Municipal Debt for Urban Infrastructure

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Center for Water and Sanitation (CWAS)

CWAS CENTER FOR WATER AND SANITATION
CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION
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About this presentation

Urban WASH infrastructure has been generally financed through public funds however, there are budget constraints…World Bank estimates capital investment of USD 840 billion in urban infrastructure and municipal services till 2036 in India.

To address these challenges, India needs substantial investments in urban infrastructure projects. Funding these projects is a major priority for both the central and state governments, as well as for municipal authorities. To effectively fund urban infrastructure projects in India, it's crucial to adopt a multi-pronged approach that combines government funding, private sector participation, innovative financing mechanisms, and efficient project management.

Municipal debt for urban infrastructure refers to the debt incurred by local governments (municipalities) to finance the construction, maintenance, or improvement of public infrastructure in urban areas. This debt is typically used to fund projects such as roads, bridges, public transportation systems, water and sewer systems, and public buildings. These components include borrowings through municipal bonds, green bonds, pooled finance and municipal borrowing funds.

The slidedeck is a desk-based assessment of the municipal debt tools in India. It is prepared as an academic study material for the course "Financing Urban Development" for Masters students of Urban Infrastructure and Masters of Planning at CEPT University, India. This course material is developed by Dr.Meera Mehta and Dr.Dinesh Mehta with support from Mr. Dhruv Bhavsar, Ms Upasana Yadav and Ms Saubiya Sareshwala from Center for Water and Sanitation (CWAS)-CRDF, India.

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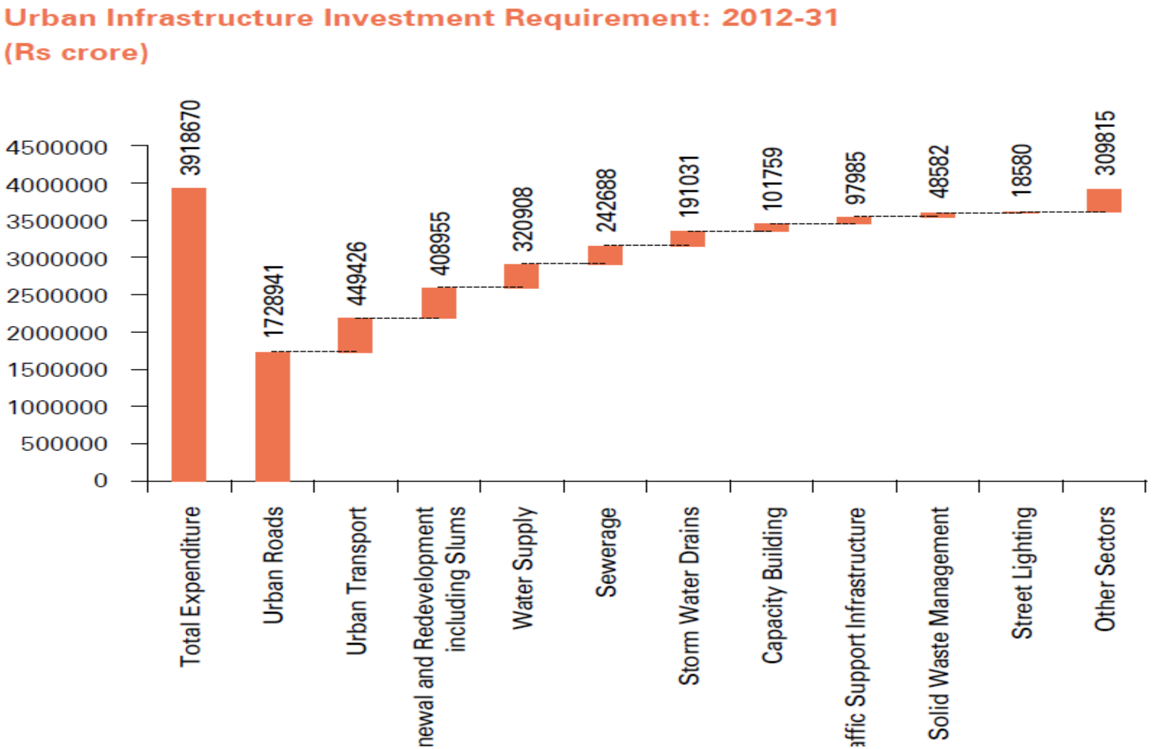
Key questions?

