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"A STUDY ON GREEN INVESTMENT"

UNDER THE GUIDANCE OF

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ABSTRACT

In present times of technological progress the worldwide economy is undermined from three major challenges: environmental change, vitality limitations and money related emergency. This is on account of financial improvement conveys alongside itself expenses to the countries in the shape of environmental degradation. Green Investment or finance is the solution for accomplishing contract between the economy and nature. Green Investment is considered as the monetary help for green development, which decreases ozone depleting

substance discharges and air contamination emanations altogether. Green fund in horticulture, green structures, green security and other green activities should increase for the monetary improvement of the nation. In this paper an endeavour has been made to explore the existing literature on the green investment or finance and future scope of green investment in India.

CHAPTER-1

INTRODUCTION

Investors and consumers around the world are increasingly driving momentum for positive changes in our financial and economic systems. Large corporations face pressures to act responsibly towards multiple sets of stakeholders, consumers demand increasing transparency in business practices, and environmentally or socially minded innovators excite investors and consumers alike about a more sustainable future. The scale of today's social and environmental challenges, too - with globally heightened uncertainty, widespread inequality, and significant pressures on the environment-makes it evident that the responsibility to address them does not fall on governments and philanthropists alone.
Businesses and investors must embrace their responsibility as engines of progress.

Indeed, there is evidence to show that investors and other financial professionals can lead efforts to confront critical issues in local and global communities. Impact investing-investing to generate positive social or environmental benefits alongside financial returns- has seen tremendous growth and development over the past decade. Impact investors-whether they are commercial investors, fund managers, foundations, government agencies, or individuals-now help finance a diverse set of solutions to many social and environmental issues, including expanding access to critical basic services, supporting environmental conservation, and driving the transition to renewable energy.

1.Concept of Green Investment

Definitions

There are hundreds of definitions for green investments in circulation and use, and it would be futile to try to list and compare even a fraction of them. The purpose of this research is not to take a position on a specific definition but rather to explore what is being commonly used in the market place, whether there are commonalties and inconsistencies, and what lessons can be drawn from this analysis.

Opinions differ not only on the definition of green" but also on what is meant by „investment". It is therefore more productive to approach the question in two stages.

1.1 Defining 'green'

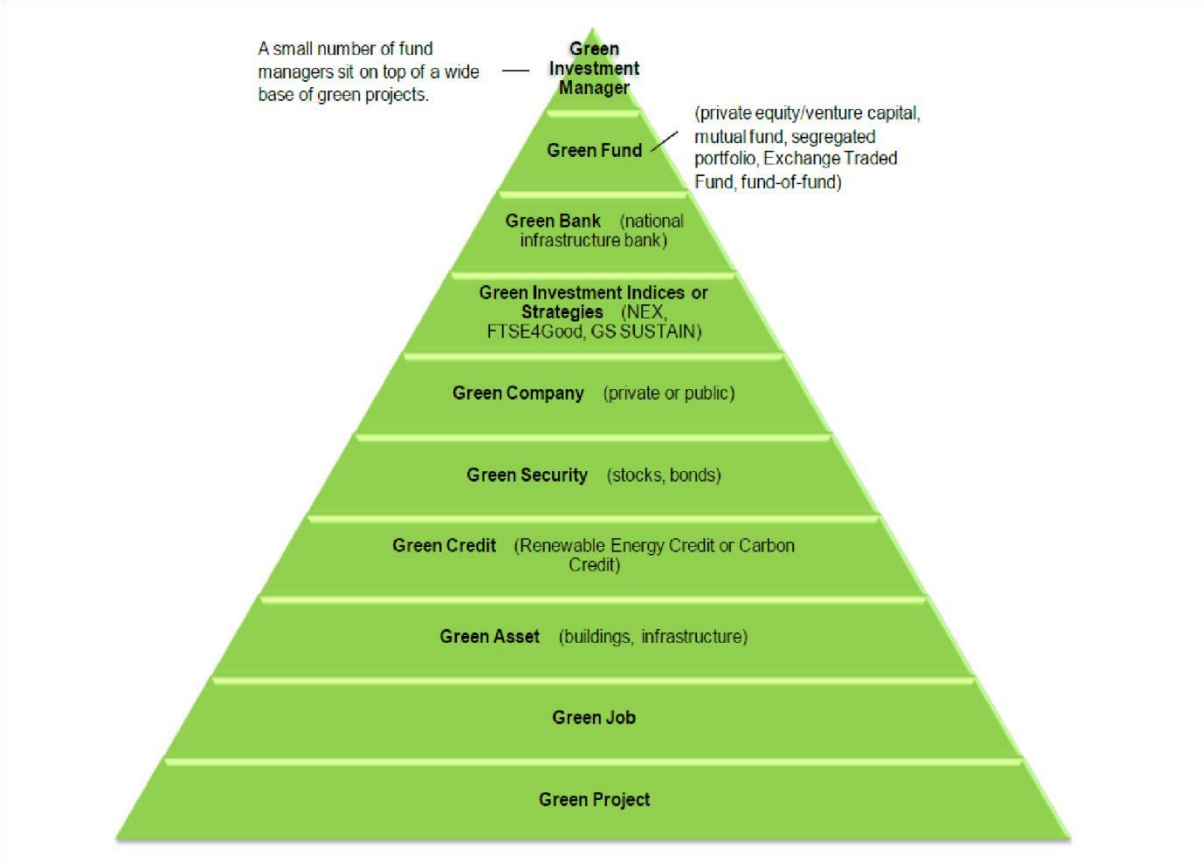
Definitions of „green" can be explicit or implicit. Some are very broad and generic, others are more technical and specific. Some are investment-driven, others come out of ecological or ethical discussions. The „greenness" of assets can be postulated in absolute terms (a good or technology is green or not green) or in relative terms (e.g. one company has lower greenhouse gas emissions than another or is more energy-efficient). Green investments are invariably conflated with climate change mitigation or adaptation, and the definitions focusing around climate change are more uniform as they can to a certain extent be deduced from the science about how to address climate change.

1.2 Defining 'investment'

A lot of actions are referred to as „investment", and this creates considerable confusion also for the definition of green investments.

In the broadest terms, an investment involves committing money or capital to an endeavour (a business, project, real estate, etc.) with the expectation of obtaining an additional income or profit. This can refer to the investment in underlying technology, projects or ventures but also to financial products that invest in those. Green (or not so green) „investment" is being referred to at all levels. This paper will focus on the latter – i.e. the financial products that institutional investors use to invest in green projects and ventures. It must be stressed that financial products cannot in themselves be green – greenness is derived from the uses to which they are being put – underlying assets or activities.

Green investment pyramid



For institutional investors, there are basically two main levels of investment decisionmaking: Strategic decisions taken by a board of directors or trustees, an investment committee or CIO (e.g. on the type of ESG (Environmental Social and Governance), SRI (Socially Responsible Investment), green investment policy).

• Implementation decisions taken by internal or external fund managers and „green" analysts (e.g. selection of assets, benchmarks, funds etc.).

1.3 Historical Background of Green Finance

In 1992, The United Nations Environment Program Finance Initiative (UNEP FI) was launched when UNEP joined with a group of commercial banks to promote consciousness of the environmental program into the banking industry. The UNEP Finance initiative is a unique corporation among UNEP and the economic region. It can be seen as the initial idea of Green Finance. Later on, the initiative keeps engaging more financial institutions, including investment and commercial banks, insurers and fund managers into close dialogues about connecting environmental protection with sustainable economic development. It aims to integrate environmental considerations into present financial services and practices. Currently, around 190 financial institutions beginning, greater than 40 nations have signed to the UNEP FI statement. Signatory institutions to the UNEP FI statement also have the chance to learn from the network about the latest trends and practices on how to seize green opportunities for growth as well as to shape sustainable finance agenda in their own development (UNEP FI, 2010, 2011).

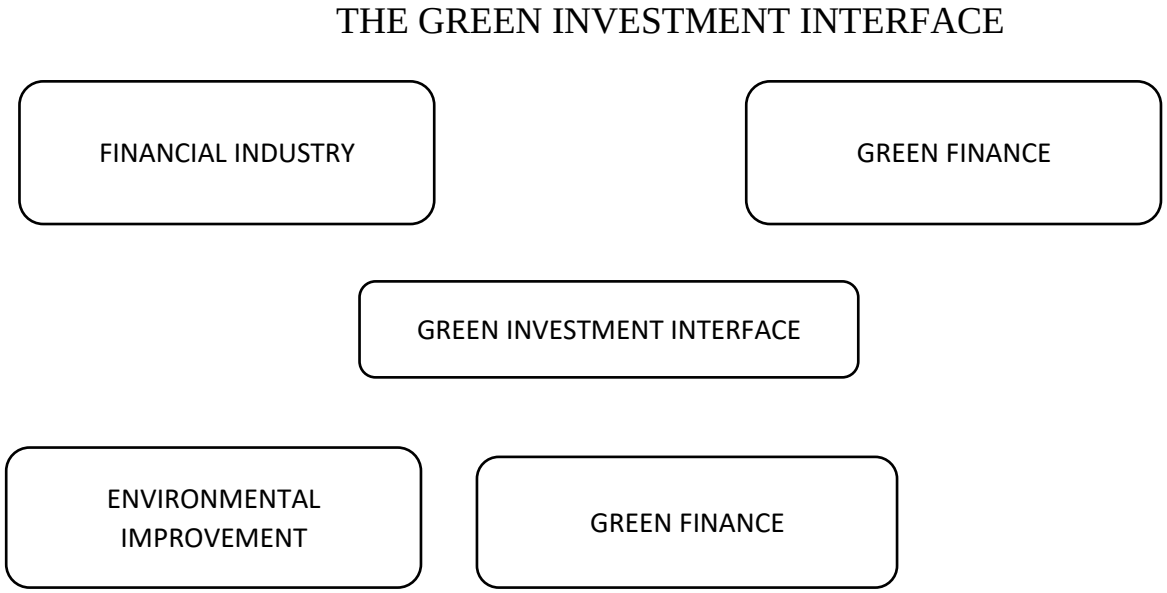
1.4 The Equator Principles

In 2003, the Equator Principles (EPs) were propelled and were at first received by some driving worldwide banks, for example, Citigroup Inc., The Royal Bank of Scotland, Westpac Banking Corporation. It fills in as "an arrangement of wilful gauges for deciding, evaluating and overseeing social and ecological hazard in venture financing" (Chaudhary and Bhattacharya 2006). The EPs is construct the execution gauges in light of social and natural manageability of the International Financial Initiatives (IFC) and World Bank Group's Environmental, Health and Safety general rules, and it gives a typical benchmark and system for venture back the receiving substances, known as Equator Principles Financial Institutions (EPFIs), make their own particular social and ecological strategies, methodology and models for their financing exercises, and guarantee not to offer credits to ventures where the borrowers don't consent to the guidelines expressed in the EPs. In the meantime, EPFIs have obligations to guarantee the borrowers know the substance of standards and to manage them on the best way to join standards into arranged undertaking. They also require their clients to report the intention of compliance with EPs' standards if they are able to continue to seek financing for the project afterwards. These principles can exist apply to all new projects with total capital costs equator to or more than US$10 million wherever nationally or internationally. So far, there have been nearly 70 monetary institutions on a global scale adopting and implementing the EPs. Different from the UNEP FI report, the EPs explicitly provides sector standards that guide EPFIs to manage independently and

govern the policies by themselves. Nevertheless, the EPs only apply to project finance and incidental advisory services, which is a comparatively narrow market within the financial sector.

1.5 How green finance work

Green businesses and innovations are all at various levels of development, in this way, requiring distinctive levels of subsidizing from various wellsprings of capital. There are by and large three sources: residential open fund, worldwide open back and private part back. Residential open back alludes to the immediate subsidizing by a legislature while worldwide open fund alludes to subsidizing from universal associations and multilateral advancement banks; private segment fund comprises of both local and global financing sources. Green financing can be bundled in various routes through different speculation structures.



Green fund is a centre piece of low carbon green development since it interfaces the money related industry, ecological change and monetary development (Figure 1): "One missing connection amongst 'knowing' and 'doing' in the progress to green industry is 'green back'. All green modern suggestions cost cash, and numerous green industry plans of action are as a general rule untested or eccentric. Hence, conventional fund may think that its troublesome or economically ugly to back these green modern recommendations." (Gao, 2009).

GREEN INVESTMENT PRODUCTS

RETAIL FINANCE	GREEN INVESTMENT	CORPORATE/INVESTEMENT FINANCE
• • Green Mortgage • Green Home Equity Loan Green Commercial Building • Loan Green Car Loan, Credit Card		• Green Project Finance • Green Securitization • Green Venture Capital & Private Equity • Technology Leasing • Carbon Finance
ASSET MANAGEMENT		INSURANCE
• • Fiscal Fund (Treasury Fund) • Eco Fund, Carbon Fund • Cat bond (Natural disaster bond) Eco ETF		• Auto Insurance • Carbon Insurance • Catastrophe Insurance • Green Insurance

Three classifications for green fund are: framework of green, money related help for industry or firms and budgetary markets. Green financing identified with Financial Industry Green Finance Environmental Improvement Economic Growth Green Finance Interface environmental change incorporates alleviation and adjustment ventures. Numerous private financial specialists see the dangers of ecologically economical activities as not advocated by the normal returns. Open financing components can tilt this adjust for apparent gainfulness; for instance, by offering delicate advances or ensuring credits from private banks. Open subsidizing can help goad private speculation. Joined Nations Economic and Social Commission for Asia and the Pacific, Financing an Inclusive and Green Future: A Supportive (Hee, 2010).

