



# Green Bonds

## Review Of Green Bonds For Urban WaSH Infrastructure Investments

**Guided By**

Upasana Yadav and Saubiya Sareshwala



**Submitted By**

Drishti Dwivedi (PUI22110)



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- 5. Future of (Green) Municipal Bond Market in India**

# Understanding the Context of Green (finance) Bonds in India

# Addressing Urban Infrastructure Gaps: Leveraging Green Bonds for Sustainable Financing

- Indian cities require - an estimated **840 billion USD** capital investment in urban infrastructure and municipal services in the 15 years till 2036 (in 2020 prices).
- Conventional funding mechanisms fall short, leading to heavy reliance on **state and central fund transfers**.
- **Green Bonds and Green Finance emerge as one of the most promising solutions.** Offering avenues for sustainable financing that align with environmental objectives while addressing the critical infrastructure gaps in urban areas.
- **Green Bonds**, cities can access capital for essential infrastructure projects while simultaneously contributing to environmental sustainability goals.
- Help in **Diversification Funding Sources** but also **promotes** the adoption of **Eco-friendly** and **Good Governance practices** in urban development.

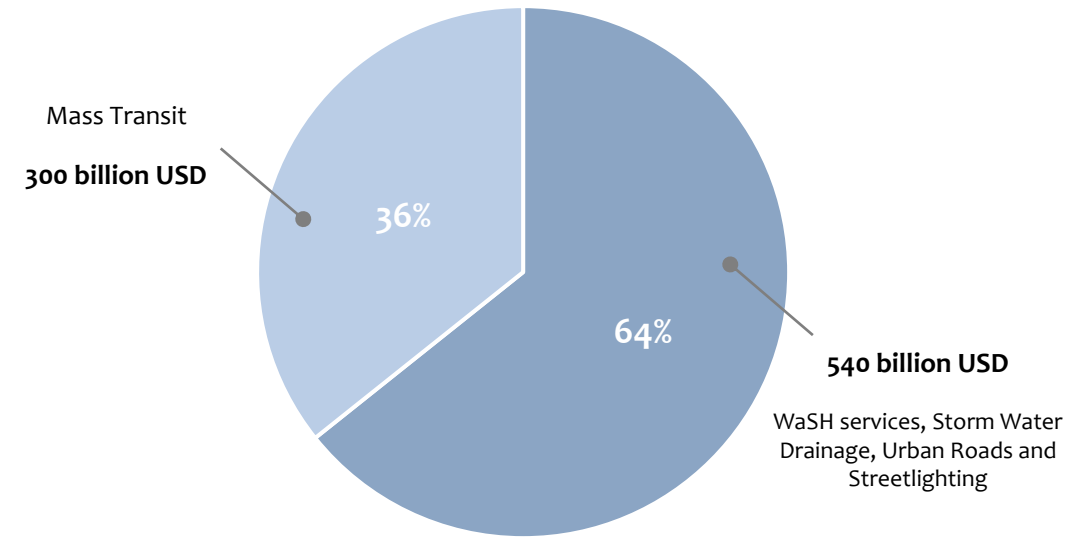
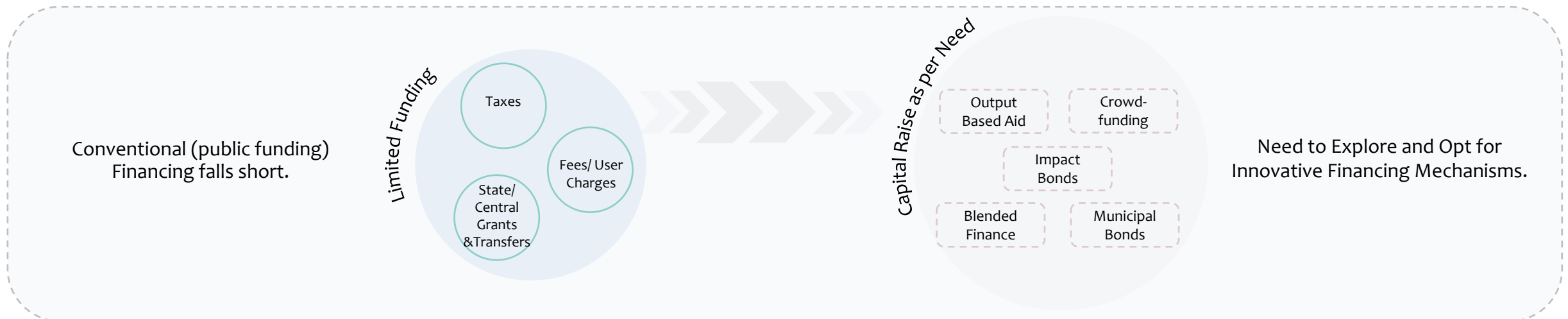


Figure 01: Investment needed for basic Municipal services in India till 2036.

Source: Author



## Objectives

### Aim

“Review of Green Bonds for Urban WaSH Infrastructure Investments.”

01

Understand the context of Green finance and Green Bonds across the globe and in India.

02

Identify and review policies and practices of green finance and green bonds across the globe and in India.

03

Review best practices and key challenges faced during the issuance of green finance/green bonds.

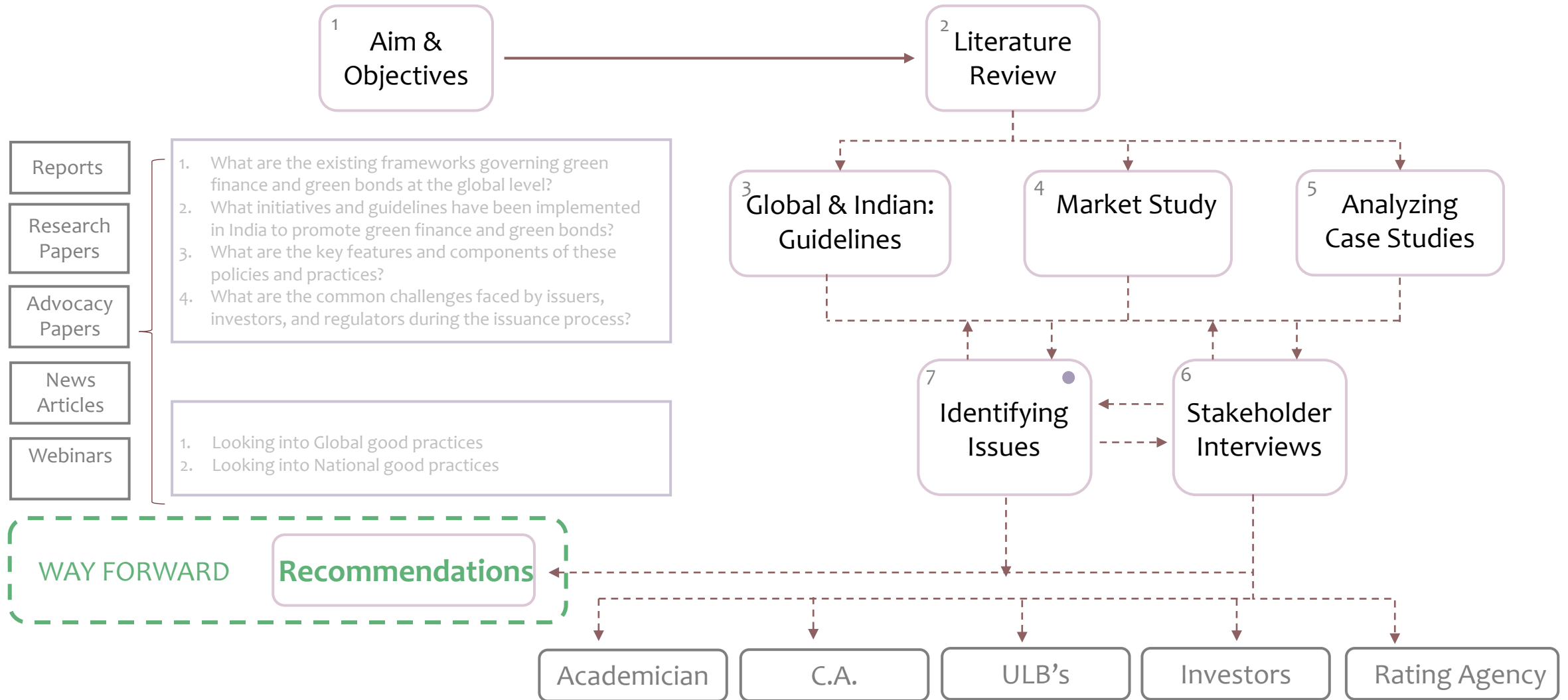
04

Suggest recommendations for improving green finance/green bonds applicable in the Indian context.

### Scope

Focuses on reviewing green bond market as an innovative financing mechanisms to fund WaSH projects.

# Methodology



# Review Green Bonds Across the Globe and in India

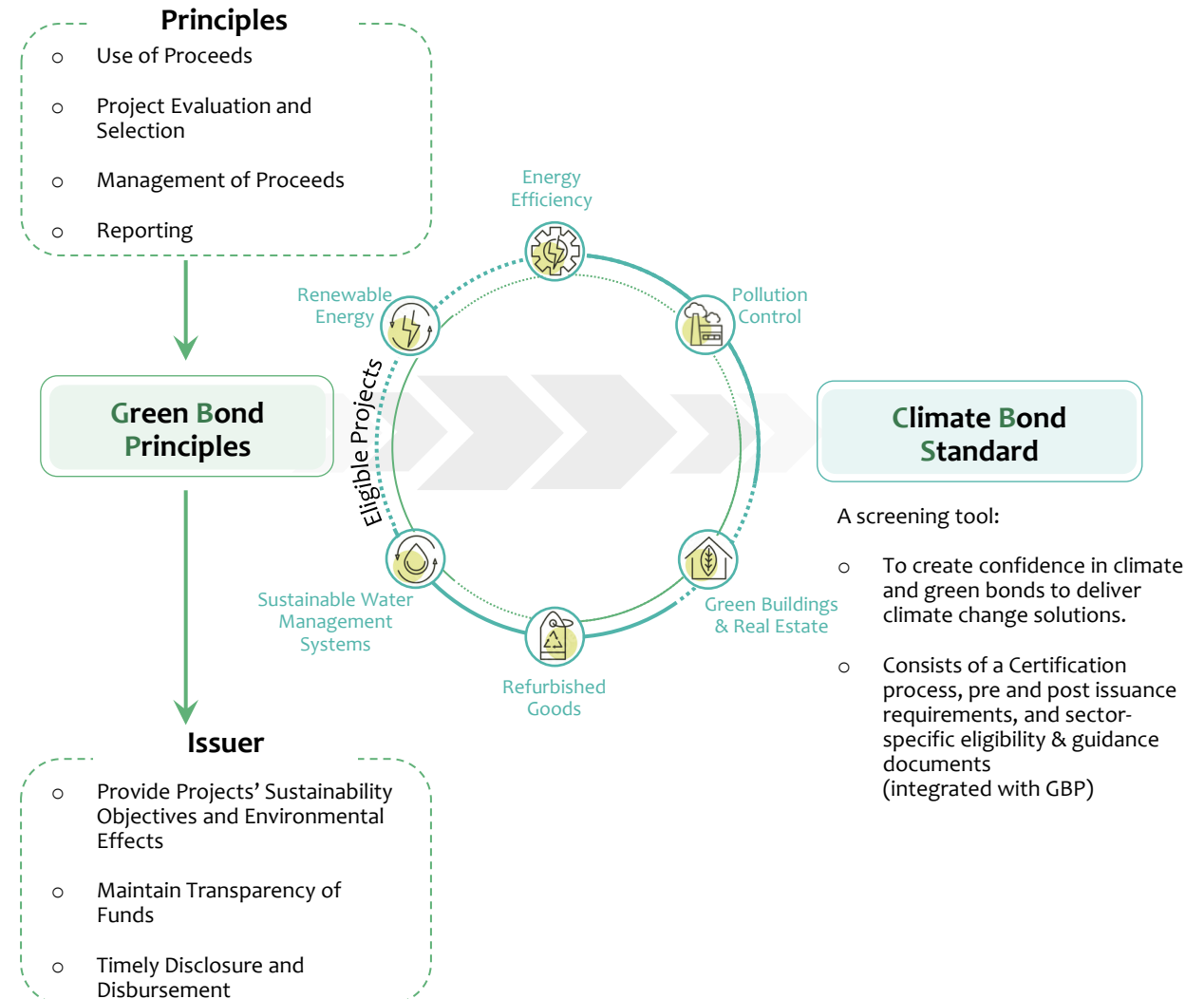
# Green Bond Principles

## Green Bonds

“Green bonds are regarded as a financial instrument having a fixed rate of return and liquid financial instrument which is used to raise funds specifically for the climate mitigation, adaption and other environment friendly and low carbon project.”

