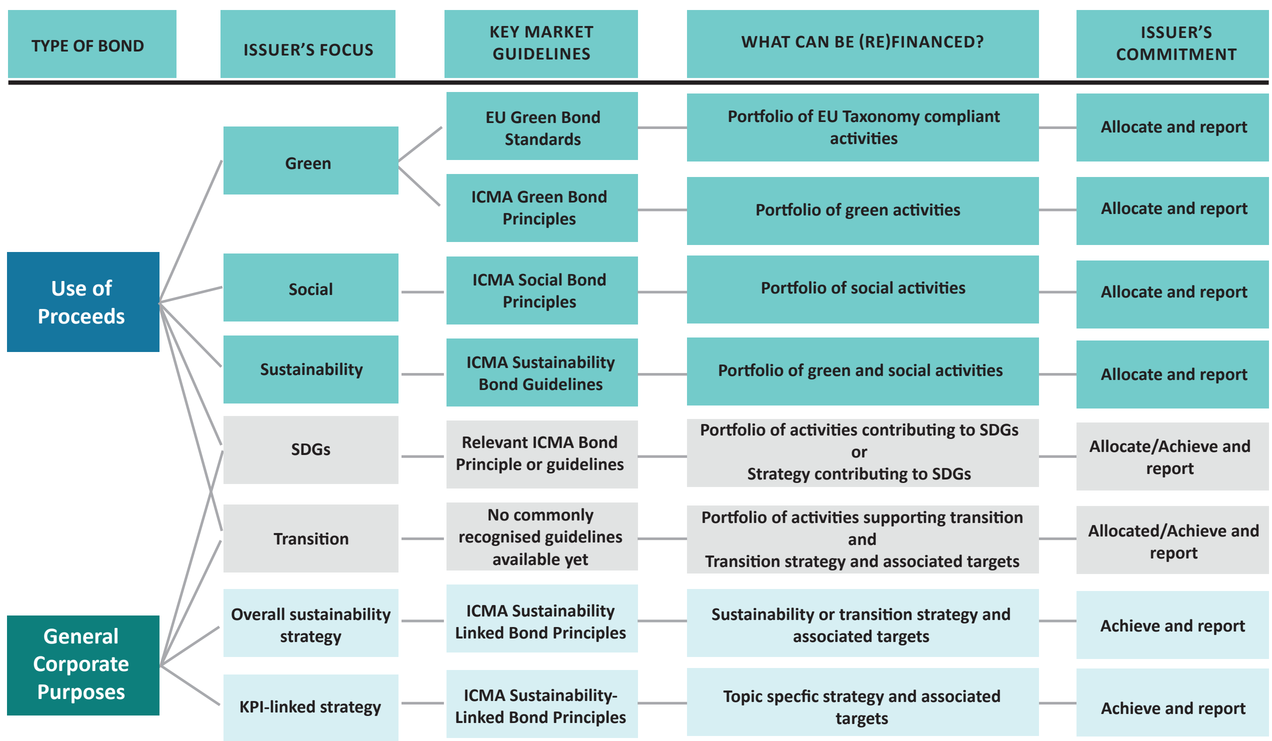
LITERATURE REVIEW

The Paris agreement adopted on 12 December 2015 in Paris by 195 countries (plus the European Union) also called the "Paris Agreement", aims to limit the adverse effects of climate change. The event opens up debate[1] on how to drive the planet towards a low-carbon future. The costs of climate change have been estimated by the Economist Intelligence Unit at the net present value costs of climate change at USD 4.2tn (Orsagh, 2020). Among several climate proposals, Green Finance and Climate Finance have emerged as one of the most followed topics. Nowadays, the "Green bond" issuance is growing fast, part of the overall trend of "do-good investments" has become more popular [2]. According to the CBI (Climate Bonds Initiative), the Green Bonds issuance is set to reach globally more than USD 1tn in 2022 (cumulative since 2007).

The Green Bonds are also a part of the "Thematic Bonds" family. Thematic Bonds are fixed-income securities that highlight the issuer's environmental and social objectives, as well as commit funds to relevant activities, and are labeled as such (Hussain, 2022). There are several different types of bonds available under the banner of "Thematic Bonds". These bonds include, but are not limited to, green, social, sustainable, and SDG bonds (Martin, 2021).

Figure 1

Overview GSS + Bond Principles and Standards



For example, Green Bonds include Climate Bonds linked to climate mitigation, such as projects in solar and wind technologies that reduce GHG emissions, and climate adaptation, such as infrastructure projects to protect against flooding. At the same time, other types of Thematic Bonds have emerged in response to new challenges. The main difference is that Thematic Bonds are primarily for funding projects that generate environmental and social benefits.[3] (Martin, 2021). The Green Bonds as well as Thematic Bonds, are common to fixed-income bonds. The section 4, will elaborate the difference between Green Bonds and Vanilla Bonds, offering predictable returns/yields for investors in the form of a fixed coupon in exchange for medium to long-term funding.

In 2022, the global issuance of all types of Thematic Bonds including Green, Social, Sustainability, and Sustainability-Linked Bonds is expected to reach a new cumulative record amount of USD 1.5tn (CBI, 2022). The Green bonds will take the lion's share, since it has increased as a prominent instrument in sustainable finance. The Green Bonds initially emerged in 2007 (Fatica et al., 2021) and the market has expanded rapidly (Tang et al., 2018) and recently reached the milestone of USD 1tn of Green Bonds issued globally (more than 66% of the total of thematic bonds).