- **Why municipal borrowing?**
- Forms of borrowing, how can ULBs / utilities mobilize debt? Why focus on credit markets?
- What will be needed in India to maximize potential of municipal debt in a sustainable manner?

Investment Gaps and Sources of Funds for Urban infrastructure

Large Financing Requirements - HPEC



Source: High Powered Expert Committee (HPEC – 2011) "Report on Indian Urban Infrastructure and Services" and Rakesh Mohan Committee () "…)

Sources of investments – 12th Plan WG

Table 2: Investments over 20 years using HPEC phasing plan

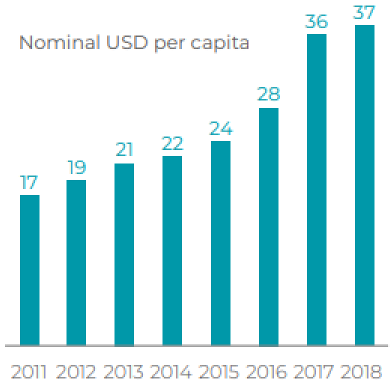
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Total Revenue	**1.19**	**1.23**	**1.26**	**1.32**	**1.34**	**1.36**	**1.39**	**1.41**	**1.44**	**1.46**
Own Revenue	**0.74**	**0.83**	**0.89**	**1.03**	**1.05**	**1.07**	**1.10**	**1.12**	**1.15**	**1.17**
Exclusive Taxes	0.33	0.33	0.34	0.34	0.35	0.35	0.36	0.36	0.37	0.37
Revenue-shared Taxes	0.23	0.31	0.36	0.49	0.50	0.51	0.53	0.54	0.56	0.57
Non-Tax Revenue	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.23
Other Revenue	**0.46**	**0.41**	**0.37**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**
Transfers from SFC	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Grants-in-aid from State Governments	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Transfers from CFC	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Grants-in-aid from GoI	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Revenues of entities other than ULBs	0.17	0.12	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Expenditure	**0.90**	**0.90**	**0.90**	**0.90**	**0.91**	**0.91**	**0.92**	**0.93**	**0.95**	**0.96**
Annuity Payments	0.00	0.00	0.01	0.02	0.04	0.06	0.10	0.13	0.16	0.20
Debt Repayment	0.02	0.04	0.07	0.09	0.11	0.11	0.11	0.11	0.11	0.11
Revenue reductions on the account of PPP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.02
Investible surplus of ULBs	**0.27**	**0.29**	**0.28**	**0.30**	**0.28**	**0.26**	**0.24**	**0.22**	**0.20**	**0.17**
Capital Expenditure	**0.75**	**0.79**	**0.85**	**0.90**	**0.96**	**0.99**	**1.03**	**1.06**	**1.10**	**1.14**
Deficit(-)/Surplus(+)	**-0.47**	**-0.50**	**-0.56**	**-0.60**	**-0.68**	**-0.73**	**-0.79**	**-0.85**	**-0.91**	**-0.97**
PPP	0.02	0.03	0.05	0.07	0.09	0.10	0.10	0.10	0.11	0.11
Annuity	0.04	0.08	0.12	0.17	0.23	0.24	0.25	0.26	0.26	0.27
Borrowing	0.09	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00
Land based Instruments	0.07	0.07	0.12	0.16	0.17	0.17	0.18	0.19	0.19	0.20
Unfunded Deficit(-)	**-0.26**	**-0.23**	**-0.18**	**-0.11**	**-0.10**	**-0.22**	**-0.26**	**-0.30**	**-0.34**	**-0.39**

Large Financing Requirements –World Bank estimates

- India's cities require an estimated capital investment of **USD 840 billion in urban infrastructure** and **municipal services in the 15 years** till 2036 (in 2020 prices)

- Over **half of these investment needs–almost USD 450 billion**–are in basic municipal services (i.e., water supply, sewerage, municipal solid waste management (SWM), storm water drainage, urban roads and streetlighting), while the rest–USD 300 billion-are for mass transit.