2. Green financial investment products and services

2.1 Green bond

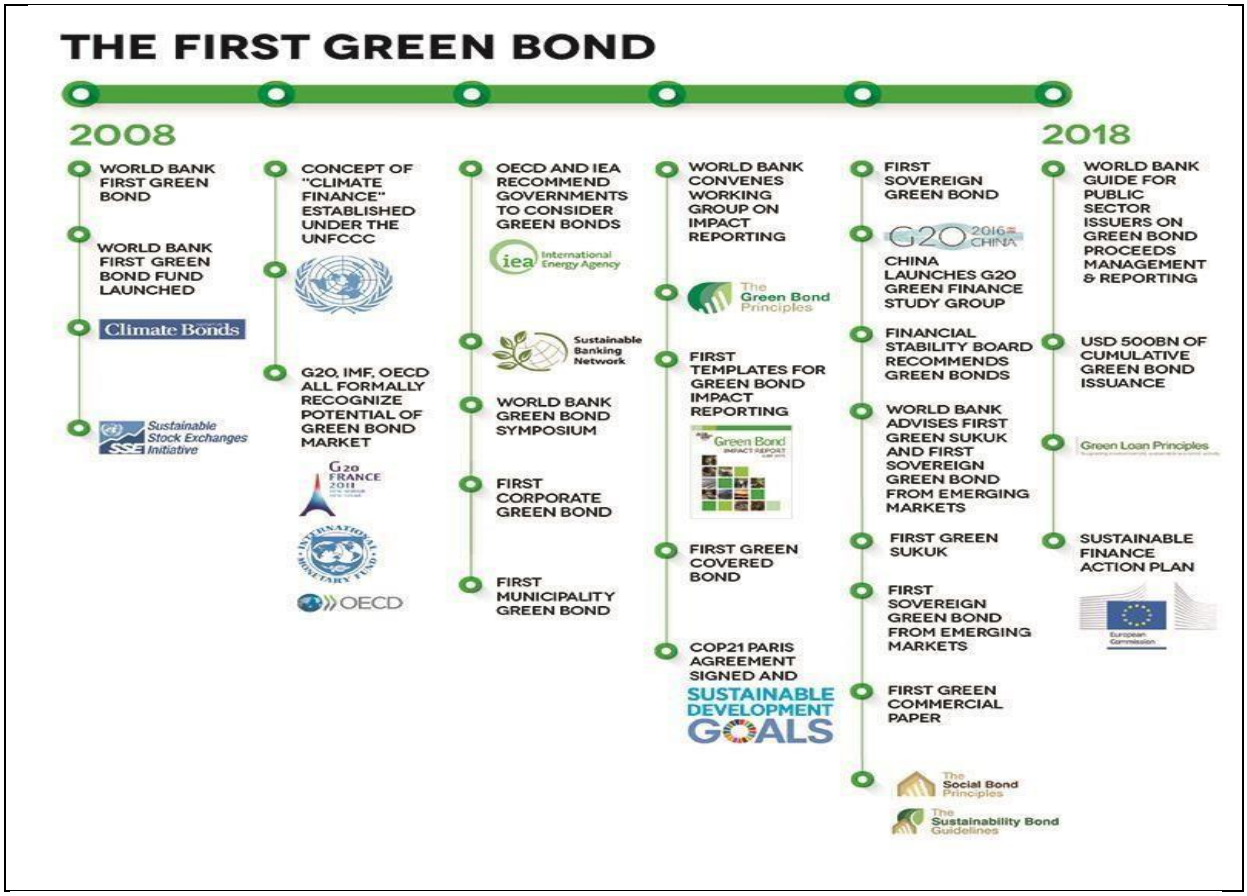
A bond is a debt instrument with which an entity raises money from investors. The bond issuer gets capital while the investors receive fixed income in the form of interest. When the bond matures, the money is repaid.

A green bond is very similar. The only difference is that the issuer of a green bond publicly states that capital is being raised to fund 'green' projects, which typically include those relating to renewable energy, emission reductions and so on. There is no standard definition of green bonds as of now.

Indian firms like Indian Renewable Energy Development Agency Ltd and Greenko have in the past issued bonds that have been used for financing renewable energy, however, without the tag of green bonds.

Green bonds are issued by multilateral agencies such as the World Bank, corporations, government agencies and municipalities. Institutional investors and pension funds also have appetite for such bonds. For instance, investment funds BlackRock and PIMCO have specific mandates from their investors to invest only in bonds which fund green projects. The issuer provides periodic reports about the project.

Green bonds also come with advantages of tax incentives such as tax savings, which make them a more attractive investment compared to other comparable taxable bonds. This feature of Green bonds provides a monetary incentive to tackle major social issues such as climate change and switching to renewable sources of energy to reduce environmental harm. To qualify for green bond status, a third party such as the Climate Bond Standard Board often verifies them that the bond will actually fund projects that benefits the environment.



2.2 Why are they in the news

In March, the Exim Bank of India issued a five-year $500 million green bond, which is India's first dollar-denominated green bond. The issue was subscribed nearly 3.2 times. The bank has said it would use the net proceeds to fund eligible green projects in countries including Bangladesh and Sri Lanka. Earlier, in February, Yes Bank raised Rs 1,000 crore via a 10-year bond, which was oversubscribed twice.

2.3 Green Bonds' Historical and International Trends

The first green bond was issued in 2007 and was initially characterized as a niche product pioneered by a handful of development banks. The "Climate Awareness Bond" was issued by the European Investment Bank (EIB) in 2007, followed by the World Bank issuing a "Green Bond" in 2008.15 Between 2007 and

2012, governments began to join international organizations and issue their own green bonds and the market reached $10 billion by mid2012.

With a growing market appetite for green bonds, there is increasing diversification of issuers and investors in more currencies beyond the early investments by the United States and Europe. The largest issuer in 2015 was the EIB, with KFW, EDF, and the Agricultural Bank of China. New investors including Credit Agricole and HSBC made first time pledges, and various consortia of banks formed to issue guidance on impact reporting, aimed at bringing companies to market.

Corporate sector engagement has increased substantially since 2013, indicating high demand among investors, including overall growth in the issuance of green bonds as well as the volume, diversity and size of issues.17 In 2014, the green bond market reached $37 billion, almost triple the total level of investment in 2013.

The United Kingdom, China, Germany, Japan, the Netherlands, Norway, and the United States have shown significant growth in the green bonds market since 2014. Seven new markets released $3.2 billion worth of green bonds in 2015 – Brazil, Denmark, Estonia, Hong Kong, India, Latvia and Mexico.

$46 billion worth of green bonds were sold worldwide in 2015, according to Bloomberg New Energy Finance. Investment is anticipated to continue increasing in 2016, following the strong climate agreement at the UNFCCC climate negotiations in Paris.18 Overall, Europe hosts the highest number of green bonds, with nearly $18.4 billion issued in 2015. About $10.5 billion came from the U.S., where the market was mainly driven by municipal green bonds.19 Within the next five years, China's green bonds market may reap an estimated 1.5 trillion yuan ($230 billion) for renewable energy and environmental projects.20 The launch of diverse types of green bonds and geographic expansion has indicated that the market is maturing and investor interest is outpacing supply.

2.4 Who Is Involved in the Green Bond Market?

Green Bond issuers – Driven by supranational EIB, IBRD, and IFC in the early days, late 2013 and 2014 saw progression with new international agencies entering the field such as
KFW, FMO, and EDC. The market expanded to include corporates such as EDF, GDF Suez, Unilever, and Unibail-Rodamco. U.S. municipals are the most recent participants, including Massachusetts, Connecticut, California, as well as DC Water. Universities followed suit led by MIT and University of Cincinnati.

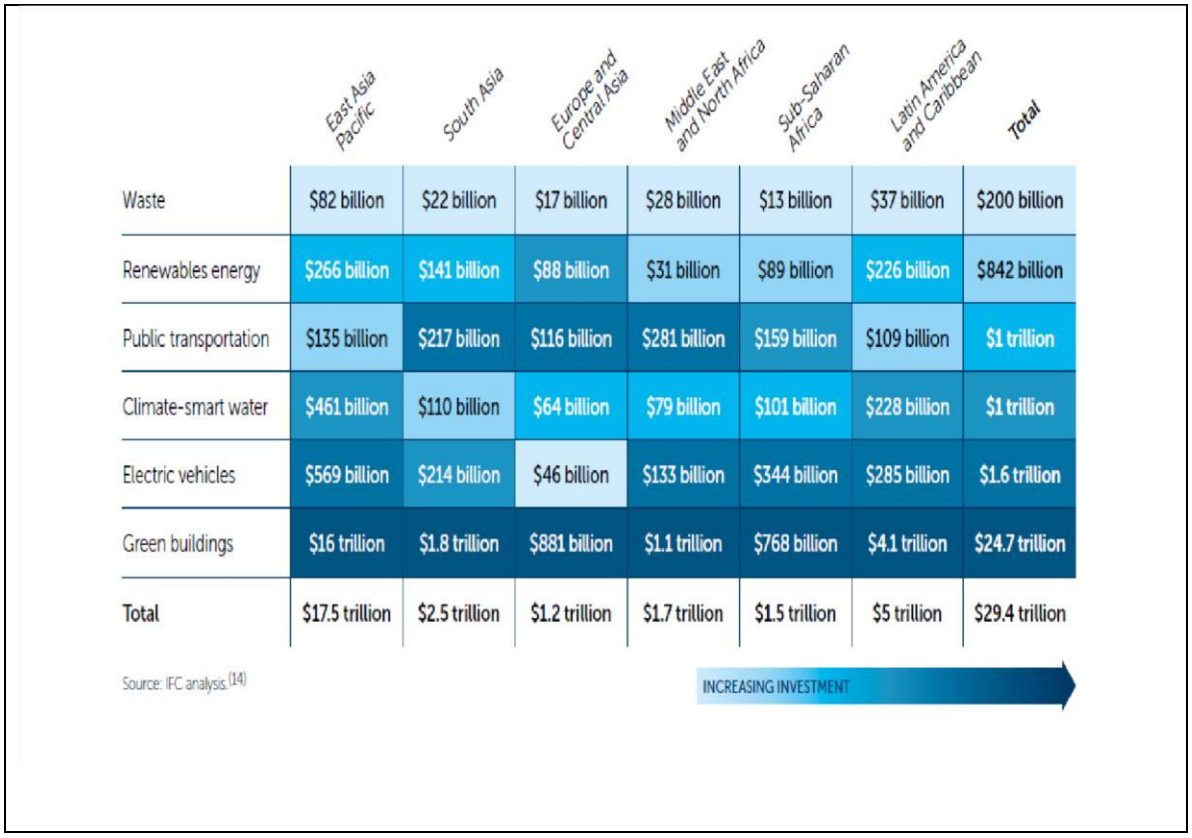
Green Bond investors – Investors range from green dedicated funds and retail, to asset managers, banks, corporations, pensions and insurance companies. Investors are not exposed to the risk of specific projects – the repayment of the bond is subject to the credit risk of the issuer; however, other forms of Green Bonds are emerging including asset backs and covered bonds, where investors can take exposures to projects.

Outstanding Climate Investment Opportunities in Emerging Markets

More than half of the world's population lives in urban areas, a number that is expected to reach 70 percent by 2050. The success or failure of cities at addressing climate change will be pivotal to efforts to limit global warming to 1.5 degrees Celsius. In a 2018 report, "Climate

Investment Opportunities in Cities - An IFC Analysis (2018),"(11) IFC estimates a cumulative climate investment opportunity of $29.4 trillion across six key sectors in emerging market cities through 2030. The largest share of the opportunity in green buildings ($24.7 trillion), covering new constructions and retrofits, as cities race to accommodate their growing populations. Other key sectors identified for urban climate-smart investment include electric vehicles ($1.6 trillion), public transport infrastructure ($1 trillion), climate-smart water ($1 trillion), renewable energy ($0.8 trillion)(13), and municipal solid waste management ($0.2 trillion).