The Green Bonds are also expected to see new record issuance volumes in 2022 (CBI, 2022), maintaining their position as the dominant Thematic Bond Category [4] . In the past decade, Sustainable Finance Initiatives in the ASEAN region have become quite a dynamic market with the growing launch of Thematic Bonds to finance numerous projects across the region. Mobilizing private finance for renewable energy and energy efficiency is critical for Association of South-East Asian Nations (ASEAN), and it is not only for the reduction of global temperature, but also for meeting fast-growing energy demand (Azhgaliyeva et al., 2019).

When we talked about Thematic and Green Bonds, we also have to refer to two international certification mechanisms, which are currently available to any issuers who wish to issue Thematic Bonds: The Climate Bonds Initiative ("CBI") and the ICMA (International Capital Market Association)'s Green Bond Principles ("GBP").

Both serve as gatekeepers to assess the eligibility and credentials of Green Bonds (Clifford Chance et al., 2022). For instance, the CBI and ICMA have developed their own taxonomies for setting out a Green Bond, beside ADB, World Bank-IFC and the United Nations.

The CBI [5] was launched in 2009 by the Network for Sustainable Financial Markets and is supported by the Carbon Disclosure Project. It is an international not-for-profit organization focusing on mobilizing the bond market for climate change solutions. In 2010, to drive down the cost of capital for climate change projects and grow aggregation mechanisms for fragmented sectors, CBI launched the Climate Bond Standard and Certification Scheme ("CBSC Scheme"),which serve as a fair trade-like labeling scheme for bonds. The CBSC Scheme is used globally by bond issuers, governments, investors and the financial markets to prioritize investments which genuinely contribute to addressing climate change.

GBP – The GBP was produced in 2014 collaboratively by capital market intermediaries, issuers, investors and environmental organizations under the ICMA leadership. The GBP were set to encourage more transparency and uniformed disclosure from the issuers and promote integrity in the Green Bonds market by laying out recommended rules for each step of a Green Bond issuance. The GBP, which are annually updated by ICMA, are divided into the following four components: (1) Use of Proceeds; (2) Process for Project Evaluation and Selection (3) Management of Proceeds; and (4) Reporting (Martin, 2021).

Beside the Green Bonds Principles (GBP) which outline the best practice when issuing bonds serving social and/or environmental purpose, however beside (GBP)[6], ICMA also oversees and helps to develop:

- Social Bonds Principles (SBP)[7]
- Sustainability Bonds Guidelines (SBG)[8]
- Sustainability-linked bonds Principles (SLBP)[9]

This report focuses mainly on Green Bonds and looks at some industry case studies of several broad categories of Green Projects. The Green bonds are a nascent but fast-growing fixed income asset class that are issued by governments, corporations and other institutions used to finance environmental and climate-friendly projects, such as renewable energy, recycling and green infrastructure (Gilchrist et al., 2021). In global practices, the ICMA Green Bond Principles are currently adopted by 95% of issuers (IFC, 2022).

The green bonds still need to face some challenges and will drive new opportunities:

- Research has discovered that environmentally responsible practices not only enhance shareholder value but also the value accrued to non-financial stakeholders (Gilchrist & Zhong., 2021).
- Furthermore, green bonds allow investors to fulfill their environment, social and governance concerns and mandates by allowing for climate-aligned investments. This "bonus" moral or green factor is what currently sets the market apart from its traditional counterparts (Weber & Saravad, 2019).
- However, a major concern among practitioners and investors relates to the so-called 'Greenwashing,' (Blecker-Olsen & Potucek, 2013), whereby companies purport to engage in green investment in order to attract impact-oriented investors while in practice engaging in investment that has little environmental value (Grene, 2015; Fatica & Panzica 2021).
- Taxonomies can play an important role in scaling up sustainable finance (Ehler et al., 2021). A solid and consistent Cambodian Green Taxonomy aligned with EU, BIS, ASEAN, UN and international organizations could facilitate the bonds issuance process and reduce risk of Greenwashing.
- While widely recognized by financial professionals; however, little is known about the convenience of green bonds for corporate and non-corporate issuers, and most important driver in investment decisions is the funding cost (Gianfrate & Peri, 2019) and the "Greenium" Effect (Loffler at al., 2021). The Greenium is basically the premium over green bond prices, i.e., the spread between green and non-green bonds of the same issuer. (Larcher & Watts, 2020)

In order to boost the green bonds industry, some significant recommendations have been proposed (but not limited) in terms of certification, disclosures, governance and capacity building:

- A proper certification by independent third parties (SPO), is an important governance mechanism in the green bond market and has a potential impact on public policy framework.
- All corporates and financiers must also use a standardized reporting format on climate risks (as set out in the TCFD or SSAB-ISSB recommendations (Burgess & Walker, 2017) also emphasizes on the importance of financial disclosures and the role of regulators and investors in strengthening the green finance schemes
- Governance will also be a key issue. And a solid governance framework on green bonds can contribute to long term sustainable development to ensure that the green bonds market matures with integrity, weaknesses in governance structures must be addressed (Berensmann et al., 2018).
- Education is also a must. Investors need to continue to educate themselves about climate change in order to provide clients with the climate-related analysis they deserve. (Orsagh, 2020). Financial markets will play a major role in those disruptive changes and practitioners, policymakers, and scholars are converging in stressing how crucial the support of finance is in delivering an actual and timely transition to a low carbon economy (Gianfrate & Peri, 2019).

Also, last but not least, the inclusion of ESG and SDG Goals criteria will be critical as: issuing size, maturity and currency do not have a significant influence on differences in pricing, but industry and ESG rating (Hachenberg & Schiereck., 2018).