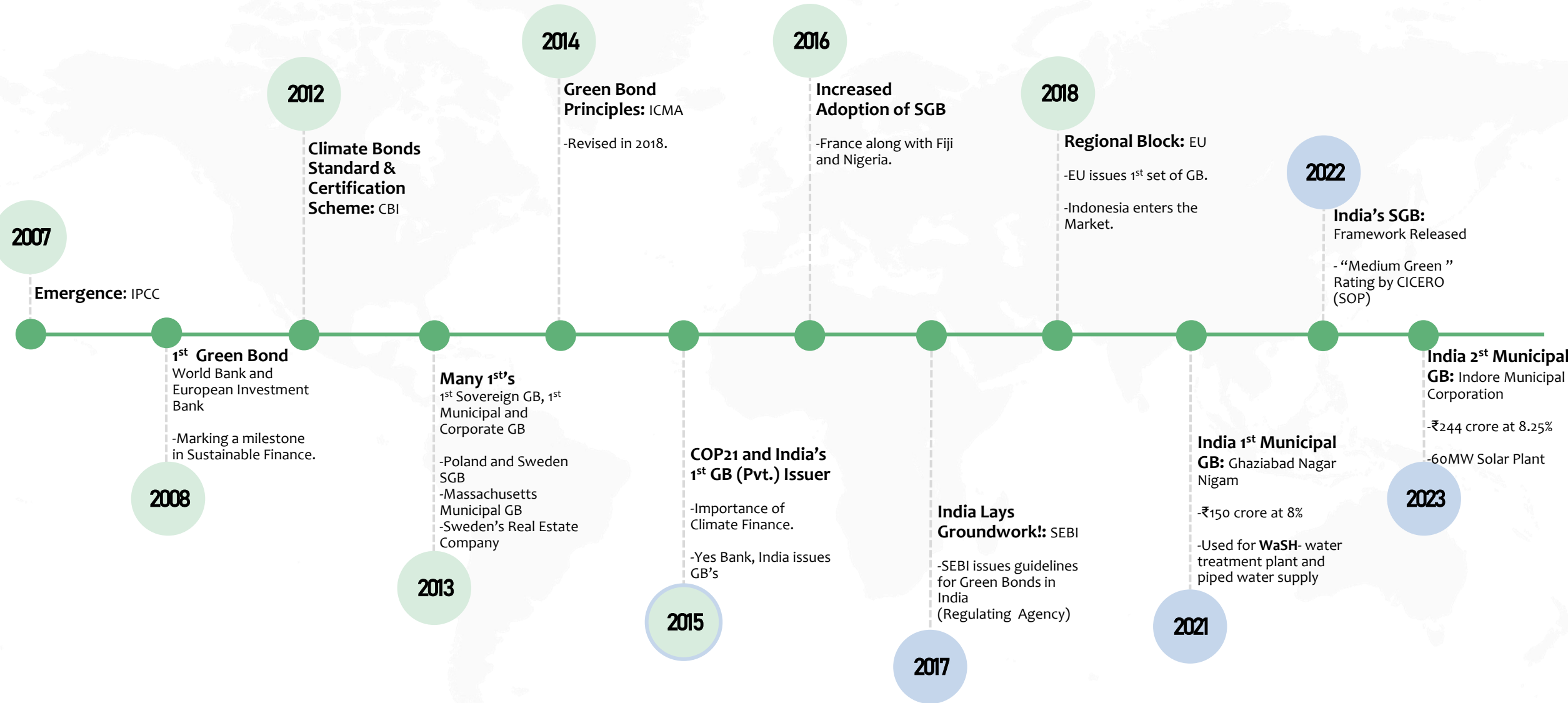
-(World Bank, 2021)

## Base Guidelines for International Practice

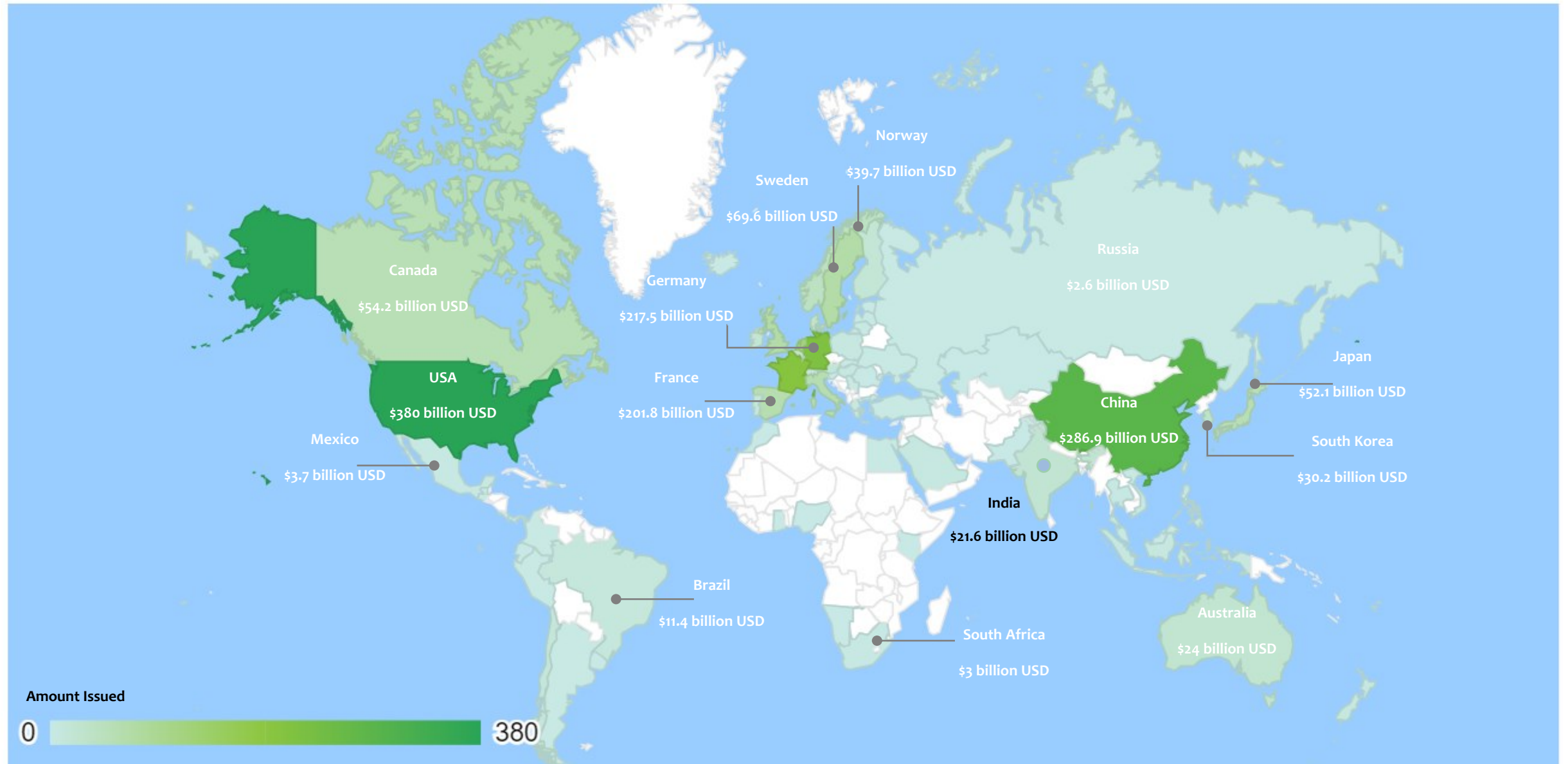




# Green Bonds Adaptation Timeline Globally



# Global Mapping of Green Bonds Issued (2014- 2022)



# US and China have the Largest Green Bond Market; India Ranks 15th

## Global Market Bond Share as per 2022

Bond Market Rank	Country/Region	Total Debt Outstanding (in trillion USD)	Share of Total Bond Market (in %)
1	US	51.3	39
2	China	20.9	16
3	Japan	11	8
4	France	4.4	3
5	United Kingdom	4.3	3
6	Canada	4	3
7	Germany	3.7	3
8	Italy	2.9	2
9	Cayman Islands	2.7	2
10	Brazil	2.4	2
11	South Korea	2.2	2
12	Australia	2.2	2
13	Netherlands	1.9	1
14	Spain	1.9	1
15	India	1.3	1
16	Ireland	1	1
17	Mexico	1	1
18	Luxembourg	0.9	1
19	Belgium	0.7	>1
20	Russia	0.7	>1

7.85% Municipal Bond

0.012% Municipal Bond

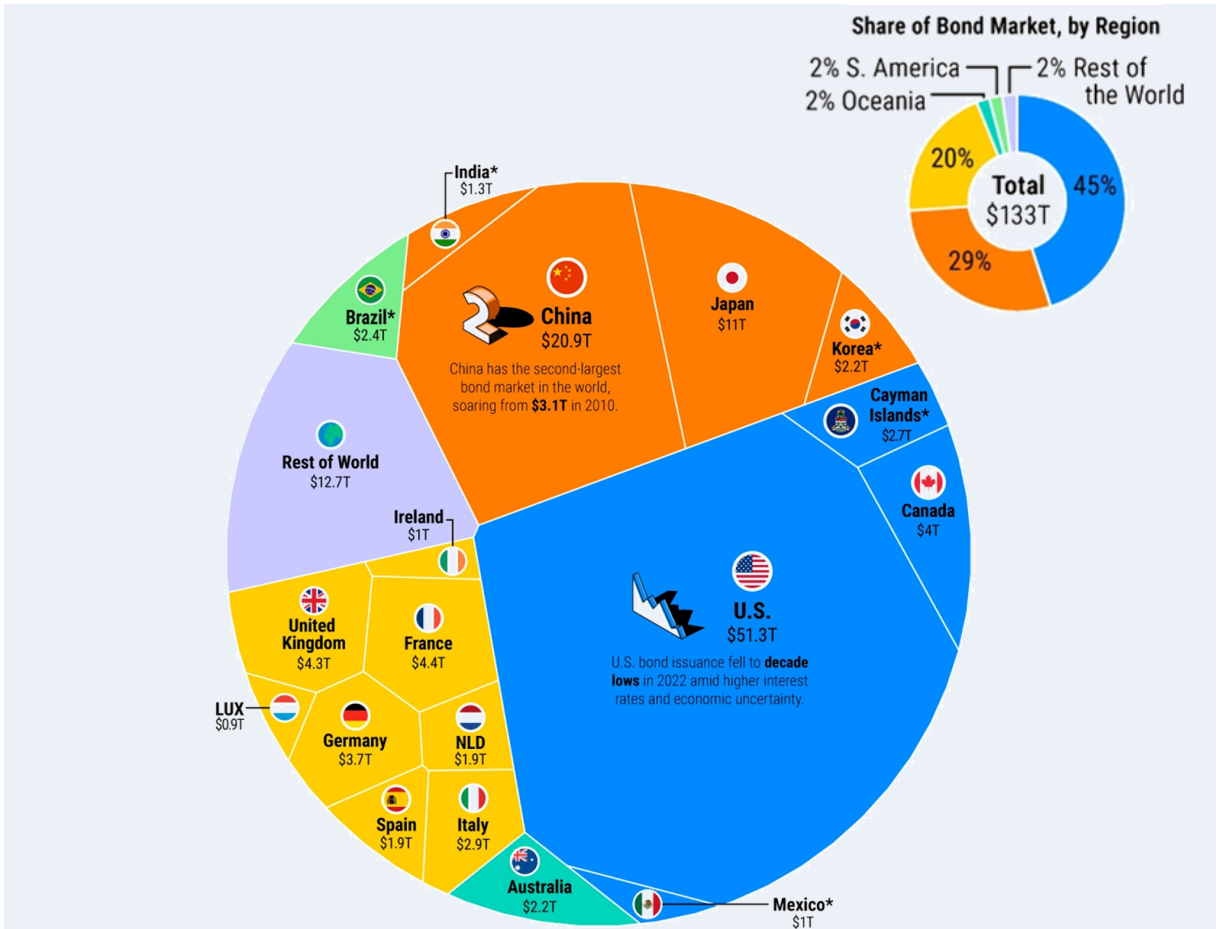


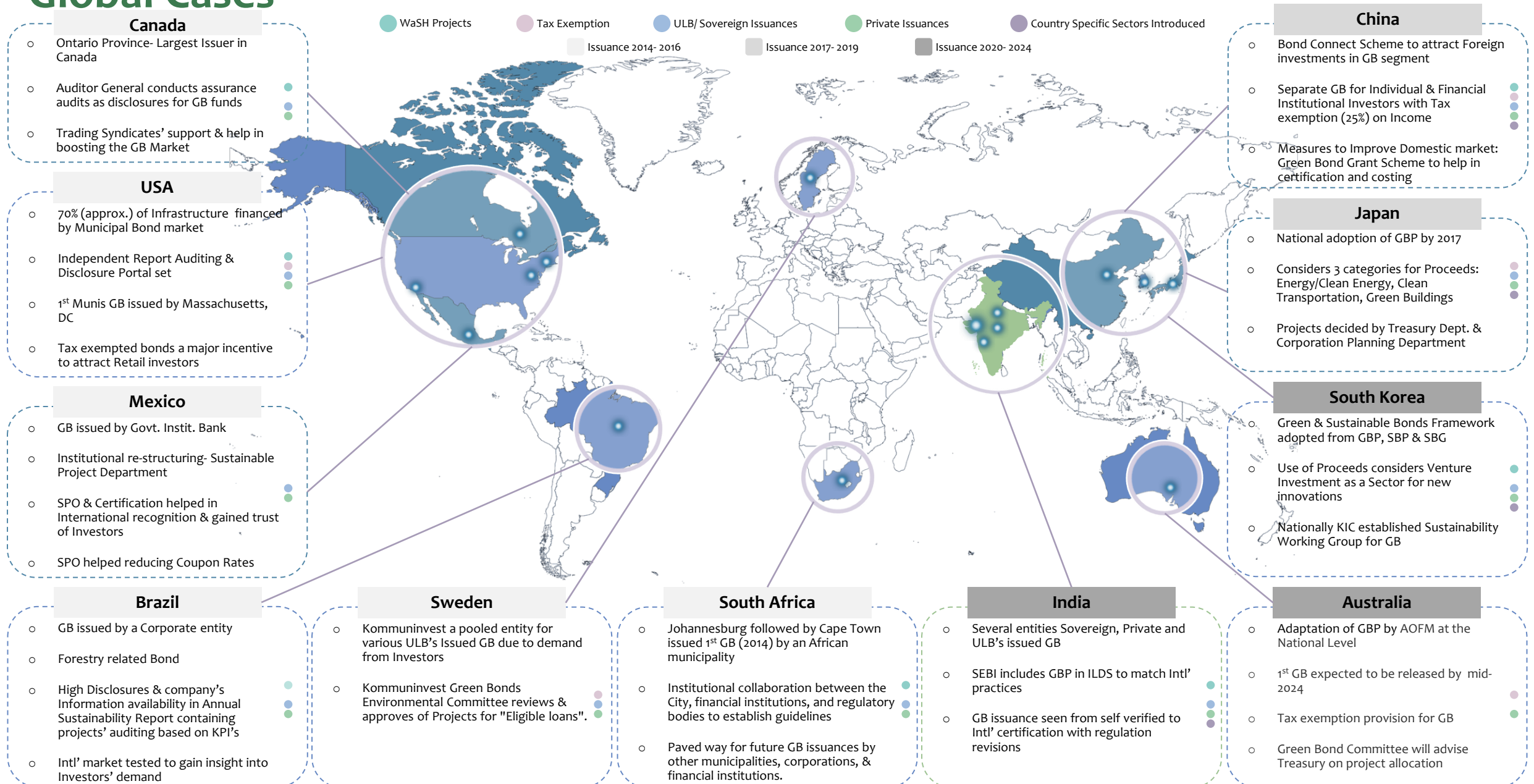
Figure 01: Largest Bond Markets in the World by Countries and Regions till 2022.