- Investment in urban infrastructure in India has grown in nominal terms but is well below required needs.



108 USD in 2020

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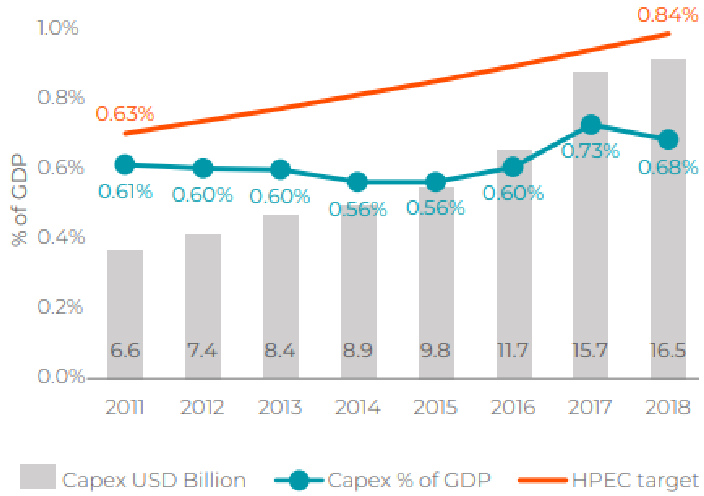

Source: Financing India's urban infrastructure needs, World Bank, p.10, 2022

India's Requirement is 139 Billion USD in WASH sector by 2030

	Bangladesh	Bhutan	India	Maldives	Nepal	Sri Lanka	Total
Renewable energy	$3.2 billion	$72 million	$403.7 billion	$55 million	$2.1 billion	$2.3 billion	**$411.4 billion**
Large hydro	-	$40.6 billion	$44 billion	-	$22.5 billion	$190 million	**$107.3 billion**
Green buildings	$118.8 billion	$390 million	$1.4 trillion	$200 million	$3.4 billion	$8.4 billion	**$1.53 trillion**
Transport infrastructure	$23.7 billion	$615 million	$250 billion	$1.5 billion	$10 billion	$326 million	**$286.1 billion**
Transport electric vehicles	-	$322 million	$667 billion	-	$2.5 billion	-	**$669.8 billion**
Municipal solid waste	$4 billion	$11.5 million	$11 billion	$46 million	$83 million	$3.5 billion	**$18.6 billion**
Climate-smart urban water	$13 billion	$106 million	$128 billion	$86 million	$686 million	$2.7 billion	**$144.6 billion**
Climate-smart agriculture	$9.1 billion	$140 million	$194 billion	$31 million	$4.8 billion	$964 million	**$209 billion**
TOTAL	**$171.8 billion**	**$42.3 billion**	**$3.1 trillion**	**$1.9 billion**	**$46.1 billion**	**$18.4 billion**	**$3.4 trillion**

India will require 139 Billion USD for WASH from **2021 to 2030 which means ~13.9 billion USD per annum**

Source: Climate Investment Opportunities in South Asia - An IFC Analysis

Achieving SDG targets will require huge private financing

Urban WASH infrastructure has been generally financed through public funds however, there are budget constraints…World Bank estimates capital investment of USD 840 billion in urban infrastructure and municipal services till 2036 in India.

Taxes from taxpayers

Tariffs for services

Transfers from upper tiers of government

Need for finance beyond public sector investments and leverage additional resources from the market through PPPs

- ✓ Additional funding
- ✓ Creditworthiness of local governments and utilities
- ✓ Investors confidence
- ✓ Efficiency of private sector
- ✓ Performance & Social & environmental impacts with emerging global interest in impact investing

Not enough to meet SDG financing gaps

Own sources and transfers

Taxes	Fees, user charges
State and Central Transfers	Grants from Finance Commissions and SFCs