METHODOLOGY

The research framework and methodology include initial data collection tools and instruments (corporate bonds feature analysis, regulatory framework) and also interviews of key players in Cambodia from academics, investment advisers (underwriters), issuers (corporates), auditors, technical experts, media, green project owners, non-governmental organizations and also regulators (NBC, SERC, MEF). Secondary data sources were by the literature review from international organization (IFC, World Bank, UN and ADB), and the practical case studies from real life situation, based on experience and interviews with Cambodian professionals (such as underwriters: Yuanta Securities, SBI Royal Securities and RHB Securities).

The interviews were carried out in Cambodia through different formats: online or/and physical or conference/workshop. The researcher also paid courtesy visits with Regulators, International Organizations and met several private sectors for Q&A sessions with high-level specialists.

The paper is divided into two sections:

(1) The first section examines policy and regulatory issues to be addressed for the effective operation of a green bond market in Cambodia including market standards (ICMA, CBI Principles) for all issuers (government and corporate). The section will describe different international and regional standards and key elements within these standards, and how Cambodia should be aligned with.

(2) The second section analyzes the process and best practices for a green bond issuance (pre-issuance & post-issuance) in Cambodia, based on the current context in the capital market including key barriers and challenges to existing corporate bonds. This section also looks at benefits /costs of issuance in the current context (Underwriting, Legal, Audit, SPOs). It lastly compares the processes and procedures and recommends best practices for green bonds issue.

In the end the researcher was not able to analyze all the current pipelines of the Green Bonds in Cambodia, because some are mostly relying on private opportunities and demand of investors, rather than a pipeline driven by the government. Therefore, some information of ongoing corporate green bonds will or must remain limited or confidential.

Also, the ongoing process of issuing the first government bond in Cambodia may add further updated information and may implicate the revised framework and appetite of investors and as well as on the Green Bonds issuers side and Investors. Additionally, ESG and SDG Goals criteria will be explored but not elaborated in a section, some references will be in the appendices.

This research examines the current context in the bond market in Cambodia including key barriers and challenges to bond issuance as well as possible benefits of issuance. The research will also attempt to identify all institutional actors/investors and key stakeholders' landscape in Green Finance, searching who/what are the specific actors in Cambodia promoting Green Bonds and Green Finance Initiatives? What is the policy-making landscape and what implications for policies to the domestic and international actors (issuers, underwriters, investors)? What could be the limits and challenges of Green Financing Regulatory Framework? What are the current taxonomies for Green Bonds currently used or implemented in/by the government? What is the pipeline and plan in targeting Green Industries? What is the current situation for reporting and/or disclosure requirements, related to social and environmental performance (voluntary based on guidelines of TCFD, ISSB)? What would be the barriers and opportunities for the securities industry and the private sector? And what would be the need in capacity building, in order to have a stronger and attractive Green Finance in Cambodia?

ANALYSIS

There are several different types of bonds available under the banner of "Thematic Bonds" (figure 1). These Thematic Bonds include, but are not limited to, Green, Social, Sustainable, and SDG Bonds (Martin, 2021). Within these categories there are also sub-categories. For example, Green Bonds include Climate Bonds linked to "Climate Mitigation" (such as projects in solar and wind technologies that reduce "GHG" Green-House Gas emissions), and "Climate Adaptation" (such as infrastructure projects to protect against flooding). At the same time, other types of Thematic Bonds have emerged in response to new challenges (such as Blue Bonds, Transition Bonds, and Pandemic Bonds).

ASEAN green bonds market

The volume of Green Bonds issued in Asia looks impressive in (figure 3), especially South East Asia. However, in relation to this, it remains low compared to Conventional Bonds; and according to the World Bank, the ASEAN market is still nascent, and it is estimated at 2.5%[10] of the conventional debt markets in 2021 (figure 4). It also has many opportunities and potential growth as the financing gap remains high.

Figure 3

Green Bonds in the Asia-Pacific Sub-Regions from 2015 to 2021

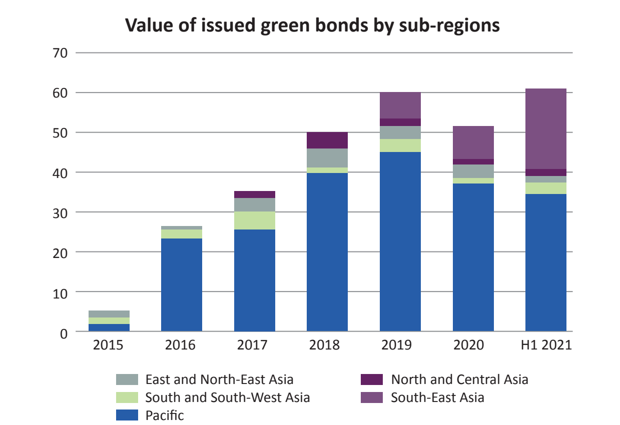
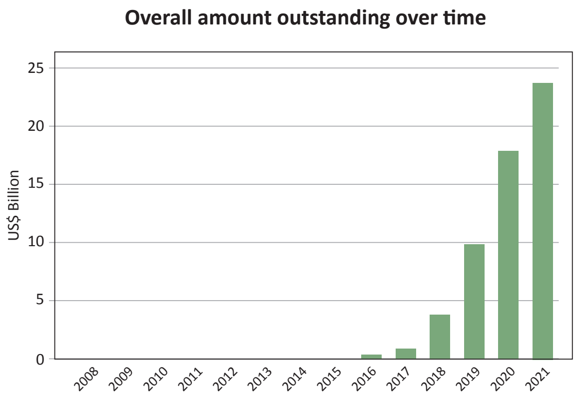
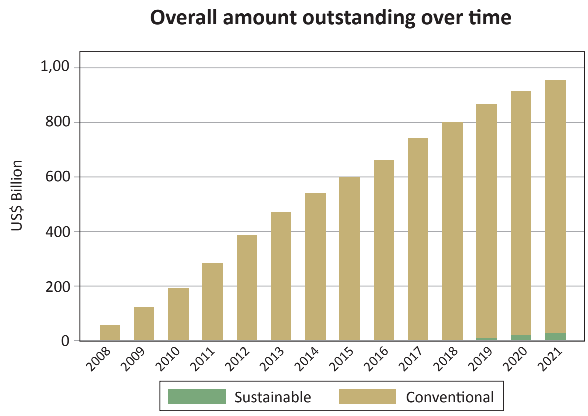