Source: VisualCapitalist

European Central Bank has amassed \$5.3T in Bond Holdings driven by years of Quantitative Easing

# Global Cases

- WaSH Projects
  - Tax Exemption
  - ULB/ Sovereign Issuances
  - Private Issuances
  - Country Specific Sectors Introduced
- Issuance 2014- 2016   ■ Issuance 2017- 2019   ■ Issuance 2020- 2024



## Canada

- Ontario Province- Largest Issuer in Canada
- Auditor General conducts assurance audits as disclosures for GB funds
- Trading Syndicates' support & help in boosting the GB Market

## USA

- 70% (approx.) of Infrastructure financed by Municipal Bond market
- Independent Report Auditing & Disclosure Portal set
- 1<sup>st</sup> Munis GB issued by Massachusetts, DC
- Tax exempted bonds a major incentive to attract Retail investors

## Mexico

- GB issued by Govt. Instit. Bank
- Institutional re-structuring- Sustainable Project Department
- SPO & Certification helped in International recognition & gained trust of Investors
- SPO helped reducing Coupon Rates

## Brazil

- GB issued by a Corporate entity
- Forestry related Bond
- High Disclosures & company's Information availability in Annual Sustainability Report containing projects' auditing based on KPI's
- Intl' market tested to gain insight into Investors' demand

## Sweden

- Kommuninvest a pooled entity for various ULB's Issued GB due to demand from Investors
- Kommuninvest Green Bonds Environmental Committee reviews & approves of Projects for "Eligible loans".

## South Africa

- Johannesburg followed by Cape Town issued 1<sup>st</sup> GB (2014) by an African municipality
- Institutional collaboration between the City, financial institutions, and regulatory bodies to establish guidelines
- Paved way for future GB issuances by other municipalities, corporations, & financial institutions.

## India

- Several entities Sovereign, Private and ULB's issued GB
- SEBI includes GB in ILDS to match Intl' practices
- GB issuance seen from self verified to Intl' certification with regulation revisions

## Australia

- Adaptation of GBP by AOFM at the National Level
- 1<sup>st</sup> GB expected to be released by mid-2024
- Tax exemption provision for GB
- Green Bond Committee will advise Treasury on project allocation

## China

- Bond Connect Scheme to attract Foreign investments in GB segment
- Separate GB for Individual & Financial Institutional Investors with Tax exemption (25%) on Income
- Measures to Improve Domestic market: Green Bond Grant Scheme to help in certification and costing

## Japan

- National adoption of GBP by 2017
- Considers 3 categories for Proceeds: Energy/Clean Energy, Clean Transportation, Green Buildings
- Projects decided by Treasury Dept. & Corporation Planning Department

## South Korea

- Green & Sustainable Bonds Framework adopted from GBP, SBP & SBG
- Use of Proceeds considers Venture Investment as a Sector for new innovations
- Nationally KIC established Sustainability Working Group for GB



# Understandings from Global Cases

01

- **Oversubscription of all Green Bond Issuances Globally**

02

- **US** a leading **Bond Market** and a few other countries like **China** **Incentivizes Bond** by providing **Tax Exemption** to its **citizens** or **Institutions** Investing especially in **Government (institutions) Bond Issuance**

03

- **Second Party Opinion & Certification** helped in **International recognition** & gained trust of Investors **especially the SRI** (Socially Responsible Investors) or **ESG Investors**. It also **helped Reducing Coupon Rates**

04

- **High Disclosures** & Issuer's Information availability in **Annual Reporting** on Sustainability containing **Projects' auditing based on KPI's**

05

- **Inter-departmental collaboration & Committee** to establish guidelines and **Successful Issuance** of Green Bonds

06

- **Kommuninvest Investors advised/ demanded** the organization to **float Green Bonds** due to its **Project Portfolio** and **Working of the Entity**

07

- **Japan and South Korea Eligible Projects** Categories listed as per their **Country's need**

08

- **India- Push** to Bonds through **Incentivization**.

# India's Coupon Rate is 7.10% Compared to Global Rates

Globally, Indian Coupon Rate Higher than counterparts, making it attractive for International Investors

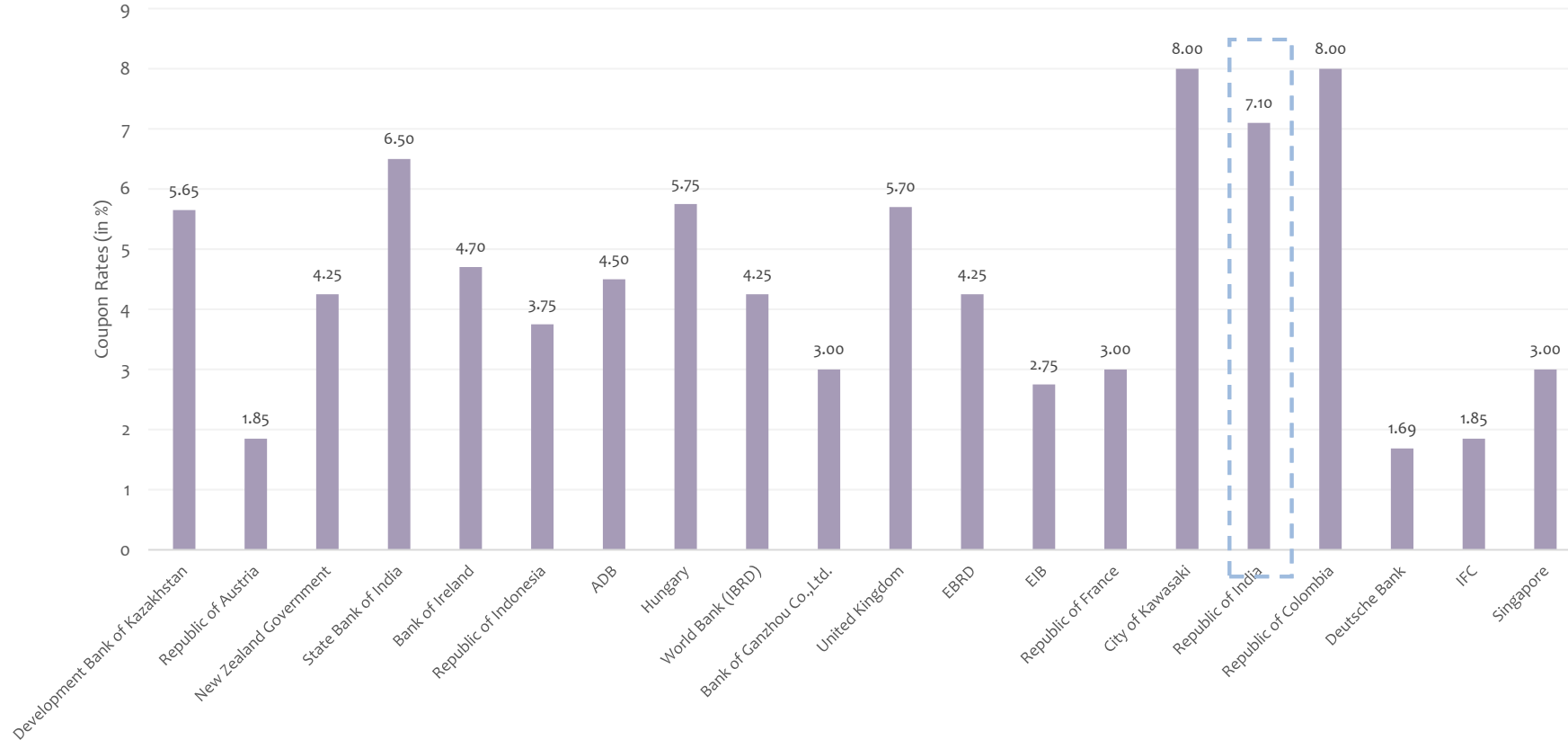


Figure 01: Graph showing the Issued Coupon Rates for various Green Bonds Issued Internationally from 2023 to Jan' 2024.

Source: CBI (till Jan'24)

# Green Bonds Outlook in India

## Green bonds: India's best bet against climate change

In light of the tumultuous economic and environmental climate that the world is experiencing today, adopting a proactive stance on issues that have repercussions on the industry as a whole, is a need of the hour

Source: Business Today (2021)

ETPrime

## India green bonds' issuance 6th largest in Asia-Pacific region, up 523% in 2021, report

Source: ET Prime (2022)

## Budget 2022: A big thumbs up for sovereign green bonds

India was at a distant 17th position among green bond issuing nations in 2021 with USA, Germany, China, France and UK occupying the top five slots. In 2021, India issued green bonds worth \$16.5 billion.

Source: Business Today (2022)



GOVERNMENT | SUSTAINABLE FINANCE

## India's Inaugural Green Bond Earns 'Greenium' on Solid Dema

Mark Segal | January 26, 2023

The Government of India's first ever issuance of green bonds met strong demand, with orders exceeding the offering size by more than 10 times, earning the bonds a 5-6 basis point "greenium," or a favorable yield spread relative to similar issues lacking green credentials.

Source: ESG Today (2023)

FEATURE STORY | APRIL 10, 2023

## From India to Indonesia, Green Bonds Help Countries Move Toward Sustainability

Source: World Bank (2023)

## Pension funds to invest in sovereign green bonds (SGrBs): How it will impact retail investors?

1 min read • 21 Jul 2023, 12:24 PM IST

iPhone 15

Sangeeta Ojha

Pension funds in India will be allowed to invest in sovereign green bonds (SGrBs), according to the Pension Fund Regulatory and Development Authority (PFRDA). SGrBs are government-issued bonds used to finance environment-related projects

Source: Mint (2023)

## Green bond issues to pick up, SBI working on matrix for ESG credits

Updated - October 09, 2023 at 09:02 PM | MUMBAI

'Over the next couple of year, the share of green bonds will rise to about 8-10 per cent of total bonds'

BY ANSHIKA KAIYASTHA

Source: The Hindu Business Line (2023)

## Ghaziabad issues India's first municipal green bonds

Updated - April 08, 2021 at 03:06 PM | New Delhi, April 8

Funds to be used to recycle waste water for drinking water; Kanpur, Agra, Varanasi next cities to issue bonds

Source: The Hindu Business Line (2021)

## Ahmedabad city issues municipal green bonds worth Rs 200 crore, oversubscribed by 6.8 times

According to an AMC official, the municipal green bond was fully subscribed in less than four seconds of opening up for subscription.

By: Express News Service

Ahmedabad | Updated: February 6, 2024 10:27 IST

NewsGuard

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The AMC is the second municipal corporation after Indore in the country to issue municipal green bonds. (File Photo)

Source: The Indian Express (2024)



Source: Bloomberg Television(2024)

# Green (Municipal) Bonds in India



# 84% of the Total Green Bond Issuances are by Private Sector in India

- **84% Private sector** – Dominated largely the Green Bond issuances
- **Slow Growth** in Bond market due to **Public Sector Inactivity** with **Local Government** accounting for **0.10% only**

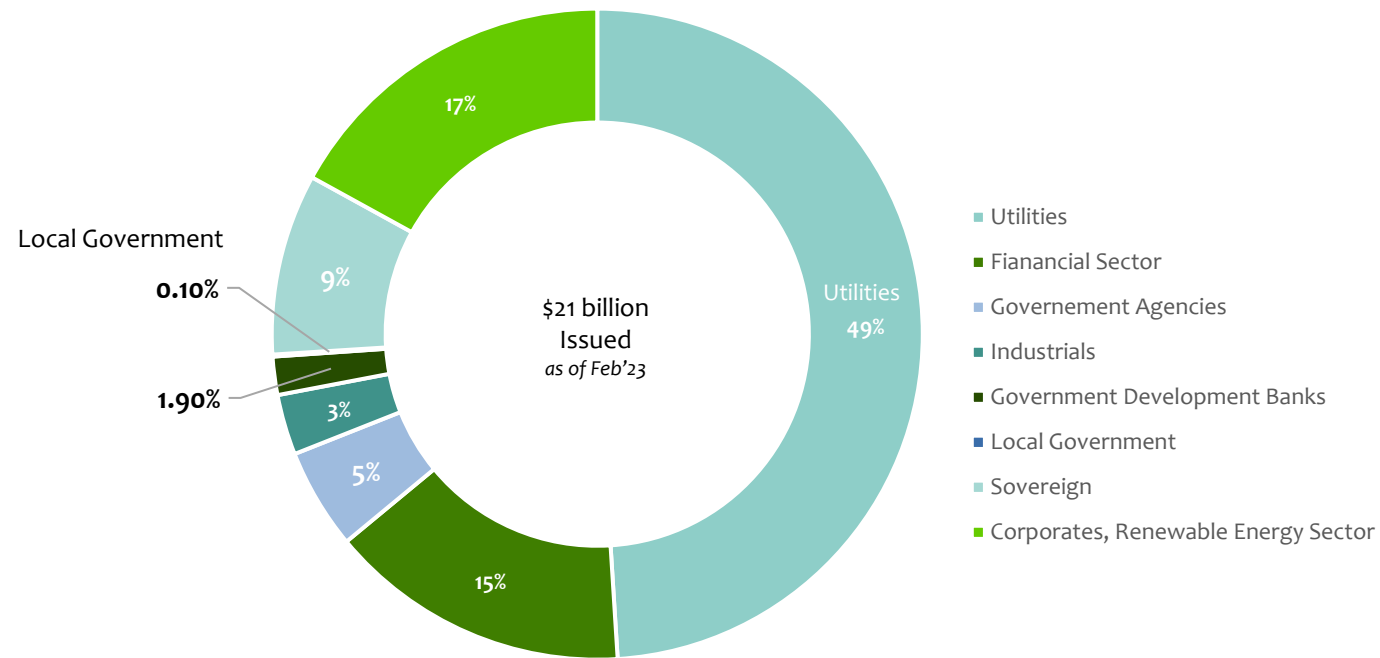


Figure 01: Green Bond issuances in India by Type of Issuer

Source: World Bank with Data from Bloomberg(2023)

# Initiatives/ Steps by Government of India till now . . .

Nationally Determined Contributions

01

In adherence to UNFCC, Paris Agreement revision submitted

Inclusion of GCF and to tap into it (2021 – 2030)

Sovereign Green Bonds

02

SGB Framework of India released (2022)

Supported by RBI with investments from PFRDA, IREDA (2023)

SEBI- ILDS

(Issues and Listing of Debt Securities)

03

Municipal Bond Regulations (ILMDS) (2015)

Green Debt Securities Regulations (ILNCS) (2017, 2021)

Compliances & Disclosures Revisions (2021, 2022, 2023)

SMART Cities

04

Projects under AMRUT (2015)

Workshop on Sustainable Financing & Municipal Bonds for (25) ULB's (2019)

AMRUT 2.0

05

Credit Rating of all Cities in 18 months from launch- State's 8% of A&OE can be utilized for it (2015)

Projects & DPR's shortlisted

Incentivization to Issue Green Munis (10 cr INR for 100 cr INR raised, 20 cr INR max) (2023)

# Stakeholder Insights

## Mode to Gather Stakeholder Perception regarding Green Bonds

- Interviews
- Webinars

## Criteria for Selection of Stakeholders for Interviews

- Maximum Involvement in the System
- Authorities involved in Regulating and Standardization of Bonds
- Bond Issuers in India based on:
  - i. Varied Green Bond Issuance
  - ii. Consistent Performer