Investment potential in cities by region and sector to 2030



	East Asia Pacific	South Asia	Europe and Central Asia	Middle East and North Africa	Sub-Saharan Africa	Latin America and Caribbean	Total
Waste	$82 billion	$22 billion	$17 billion	$28 billion	$13 billion	$37 billion	$200 billion
Renewables energy	$266 billion	$141 billion	$88 billion	$31 billion	$89 billion	$226 billion	$842 billion
Public transportation	$135 billion	$217 billion	$116 billion	$281 billion	$159 billion	$109 billion	$1 trillion
Climate-smart water	$461 billion	$110 billion	$64 billion	$79 billion	$101 billion	$228 billion	$1 trillion
Electric vehicles	$569 billion	$214 billion	$46 billion	$133 billion	$344 billion	$285 billion	$1.6 trillion
Green buildings	$16 trillion	$1.8 trillion	$881 billion	$1.1 trillion	$768 billion	$4.1 trillion	$24.7 trillion
Total	$17.5 trillion	$2.5 trillion	$1.2 trillion	$1.7 trillion	$1.5 trillion	$5 trillion	$29.4 trillion

Source: IFC analysis.[14]

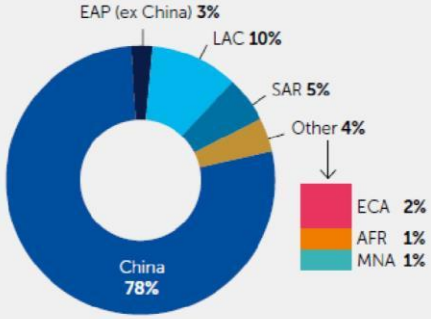
INCREASING INVESTMENT

3. CURRENT STATE AND OUTLOOK OF THE GREEN BOND MARKET

Emerging markets have been issuing green bonds since 2012, when South Africa made two debut issuances, followed by issuances from Brazil, China, and Peru in 2014. After the People's Bank of China announced guidelines for green bond issuances in late 2015, China's green bond market quickly grew to $108.6 billion in cumulative issuances between 2012 and 2018, or about 78 percent of the cumulative total of $140 billion in issuances from emerging markets during that period. The next largest issuers were India ($7.7 billion), Mexico ($7 billion), and Brazil ($4 billion) (Figure 2.1), followed by Poland, Indonesia, and South Africa, with each country issuing over $1 billion of green bonds. On a regional basis, East Asia and the Pacific had the largest volume of green bond issuances cumulatively (81 percent), while Latin America and the Caribbean (10 percent) and South Asia (5 percent) had the next highest levels (Figure 2.2). Despite the impact of market conditions in 2018, which saw an overall downturn in global bond issuance compared to the year earlier, emerging market green bond issuance kept a robust pace with $43 billion and over 90 new

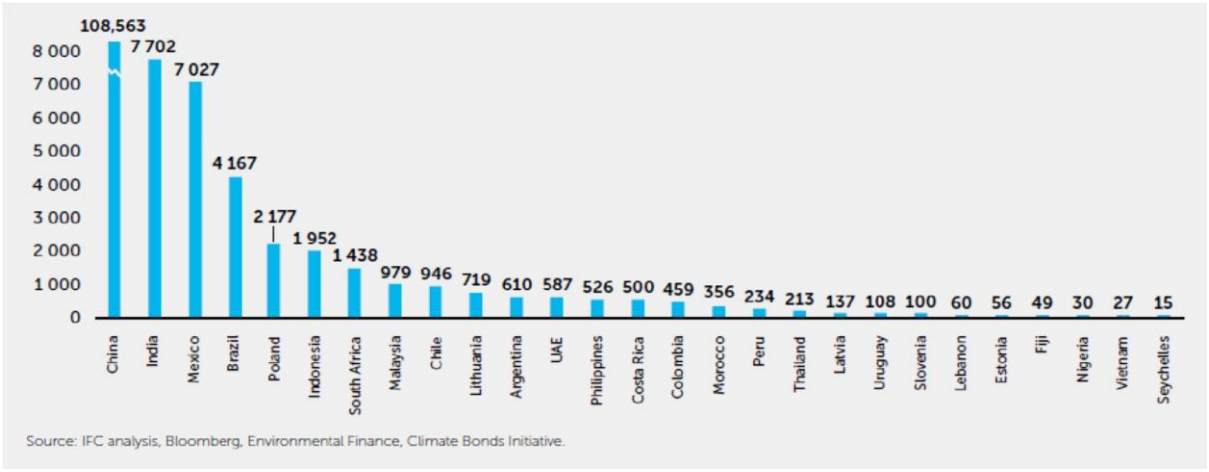
issuers. In addition, debut issuances in Indonesia, Lebanon, Namibia, the Seychelles, Thailand, and Uruguay brought the number of emerging countries with green bond issuances to 28 countries from 22 countries.

Emerging Market Green Bond Issuance, 2012-2018



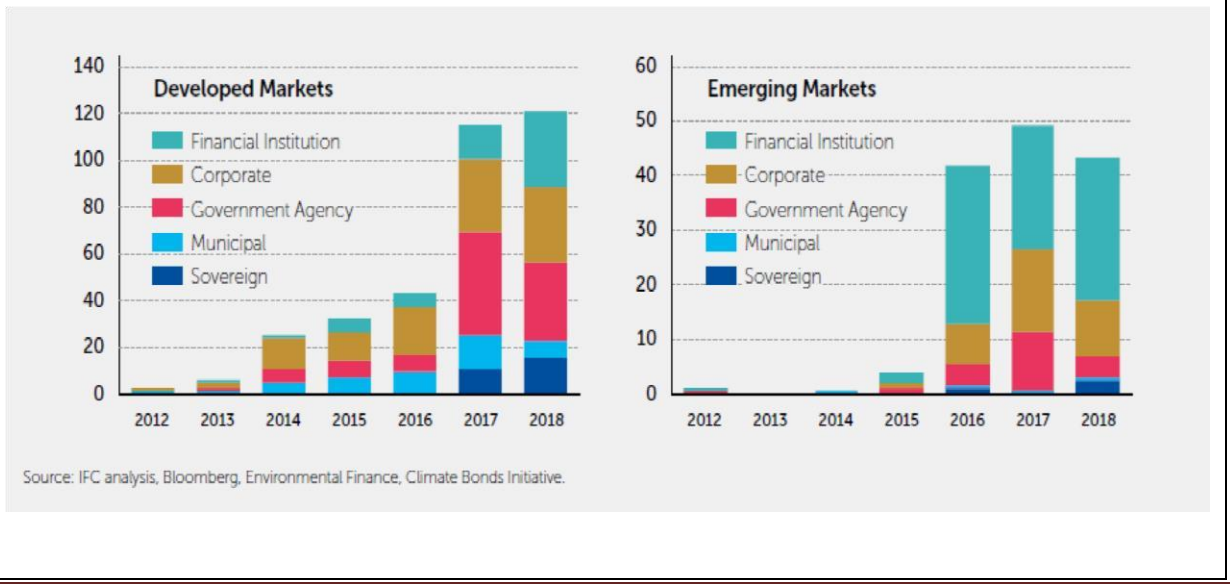
Region	Number of countries	Number of green bond issuers	Volume ($ billion)
Africa (AFR)	4	8	1.5
East Asia and Pacific (EAP)	7	160	112.3
Europe and Central Asia (ECA)	5	9	3.2
Latin America and the Caribbean (LAC)	8	32	14.1
Middle East and North Africa (MNA)	3	6	1.0
South Asia (SAR)	1	20	7.7
Total	**28**	**235**	**139.7**

Source: IFC analysis, Bloomberg, Environmental Finance, Climate Bonds Initiative.[18]



Emerging Market Green Bond Issuance, by Region, 2012-2018

While financial institutions in developed markets accounted for some 18 percent of total green bond issuances, they were the largest -issuing sector in emerging markets, making up 57 percent of cumulative green bond issuance, followed by nonfinancial corporates (25 percent), government agencies (14 percent), sovereigns (2 percent), and municipals (1 percent) (Figure 2.3). Recently, from 2016 to 2018, new EM sovereign issuers entered the market. These

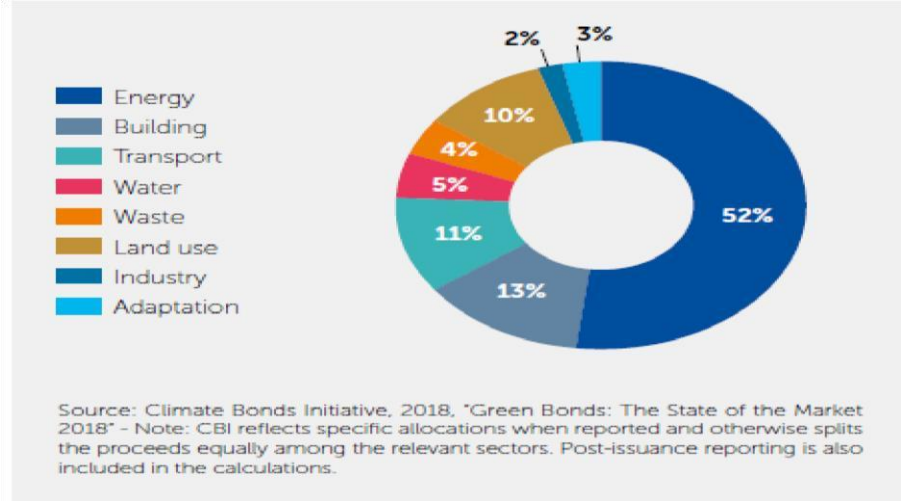


sovereign green bonds, which could serve as benchmarks for future issuances, were issued by Poland (2016, 2018), Nigeria (2017), Fiji (2017), Indonesia (2018), and Lithuania (2018).

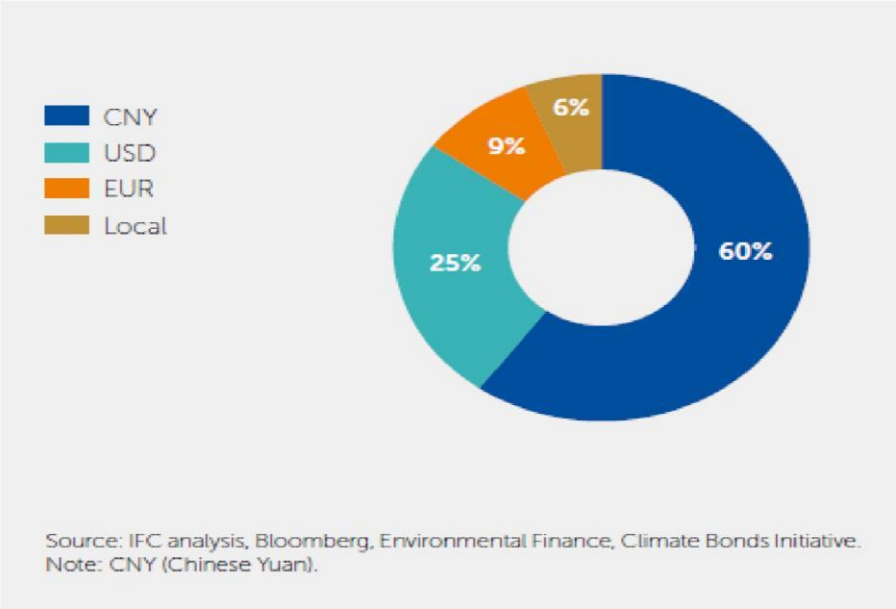
Emerging Market Green Bonds, by Issuer Sector, 2012-2018 ($ billion)

For most green bonds, proceeds were earmarked for projects that addressed environmental concerns. In emerging markets, renewable energy made up the largest sector for use of proceeds, while low-carbon transport, water, green buildings, and waste were the next largest sectors.

Emerging Market Green Bonds Issuance, by Use of Proceeds, 2012-2018



Emerging Market Green Bond Issuance, by Currency, 2012-2018



Green bond issuances in emerging markets ranged from $1.5 million to $4.4 billion, with an average issuance of $385 million. Some 34 percent of emerging market green bond issuances were in hard currency (Figure 2.5). Excluding China, local currency bond issuances made up 6 percent of cumulative emerging market green bond issuances. About half of the bonds had a credit rating, and 90 percent of those bonds were investment grade. As detailed in the interview with Amundi, “Emerging Market Issuers Catching Up with Developed Market
Counterparts” many green bonds adhered to the Green Bond Principles or local green bond guidelines and had external reviews and/or second-party opinions.

Growth Forecasting

By the end of 2018, the green bond market in emerging economies totalled about $136 billion, or about 0.5 percent of outstanding bonds in emerging markets. While green bond markets in emerging countries initially grew at a slower pace than similar markets in developed countries, they have had a noticeable “catch-up” in their share of issuances.