Philanthropic Funding	Output Based Aid
CSR	Blended Finance
Social Impact Investors	Impact Bonds
Capital Market Borrowing	Municipal Bonds
	Repayable Finance
	Crowdfunding

- To attract the private **investments-service providers (Municipal governments and/ or utilities) will need to be creditworthy and build confidence of the market and of the private sector**

Source: Financing India's urban infrastructure needs. World Bank, 2022

More importantly, Borrowing can also help to…

- To improve municipal efficiency, to improve external accountability of local governments, better information of local finances, priorities

- High cost of urban infrastructure makes it difficult to adopt 'pay-as-you-go'
- Borrowing helps to distribute the expenses for a project to the individuals that will benefit from the project over its useful life rather than requiring today's taxpayers to pay for future use.

- Can help develop national debt markets too – the US experience of municipal bonds

- Relevant for India due to higher level of financial sector development

Key questions?

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- What will be needed in India to maximize potential of municipal debt in a sustainable manner?

Municipal Debt for Urban Infrastructure

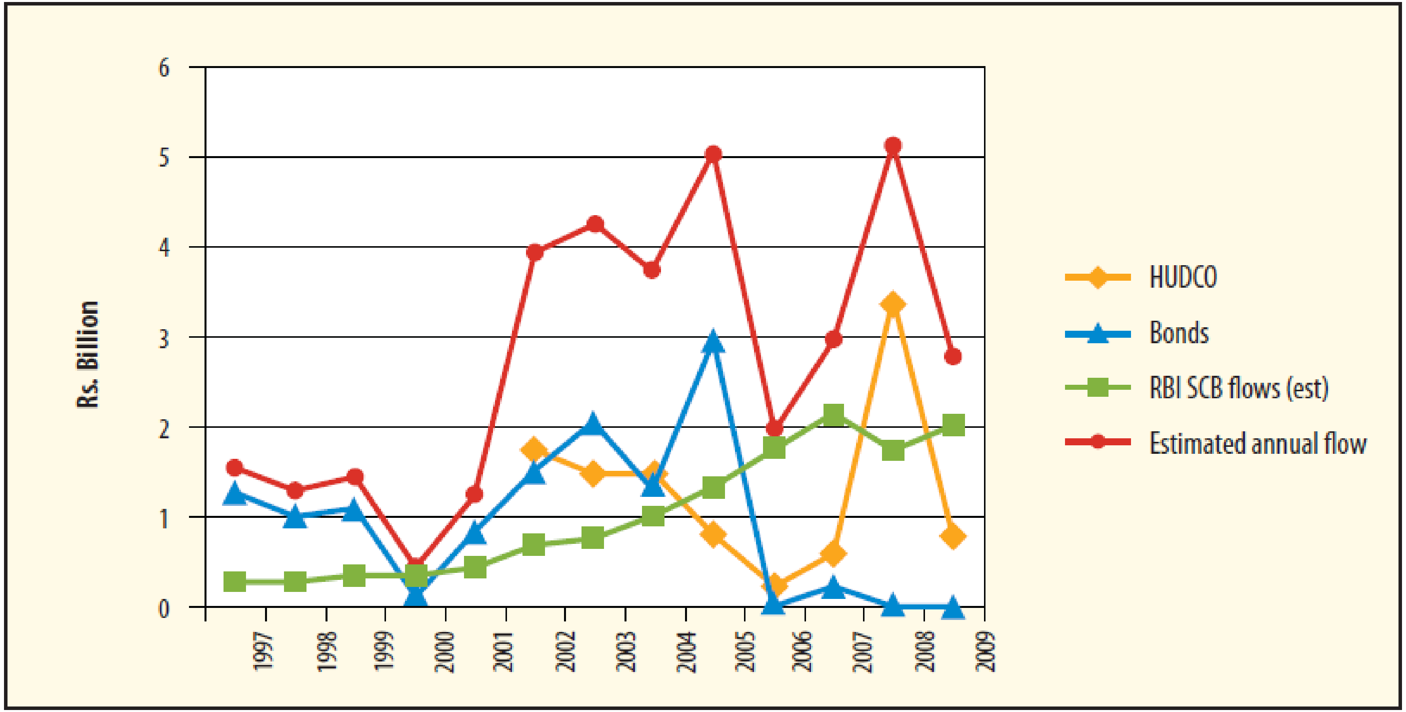
From where can municipalities borrow?