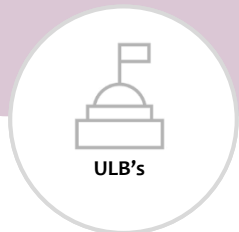
- Financial Advisor



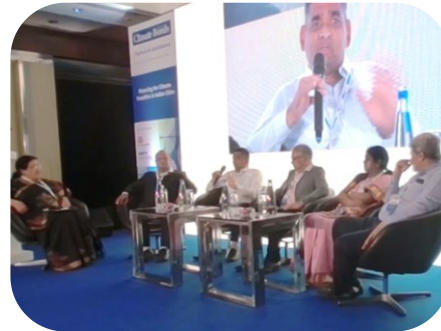
Investors/  
Traders



- AMC ○ VMC
- SMC ○ PCMC
- GNN



ULB's



- PwC (Financing the Climate Transition in Indian Cities, 2023)



Rating Agency



- Sujatha Srikumar (Financing the Climate Transition in Indian Cities, 2023)



Academician /  
Researcher



- IMC- Bonds Technical Assistance



Chartered  
Accountant

- **Bond Market has Matured over the Years Due to Incentivization by Government of India**
- **More than 60% Municipal Bonds have been Issued for WaSH Projects**
- **Not more than 5% are Public Issuances in India**
- **Cost for Green Bond Issuance: Cities have to Spend More on Public Issuance than Private**
- **More than 40% are Retail Investors in USA, Major Drivers being Tax Exemptions and Policy Structures**
- **Additional Compliances and +20 Disclosures for Green Municipal bonds from 2023 by SEBI to Prevent Greenwashing, Make Bond (Pre and Post) Issuance Cost & Time Intensive**
- **More Outsourcing for Technical & Financial Assistance due to Compliances and Disclosures in a Green Municipal Bond**

# Analysis of Municipal and Green Bond in India

# Bond Market has Matured over the Years Due to Incentivization by GoI

Maximum Activity in Municipal Bond Market seen in Issuances seen post 2015

An Effort to Boost Public Sector in to Access Capital Market

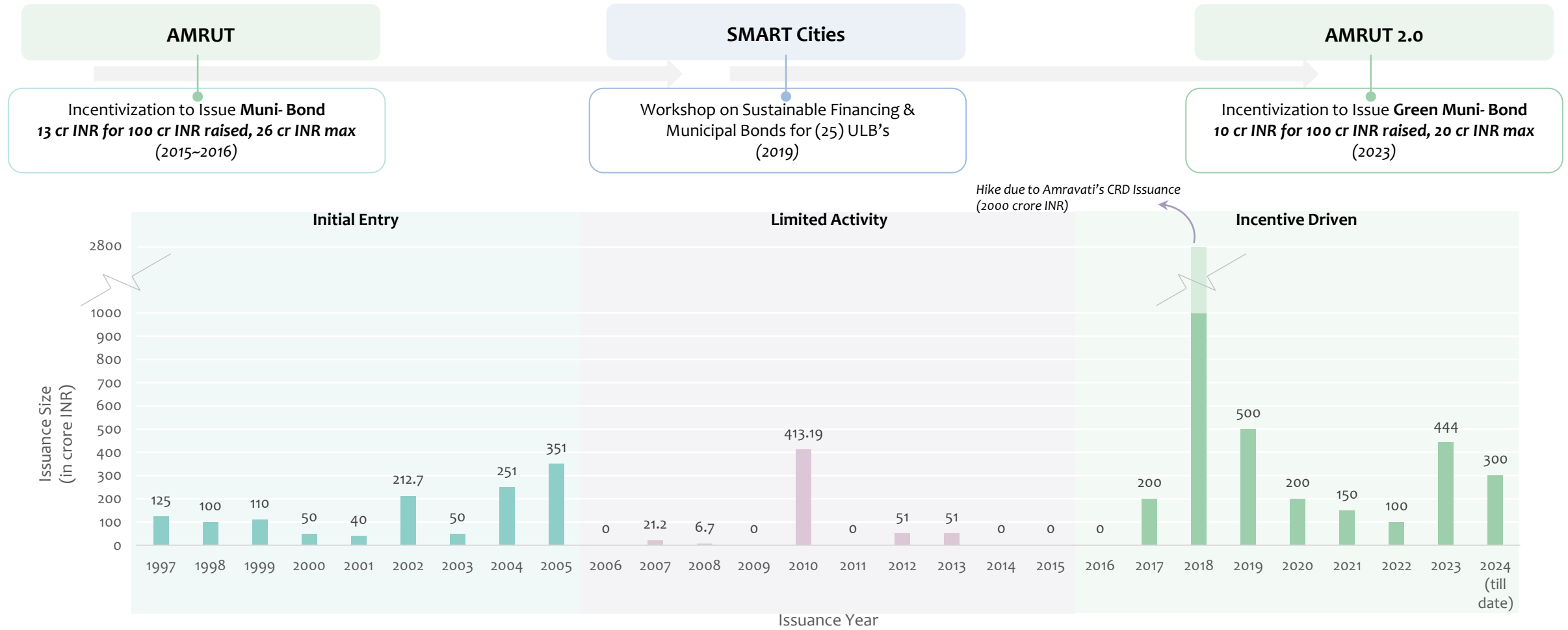


Figure 01: Municipal Bond Activity based on Issuances in India

Source: Multiple Sources

# More than 60% Municipal Bonds have been Issued for WaSH Projects

- Around **61%** of the **Municipal Bonds Issuances** in India, for **WaSH Projects** since 1997
- Most of the **WaSH Projects** fall under the Eligible **“Green Project”** taxonomy by SEBI.

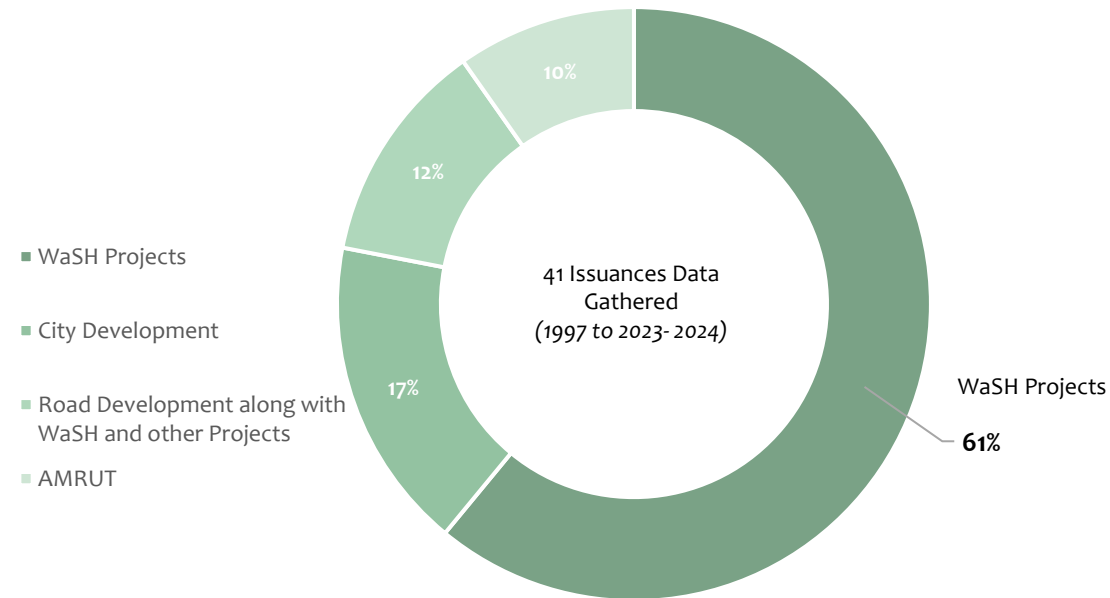


Figure 01: Municipal Bond Issuance Distribution by Type of Proceeds

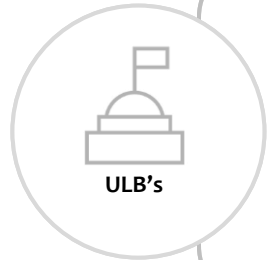
(FY 1997 to 2023-2024)

Source: Multiple Source Collection

# Trend in Inclusion of Retail Investors/ Individuals in India

Not more than 5% are Public Issuances in India

## From Issuers' (ULB's) Perspective:



Public Issuance been Less sought after:

- Issuance size is small hence preferred to give out to selected few for ease of Repayment Management
- More Disclosure Compliances and Reporting for Public Issuances – especially in the case of Green Bond Issuance to maintain Transparency
- Expense spent for Issuing Publicly Placed Bonds more than Private Placed Bonds
- Public Issuances' is Limited to Revenue Bonds by SEBI (2015)

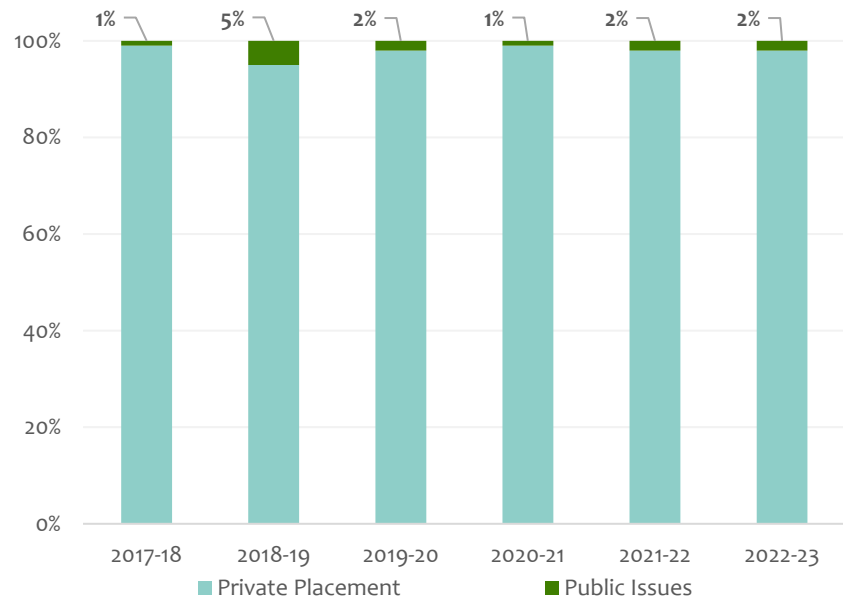


Figure 01: Bond Market Issuance Distribution for 6 consecutive FY's

Source: RBI Annual Reports

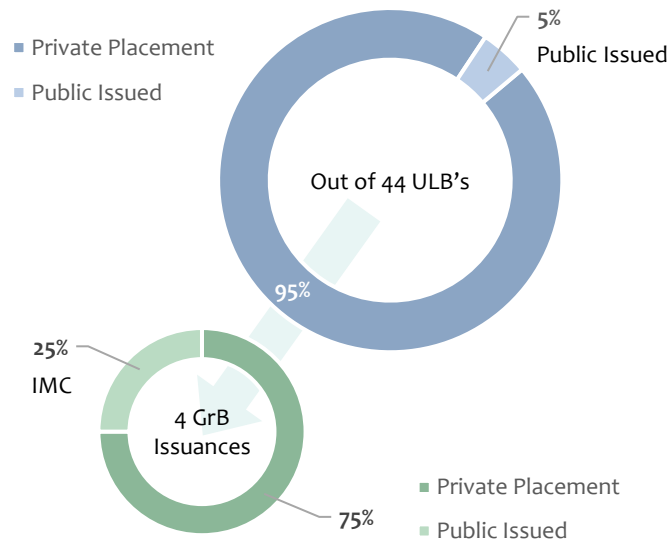
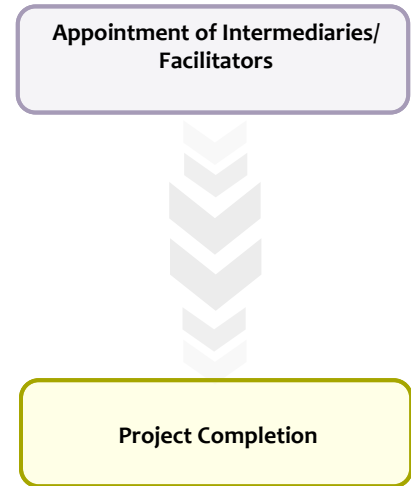


Figure 02: Municipal Bond Market Issuance Distribution since FY 1997 to 2023- 2024

Source: Multiple Source Collection



Cost of Issuance Process: 1% (max) for Private Placement and (negotiated bonds) 1% to 4% for Public Issue of the Proceeds/Principal



# Cost for Green Bond Issuance

## Cities have to Spend More on Public Issuance than Private

**Cost of Issuance Process: 1% (max) for Private Placement and (negotiated bonds) 1% to 4% for Public Issue of the Proceeds/Principal**

**Example:** If a Bond is Issued for 200crore INR

Amount spent in the Issuance of Bond:

Private Placement= 1% of total Bond Amount  
= 1% x 200  
= 2crore INR

Public Placement= 1.5% (more than 1%) of total Bond Amount  
= 1.5% x 200  
= 3crore INR

The **Major variable** other than Bond Placement is the **Verifier/ Certifier Agency fees** as the Green Bond Market with its Verification mechanism is still new, there are **only limited agencies providing such services** hence **quoted fees is Volatile**. There is no listing of Credible Verifiers by SEBI so as to provide Rate Capping.

SMC's Case for Verification (by KPMG): Pre- issue process of Bond – 25 lac INR and Post- issue process of Bond – 50 lac INR

# Insights from Stakeholder

## From Investors' (Retailer) Perspective:

\*Initially Ticket Size was at ₹10,00,000 but changed to ₹1,00,000 from 1<sup>st</sup> January, 2023 by SEBI



- Limited Players for Trading
- Illiquidity due to Absence of Secondary / Grey Market
- Quicker and Considerable Gains in Equity Market
- No Guarantee profits on Maturity completion
- Absence of Tax exemption like before 2014 on PSU's
- High Ticket size not affordable to many

	Bonds		Equity
	Public	Private	
<b>No. of Entities in Play</b>	Limited		Varied Options
<b>Nature of Investment</b>	Debt securities issued by Corporations, Banks, and the Government		Ownership stakes in Publicly listed Indian companies
<b>Who can Invest</b>	Open for Public at Large	Issued to Select Investors	Open for Public at Large
<b>Liquidity</b>	High	Low	High
<b>Governed by SEBI</b>	Yes	Yes	Yes
<b>Disclosures</b>	High	Low	Low
<b>Face Value of Issue</b>	₹ 1,000	₹ 1,00,000*	Depends on Entity
<b>Income</b>	Fixed Interest		Dividend + Capital Gains
<b>Maturity</b>	Fixed Period		No Fixed Period
<b>Return Potential</b>	Low		High
<b>Volatility</b>	Low		High

## Good Practices:

- IMC, India- Green Bond Issued in Public Placement had PAN India Retail investor involvement (25%) with Liquidity Flexibility provision of STRPP
- IRDEA, India- Green Bond Issued with Tax Exemption on Earnings
- USA- All Municipal Bonds (including Green) Tax Exempted
- China- Separate Green Bond Issuance for Individual & Financial Institutional Investors with Tax exemption (25%) on Income

# A Look into the Accelerators of US Bond Market

More than 40% are Retail Investors in USA, Major Drivers being Tax Exemptions and Policy Structures

- More than 40% of investors involved in the US Municipal Bond Market are Individual Investors and Retail Investors.
- Tax Exemptions offer investors incentives to purchase low-yield government bonds rather than higher-yielding corporate fixed-income securities.
- Majority of Municipal Bonds are issued to offer Tax Exempts (Income and Local State Tax)– a significant benefit for many US Domiciled citizens and Corporations.
- US Municipal Bond Market Supplies around 70% ~80% of the Capital for Infrastructure Maintenance and Development.