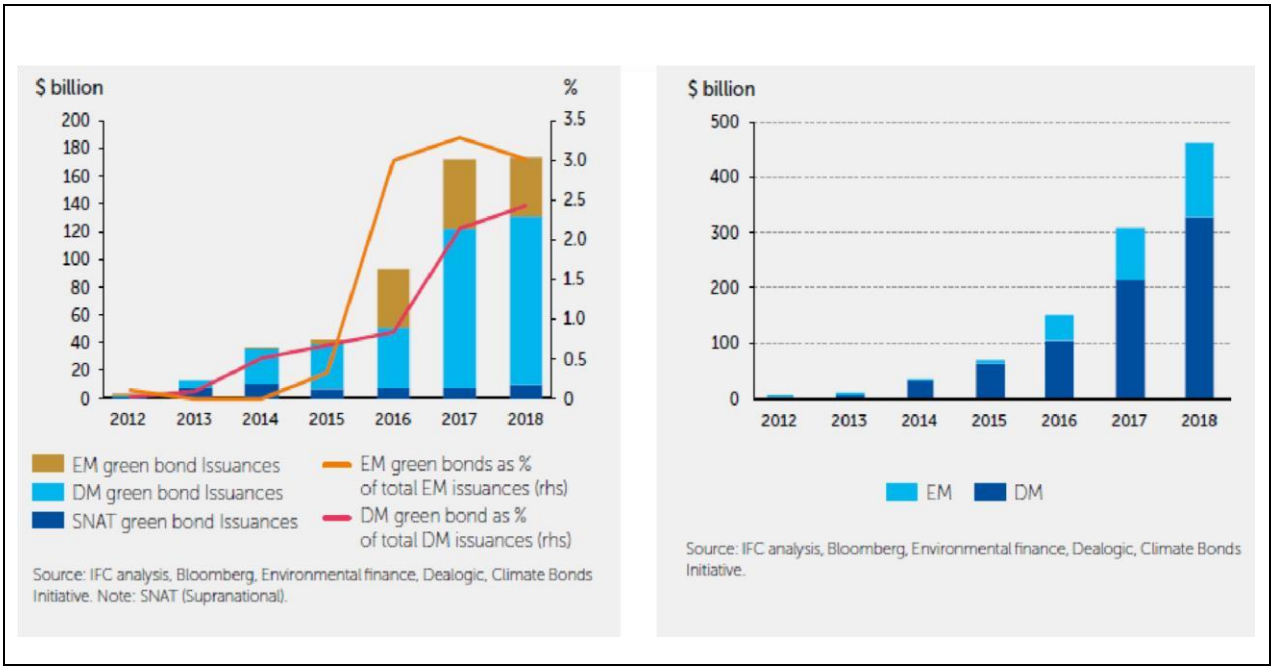
The forecast for the size of the green bond market in emerging markets has been calculated based on two assumptions:

1) the annual bond issuance will remain stable at the 2018 level of $1.4 trillion(19)

2) the share of green bonds in emerging markets will range from 1.5 percent to 3 percent over the next three years.

As green bonds continue to replace maturing conventional bonds, their market size could likely reach between $210 billion to $250 billion 2021.

Green Bond Issuances, 2012-2018 Green Bond Market Size, 2012-2018



3.1 FINANCIAL INSTITUTIONS AS AN ESSENTIAL SOURCE OF FUTURE GREEN BOND ISSUANCES

Cross-border Bonds Issued by Financial Institutions in Emerging Markets

This section analyses cross -border conventional bonds in emerging markets, as issuers of these bonds are considered potential sources of green bond issuances. The diversity of green bond issuers increased in developed markets [Figure 2.3], with financial i nstitutions

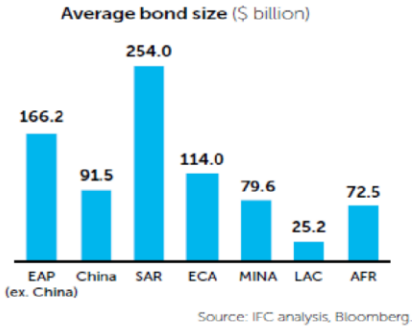
representing less than 18 percent of overall green bond issuances in developed markets. However, in emerging markets, financial institutions accounted for 57 percent of cumulative green bond issuances because many countries rely heavily on bank intermediation to supply debt financing. Therefore, financial institutions in emerging markets remain a likely source of new green bond issuances from 2019 onwards. With nearly 35 percent of green bond issuances in emerging markets denominated in U.S. dollars or euros, a useful proxy to estimate the potential for green bond market is to analyse the cross-border bond issuances by financial institutions in emerging markets. Using Bloomberg data, an analysis of 159 emerging countries found that 44 of them had financial institutions that issued cross-border bonds over the past five years (from 2014 to 2018) with a maturity of at least one year. The cumulative issuance of cross-border bonds was over $640 billion ($147 billion in 2018), with some 291 financial institutions issuing 8,814 bonds (Figure 3.1).

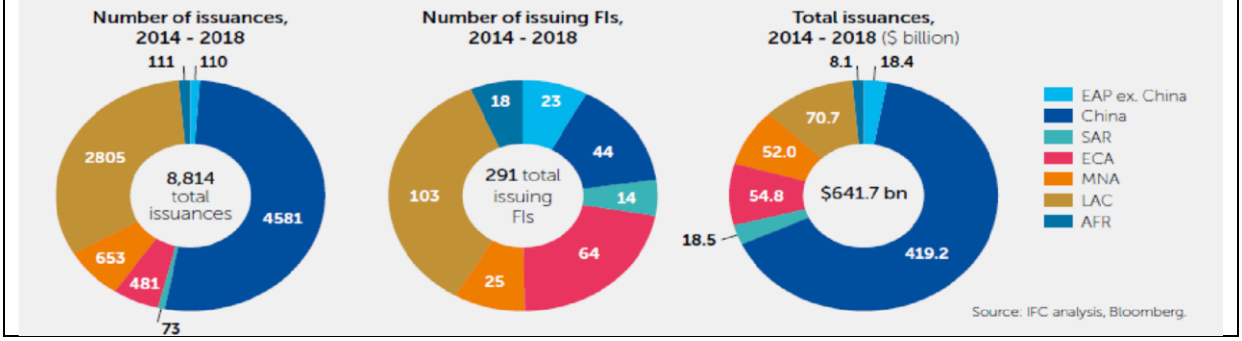
The East Asia and the Pacific region represented some 68 percent of total issuance volume. However, only 3 percent of that amount ($18 billion) came from outside China (Figure 3.2). Issuances in the Latin America and the Caribbean region had the largest increase in issuances in 2018, propelled by two large issuances in Costa Rica. Turkey, where over half of the issuances from the Europe and Central Asia region originated over the past five years, saw a decrease in issuances in 2018 as a reflection of market conditions. The Middle East and North Africa region saw a steady increase in issuances led by the United Arab Emirates.

Cross-Border Bond Issuances by FIs, by Region, 2014-2018

Cross-border issuances by FIs, 2014-2018 ($ billion)

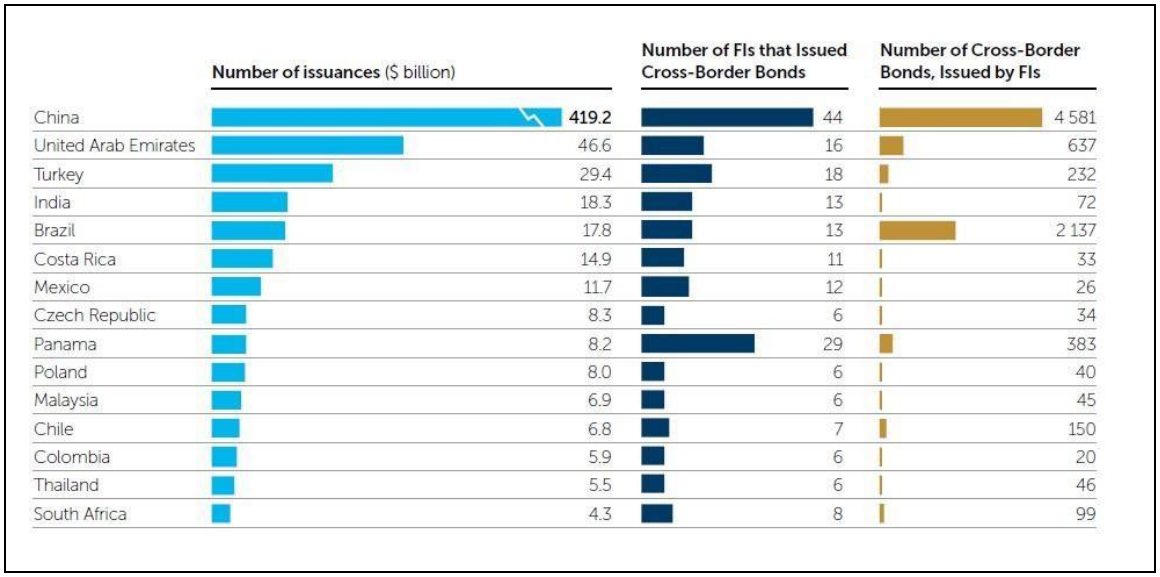
	2014	2015	2016	2017	2018	Total
East Asia and Pacific (EAP)	74.5	67.4	86.0	115.7	94.1	437.7
of which China	*71.3*	*65.1*	*83.3*	*111.7*	*87.8*	*419.2*
EAP excluding China	*3.1*	*2.3*	*2.7*	*4.0*	*6.3*	*18.4*
South Asia (SAR)	6.0	2.0	1.6	5.3	3.7	18.5
Europe and Central Asia (ECA)	14.8	8.2	8.1	17.3	6.5	54.8
Middle East and North Africa (MNA)	7.0	9.5	10.2	11.4	13.9	52.0
Latin America and the Caribbean (LAN)	14.5	5.2	9.9	14.3	26.8	70.7
Africa Region (AFR)	2.4	0.9	0.9	1.9	1.9	8.1
Total	119.2	93.2	116.6	165.8	146.9	641.7





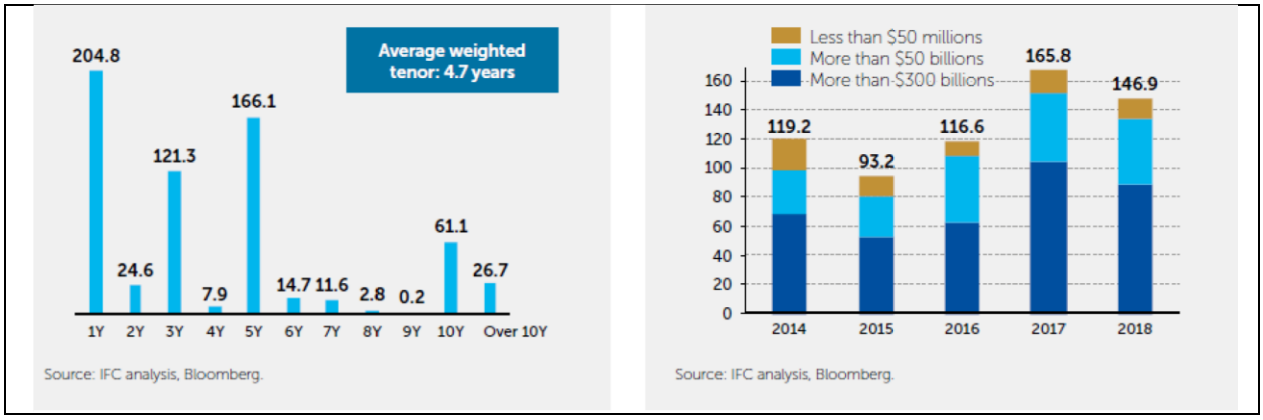
China's share of cross-border issuances between 2014 and 2018 exceeded that of any other country with $419 billion, or 65 percent, of the cross-border bond issuances. United Arab Emirates made up the second-largest share with $47 billion in issuances, while Panama – a dollarized economy and offshore financial centre – had the second-highest number of crossborder bond issuers, with an average bond issue size of $21 million.

Cross-Border Issuance by FIs, Top 15 Countries, 2014-2018



Across emerging market regions, cross-border issuance by financial institutions points to the strong potential for new green bond issuers to come to the market. As 45 percent of the crossborder bonds covered by this analysis is either a three-year or five-year bullet bond (Figure 3.4), there is expectation for rapid new issuances as existing bonds mature, with the possibility that some of these new issuances could be green bonds. With 33 emerging market countries that have at least one financial institution issuing cross-border bonds of greater than $300 million (Figure 3.5), there are significant opportunities for green bonds to grow. Implementation of an effective ESMS helps green bond issuers provide assurance to investors and for investors, including asset managers, to verify if this is really the case.

Tenor of FI Cross-Border Bonds, 2014-2018 ($ billion) Volume of FI Cross-Border Bonds Issuances, 2014- 2018 ($ billion)



3.2 Strategies to Strengthen India's Green Bonds Market

Why are green bonds important for India

India has embarked on an ambitious target of building 175 gigawatt of renewable energy capacity by 2022, from just over 30 gigawatt now. This requires a massive $200 billion in funding. This isn't easy. As reports suggest, higher interest rates and unattractive terms under which debt is available in India raise the cost of renewable energy by 24-32 per cent compared to the U.S. and Europe. "India has big goals in terms of renewable energy installations, but a big hurdle has been financing and the cost of financing," says Raj Prabhu, CEO and Cofounder of Mercom Capital Group, a global clean energy research and communications firm.