- ULBs can borrow from **the capital market** (as permitted in legislation) through bonds, pooled funds, etc
- ULBs can also borrow from **Institutions**
  - Agencies such as HUDCO, LIC lend directly to ULBs
    - Can be with or without government guarantee
  - Scheduled Commercial Banks (SCB) – e.g. SBI lend to ULBs for specific projects (public sector banks, either nationalized or owned by a government agency, Indian privately-owned banks, foreign banks licensed in India);
  - Specialized infrastructure finance entities that are privately owned or have only partial or indirect public ownership (IIFCL, IDFC, the new DFI annunced)
  - Municipal development funds such as TNUDF, KUIDFC, MUIF – some of these also tend to be multi-lateral funds routed through these agencies

Source: Based on World Bank (2010), "Developing a regulatory framework for municipal borrowing in India, Vol 1, p.18

Flow of funds to ULBs in recent years

Chart 3: Summary of Annual Lending Flows to ULBs 1997-2009 (Rs billion)



Source: Compiled by authors, HUDCO and RBI data as reported by July, 2009. Excludes Mumbai's MMRDA loan of Rs 28.02 billion

Source: World Bank (2010), "Developing a regulatory framework for municipal borrowing in India, Vol 1, p.15.

History of municipal borrowing in India

Till 1990s

- Urban infrastructure largely funded through grants, **Limited lending by LIC based on government guarantees**
- Bank loans though available – not really used due to **high cost and lack of long tenor**

From 1997 to 2015:

- **Market borrowing: Efforts to develop municipal bonds**
- **Setting up of TNUDF** to lend to ULBs in TN, Also KUIDFC and MUIF
- Some **funding from HUDCO** from 2002 onwards
- In 2006, the GoI has approved the **Pooled Finance Development Fund (PFDF) Scheme**.
- **Decline in bonds with largescale grant funding for the first time under JNNURM**

2015 onwards

- Under AMRUT and Smart city mission - **cities are encouraged to raise funds through municipal bond market.**
- **94 cities assigned Credit Ratings to issue Municipal Bonds** under Smart Cites and AMRUT mission – and 59 cities got investment grade rating. **By 2020 – credit rating in 468 cities –163 having investible grade and 36 with A- or above**
- More recently a few cities have new issued **municipal bonds with subsidies** offered by MOUHA

Source: Mehta M. and Mehta D(2024). Municipal Debt for urban infrastructure-Presented as a lecture for CEPT MUI Students

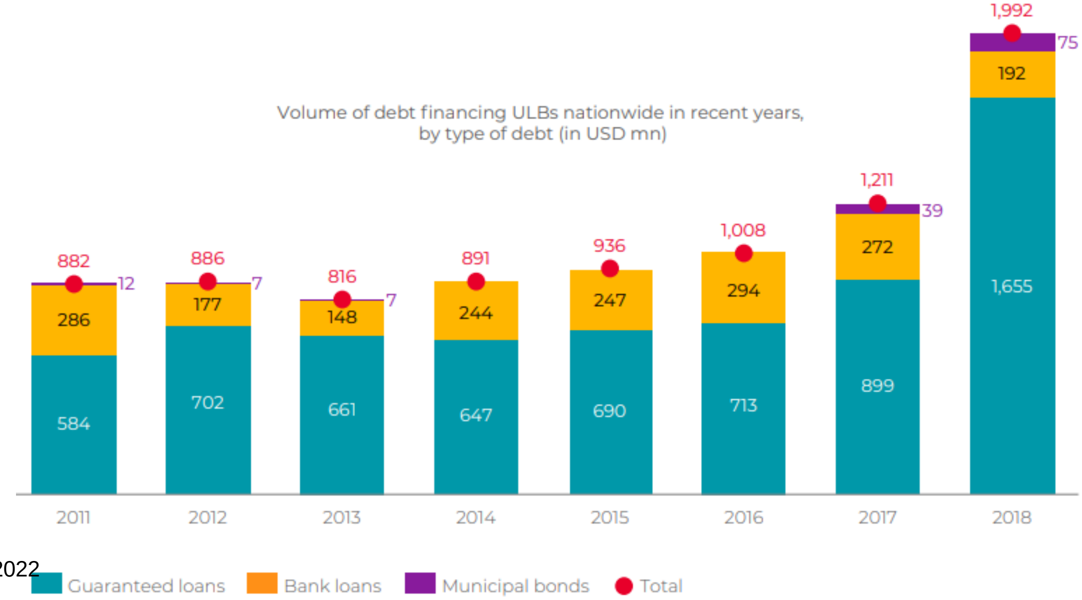
The mirage of municipal debt financing in India