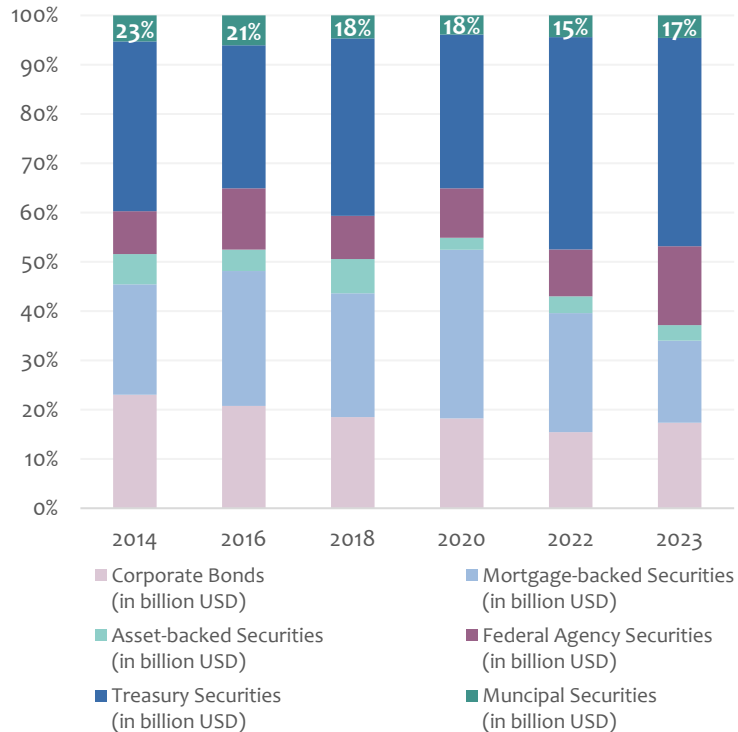


Fig. 01: US Fixed Issuance Debt Market Contribution (2 year Interval)

Source: SIFMA

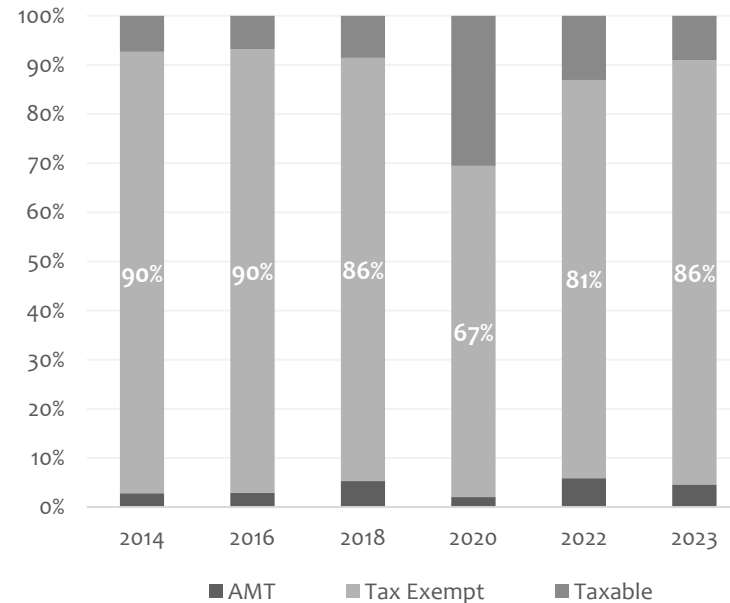


Fig. 02: Tax Distribution of the Issued Bonds (2 year Interval)

Source: SIFMA

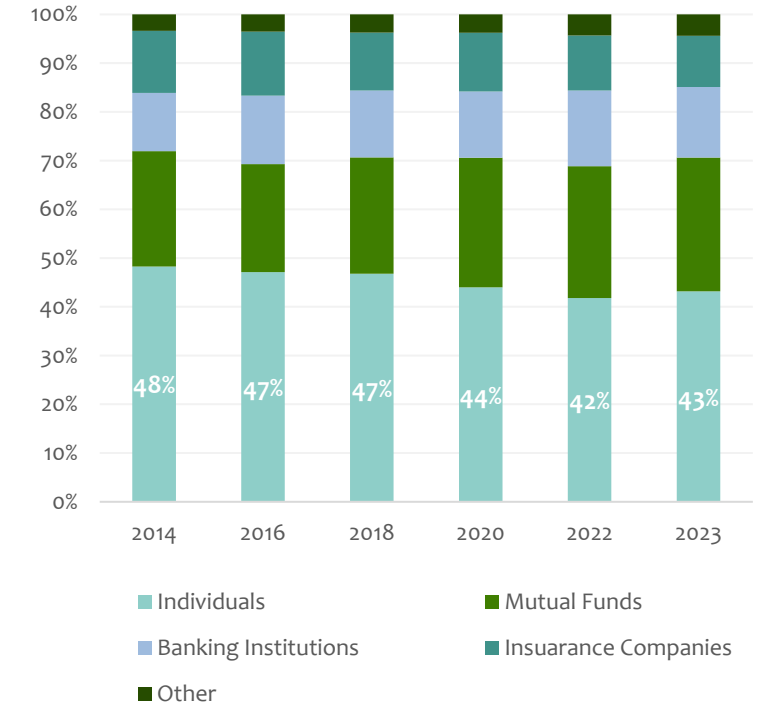


Fig. 03: Municipal Bond Holders Composition (2 year Interval)

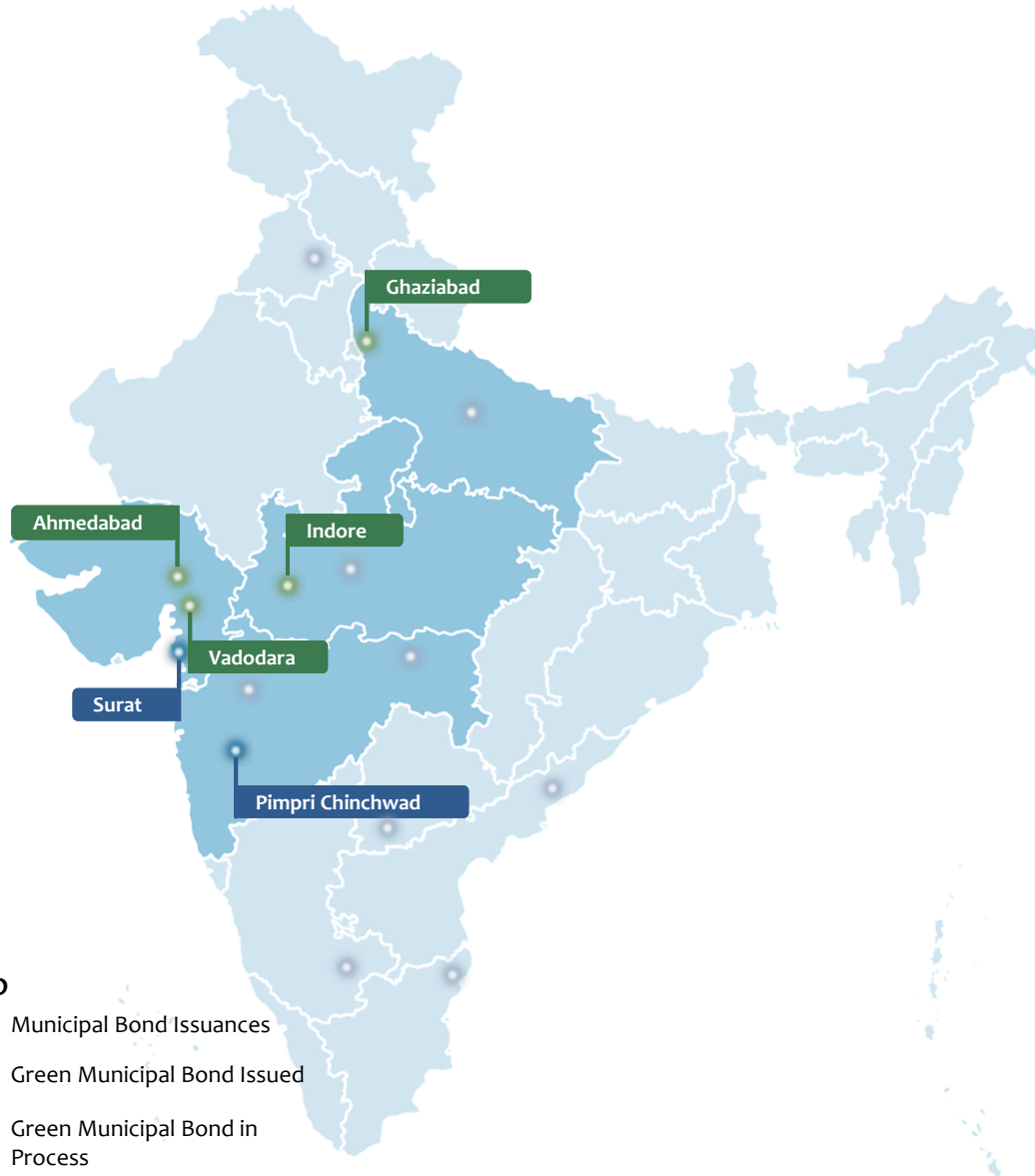
Source: SIFMA

# Municipal Bond Environment in India & USA

Enabling Parameters	India	USA
<b>Type of Investors</b>	Retail Individual Investor High Net-worth Individuals Non-institutional Investors Institutional Investors	Individuals Mutual Funds Banking Institutions Insurance Companies Others
<b>Policies or Regulation to Support Municipal Bonds</b>	NDC's SMART Cities AMRUT	BAB (Build America Bonds), 2008- 2011 Bipartisan Infrastructure Investment and Jobs Act (IIJA) , 2021 IRS (Internal Review Service), 2022
<b>Intention</b>	To Increase Financial Capabilities of ULB's and Tap into Capital Markets	Push for Public Funding Mechanisms under Subsidized Federal Programs as Self Funding Reliance
<b>Incentives</b>	To ULB's to Issue Bonds	To Investors as Tax Exemption on Returns

- In USA there is Enabling Environment for the Municipal Bond Market which is backed by Policy & Regulatory Support for Public Funding with Incentivization for Investors
  - US Municipal Bond Market Supplies around 70% ~80% of the Capital for Infrastructure Maintenance and Development
  - Whereas in India the Enabling Environment is Developing and currently the ULB's are getting Incentivized

# In Depth Assessment of 6 Indian Cities who have Issued or under Process of Issuance of Green Bonds



## 01 Ghaziabad NN

1<sup>st</sup> Bond Debut with Green Muni Bond of the City and Country

Issued Pre-incentivization

Proceeds used for Upgrading STP and Tertiary Sewage Treatment Plant set-up

## 02 Indore MC

Pioneer in Climate Financing (Carbon Credit Financing since 2018)

Green Bond under Public Placement with Pan India Retail subscription

Proceeds used for providing Solar Electricity pumping for Drinking Water Needs

## 03 Ahmedabad MC

Paves way for other ULB's of Gujarat by issuing Green Muni Bond

Proceeds used for Implementation of zero-liquid discharge systems and Green Energy production

Going to issue subsequent Green Bond CBI certified

## 04 Vadodara MC

1<sup>st</sup> Green Muni Bond CBI Certified and Verified in Asia

Proceeds used for enhancing Liquid Wastewater Management infrastructure

Demonstration of Scalable Model for cities

## 05 Surat MC

Aims to follow Vadodara's footsteps with Bond release in FY 2024-2025

Projects include Renewable Energy and WaSH sector projects

## 06 Pimpri-Chinchwad MC

1<sup>st</sup> Green Muni Bond for Maharashtra plan to achieve CBI certification

Bond release in FY 2024-2025

Projects include Green & Blue Infrastructure

# Regulations by SEBI for Issuance of Green Bonds

## Eligibility Requirement for ULB's - SEBI

### 01 Funds

Eligibility to raise funds under the constitution

### 02 Accounting

ULB accounts prepared according to National or State Municipal Accounts Manual for 3 consecutive years

### 03 Surplus

ULB shows surplus income in past 3 consecutive financial years based on its Income and Expenditure Statement

### 04 No Defaults

ULB has no default on loan repayments to banks/ financial institutions in the past year

## Additional Compliances and +20 Disclosures for Green Municipal bonds from 2023 by SEBI to Prevent Greenwashing, Make Bond (Pre and Post) Issuance Cost & Time Intensive

1. **Compulsory Appointment of 3rd Party Verification/ Certification and a Merchant Banker** (for detailed Due Diligence)
2. **3rd Party** Along with SEBI will **Monitor, Manage, and Track Pre- Post Issuance** and after Project Completion the Use of Proceeds **along with Impact Reporting of the Project (with KPIs)**
3. **No Separate** Compliances and Verification processes for a ULB, adheres to Regulations as for Private Companies.
4. **Impact Reporting: Information, about reporting of the environmental impact of the projects financed by the green debt securities to be disclosed as per Disclosures of Major Elements of Business Responsibility and Sustainability Reporting (BRSR)**