"Budget allocations have been insufficient. Renewable energy is still part of the larger power/infrastructure funding basket in most banks, and with most financing going towards coal power projects, there is very little funding left for renewable energy. Currently, options for raising funds and investing in the "renewable energy story" in the public markets in India is very limited," he says. That's why green bonds seem like a good option. In India, Indian

Renewable Energy Development Agency (IRDA) issued a tax free Green Bond in February 2014 for Rs.1, 000 each. It issued bonds with 10 year, 15 year and 20 year terms carrying interest rates at 8.16%, 8.55% and 8.55% p.a. respectively. CARE and Brick Works gave it AAA rating. Yes Bank has issued a 10 year Green Infrastructure bond in February 2015 raising an amount of Rs.1, 000 crores. The amount raised by the bank would be diverted towards the financing of the Green Infrastructure projects such as solar power, biomass, wind power and small hydel projects. It has tied up with KPMG India to provide Assurance

services annually in accord with the green bond principles. In 2016 Yes Bank issued another green bond as a private assignment with International Finance Corporation (IFC) as a sole investor for INR 3.15 billion. The bond has been rated as AA+ by ICRA and CARE. EXIM Bank of
India issued a five year $500 million green bond in March 2015. It is the India's first dollar denominated green bond.

"The simplicity of the [green bonds] market helped it become what it is today. We need to develop guidance and encourage greater transparency, but also encourage growth in new directions."

~ Rachel Kyte, CEO & Special Representative of the UN Secretary General for Sustainable Energy for All.

The green bonds market has been growing rapidly as it offers investors diverse issuances that vary in size, maturity, currency and structure. Green bonds are becoming more attractive in that they allow climate risks to be hedged separately from other financial risks. Development banks' mandated investments and the growing familiarity of institutional investors to recognize the similarity of green bonds to classic bonds are also driving growth. Portfolio managers looking for environmentally responsible investments have to consider riskweighted returns first. This means that green bonds have to be financially competitive with other fixed income assets to meet the minimum investment criteria. While green bonds benefit from a strong demand from environmentally-focused funds and therefore garner a small basis point premium over comparable corporate bonds, the following three objectives and targeted strategies that can help strengthen and expand the market for green bonds in India:

1. Reduce the cost of capital
2. Stimulate demand from institutional and retail investors
3. Expand and diversify the issuers base

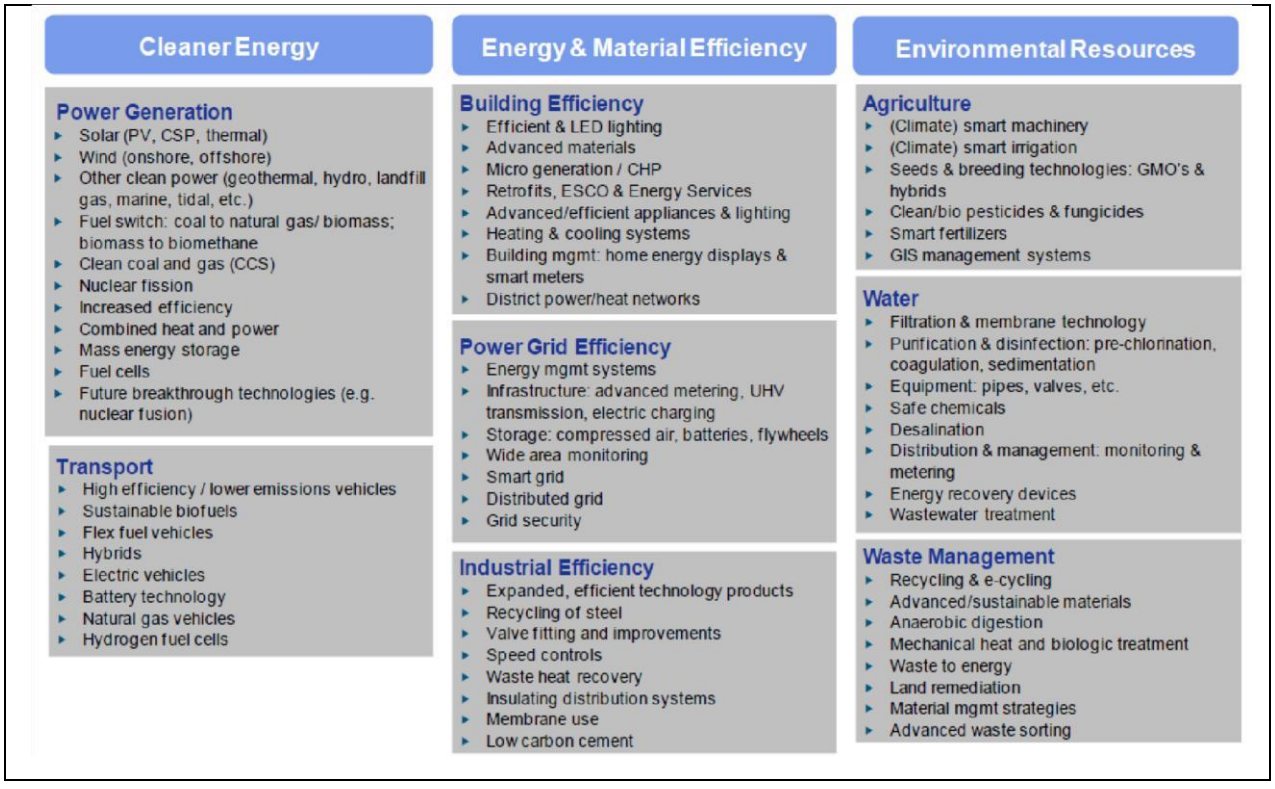
As laid out in the table and explored in detail below, there are key strategies to achieve each objective and corresponding institutions and organizations to implement those strategies.

Reducing the Cost of Capital

4. Green Equities

Green equity products have been mushrooming throughout the market, using all sorts of different approaches to green investing. The level of methodological clarity and transparency is mixed. An example of a broad, comprehensive „climate change investment universe" is provided in a recent report by DB Climate Change Advisors (2019). It identifies three broad sectors: cleaner energy, energy and material efficiency and environmental resources.

Deutsche Bank Climate Change Investment Universe



Notes:

- Transport could also include mass transit and rail.
- Desalination is controversial, as its usually an energy intensive way of addressing water supply issues. In some wealthier jurisdictions it can be built instead of more sustainable water runoff harvesting, and/or drawing on and increasing use of fossil fuel-fired power.

The approach taken in this paper is to look at equity indices in more detail as they tend to be more transparent and easier to compare. Index providers often have an incentive to be clearer about the methodologies applied, than funds.

Indices are a primary investment tool for investment managers and investment owners as they provide a benchmark or point of reference for the active investment decisions. Furthermore, a substantial portion of funds and institutional mandates are managed „passively", i.e. by tracking a reference index very closely.

In addition, exchange traded funds (ETFs) and derivatives can be connected to those indices. The number of green ETFs has risen substantially in recent years. Liquidity, transparency and cost advantages are often mentioned as reasons.

All major index providers have over time developed some sort of SRI, ESG and/or environmental change indices. There is now wide choice of equity indices available, using different approaches, definition, composition, coverage and methodology gives an overview on some indices currently available to investors. Some indices have a relatively narrow sectoral or thematic focus, e.g. on alternative energy or clean technology and innovation. Others span the typical range of green activities, also including energy efficiency environmental management and similar. Others again concentrate on just one factor, most prominently carbon emissions. The oldest indices tend to be broader responsible or ESG indices that include environmental as important but not sole factors.

Green equity indices - Overview

	RI / SRI / ESG/ SI	*Green thematic*	*Sectors*	*Carbon related*
FTSE	FTSE4Good Series	FTSE Environmental Market		FTSE CDP Carbon Strategy
Dow Jones	DJ Sustainability			
S&P		S&P Eco	S&P Clean Energy, Alternative Energy	S&P Carbon Efficient
MSCI	MSCI ESG / SRI	MSCI Climate; Environmental		
HSBC		HSBC Climate Change		
Bloomberg			Bloomberg Clean Energy	
Wilderhill			Wilderhill New Energy Innovation (NEX)	
NASDAQ		NASDAQ OMX Green Economy		
Markit				Markit Carbon Disclosure

The preferences for indices differ across countries and investors. In Japan, there is a focus on environmentally themed indices. Technology and social aspects (e.g. community investing) are popular in the USA, whilst in Europe the interest has been generally broad across all responsible investment (RI) approaches. Indices see rising demand for different strands and by all investor groups, driven also by changes in legislation, regulation and government initiatives (e.g. „green ISAs“ in the UK). (UKSIF 2010)

Indices also differ in terms of their approaches to selecting and weighting of the index constituents. There are 3 basic approaches by index providers17 (Table 4):

1. screening: create a green / ESG / SRI subset of a broader market index
2. best-of-class: e.g. top 20% within sector or industry (sometimes with neutral sector or country weightings)
3. re-weighting: adjust the weightings of stocks in a standard market index according to a green (carbon) factor (usually keep sector weightings neutral to minimize tracking error)

Green selection approaches

Screening	*Best-of-class*	*Re-weighting*
FTSE4Good; Environmental Market		FTSE CDP Carbon Strategy
	DJ Sustainability	
S&P Eco, Clean Energy		S&P Carbon Efficient
MSCI Environmental, Climate	MSCI ESG / SRI	
HSBC Climate Change		
Bloomberg Clean Energy		
Wilderhill New Energy Innovation (NEX)		
NASDAQ OMX Green Economy		
		Markit Carbon Disclosure

Index providers use internal and/or external research resources for the determination of their green universes. Given the different approaches, it is no surprise that the definition of green investment varies across different indices (see Table 5).

Table 5 also demonstrates the major differences in terms of the metric used. Some providers select green stocks on a qualitative basis, i.e. because they operate in certain green sectors or produce green technology. Others take the whole stock market universe and specify „greenness" quantitatively, e.g. 50% or more of the revenue needs to be climate changerelated18, or stocks with the highest contribution to reducing emissions. Finally, in a best-ofclass approach, it is all relative, as the top 10% or 20% of companies of a sector are selected. As a consequence, not surprisingly, the actual indices all look very different in all dimensions, including the number of stocks, average sizes, liquidity and sector breakdowns. The outcome is a great variety in the constituent companies in the various indices. They range from small, highly specialized niche producers to well-known global players that are deemed to be somehow „green" or at least „greener than others". Appendix 1 gives more detail on a number of relevant indices.

There are limitations and weaknesses of green indices. Biases frequently found include (they do not necessarily apply to all indices):

- Sector biases (e.g. overweight in technology, TMT, financials, pharma)
- Country biases (e.g. underweight in Japan, Emerging Markets)
- Size bias (overweight in larger stocks, or small stocks, depending on the index approach
- Cyclicality.

More generally, there are other issues with green indices (again, they do not necessarily apply to all):

- Data quality and transparency (e.g. Sinclair 2012)
- Poor company reporting on ESG or green factors
- Lack of disclosure, e.g. from SME, emerging markets
- Debates over performance and risk compared to standard indices
- Tracking error relative to general market indices (e.g., how much should green indices deviate from main-stream market indices?).

Provider	*Index*	*Partner*	*Green Definition*	*Number of stocks*	*Market capitalization (US$)*	*3 largest holdings*
Dow Jones	DJ Sustainability World	SAM	top 10% in each sector, of the largest 2,500 companies in the base index based on long-term economic, environmental and social criteria	342	9800bn	IBM, GE, Nestle
FTSE	FTSE4Good	Eiris	including environmental and climate change factors	730 (global)	12900bn	Apple, Microsoft, Nestle
	Environmental Opportunities	Impax	environmental business activities, incl. renewable & alternative energy, energy efficiency, water technology, waste & pollution control	475	1593bn	
	Environmental Technology	Impax	green technology, renewable & alternative energy, energy efficiency, water technology and waste & pollution control	50	100bn	Novozymes, Stericycle, Pall Corp
	CDP Carbon Strategy 350 (UK)	CDP, ENDS Carbon	track base index but reduce exposure to carbon risk	<350	Similar to FTSE 350	BP, National Grid, Anglo American
MSCI	MSCI World ESG Index	MSCI / RiskMetrics	best-of-class approach relative to sector peers	790	11700bn	IBM, Procter & Gamble, J & J
	MSCI Global Environmental	KLD	companies derive over 50% of their revenues from products and services in of five environmental themes: alternative energy, clean technology, sustainable water, green building, and pollution prevention.	167	413bn	ABB, Emerson Electric, Schneider Electric
	MSCI Global Climate	KLD	100 leaders in mitigating the causes or the impact of climate change (Renewable Energy, Future Fuels, and Clean Technology & Efficiency); equally weighted	100	2.4bn	Int. Power, Clean Energy Fuels, Owens Corning
S&P	Global Eco		clean energy; water; environmental services/waste management	40	178bn	Waste Management, Danaher, Geberit
	Clean Energy		clean energy producers; clean energy technology & equipment providers	30	60bn	
	S&P U.S. Carbon Efficient	Trucost	track base index whilst reducing exposure to carbon emissions by up to 50%	<375	Similar to S&P 500	Apple, Chevron, Procter&Gamble
	S&P IFCI Carbon Efficient	Trucost	track base index whilst considerably reducing exposure to carbon emissions	>500	Similar to S&P/IFCI LargeMidCap	Samsung, Itau Unibanco, Vale
BNEF	Wilderhill New Energy Global Innovation	WilderHill	innovative technologies and services focus on the generation and use of cleaner energy, conservation, efficiency and the advancement of renewable energy in general	97	187bn	Contact Energy, Verbund, Ormat
HSBC	HSBC Global Climate Change Benchmark		generate revenues, on a supply chain basis, from the provision of goods, products and services directly linked to the industrial shift towards a low carbon economy	342	682bn	Siemens, ABB, Honeywell
	HSBC Investable Climate Change		climate change related revenue is more than 50 per cent of the total revenue of the company	50	147bn	Waste Management, Fortum, EDF
Markit	Markit Carbon Disclosure Leadership	CDP	tracks the performance of companies according to the CDP annual scores	569 (global)	Similar to FTSE All World	Exxon Mobil, Microsoft, J&J
NASDAQ	NASDAQ OMX Green Economy Index	SustainableBusiness.com	13 'green economy' sectors (US)	417	1271bn	Cisco, EMC. ABB

In conclusion, the analysis of green and responsible equity indices reveals major differences across indices on the market. There are different dimension to this. One is the investment focus of indices. Some indices have a relatively narrow sectoral or thematic focus while others span the typical range of green activities. Another category concentrates on just one factor, most prominently carbon emission. The oldest indices tend to be broader responsible or ESG indices that include environmental as important but not sole factors.