- Total annual issuances of commercial debt financing for ULBs, including loans and bonds, was muted in the period FY11-18, ranging between USD 156–311 million of annual issuances.

- In comparison, loans from HUDCO, guaranteed by state governments, have accounted for a much larger share of capital expenditure.

- Municipal bonds are very small relative to commercial loans, being less than one-tenth of total commercial debt raised by ULBs in this period

- Municipal bonds comprise a small fraction of debt financing



Source: Financing India's urban infrastructure needs, World Bank,p. 13, 2022

Picture Source: IOWA league of cities, Rerieved from https://iowaleague.org/resource/continuing-disclosure-of-municipal-bonds/

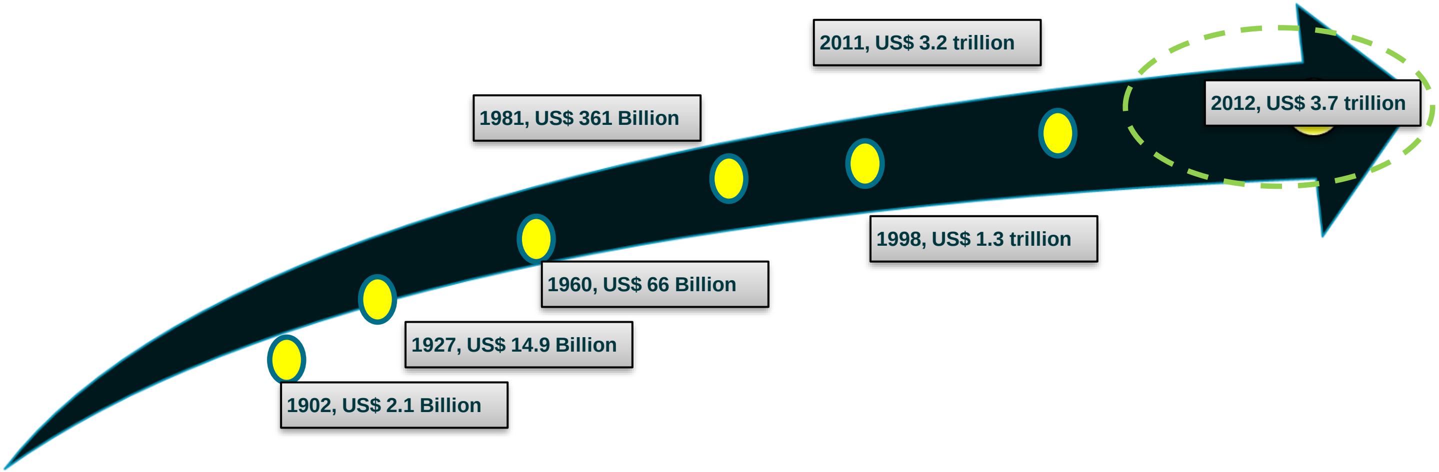
Market borrowings by local governments- Municipal Bonds

Municipal Bond Market in U.S.

- In USA, the term municipal bond is applied for instruments used to finance municipal infrastructure and services by a public agency and not only those issued by the government.

- **More than half the funding for local public construction projects** comes directly from municipal bonds.