# Comparative Analysis of Green Bond Issuance Process of Cities Before & After Revision of Guidelines

## Green Debt Securities Regulations (ILNCS) (2017, 2021)

### 01 Ghaziabad NN 2021

No Incentivization for Bond Issuance

Followed Municipal Bond Regulations & Procedure

Eligible Projects- mentioned in ILNCS for GDS, 2017

**1 Time Certification** of Project (& Partly the Proceeds) Done by Uttar Pradesh Pollution Control Board

**Quarterly Project Disclosures** to NSE (comm. SEBI) & Annual Reporting by Rating Agency & Trustee

### 02 Indore MC 2023

Incentivization for Bond Issuance

Followed Municipal Bond Regulations & Procedure

Eligible Projects- mentioned in ILNCS for GDS, 2021

**1 Time Certification** of Project (before ILNCS revisions of 2023) & Monitoring of Proceeds Done by Rating Agency

**Half Yearly Project Disclosures** to NSE (comm. SEBI) & Annual Reporting by Rating Agency & Deb. Trustee

### 03 Ahmedabad MC 2024

## Compliances & Disclosures Revisions (2022, 2023)

### 04 Vadodara MC 2024

Incentivization for Bond Issuance

Followed **Municipal Green Bond Regulations & Procedure**

**Formulation of Framework & KPI's**

**Addition of 3<sup>rd</sup> Party Verifier along with Rating Agency**

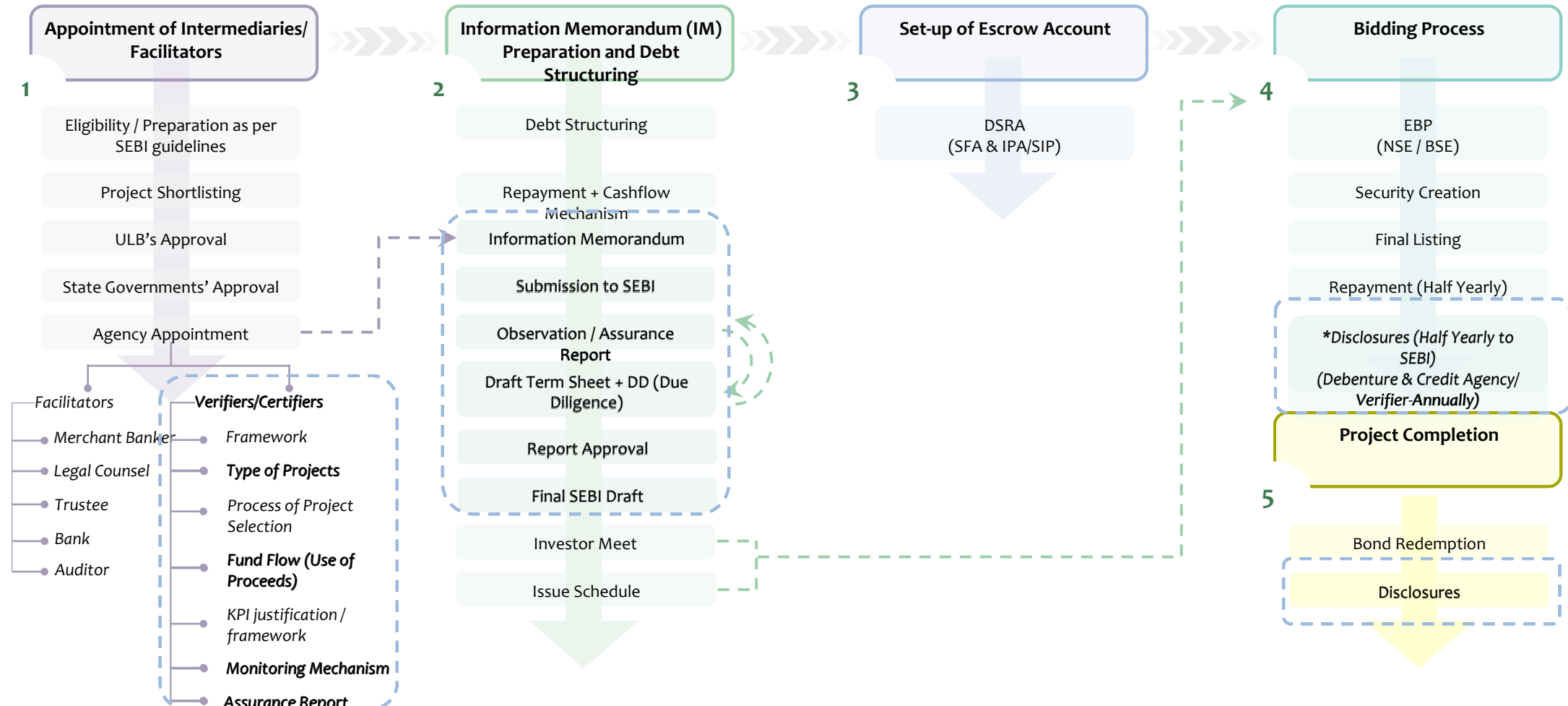
1 Time Certification of Project by Rating Agency (Private Comp. have renew every Year)

**Half Yearly Disclosures** to Verifier & SEBI

Annual Reporting by Rating Agency / Trustee / Verifier

# Review of Green Bond Issuance Process of Cities Before & After Revision of Guidelines

- 1 time Project certification/verification during its Project lifecycle
- Compliances more Aligned to Private companies and Not user friendly for ULB's to fit themselves in it
- Compliances/ Regulations for Public Issuance more strict and lengthy compared to Private Placement
- Private placement opted due to ease of Disbursement, Disclosures and amount involvement in Issuance





# More Outsourcing for Technical & Financial Assistance due to Compliances and Disclosures in a Green Municipal Bond

- **Compliances, Disclosures and Litigations More** in a Green Municipal Bond require **Additional External Assistance** as **ULB's** are **not Self-sufficient** to carry it out alone.
- **Limited agencies providing such Services** hence **Quoted fees is Volatile**. There is **No listing of Credible Verifiers by SEBI** so as to provide **Rate Capping**.

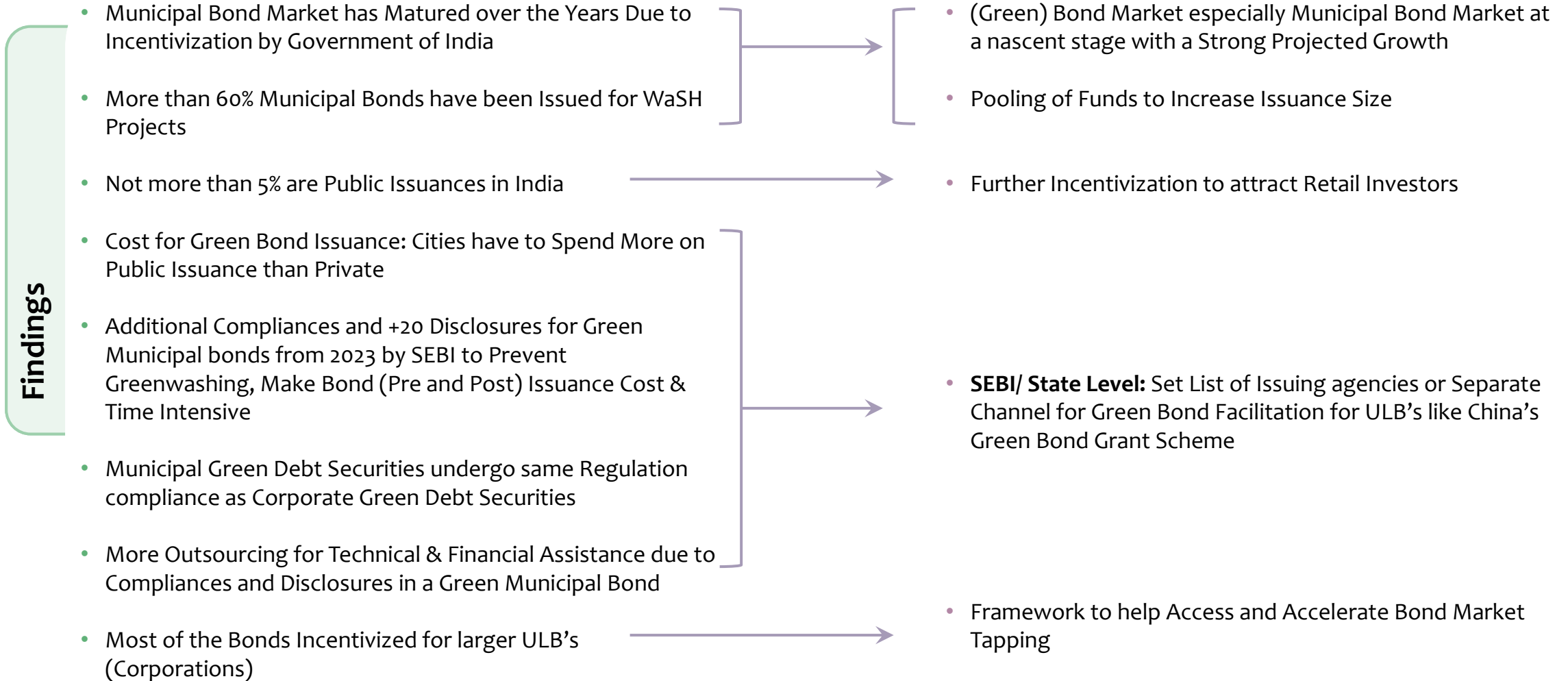
ULB	Rating Agency		Credit Rating	Green Bond										Public Placement		
				Bonnd Issue Year	Coupon Rate (in %)	Tenor (in years)	In Process	Issued	WaSH Project Inclusion	Amount (discussed) (in crore INR)	Verifier	Certifier	Major Investor		Technical and Finacncial Assistance	Liquidity Flexibility
GNN	India Ratings	BWR	AA	2021	8.10	10.0		●	●	200.0			Financial Institutions		No	
IMC	India Ratings	Care Ratings	AA	2023	8.25	9.0		●	●	244.0			Financial Institutions		Yes (5 STRPP)	●
AMC	India Ratings	CRISIL	AA+	2024 (February)	7.90	5.0		●	●	200.0	None	CAREdge	Financial Institutions	ICLEI (not confirmed)	No	
SMC	India Ratings	CRISIL	AA+	2024 (FY 2024-2025)	under 8%	Not set	●		●	~ 100.0	KPMG	CBS (Climate Bond Standards)	Financial Institutions	GIZ + US Treasury	No	
VMC	India Ratings	CRISIL	AA+	2024 (March)	7.90	5.00		●	●	100	KPMG	CBS (Climate Bond Standards)	Financial Institutions	GIZ + US Treasury	No	
PCMC	Care Ratings	CRISIL	AA+	2024 (FY 2024-2025)	under 8%	Not set	●			not fixed	KPMG	CBS (Climate Bond Standards)	Financial Institutions	UNDP	No	

Table 01: Detail Matrix of Green Bond in Municipal Issuances

Source: Author, Multiple Sources

# Summary of Key Findings & a Few Recommendations

# Key Findings



## **Future of (Green) Municipal Bond Market in India . . .**

# Did Public Funds and Government Transfers Crowd Out Municipal Borrowings?

- ULBs face a **Need** for Substantial **Investments** in Infrastructure particularly in **Essential Urban Services of WaSH sector**
- **Heavy Reliance** on IGT of **Grant Funding**, indicating a **Need for More Financial Independence** and **Revenue-generating Mechanisms**.
- **Gradual Shift** towards **Diversifying Funding Sources** beyond Traditional IGT, with an **Increasing Inclination** towards **Market Borrowings** accounting for **4%** of the **Borrowings to Support** the escalating **Demands** of **Urban Development**.

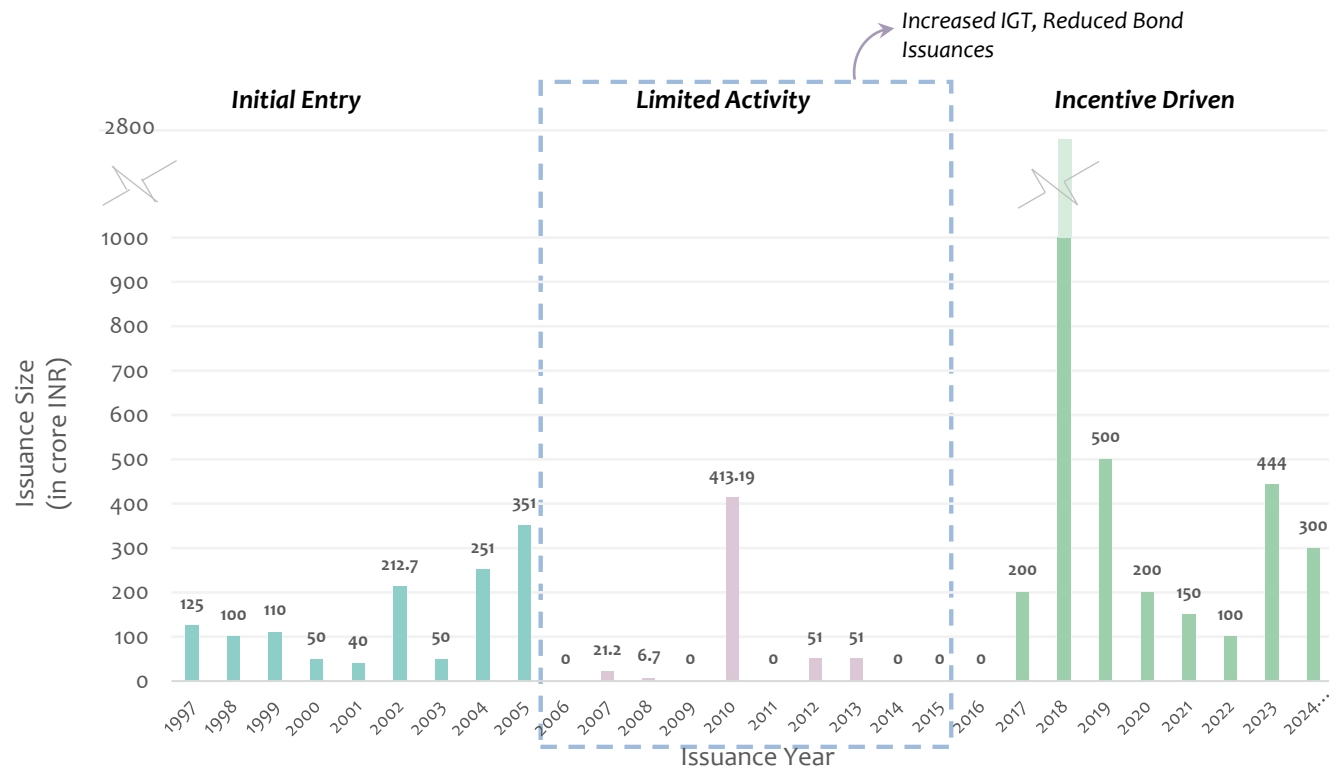


Figure 01: Municipal Bond Activity Based on Issuances in India

Source: Multiple Sources

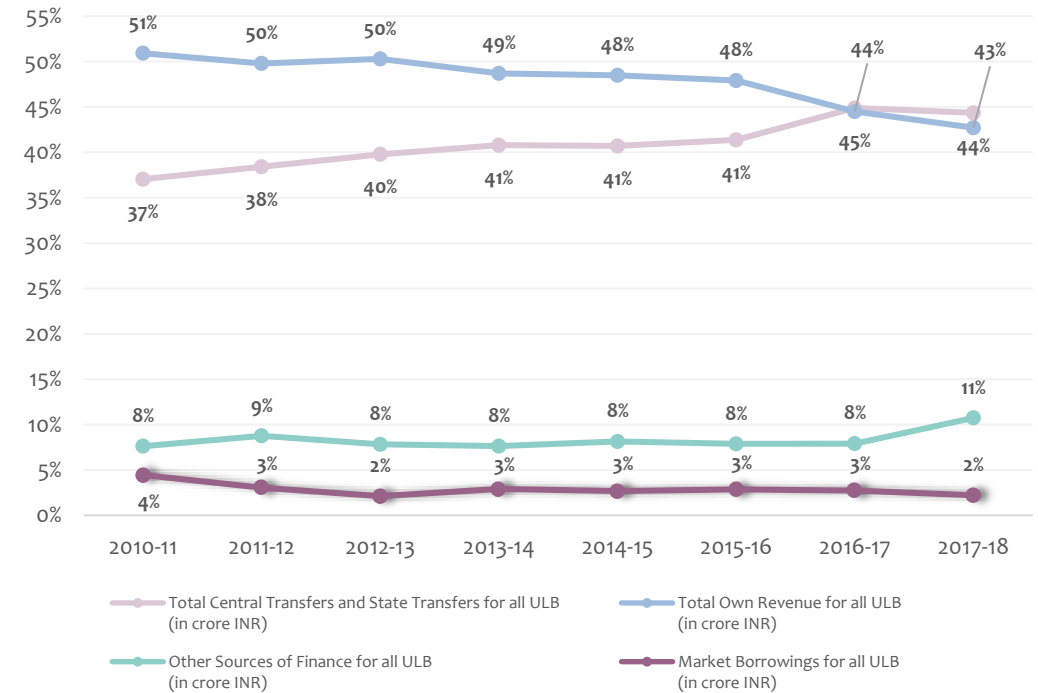


Figure 02: Source Distribution as a percent of Total Municipal Revenue

(FY 2010 to 2017-18)