Indices can also be grouped by their selection approach, i.e. screening, best-of-class or reweighting of stocks. There are also major differences in terms of the metric used. Some providers select green stocks on a qualitative basis while others try to specify „greenness" using some quantitative measurement. Some indices stress the absolute values, in others it is all relative to peer companies.

5. Green insurance

Green insurance schemes are those schemes which provide risk cover at a low premium and enhanced coverage for green products to minimize the impact of climate change, thereby fostering good corporate behaviour. In India at present HSBC collaborated with Allianz to provide its customers with green reinvestment insurance. It provides cover to buildings obtaining certification from international environmental standards such as US Leadership in Energy and Environmental Design (LEED) and Building Research Establishment Environmental Assessment Methodology (BREEAM). This cover provides an additional 5% over and above the normal insured loss amount with an only minor increase in premium. This would encourage the builders to create more energy efficient buildings. One of those innovations takes the form of green commercial building insurance, which is rapidly facilitating increased green construction and development for businesses, homes and on campuses across the U.S. According to McGraw-Hill Construction, spending on green building construction is projected to reach $96 billion in 2013, up from $36 billion in 2008.

6. Green loan schemes

At first, there were no recognised market standards to help determine what qualifies as a green or sustainability linked loan. While the Green Bond Principles first published by the International Capital Markets Association in January 2014 were a useful indication of the direction being taken in the capital markets, they focussed on bonds rather than loans, and on green use of proceeds rather than sustainability.

In the loan markets, the Equator Principles have long been used by financial institutions for managing environmental, social and governance risks in the project finance market, but their application was limited in the wider loan markets.

Without the benefit of recognised market standards there was a risk of diverging approaches being taken on what amounts to a green or sustainability linked loan. At its worst, that risked loans being presented as green or sustainability linked, when in reality they were little different to an ordinary loan, sometimes referred to as “green washing”.

Market standards for green loans were published by recognised industry associations in March 2018, and were followed in March 2019 by sustainability linked loan standards.

Green and sustainability linked loans are now recognised products globally.

The drivers for the growth in green and sustainability linked loans are changing. What started as a mostly voluntary approach to addressing climate change risks and the need for businesses to act responsibly is beginning to be overtaken by regulation. In a speech in 2015, the Governor of the Bank of England, Mark Carney, set out how the catastrophic impacts of climate change will be felt beyond the traditional horizons of most banks, investors and financial policy makers, imposing costs on future generations. He warned that once climate change becomes a defining issue for financial stability it may be too late, and noted that risks to financial stability will be minimised if the transition towards a lower-carbon economy begins early and follows a predictable path.

A look

6.4 Trends In Green And Sustainability Linked Loans

The Equator Principles were first published in 2003 and incorporate the International Finance Corporation Performance Standards and the World Bank Group's technical industry guidelines for projects in emerging markets. The Equator Principles are intended to help ensure that project finance transactions are undertaken in a socially responsible way and in accordance with appropriate environmental management practices.

While widely adopted in the project finance sector, the Equator Principles are rarely encountered in ordinary corporate loan transactions. The introduction of the Green Loan Principles may have broader reach into other parts of the loan markets, but they are less established than the Equator Principles.

While the Green Loan Principles do not contemplate the pricing on the loan being linked to green use of proceeds, that linkage has been a feature of some corporate financings. In one example, a revolving credit facility for general corporate purposes was split into two tranches – the first tranche, which was available for general corporate purposes did not benefit from any discount, but the second tranche, which was available only for green purposes had reduced pricing.
Where sustainability targets were not met, the margin calculation mechanism on those financings had no penalty for poor performance. Instead the margin reduction was simply not applied.

There are examples of alternative structures being considered, which could mitigate that concern. One idea replaces increases in pricing with a requirement to make additional payments into a separate bank account should sustainability targets not be met. Those amounts could then be reinvested into improving the sustainability profile of the borrower.

"As the market becomes more sophisticated, rating methodologies are becoming more tailored."

6.5 Third party oversight

The Sustainability Linked Loan Principles state that the need for external review of the borrower's ESG performance is to be negotiated and agreed on a transaction by transaction basis. Where information relating to sustainability performance targets is not publicly available or otherwise accompanied by an audit or assurance statement, the Sustainability Linked Loan Principles recommend that external review of those targets is sought. Even where data is publicly disclosed, independent external review may be desirable. The majority of deals signed to date require external review rather than relying on self-reporting. This is in some ways similar to the requirement for an independent environmental and social consultant under the Equator Principles.

A number of factors influence whether third party oversight is required by lenders. At a general level, the integrity of the product is promoted by credible independent review. In many cases, self-reporting is not feasible because borrowers do not have the internal expertise to perform the role themselves. Larger corporates, which may have the necessary internal expertise to selfreport, are encouraged by the Sustainability Linked Loan Principles to thoroughly document that expertise and their internal processes.

One reason borrowers might prefer to self-report is to avoid incurring an increased cost burden. It is worth bearing in mind the wider trend toward companies assessing and reporting on their ESG performance for other purposes, so to the extent information is already being gathered, it may be possible to repurpose it for a lower incremental cost.

6.6 Methodology changes

A less obvious concern is the potential for external ESG rating providers to change their methodologies unilaterally. There are many entities in the market that research and rate corporate sustainability, although reporting in the loans market is concentrated on a smaller group of providers.

Each of the ESG rating agencies considers various data points to arrive at their respective ratings. Their rating methodologies are not only varied from each other, but evolve over time. In part that reflects shifts in perception towards particular risk factors – what is considered green or sustainable today may be less so tomorrow. For example, the production of electric vehicles might in some cases rely on the transport and use

of raw materials that are extracted using polluting methods or perhaps involving poor employment conditions. Early ESG ratings tended not to differentiate between sectors when assessing the relevance of particular risks, but as the market becomes more sophisticated, rating methodologies are becoming more tailored.

Evolving rating methodologies can also be the result of consolidation in the market. For example, Sustain analytics acquired ESG Analytics in 2015. Vigeo Eiris was formed in 2015 by the merger of Vigeo and Eiris, both of which were ESG data providers. There are also moves from credit rating agencies into the market – Moody's acquired a majority stake in Vigeo Eiris in April 2019.

Concerns have been raised about the low correlation between different ESG rating agencies' assessment of the same company, which contrasts with the strong positive correlation generally seen in the context of credit ratings. This is a challenge for investors seeking a comparative assessment across companies with ratings provided by different sources. It is perhaps less of a problem in the loan markets where a particular ESG rating agency's rating is being used to demonstrate an improvement in the performance of the borrower over time rather than to compare different borrowers. In time, the industry may well develop a more uniform approach, but to get there will require greater standardisation of the various methodologies used currently.

Changing methodologies could create a potential difficulty for the sustainability linked loans market. It is agreed when the loan is entered into that the pricing will change by reference to whether particular ESG performance targets are hit. If a rating agency changes its calculation methodology for whatever reason during the life of the loan, and that results in changes to a particular corporate's rating, the pricing on the loan may also change. Whether or not methodology changes are significant enough to have a substantial impact is another question.

2.CHAPTER

Review of Literature

Matthew Haigh and James Hazelton (2004) study on the market share of SRI funds in the regions where they are most developed, being Europe, the U.S. and Australia, to show that this claim is unlikely to eventuate. SRI funds also commonly claim that they will outperform conventional active mutual funds. That the

economic performances of both are similar might be explained by their similar portfolio compositions. Their paper makes an innovation in the SRI literature by adopting a legitimacy framework to explain the continued presence of SRI funds. To achieve desired social and environmental outcomes, SRI funds are urged to address issues at a more systemic level. A suggested mechanism is the collective lobbying of corporations and, especially, governments.

Katherina Glac (2009) states that 'Over the past two decades, the phenomenon of socially responsible investing has become more widespread. However, knowledge about the individual socially responsible investor is largely limited to descriptive and comparative accounts. The question of "why do some investors practice socially responsible investing and others don't?" is therefore still largely unanswered'. To address this shortcoming in the current literature, this paper develops a model of the decision to invest socially responsibly that is grounded in the cognition literature. The hypotheses proposed in the model are tested with an experimental survey. The results indicate that the framing of the investing situation influences the likelihood of engagement in socially responsible investing and how much return the individuals are willing to sacrifice when choosing socially responsible over conventional investments. The study does not find support for a relationship between expectations about corporate social responsibility and the likelihood of engagement in socially responsible investing.

Céline Louche (2009) explores the investor's perspective of the field of corporate social responsibility and more specifically on the practice of Responsible Investment (RI). The aim is threefold: firstly to provide a general background on Responsible Investment – definition, history, actors and trends, secondly, to give an overview of the existing practices of responsible investment and its key characteristics and finally to discuss some critical issues that may shape the future of RI. RI is still a developing and changing activity which is expected to keep growing in the future. But responsible investors can play a major role in transforming the concept of investing by integrating social and environmental dimensions whilst simultaneously pushing up the issue in a company's CSR agenda.

Greig A. Mill's paper empirically examines the financial performance of a UK unit trust that was initially "conventional" and later adopted socially responsible investment (SRI) principles (ethical investment principles). Comparison is made with three similar conventional funds whose investment objectives remained unchanged. Analysis techniques employed in previous studies find similar results: mean risk-adjusted

performance is unchanged by the switch to SRI, with no evidence of over-or under-performance relative to the benchmark market index by any of the four funds. More interestingly, changes in variability of returns over time are also modelled using generalised autoregressive conditional heteroscedasticity models, not previously applied to SRI funds so far as is known. Results show a temporary increase in variability of returns, followed by a return to previous levels after around 4 years. Evidence shows the increased variability to be associated with the adoption of SRI rather than with a change in fund management. Possible explanations for the subsequent reduction in variability include the spread of corporate social responsibility activities by firms and learning by fund managers. In addition to reporting on a previously unobserved phenomenon, this paper raises questions for further research.

Biodiversity Finance (Rubino, 2000)

Public sector investment is insufficient to stave off depletion of natural resources. Thus, private sector investment is required. How companies are currently investing in sustainable activities by investing in the organic food market, etc. So far, green venture capital funds have captured only a tiny slice of the available institutional money. North American forestry funds (with over US$7.5 billion under management) are seeking 'sustainable forestry' investments. Partnerships with government are often required to entice private sector investors into initial participation in biodiversity conservation.

Potential of Carbon Finance Fund (Singh, 2008)

The CFF would introduce a holistic approach to enable project entities to explore the carbon finance window for earning resources for the project on a sustainable basis. The CFF would thereby help upscale new investments with carbon finance as an additional source. It will also help in the replication of successful projects. It suggests that the government of India should establish a Carbon Finance Fund in order to maximize the number of projects that can be registered with CDM EB. It would augment effectiveness of carbon finance operations. CFF objectives include addressing issues related to the carbon finance both ex ante and ex post.

Clean is the new green: Clean Energy Finance and Deployment Through Green Banks (Leonard, 2014)

This paper discusses the need for green banks and finance. It discusses the main barriers to entry for clean energy compared to traditional sources of energy and elaborates on the need for green finance to eliminate these barriers. It discusses the principles based on which green banks function. That they aim to bridge the finance gap and reduce cost of capital for clean energy ventures. The main goal of green finance is to increase the number of clean energy ventures undertaken. They are innovating a variety of financial mechanisms to reduce the risk for private investors. Then this paper compares the difference between green finance in two places, Connecticut and New York. The paper investigates the possibility of partnerships being able to increase the popularity of green finance.

Climate Finance: Already in Trouble (KANTH, 2010)

Discusses the failure of the US administration in pledging to cut their carbon emissions. Despite increase in number of natural calamities in recent time, industrialized nations are unwilling to cut back and commit to reducing carbon emissions. However, they have agreed to establish a clean energy fund to fund projects and programs in the developing world towards adaptation. When discussion moved to whether it would be raised through public or private sources, though, the developed countries said that all the funds need not be raised through public sources.