Figure 4

ASEAN-5 Green Bonds vs. Conventional Bonds 2008 to 2021





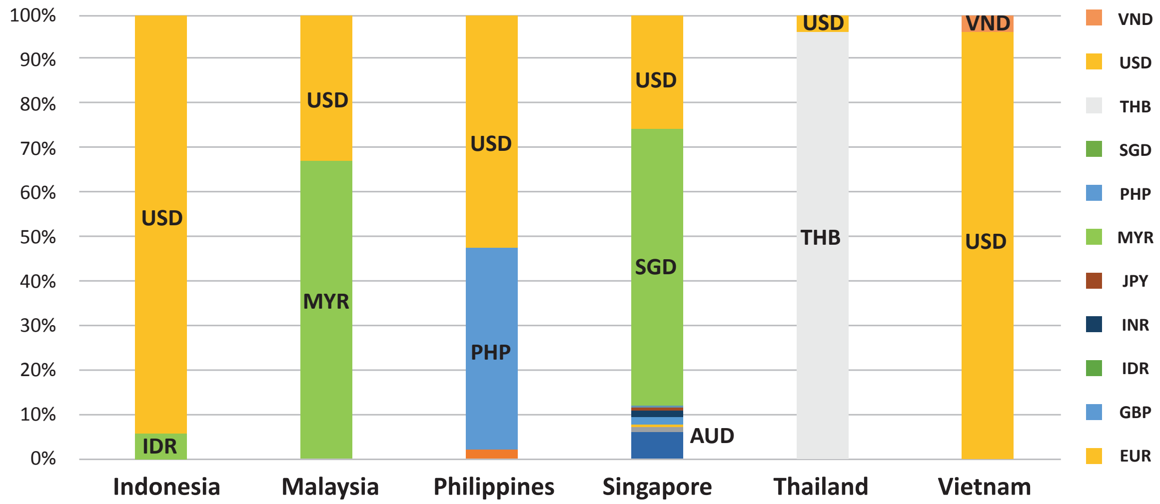
The ten members of the Association of Southeast Asian Nations (ASEAN) – Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam – taken together, represent the sixth largest economy globally. However, growth in the region has great environmental concerns such as air pollution, water contamination and deforestation, which are just a few of the pressing issues. It is estimated that around USD 3tn in green investments will be required between 2016 and 2030 to fill the funding gap needed for the region to achieve a low carbon transition.

The involvement of both public and private investors will be essential to meet the investment targets. Currently, Public Finance accounts for more than 75% of infrastructure investments in ASEAN, but this share is projected[11] to drop to 40% in the future. Private Finance will have to scale up exponentially to ensure the availability of sufficient green capital flows.

The first ASEAN country to enter the Green Bond market was the Philippines (AP Renewables in 2016). Since then, issuers from Indonesia, Singapore, Malaysia, Thailand and Vietnam have issued green debt for a cumulative total of USD 24bn, as of the end of 2021 (figure 5). Also, we can notice that most of the USD denominated bonds are significant in less advanced ASEAN countries such as Indonesia and Vietnam (benchmark for Cambodia).

Figure 5

Overview ASEAN Labeled Bonds by Country and Currency



Green bonds vs. Vanilla bonds

What is the main difference between the Green Bonds vs. Regular Bonds?

The figure 6 below (CFA, 2021) summarizes the main key difference. Unlike conventional bonds, on the pre-issuance side, there are additional steps to comply with the Green Bonds Framework such the use of an ASEAN taxonomy, which will make the screening of the bonds more consistent, and to make sure if the issuer is eligible or not. Furthermore, the issuer has to set up a process of using and managing the process, with transparency.

Figure 6

Pre-Issuance & Post-Issuance Regular Bonds vs. Green Bonds by CFA Institute

Regular Bonds Pre-issuance	Green Bonds
Get rated by Ratings Agency or SPO	Define a green bond framework
Get market intelligence on currency, tenor, size	Define how project meets green bond eligibility criteria (use of proceeds)
Decide on underwriters	Put in place project selection process and select eligible projects (selection of projects and assets)
Register with local regulator	Set up accounts and process to earmark and allocate proceeds—"ring fence" the proceeds (management of proceeds)
Issue prospectus	Establish reporting processes
Comfort letter/due diligence	Get pre-issuance external review (external review)
Outreach through road shows and sales	Allocate proceeds to the projects
Price and allocate bond to support secondary market performance	Monitor the projects
Communication to the capital market	Publish impact report
Monitor secondary market	Post-issuance audit if necessary

On the post-issuance side, the reporting and communication of information are critical. In some countries, like Singapore, listed companies have to disclose the green projects in their annual report. In other jurisdictions, it is on a voluntary based approach (recommended for Cambodia at the beginning).