Source: 15<sup>th</sup> Finance Commission (2020), ICRIER (2019)

Source: 15<sup>th</sup> Finance Commission (2020), ICRIER (2019), WB (2022) 37

# Expanding the Urban Financing Horizon: 43 ULBs Gearing Up for Municipal and Green Bond Issuance

- **28 Municipal Corporations (Larger ULBs)** have Potential as **New Entries** in **Municipal Bonds** under AMRUT 2.0 for incentivization in coming years.
- **8 Municipal Corporations (Larger ULBs)** as Potential to opt for **Green Bonds** with **4 ULBs** from pre-AMRUT phase Bond issuance

	Amount (in crore INR)		Permissible Incentives	Investible ULBs			Remaining Incentives
	Min.	Max.		Available	Redeemed	Future Potentials	
<b>AMRUT 1.0</b> (1 Municipal Bond per ULB)	100	200	35	43	11	28	24
<b>AMRUT 2.0</b> (1 Green Municipal Bond per ULB)	100	200	20	15	3	12	17

Table 01: Matrix of Issuances and Future Potential Issuances in Municipal and Green Bonds Issuances

Source: Author, Multiple Sources

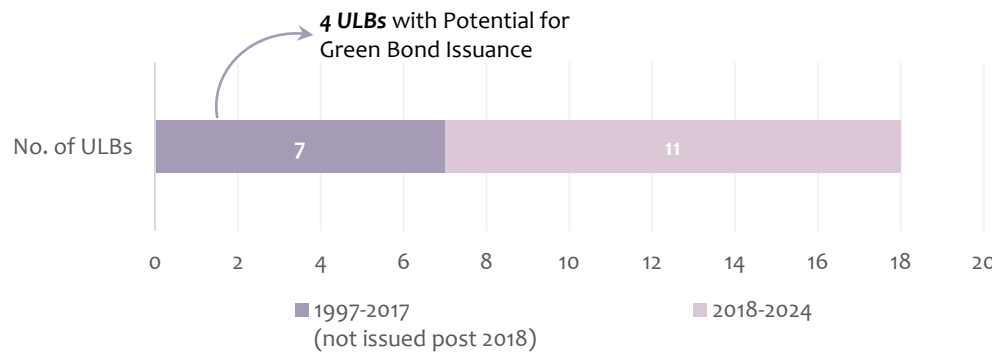


Figure 01: ULBs with the Potential to Issue Green Bonds within Investment Grade

Source: Author, Multiple Sources

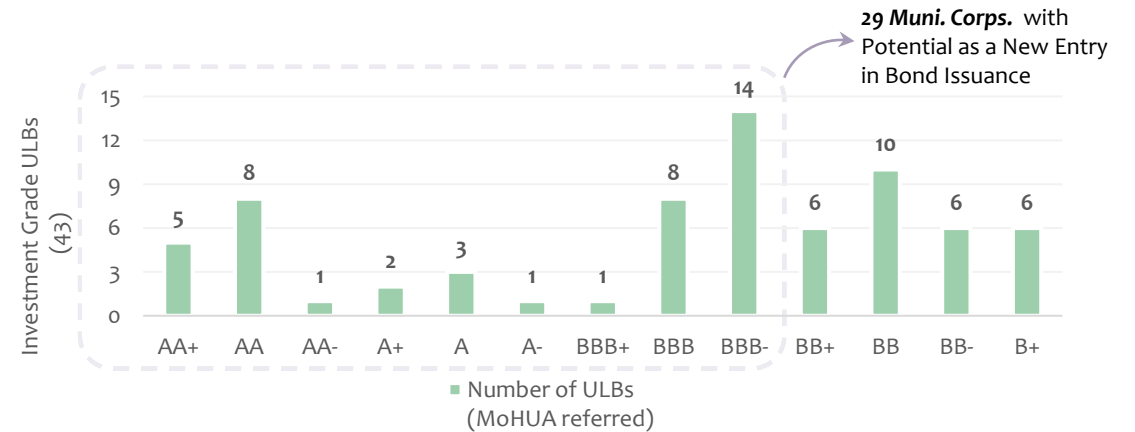


Figure 02: ULBs with the Good Credit Rating

Source: Author, Multiple Sources

# Scenario 01: If Business as Usual Continues . . .

# Municipal Bond Market will Add Approx. INR 6,400 crore if all Potential Municipal Corporation Issue Bonds (2018 – 2030)

- **2024- 2<sup>nd</sup> Half** of the FY SMC and PCMC will Issue a Green Bond of **Minimum size 100 crore and 200 crore INR** to utilize Incentives (from Interviews and Webinar)
- **Municipal Bond Market Size will Triple** from Issuances between 1997 to 2017 in a **Span of 12 years**.

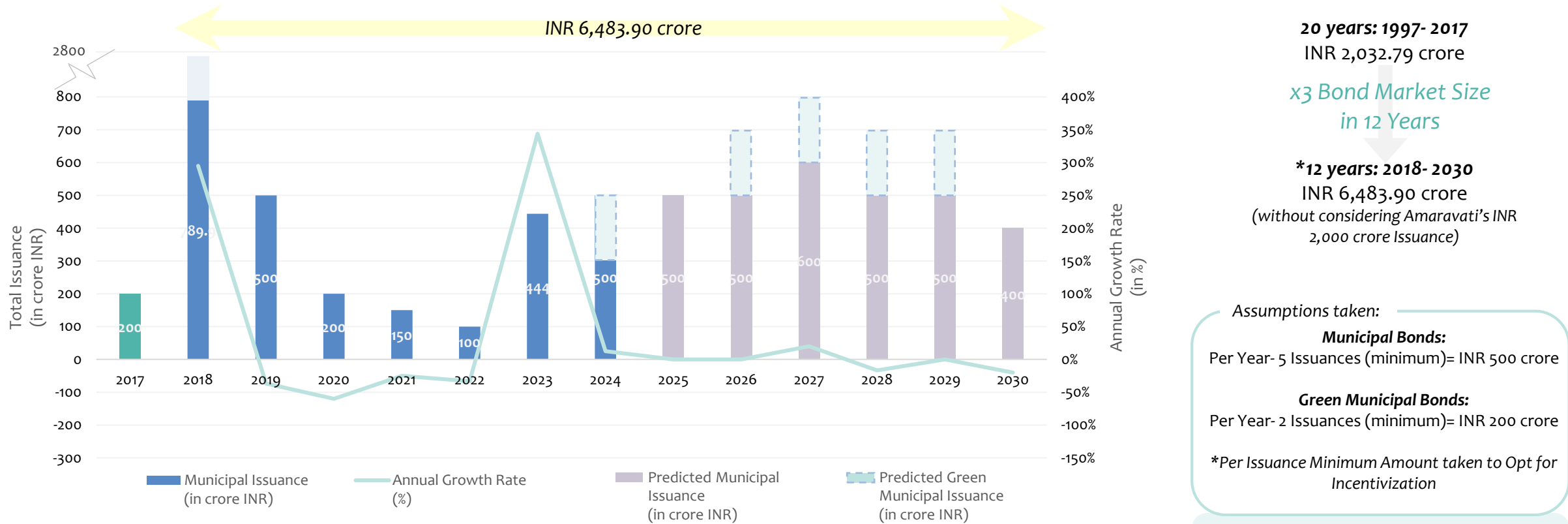


Figure 01: ULBs with Bond Issuances before FY2018 and Future Scope (including GBs)

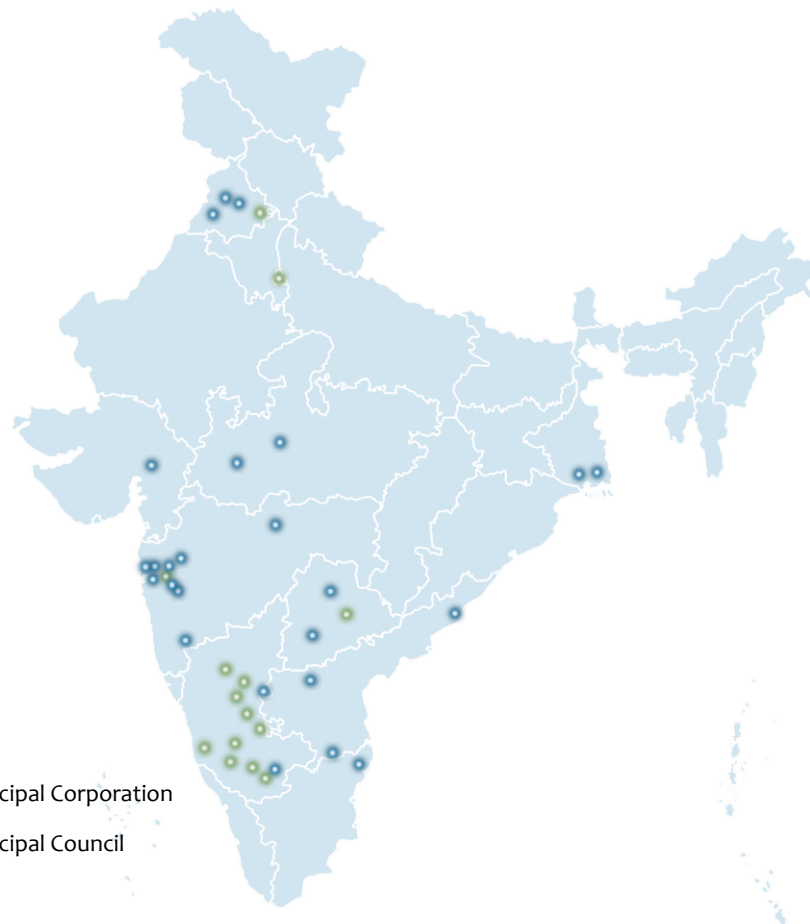
(from FY2018 to FY 2030 projected to 2027)

Source: Author, Multiple Sources



# What about Municipal Councils which are Credit-worthy but have Not Issued Bonds?

- 14 Municipal Councils (*Smaller ULBs*) fall Under the **Investment Grade** as per the **AMRUT Rating Assessment** out of the 43 Potential ULBs
  - **Smaller ULBs** have the **Potential to Borrow** from the Market if **given the Support/ Push**
  - **Till Now Issuances** have been Only made by **Municipal Corporations (*Larger Cities*)**



**LEGEND**

- Investible Municipal Corporation
- Investible Municipal Council

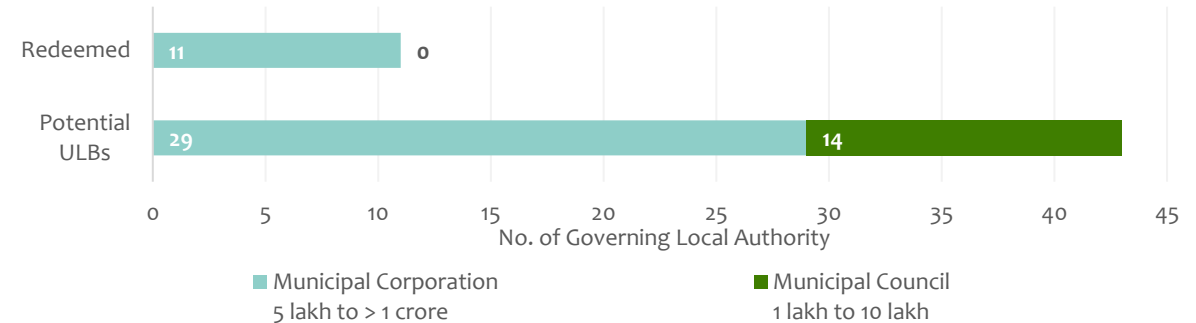


Figure 01: Distribution of 43 Potential ULBs and those which have Issued Bonds

Source: Author, Multiple Sources, MoF (2017)

Governing Local Authority	Number	Names of Investible Cities
<b>Municipal Corporation</b> 5 lakh to > 1 crore	29	Navi Mumbai, Pune, Ahmedabad, Greater Visakhapatnam, Greater Hyderabad, Nashik, Thane, Pimpri-Chinchwad, Indore, Kolkata, Bhopal, Mira Bhayandar, Kurnool, Kolhapur, Chittor, Mysore, Bellary, Bhiwandi, Akola, Amritsar, Jalandhar, Bathinda, Karimnagar, Chennai, Haldia, Surat, Vadodara, Ghaziabad, Lucknow
<b>Municipal Council</b> 1 lakh to 10 lakh	14	Greater Warangal, Hospet City, Bhadravati City, Chitradurga City, Mandya City, Hassan City, Udupi City, Chikmagalur City, Bagalkot City, Ranibennur City, Gangawati City, Badlapur Municipal, S.A.S. Nagar Municipal, New Delhi Municipal