3.CHAPTER

RESEARCH MRTHODOLOGY

OBJECTIVE OF THE STUDY

1. To review the existing literature on Green investment initiatives taken by the developed and

developing countries and study the recent developments in this area.

2. To study the kind of green financial products and services being offered by the foreign and Indian markets and their challenges.

3. To understand the future scope of Green Investment.

4. To understand the green products and their long term benefits.

5. To understand the Green Investment and its relation with sustainable development.

6. To study the world implications of green investment.

HYPOTHESIS

• Hypothesis (H0): Awareness of Green Investment is not related to the age of the respondents.

• Hypothesis (H1): Awareness of Green Investment is related to the age of the respondents.

SCOPE OF THE STUDY

• The project will provide us the better platform to understand the history, growth and various aspects of the Green Investment

• It will also help to understand the behaviour of Indian and Foreign investment towards various investment avenues Green Investment.

• It will also help to understand how people change its workings by shifting the preferences of the investment avenues related sustainable development.

PURPOSE OF THE STUDY

The reason for choosing our research topic was to make our peers aware of the green investment

sector. The researcher's interest has been focused on assessing the current awareness of the green investment options available in the market among different age groups. The growth of green financing in the Indian banking sector and the large number of banks with green financing options and the awareness of this was the focus of the research. To analyse the data collected from the primary source, students of the Department of Professional Studies, Narsee Monjee College (Deemed to be University), Shannon index and Simpson Index were used. These indices are usually used to analyse biodiversity among species using qualitative data. This qualitative data has been condensed into quantitative data by identifying patterns within the responses and recording the responses to each pattern.

It takes into account the investor's point of view.

• The total number of financial instruments in the market is so large that it needs a lot of time and resources to analyse them all.

• As the analysis is based on primary as well as secondary data, possibility of unauthorized information cannot be avoidable.

• Research was carried on in Mumbai.

• Investment pattern has been analysis has been limited to only 50 individuals.

PROBLEM IDENTIFICATION

Analyse the investment pattern of people and the popularity of different products (Green Bonds , Green Insurance, Green Equities, Green loans) provided by the financial institutions and

banks for Green Investment.

RESEARCH DESIGN

We select the descriptive research method approach. In this approach for the data collection we conduct semi structured interview. Descriptive statistics tell what is, while inferential statistics try to determine cause and effect so descriptive and exploratory study is conducted. A questionnaire method was constructed and various investors filled up the questionnaire and that becomes the base for analysis.

Firstly, we asked open ended questions and used probes and prompt to get the deep information about our topic and to keep the respondent on track. We conduct interview from experience respondent so that we get the accurate information about our topic. Our research based on understanding the factors which effect investment decision of an individual. Our data collection method is cross sectional. We collected all the interview at once.

DATA COLLECTION TECHNIQUES

Primery data

Primary research involves the collection of original primary data by researchers. It is often undertaken after researchers have gained some insight into an issue by reviewing secondary research or by analysing previously collected primary data. It can be accomplished through various methods, including questionnaires and telephone interviews in market research.

METHOD OF DATA COLLECTION

The data collection component of research is common to all fields of study help us to collect the main points as gathered information. Data collection methods for impact evaluation vary along a continuum. At the one end of this continuum are quantitative methods and at the other end of the continuum are Qualitative methods for data collection.

A questionnaire is a question format that limits respondents with a list of answer choices from which they must choose to answer the question. Commonly these types of questions are in the form of multiple choices, either with one answer or with check-all-that-apply, but also can be in scale format, where respondent should decide to rate the situation on scale.

DRAFTING OF A QUESTIONNAIRE

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, Questionnaires have advantages over some other types of surveys in that they are cheap, do not require as much effort from the questioner as verbal or telephone surveys, and often have standardized answers that make it simple to compile data.

SAMPLE DESIGN

The sample design encompasses all aspects of how to group units on the frame, determine the sample size, allocate the sample to the various classifications of frame units, and finally, select the sample. There are two types of sampling: non-probability and probability sampling.

Nonprobability sampling uses a subjective method of selecting units from a population, and is

generally fast, easy and inexpensive. Therefore, it's sometimes useful to perform things like preliminary studies, focus groups or follow-up studies.

SAMPLE SIZE

The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. In practice, the sample size used in a study is determined based on the expense of data collection, and the need to have sufficient statistical power.

The Sample Size for this study is 50.

TOOLS USED FOR DATA ANALYSIS

The analysis of data collection is completed and presented systematically with the use of Microsoft Excel.

LIMITATIONS

- Questionnaire is not suitable when a spontaneous answer is very much required.
- Sample size may be inadequate
- There may be certain extraneous factors which are not taken into consideration.
- Investor Psychology changes with time.

4.CHAPTER

DATA ANALYSIS AND INTERPRETATION

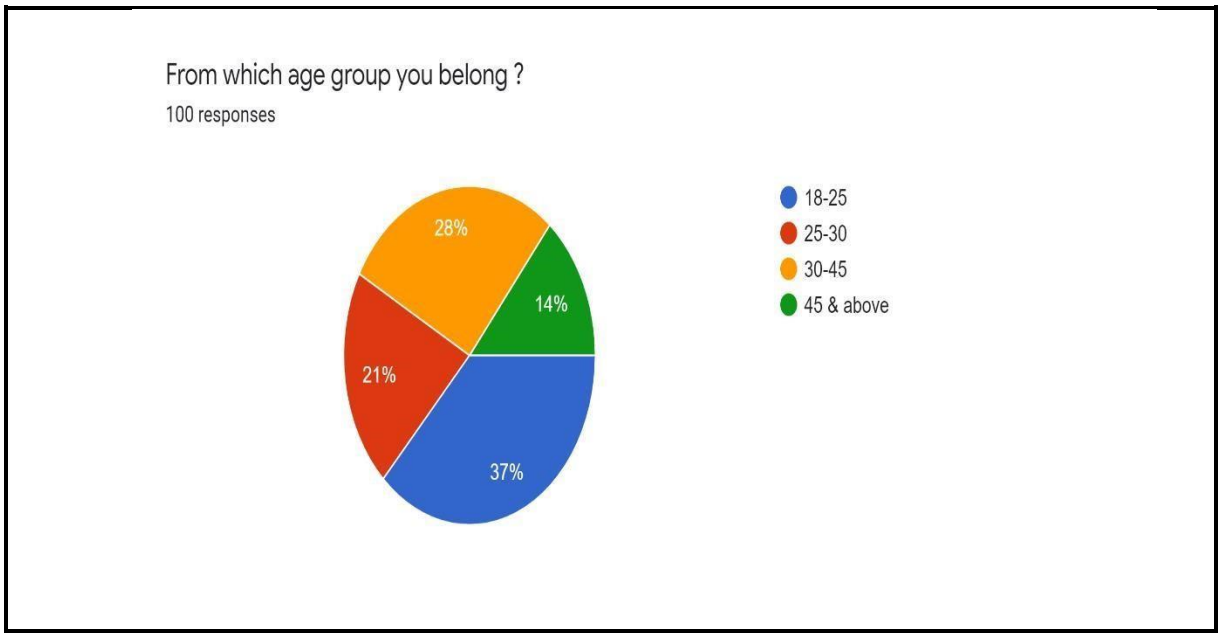
1.Age of Respondents

Row labels	Count of age of respondents
18-25 years	37
25-30 years	21

30-45 years	**28**
45 & above	**14**
Grand Total	**100**

Interpretation:

The data shows that individuals of the age between 18-25 years were more in count for the survey conducted which was 37 respondents in count, 25-30 years respondents were 21 in

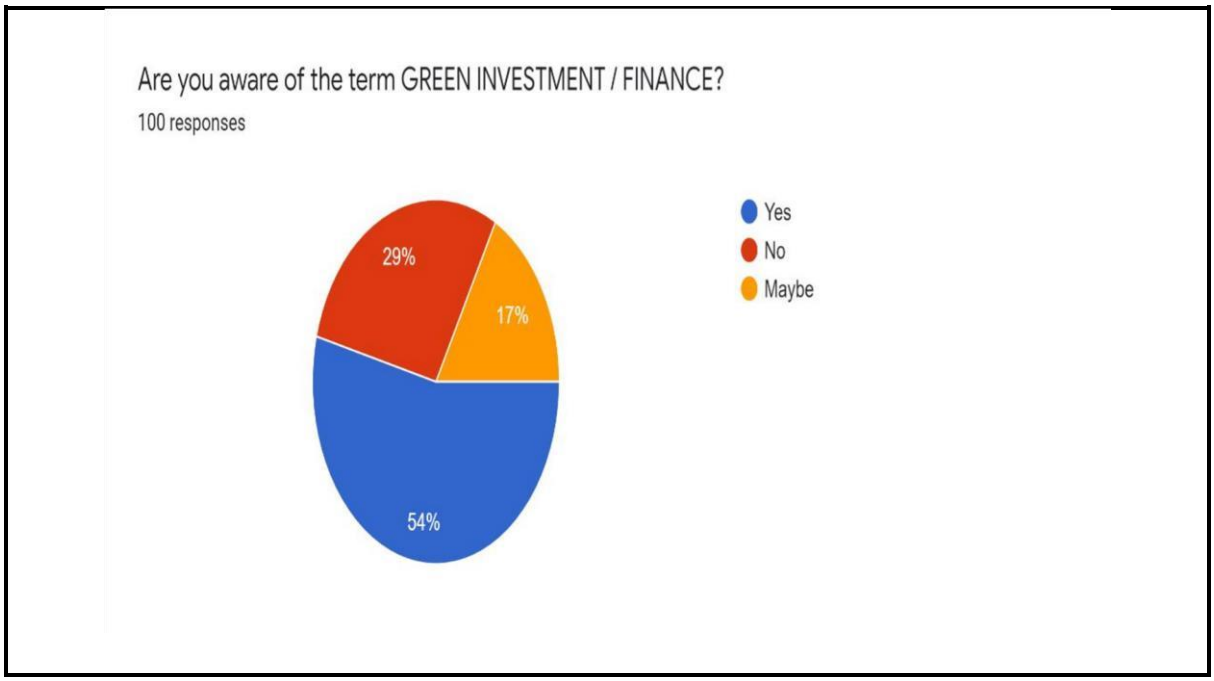


count, 30-45 years respondents were 28 in count and individuals above the age of 45 years were 14 in count.

2.Awareness about Green Investment/ Finance

Row labels	Count of the awareness of GI
YES	**54**

NO	**29**
MAYBE	**17**
Grand Total	**100**



Interpretation:

The data shows that individuals were having knowledge about the Green Investments,
Individuals who said YES regarding the knowledge about Green Investments were 54 in count that is 54%, respondents who said NO as a response were 29 in count that is 29% and the respondents who said MAYBE as a response were 17 as a count that is 17%. Which thereby shows that people have knowledge about the Green Investment and it is also amongst the age group of 18-25 years.

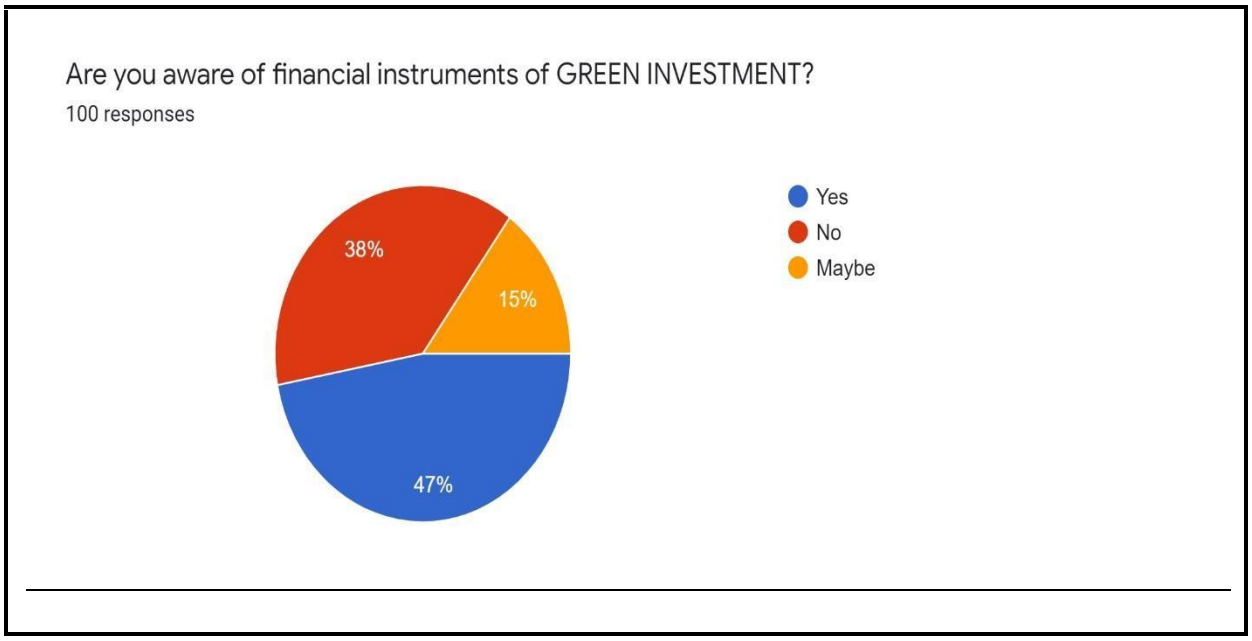
3. Awareness about financial instruments of Green Investment