What is the Greenium Effect?

"The Greenium", or Green Premium, refers to pricing benefits based on the logic that investors are willing to pay extra or accept lower yields in exchange for sustainable impact", (UNDP, 2022) or, in other words, it gives the investors lower yield compared to non-green bonds with otherwise similar characteristics.

The so-called 'Greenium' or the premium that bondholders are willing to pay to invest in green securities rather than conventional, makes green bonds relatively cheap vehicles to fund environmentally sustainable projects and thus contributes to the shift to a green economy. Yet, evidence on the Greenium is mixed and the determinants of green bond yields are not fully understood (Agliadi et al., 2021).

Green bonds pre-issuance

The issuer of the Green Bonds could be sovereign or non-sovereign. There are different types of Green Bonds issuers. For example, they were:

- Cities, States, State-Owned-Enterprises. Sovereign Fund
- Multilateral Development Banks or MDBs (AFDB, EIB, IBRD, IFC ADB, NIB...)
- Bilateral Trade and Development Agencies (G to G)
- Multinationals or Corporates (GDF Suez, DC Water, AC Energy...)
- Banks and Financial Institutions (Bank of America, Yes Bank. SMUFG, Toyota, ...)

Before starting the issuance process, issuers should identify their fundraising needs as well as their choice of debt instrument (capital structure, debt leverage). The issuer may decide to use the proceeds to finance projects or operations with green nature, or possibly green projects, green assets, or even to refinance relevant activities eligible with a green label.

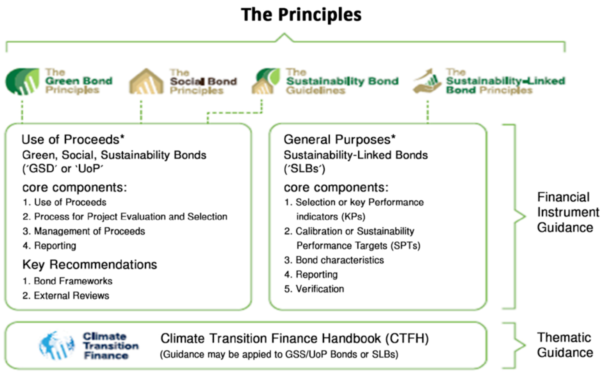
The types of green projects, assets, and expenditures which can be included in a green bond are: (i) owned projects and assets, (ii) financing arrangements for projects and assets, and (iii) related supporting expenditures.

However, issuers could refer to available taxonomy (ASEAN, International or Domestic framework) to support the "Green" criteria used in their classification. In Cambodia, the SERC recommends the ASEAN guidelines elaborated by the ADB Green Policy framework.

Once the green bond issuance is confirmed, the entity could develop Green Bonds Framework. These guidelines highlight the required transparency, accuracy, and integrity of information that issuers will disclose and report to stakeholders with its four core components (Figure 7): use of proceeds, process for project evaluation and selection, management of proceeds, and reporting.

Figure 7

ICMA Principles



The issuing entity could source for external consultancy in building up this framework (SPO, section 2.2.5) and shall provide regular reporting to investors and the market after the green bond has been issued. The format and frequency of the post-issuance report depends on circumstances (could be voluntary at the beginning, in Cambodia). In general, issuers could consider producing impact reporting, allocation reporting, or eligibility reporting. Additionally, issuers could seek a second-party or third-party assurance opinion on the allocation of proceeds to eligible green projects.

In the International context, issuers need to follow the international best practices and guidelines from: ICMA, CBI, ADB, IFC-WB, UN. There is Green Taxonomy available for ASEAN and can be applicable for domestic framework. In Cambodia, the process of labeling green bonds and eligibility of the issuer (priority sector) in terms of project metrics, assets and capital expenditures, are still ongoing. The Government of Cambodia is gradually releasing the Policy of Frameworks on Development of Government Securities (CPF SG 2023–2028). Under the leadership of MEF and SERC, the requirements of regulatory frameworks such as Policy Framework/ Strategies/Guidelines and other standardized criteria and principles relevant for Cambodia:

In summary the process to issue a green bond, before deciding to issue green bonds is:

1- Describe of the use of proceed which will finance or refinance the green projects

2- Identify of the most suitable instrument for fundraising

3- Issuers has to meet the legal, regulatory and financial prerequisite required of bond issuing

Transparency of use of proceeds is critical

The transparency of the use of proceeds is critical. We can use the past examples of the eight issuers of first corporate bonds in Cambodia (2019-2021). These examples below (none are them are Green Bonds) provide a summary on the past communicated Use of Proceeds from the issuers in Cambodia, and this part was elaborated with and through the helpful interviews with the underwriters' team (SBI Royal, Yuanta Securities and RHB Securities in May 2022):

- **LOLC:** funding the growth of lending business. LOLC issued two types of bonds – namely FX-indexed bonds and fixed-coupon bonds – and successfully raised KHR 80bn (USD 20mn) for the growth of its lending business.
- **HKL:** funding the growth in lending business, for the working capital and capital expenditure. The proceeds from HKL's KHR bond issuance will also support rural micro, small and medium enterprises ("MSME"), including women entrepreneurs in Cambodia.
- **ABA:** funding the growth in lending business and for operating expenditure. The proceeds from ABA Bank's KHR bond issuance will support rural micro, small and medium enterprises ("MSME"), including women entrepreneurs in Cambodia.
- **PPCB:** securing liquidity and ALM, and being compliant with regulatory ratios.
- **RMA:** refinancing existing working capital facilities and food business (investors: Manulife, BRED and Prudential)
- **PRASAC:** helping to diversify KHR sources of funds to finance KHR loans in rural micro, small and medium enterprises ("MSME"), including women entrepreneurs as well as helping to promote the use of Khmer Riel, following the NBC's effort to promote wider usage of the currency.
- **Telcotech:** refinancing existing debt, and in part, for meeting the on-going capital expenditure requirements of the business, which includes investment in new towers, upgrades of existing

towers and the roll out of more efficient power solutions, including solar generation.