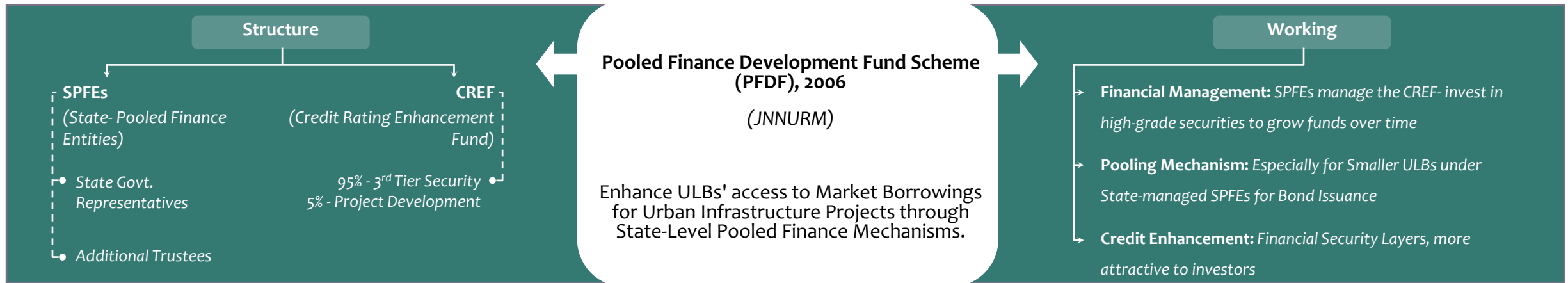
Table 01: Names of 43 ULBs as Future Potential Issuances in Municipal and Green Bonds Issuances

Source: URDPFI Guidelines (2015), Multiple Sources

Source: 15th Finance Commission (2020), ICRIER (2019), URDPFI Guidelines (2015), MoF (2017)

## Scenario 02: If Pooled Financing Bodies Mechanisms are Explored for Municipal Councils (*Smaller ULBs*) to Access Capital Market

# Pooled Finance Mechanism



## States with PF Entities in the Country

\*Most of their Project Portfolio – Water Supply and Sanitation (Sewerage)

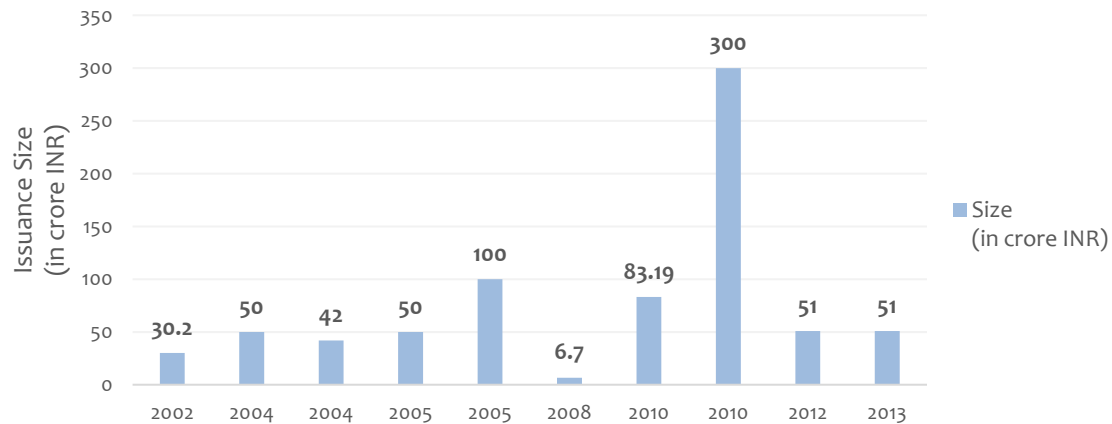


Figure 01: Pooled Bond Issuances over the Years since 1997

Source: Author, Multiple Sources

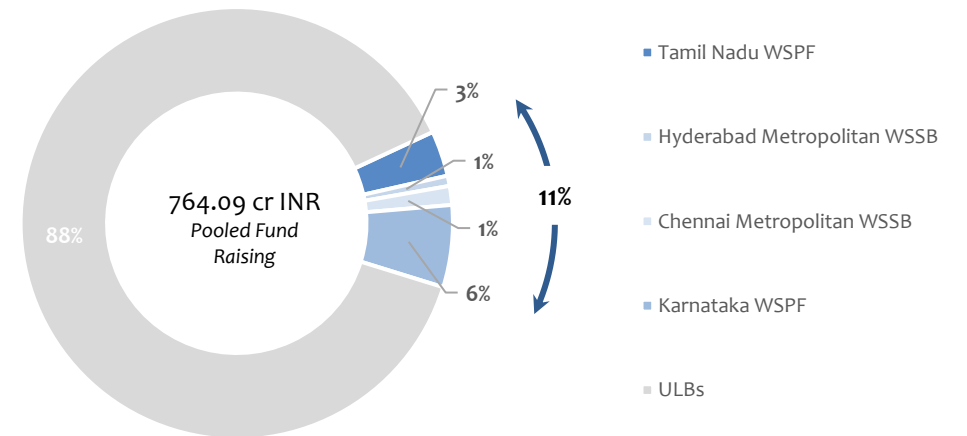
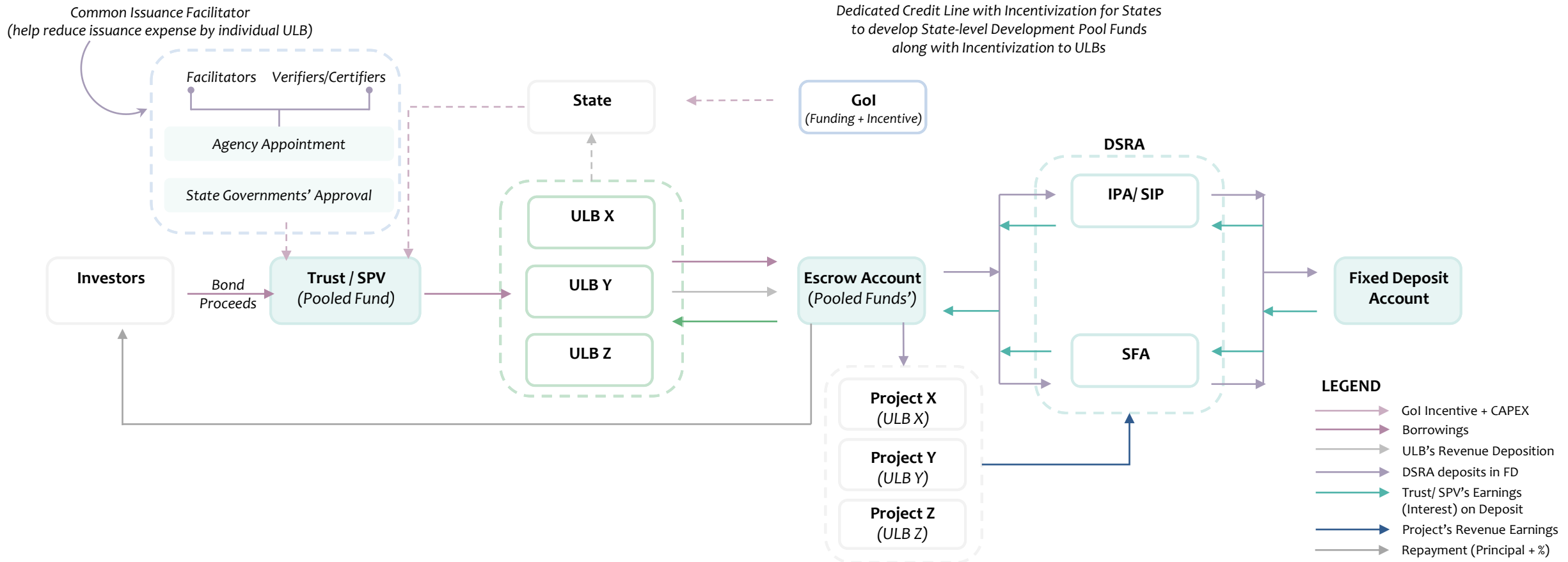


Figure 02: Pooled Bond Issuances Share over the Years since 1997

Source: Author, Multiple Sources

# If Pooled Financing Bodies and Municipal Councils are Incentivized, will help Access more Funds with Less Expense on Individual Issuance

- **Smaller ULBs'- Municipal Councils can Access Capital Market** that has the **Potential to Borrow** which can be **Enhanced** through pooled financing
  - Pooled Funding **Lowers** the **Cost** of **bond issuance** for individual local bodies and **Enhances** the **Creditworthiness** of the Bond Issued
    - Pooled Financing **Best Suited** to help **Streamline Green Bond Access** and **Issuances**
  - **State** comes as a **Guarantor** to help with **the Credit Enhancement**, thereby helping reduce the coupon rate.
  - **Requires Good intergovernmental Coordination**



# Municipal Bond Market will Add Approx. INR 7,000 crore if all Potential Muni. Corporations and Pooled Bodies Issue Bonds (2018 – 2030)

- Pooled Funding Bodies can Add a minimum of up to INR 900 crore in the next 5 years.
- Especially from the States of Tamil Nadu and Karnataka

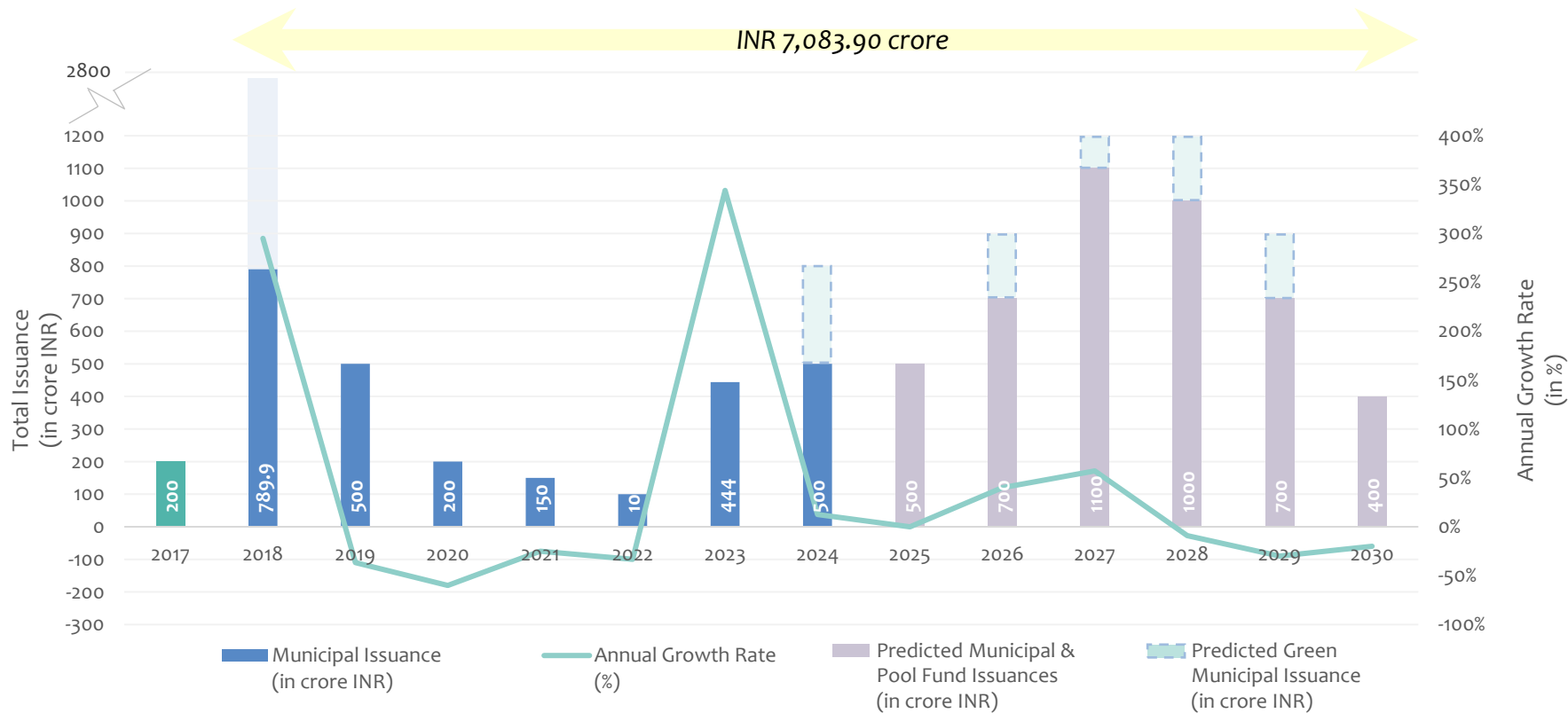


Figure 01: ULBs with Bond Issuances before FY2018 and Future Scope (including GBs)

(from FY2018 to FY 2030 projected to 2027)

Source: Author, Multiple Sources

20 years: 1997- 2017  
INR 2,032.79 crore

x3 Bond Market Size  
in 12 Years

\*12 years: 2018- 2030  
INR 7,083.90 crore  
(without considering Amaravati's INR  
2,000 crore Issuance)

Assumptions taken:

**Municipal Bonds:**

Per Year- 5 Issuances (minimum)= INR 500 crore

**Green Municipal Bonds:**

Per Year- 2 Issuances (minimum)= INR 200 crore

**Pooled Funds:**

2 Issuances (minimum) each of = INR 300 crore

\*Per Issuance Minimum Amount taken to Opt for  
Incentivization

Maximum Amount Issuance as per MoF:  
Municipal Corporations– INR 400~ 500 crore  
(above 50 lakh population)

# Policy Level Recommendations

## 01 Policy Intervention

- **Promotion and Expansion of SPFEs** by GoI through **Incentives and Updating PFDF** and **Streamlining Procedures** passed by **SEBI to Facilitate**.
- Set a **List of Issuing Agencies** or **Separate Channels for Green Bond Facilitation** for **ULBs** like China's Green Bond Grant Scheme
- **Enhance the Capacity of Cities** by conducting **Regular Workshops on Financing** and **IEC Programs** at the **State Level** to update them with Government schemes/notices
- **Cities** going for **Green Projects** or **WaSH Projects** should also **explore linking** with **Climate Financing Revenue Generation prospects** for a Holistic Approach such as Carbon Credits, Water Credits, etc.

## 02 Measures to Improve Credit Worthiness

- **Mandatory Cyclical or Annual Credit Rating Assessment of ULBs** in the Country to Achieve Good Financial Practices (**National Municipal Accounts Manual**) done either by the ULBs themselves or by External Agencies.
- A **Partial Credit Enhancement scheme** designed by the **Government of India** for **Municipal Bonds** (including municipal green bonds) can significantly boost the municipal bond market in India.
- Structuring and Honing of **Bankable projects**

**Thank you**