Row labels	**Count of awareness about financial instruments of GI**

YES	**47**
NO	**38**
MAYBE	**15**
Grand Total	**100**

Interpretation:

The data shows that individuals were somewhat aware about the financial instruments of the Green Investments, the respondents who said YES as an answer 47 in count which is 47% of the total sample, respondents who said NO as an answer were 38 in count which 38% of the total sample and respondents who said MAYBE as an answer were 15 in count which is 15%

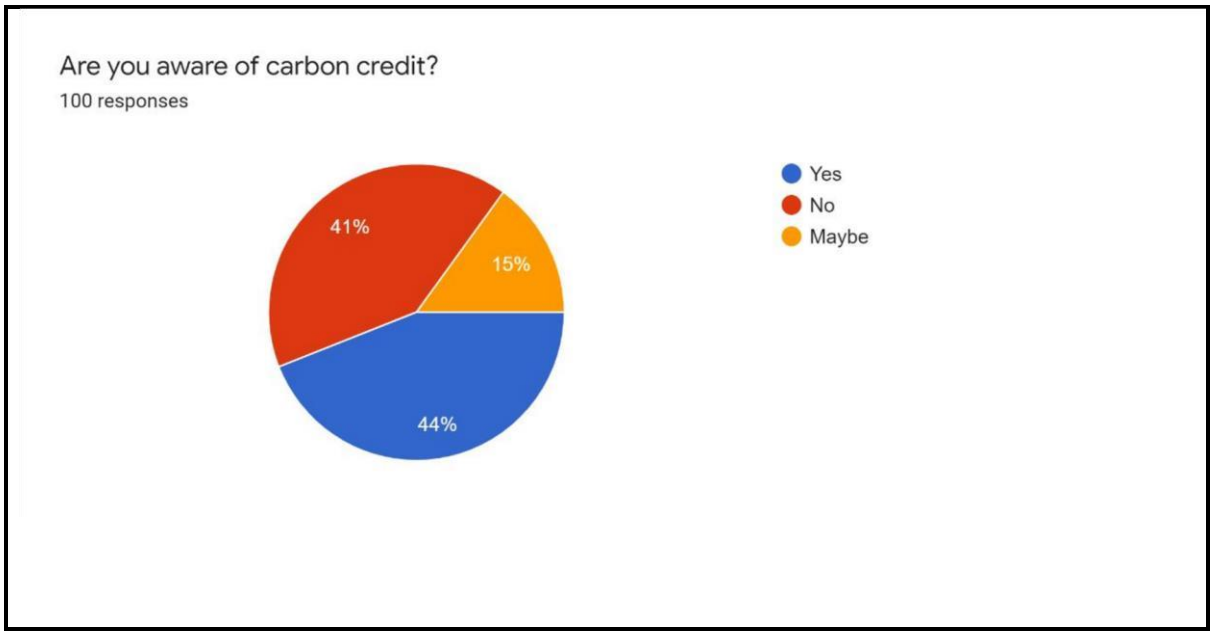


of the total sample. The data also shows that individuals who did not know about green investments completely did knew about some of the financial instruments of the Green

Investments

4. Awareness about Carbon Credit:

Row labels	Count of awareness about carbon credit
YES	**44**
NO	**41**
MAYBE	**15**
Grand Total	**100**



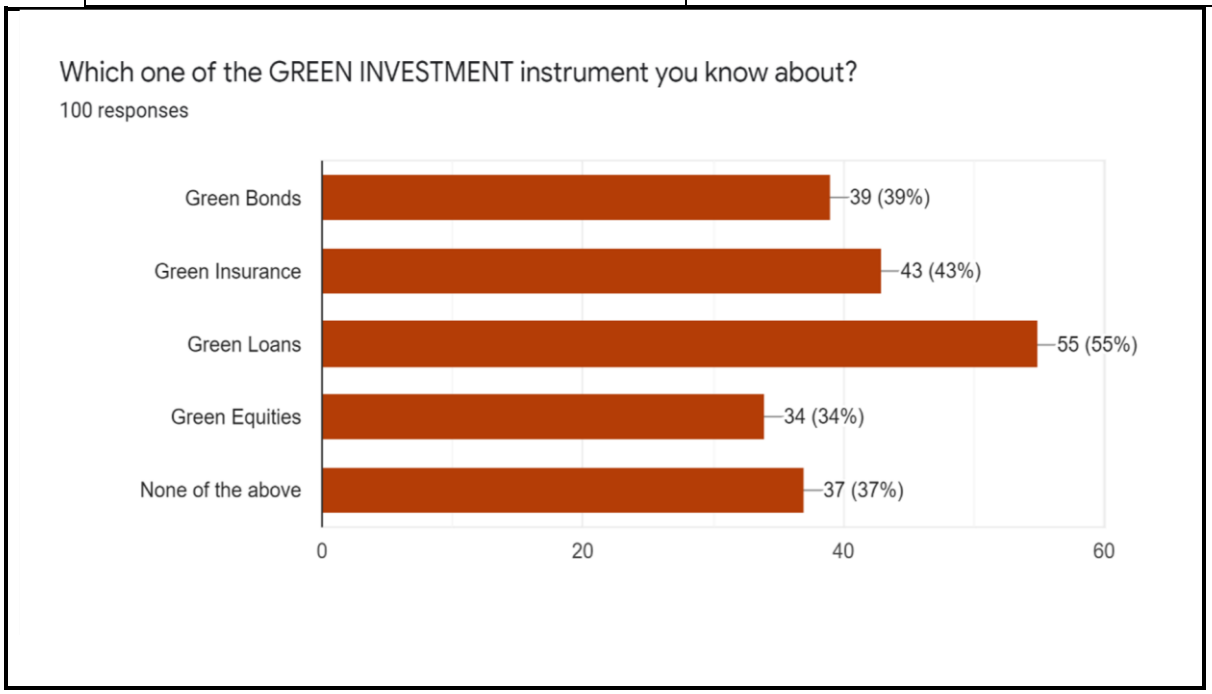
Interpretation:

The data shows that respondents were somewhat aware about the term carbon credit the respondents who knew about the term carbon credit were 44 which is 44% of the total sample and people did not had any idea about the term were 41 in count which is 14% of the total sample and people who responded MAYBE as a response were 15 in count which 15% of the sample survey.

5. Count of financial instruments known by individuals.

Row labels	Count of financial instruments
Green Bonds	**39**
Green Insurance	**43**
Green Loans	**55**
Green Equities	**34**
None of the above	**37**

Grand Total	**208**

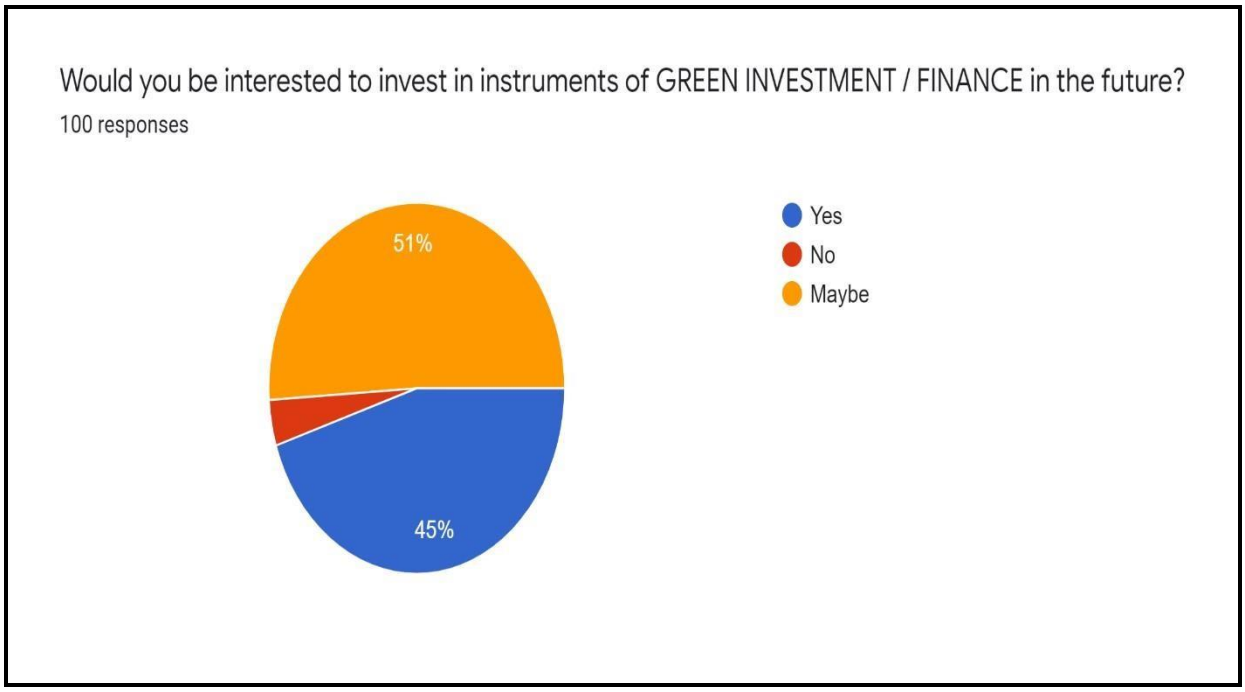


Interpretation:

The data shows that respondents of the sample study were aware about the instruments like green bonds, green insurance, green loans and green equities but their were also individuals who did not knew about the green investment instruments which were 37 in count which 37% of the total sample survey.

6. Count of individuals who will invest in Green Investments in future.

Row labels	Count of individual who will do GI in future
YES	**45**
NO	**4**



MAYBE	**51**
Grand Total	**100**

Interpretation:

The data shows that after conducting survey with the people or the individual respondents did got the knowledge about Green Investment and they become more interested to know about its instruments and were interested in investing in Green Investments in future.

5.CHAPTER

FINDINGS

The most selected combination by a clear majority, is by both age groups of 30-45 and 45 & above. This means that they are not aware about the concept of Green Investment, but may still be interested to invest in these methods of finance. It also shows that the entire sample surveyed are not aware about this mode of Investment. This shows that they do not know about the term Green Investment, and the existence of instruments such as carbon credit, green bonds, green insurance, green loans etc.

The second most common pattern opted is the 25- 30 years of age option. This also means that they are unaware of the potential Green Investment opportunities, but are at least vaguely aware of the term.

We can see that majority of these responses YES mainly are from the 18-25 age group. This points to the fact that the 18-25 age group is more informed about the concept of green finance in general and may choose to invest in the future.

The patterns by the 25-35 age group than the 18-25 age group. This shows that they are less informed but in the case of 25-35 age group they are still willing to invest. The indices demonstrate the diversity of responses within the respective age groups. The pattern diversity of the 25-30 age group is higher as compared to the 18-25 age group. This means that their responses are more varied.

6.CHAPTER

SUGGESTIONS

- Government should bring stable policy framework for green finance which encourages private sector to finance sustainable development programme. For this, India has launched its National voluntary guidelines for responsible financing which mainly focus on disclosure of information.
- Environmental performance of the companies can be shown through index. Although India has 4 ESG index, there should be more ESG index in India to show the environmental performance of the companies. There should be green rating agencies also in the country.
- Government should intervene to increase the profitability of green projects. It can be increased by giving the tax exemption, subsidies and concessional loans to green projects which reduce the cost of green projects. It can also be done by charging high tax and by reducing the subsidies of polluting industries that means increasing the cost of polluting industry.
- There should be a mechanism to evaluate the projects and business etc., in terms of environmental, social and governance (ESG) risk. Objective should be to give more emphasis on environmental risk.
- Awareness among Investors and consumers about the green finance is essential for the sustainability of the economy. Conferences, newspaper report, seminar can be useful tools for imparting the knowledge about the necessities of green products, technologies for energy efficiency for the sake of the future generation because a socially responsible consumer creates the market for green products.
- More numbers of green financial products should be available to investors so that they can make investment easily

7.CHAPTER

CONCLUSIONS

There is a high scope for increasing the awareness of the youth about Green Investment as it is lacking according to the study. The 18-25 age group are more aware of green finance concept as compared to the 25 above age groups. We can infer that the age of the individual is linked to their awareness. The demand for

Green Investment is high for foreign investors. It is in India's interest to develop and promote the rising demand. Awareness is vital to improve the market as the survey has shown that while it is only in its growth stage, students are interested in opting for instruments of green finance. Green Investment provides an elusive market for investors to invest while promoting sustainable development. With effective measures to spread awareness of these financial instruments, we can help the economy and environment grow.

8.CHAPTER

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