The Use of Proceeds (UoP) is the foundation of any green bonds; it is essential that the proceeds are specifically utilized for specific activities which create a positive environmental or social impact through climate change mitigation, climate change adaptation, natural resource conservation, biodiversity conservation, and pollution prevention and control. And project categories may include activities such as renewable energy, energy efficiency, clean transportation, sustainable water and wastewater management, affordable housing amongst others.

The main additional requirement for a green bond compared with a vanilla bond is that the proceeds are allocated to "green" projects and assets. It is therefore crucial that the issuer clearly identify the categories of "green".

The green bond issuers should clearly communicate on the environmental sustainability objectives of the projects to their investors. It may also include the exclusion criteria, or any other process applied to identify and manage potentially material environmental and social risks associated with the projects, as applicable.

Since Cambodia does not have yet investible thematic bonds, the selection process would need the underwriter to discuss with the investors on the project characteristics that they want to invest in which means the underwriter uses the practical approach for selecting the projects.

- From underwriters' network (licensed by SERC)
- From investors local or international companies based in Cambodia (buy side)
- From issuers (sell side): corporates
- Other buy side system in place such as institutional investors: Pension Funds (NSSF Pension Funds Investment Management) Collective Investment Schemes (CIS) Life Insurance
- Metrics generally used are
  - ◊ Assets evaluation (balance sheets), project based (merger and acquisition, expansion, new equipment, restructuration, …)
  - ◊ Expenditures evaluation (cost of equipment, development costs, due diligence costs, tax benefits
  - ◊ Existing financing arrangement (capital structure, debt, equity, leasing, alternative source of finance, subsidies, grants, …)
  - ◊ Project evaluation tools and metrics (NPV, Payback period, IRR project vs. IRR Equity)

On the other hand, an exclusion list may help to implement the negative screening. For instance, the following activities are excluded from eligible Green and Social Projects: exploration, production or transportation of fossil fuel; large scale hydropower plants (>25MW capacity); generation of nuclear power; biomass plants, waste to energy power plants and geothermal plants, manufacture and production of finished alcoholic beverages; lethal defense goods; military contracting; gambling; weaponry; non-certified palm oil; manufacture and production of finished tobacco products; and conflict minerals activities/projects associated with child labor/forced labor.

A consistent external review is vital

While according to ICMA's Green Bond Principles, external verification is not mandatory, according to Climate Bond Standards, it is mandatory. The engagement of external reviewers is a recommended element in international practices. This helps build investors' confidence into the upcoming market and prevents the issuers from misusing and misreporting on the use of proceeds of the bond.

The external review refers to independent assessment by an external auditor (reviewer) of the green credentials of a bond. Issuers can seek certificates from recognized and approved consulting firms recognized in climate finance. Such external reviews fall under one of the two categories[12]: Second-party opinions and Assurance. These independent third-party companies undertake audit and verification, in accordance with standards set by an independent standard setter (such as the Climate Bonds Initiative). And the opinions provide an assessment of the green credentials of the bond against both the standard and the internal procedures established by the issuer.

In Cambodia, the market has been generally relying on issuers' disclosures, second party opinions, and commentary from academics, investment advisers, auditors, technical experts, media, and non-governmental organizations such as (but not limited):

- International rating agency: for ABA Bond a B rating (Standard and Poor, same as for ACLEDA IPO)
- Domestic rating agency: RAC "Rating Agency of Cambodia" (starting in July 2022)
- Audit companies: big 4 such as KPMG. EY, Deloitte, PwC and second tier (BDO, baker tilly, grant Thornton)

- Tax and legal advisory: DFDL, VDB Loi, Sok Siphana & Associates, Bun & Associates
- ESG compliance services providers: local ESG (to identify), local international (EY, Deloitte), international (Sustainalytics-Morningstar)
- Other services certification providers recognized and approved by MEF and SERC, MOE (IEA, IESA)
- Also, several international SPO[13] also identified by CBI: Veritas, (DNV), and Vigeo, among others. And green bond indices (for example, Barclays/Morgan Stanley Capital International [MSCI], Standard & Poor's) are useful benchmarks for green bond portfolios and support transparency in definitions and processes.

A voluntary-based disclosure

The SERC-CSX are currently working on how to enhance current disclosure requirements. Listed companies have to comply with SERC-CSX Disclosure Rules. However, with the introduction of Thematic Bonds, the introduction to ESG Disclosures becomes important like the Singapore Model. Plus, the disclosure should be on a voluntary based approach at the beginning.

The Public Disclosure and requirement should also extend to annual reports. The listed organizations should start working in a general and global Introduction of climate reporting, a simplified standard aligned with the recommendation of climate-related disclosures (TCFD, IFRS, ISSB).