Timeline of Outstanding Municipal Debt in USA



Source: Sujatha Srikumar (n.d.), “Municipal bonds: International experience”, presentation

Market borrowing through "Municipal Bonds"

What are municipal bonds?

- Municipal bonds are instruments of debt issued by civic entities such as cities and specialised agencies to finance long-term capital expenditures, and/or fund specific municipal projects

- The investors lend money to an issuer who promises to pay the investors a specified amount of interest (usually paid semiannually) and return the principal on a specific maturity date

- They are generally classified according to the source from which the issuer intends to reimburse bond payments.

Type of Bonds

General Obligation (GO) Bonds

- General Obligation bonds or "G O bonds" are unsecured bonds that are backed by the "the full faith and credit" of the local or state government that issued the bond.
- Projects funded by GO bonds generally may not necessarily produce revenue.
- The issuer can employ any means available to guarantee payments through Property tax and Special taxes.

Revenue Bonds

- Revenue Bonds are those bonds that are financed mainly from the income streams of the project/ specific service
- Projects that have regular income streams like rents, entrance fees, tickets, etc.
  - Commercial projects – office complex
  - Shopping centres
  - Convention centres
- Selected services such as water may have user charges to support revenue bonds

Double Barrel Bonds

- Bonds that combine features of both general obligation bonds and revenue bonds
- Many municipal projects/ services can generate some revenues, but not all revenues needed to service the bond

✓ Drinking water
✓ Wastewater treatment
✓ Toll roads
✓ Mass transport – metro, BRTS

Development of municipal bonds in India

- Concept of municipal bonds as an additional mechanism for raising resources for urban infrastructure sector was first presented at an USAID seminar in Bangalore in 1995.

- Later recommended for Urban Infrastructure in India by the Rakesh Mohan Committee on commercialization of infrastructure in 1996, AND the first bonds were issued by Ahmedabad Municipal Corporation and Bangalore in 1997, 1998

- GoI provided tax free status to municipal bonds in 2001, and both 13th and 14th Finance Commissions have advocated the use of municipal bonds, as have other committees

- Credit rating and municipal bond issuance are part of reforms package under the AMRUT program and envisaged by SPVs under Smart Cities. In 2006, the GoI has approved the Pooled Finance Development Fund (PFDF) Scheme. Pooled Bonds issued by TNUWS and KUIDFC in 2006

- In 2015,The Securities & Exchange Board of India (SEBI) passed regulations (to facilitate issuance of municipal debt and listing of debt securities by municipalities in India.

- Union Government has proposed to give a compensation of 2% interest subsidy on the total size of the bond issue to municipal corporations.

Key Benefits of Municipal Bonds in India

Financial incentive by Government of India

Government of India has come out with an incentive scheme wherein financial incentive is being provided to the ULBs amounting to Rs 13 Crores for every Rs 100 Crores of bond issued and the incentive to each ULB is limited to Rs. 26 cr

This incentive scheme was first brought in FY 2018-19. In FY 2020-21,the incentive will be given to first 7 ULBs coming out with its bond issuance

Timely completion of projects

Theimmediate availability of funds shall help in timely completion of projects forwhich funds are being raised which may otherwise get delayed due to delay in availability of funds

Benefit to public at large

The timely completion of the projects shall also benefit the general public at large who will be the main beneficiaries from completion of the projects for which funds are being raised by getting better and improved facilities.

Generation of incremental revenues

The timely completion of projects may also help the Corporation to generate incremental revenues either directly or indirectly.

Improvement in financial discipline

The process of issuance of Municipal Bond increases the financial discipline and also improves the professionalism in delivering services by the Municipal Corporations.

Source: Sujatha Srikumar (2024). Accessing Capital Markets Through Issuance of Municipal Bonds

Procedure to raise money through municipal bond..

1. Identify a project

Identify a project or a function for which the municipality needs to raise money. It can be the construction of water supply network, storm water drains, roads et cetera.

2. Choose the issue type

Choose the type of issue which fits the municipality's requirement. You can raise money through General Obligation Bonds or Revenue Bonds

3. Evaluate project cost

Cost analysis for the project. The municipality must contribute at least 20% to the total project cost.