To provide an extra layer of comfort to investors, issuers might decide to re-engage an external reviewer at the post-issuance stage:

- *Post-issuance reviews:* the reviewer undertakes an assessment to provide investors with extra assurance that the proceeds are being allocated correctly to the nominated projects and assets. Although this step is voluntary in the second-party opinion model, it is mandatory under the Climate Bonds Standard and Certification Scheme.
- *Report audit.* the issuer might decide to engage a reviewer in order to assess its investor reports periodically (usually on an annual basis). The practice allows issuers to provide investors with the confidence that the key performance indicators are being met.

The new International Sustainability Standards Board (ISSB)[14] aims to develop sustainability disclosure standards that are focused on enterprise value. ISSB will benefit from the consolidation of global bodies (CDSB, IIRC and SASB) – as well as the support of IOSCO, TCFD and WEF. Together, they share the aim of enterprise value-focused sustainability disclosures.

The findings from the interviews

From the information provided by CSX and SERC, we have completed the detailed table below with insight information through each 1-hour meeting with each Underwriters (SBI Royal, Yuanta and RHB). The second part of the analysis is based mainly on the responses of the latter underwriters particularly on the topics on pipeline.

As to date, more than USD 160 mn has been issued: USD 120mn from the SBI Royal Securities (75% of the volume) and USD 40mn from Yuanta Securities (25% of the volume). Figure 10 illustrates the characteristics of the classic corporate bonds issued in Cambodia since 2019 (Pricing, Tenors, Coupon rates, Maturities, etc.).

Figure 10

Overview Bonds Issued in Cambodia (Non-Green, Non-Social)

BONDS	1	2A	2B	3	4A	4B	5	5	7
ISSUERS	HKL	LOLC	LOLC	ABA	PPCB	PPCB	PRASAC	RMA	TELCOTECH
CODE	HKL21A	LOLC22A#	LOLC228	ABAA22A	PPCB23A	PPCB23B#	PRA23A	RMAC25A	TCT26A
INDUSTRY	MFI	MFI	MFI	BANK	BANK	BANK	MFI	INDUSTRY	TELCO
UNITS	1,200,000	536,000	264,000	848,210	400,000	400,000	1,272,000	800,000	800,000
FACE VALUE(KHR)	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
GUARANTEE	N/A	N/A	N/A	N/A	N/A	N/A	CGIF 1,5%	CGIF 1,5%	CGIF 1,5%
ISSUING DATE	11/14=2018	04/26/2019	04/27/2019	04/27/2019	04/10/2020	9/22/2020	4/23/2020	9/4/2020	8/25/2021
MATURITY	11/14=2021	04/26/2022	04/27/2022	04/27/2022	04/10/2023	9/22/2023	4/23/2023	4/4/2025	8/25/2026
YEARS	3	3	3	3	3	3	3	5	5
C RATE (KHR)	8.5% Annually	8% Annually	9% Annually	7.75% Annually	6.50% Annually	6.50% Annually	7.50% Annually	5.50% Annually	4.50% Annually
KHR HEDGING	KHR ONLY	FX-Indexed Bond 2	Plain Bond 2019-2	KHR ONLY	FOREX LINKED	FOREX LINKED	FOREX LINKED	USD SETTL SCHEME	USD SETTL SCHEME
RATINGS				S&P: B Ratings					
C TYPE	Coupon Bond SA	Coupon Bond SA	Coupon Bond SA	Coupon Bond SA	Coupon Bond SA	Coupon Bond SA	Coupon Bond SA	Coupon Bond SA	Coupon Bond SA
B TYPE	Corporate	Corporate	Corporate	Corporate	Corporate	Corporate	Corporate	Corporate	Corporate
UNDERWITRES	SBI	YUANTA	YUANTA	SBI	YUANTA	YUANTA	SBI	SBI	SBI
AMOUNT (USD)	30,000,000	13,400,000	6,600,000	21,205,250	10,100,000	10,100,000	31,800,000	20,000,000	20,000,000

None of them are Green or Social Bonds, however the Underwriters have one or two potential "Green Project" candidates in their respective pipeline, and also become vital for them to identify, include in their potential pipeline:

Here are some ongoing pipelines examples from the Underwriters (confidential)

Response 1	Green Bonds: with Green Building (3 projects), and one in green energy (renewables, solar), Green Agriculture Bond (Food security and agriculture value chain project, cold chain, green supply chain)
Response 2	Green Bonds: on water infrastructure Bond in Cambodia such as wastewater management & water supply: the project focuses on recycling (circular economy)
Response 3	Solar energy, 20 MW Stand-alone projects without recourse. The solar project is already commissioned.

In terms of bond features, we can notice that past issued bonds' maturities range from 3 years to 5 years maximum. According to the Underwriters, the new coming bonds maturity should range 3-5 years (maximum 7 years). And the coupon has decreased from 8.5% in KHR to 4.5% in USD (Telcotech). The coupons are semi-annual in Cambodia. Today, new yields are uncertain with the context of raising inflation over the world, it is uncertain if the coupon rates would remain at this level (lastly 4.5% in USD) for the future issues.

Furthermore, the credit rating and credit guarantees are very critical, even vital, to match the investors' requirements. For example, the last three bonds (PRASAC, RMA and Telcotech have cooperated with CGIF (ADB) to get an AA rating through a credit enhancement schemes on top of the yield (about 1.5%), The Underwriters would recommend a partnership with credit enhancer provider such as CGIF (ADB) and Guarantco. Some credit enhancement could be also offered by international organizations such as AIIB, AFD or USaid. Definitely, Green Bonds will need to integrate the credit rating and credit enhancement factor, in order to maximize the chance of placement.

There are still some ongoing undisclosed projects led by the public sector (sovereign bond projects).

CONCLUSION

Through the research papers and our interviews, we can summarize and emphasize some points such as the main challenges faced by Green Bonds participants: excessive issuance costs, length of the process to get bonds listed, and a nascent regulatory framework (aligned with regional and international standards and best practices). These are also obstacles that the participants have to overcome and there are in line with the past research on emerging markets bonds, such:

- The Foreign Exchange Risk: the first bonds were issued in KHR and have gradually evolved to forex-linked bonds and USD-denominated bonds (due to international investors demand). Thus, the foreign forex risk is now borne by issuers (since the recent bonds are issued in USD) exposing issuers to exchange risk. The forex risk may imply some additional concerns such as forex hedging as investors do want to mitigate the exchange risk exposure if the USD is not their main transaction currency. In that case the hedging cost could range 3%-4% on top of post- issuance costs (for example, forex swap on PRASAC bond). And there are no local hedging tools such as derivatives or swap provided by the Cambodian Derivatives market (CDX - they only trade CFD and on spot). And most of the swaps are done through foreign banks.
- The nascent Domestic Institutional Investors: need to polish their policy and refine their asset allocation. Cambodia's institutional investors are growing significantly (Pension funds, Life Insurance), but their investments remain limited to short term investments such as Certificate of Deposits (matter of financial education?). Besides Life Insurance and NSSF, the main participants in asset management can include corporate treasurers, corporate pension funds and CIS (collective investment schemes). The NSSF Pension Fund may play a leading role in local demand for domestic securities.
- The International Institutional Investors Demand Appetite Remains High: the last bond issue (Telcotech) was 100% purchased by offshore investors. The market appetite from foreigners is translated into more USD-denominated bonds and more credit guarantee and Guarantee/Credit Rating (such as CGIF-ADB, Garantco, and Credit Ratings providers like S&P,

also + AIIB and MBDs). The credit guarantee adds extra cost for the post issuance bond: for the instance CGIF Guarantee (for PRASAC, RMA and Telcotech, and cost is around 1.5% on top of yield (4.5% coupon on Telcotech +1.5%=6%, to get the CGIF AA rating)

- The Accounting Complexity: in the case of KHR-denominated bonds, the accounting can be complex as the issuers have to do mark-to-market valuation and provision the forex risks, and this is also challenging for issuer's financial statements who wants to both comply with CIFRS (Cambodian IFRS) vs. IFRS Disclosures and ongoing SSAB-ISSB recommendations (Burgess et al., 2017). The capacity boiling is needed at public and private sector level, in order for all stakeholders to be aligned with the recommendations of (Bhattacharyya, 2021) insisting on the importance of financial disclosures and the role of regulators and investors in strengthening the green finance schemes.

RECOMMENDATIONS

In order to stimulate the Green Bonds market, and based on the past experience on the CSX Bond market, some additional initiatives could be implemented to drive the Green Bonds market and leverage the domestic capital market as a whole.

For the recommendation it would be better to establish a clear, consistent and broad framework for Green Bonds in Cambodia, then detailed one later. A harmonized and a simplified framework could stimulate the bond market – harmonization between bank and non-bank (NBC & SERC-MEF).

Our green taxonomy should be innovative enough, and aligned with the international and ASEAN taxonomy. Public education is the next priority. For instance, clear definitions and practical, applicable criteria for green projects eligible in Cambodia (this will help the stakeholders to define what is green-washing or not green-washing). Greenwashing was well defined by (Blecker Olsen & Potucek, 2013) and (Grene, 2015) and (Fatica & Panzica, 2021).

The establishment of collaboration between the public and private sector on ESG criteria, compliance and guidelines is important. The government may also establish recognized local authorities that can issue local certification on ESG compliance whether with or without government backed, as referred to nonfinancial information to stakeholders by (Gilchrist & Zhong, 2021)

In terms of guarantee the government should provide guarantees to the private sector. An efficient guarantee system could be elaborated at the MEF (Ministry of Economy & Finance) level (Credit Guarantee Corporation of Cambodia, Khmer Enterprise) and could allow smaller and private limited companies to also issue bonds.

The issuance costs remain high in Cambodia. The costs of getting bonds listed may include ESG compliance, underwriting fees (2%-2.5% of the issued amount), legal fees, advisory and audit and also credit guarantee (i.e. 1.5% by CGIF) and hedging costs (swap). Therefore, a system which can provide subsidies on issuance costs would stimulate the market. In parallel, the reduction of redundant due diligence processes by reducing excessive steps in the process can also reduce the lead time which, in general, is more than a year.

A frequent periodic and voluntary disclosures, supported and encouraged by CSX platform or/and Cambodian Financial Analysts Association, dedicated green bond investors newsletter, annual report on sustainability issuer's project's website, could be a plus. Simplified and applicable disclosures and methodology for green bonds and for green loans is essential to build the trust between issuers and investors but also in the regulatory framework. Good governance structures must be addressed (Berensmann et al., 2018).

The climate disclosures will also affect the risk committee of the board of directors' agenda. Therefore, an improvement of corporate governance by including an ESG committee or ESG-driven audit committees and even in risk management will definitely change the structure of decision and internal control, the way we do today, emphasized by (Hachenberg & Schiereck, 2018).

Last but not least, the capacity building should be extended at all levels from the public (regulator) to the private sector, and even at the board of director's level. The capacity building should cover taxonomy explanations, methodologies and certifications "Align taxonomy and public education at every level", and ESG tools.

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