4. Get credit rating

Get a credit rating for the municipality from a recognized credit rating agency. Minimum rating for raising money through municipal bonds must be A+.

5. Open an escrow account

Open an escrow account for the purpose of the project for which the money is to be raised. An escrow account is used for making debt payments to investors.

6. Disclose information

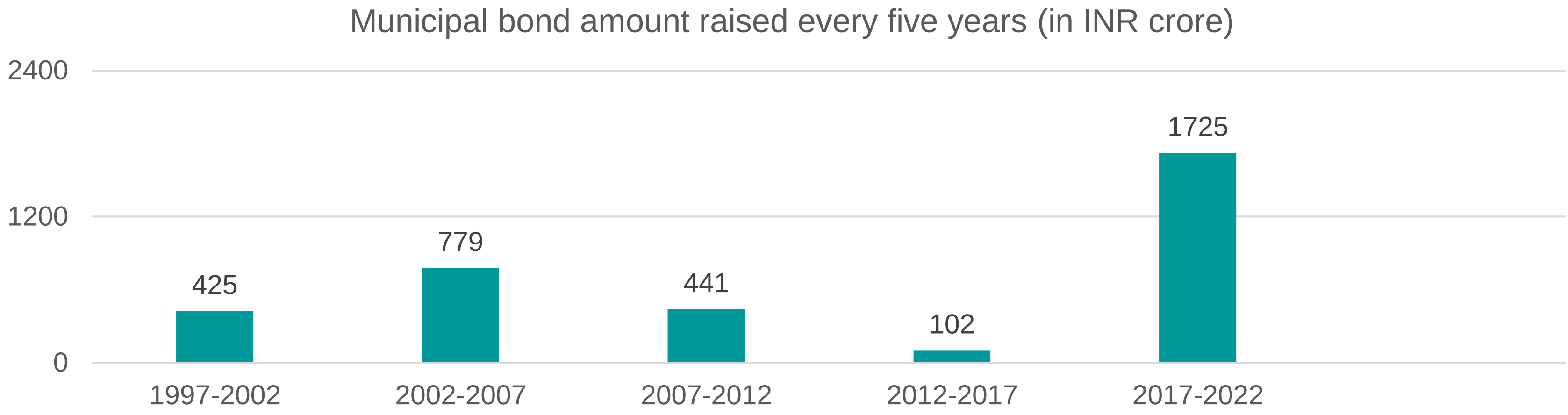
Disclose Budgets and abridged Annual Accounts for the last five years, and other information as specified in the SEBI regulations.

7. Raise funds

Raise funds through private placement or public issue

Source: Adapted from Municipal Bond-Policy Brief, Janagraha, 2015

Issuance of municipal bonds in India from 1997 to 2022 (Rs in crore)



- The Indian bond market matured from 2022-2007 in which total INR 779 crore municipal bonds were raised.
- However, it dropped down from the period of 2007-2017 in which INR 543 crore were raised in a period of ten years.
- Post 2016, the municipal bond market again started picking up and is able to raise total INR 1,725 crore in the last five-six years.

Chakrabarti (2014); Kapoor and Patil (2017); Tamil Nadu Urban Infrastructure Financial Services Ltd (2019); World Bank (2016); BSE listing of new debt security of Pune (2017, June 21), Andhra Pradesh (2018, August 24), Hyderabad (2018, February 15), Surat (2019, March 5), Visakhapatnam (2019, January 8); *Economic Times* (2019); Press Trust of India (2018); Indore Municipal Corporation (2018); Institute of Chartered Accountants of India (2018); Pathak (2019, January 25).

Crowding out Municipal Bonds?

City Corporation/ Metro Water Authority (year of bond issues)	Total value of municipal bonds issued	Estimated total capital expenditure by ULG (2000-2005)	Total bond issuance as a %of total estimated capital expenditure
Ahmedabad (1998, 2002, 2004, 2005)	358	876	41
Bangalore (1997)	125	2202	6
Hyderabad (2003)	82	437	19
Nasik (1999,2002)	150	830	18
Nagpur (2001, 2007)	71	468	15
Vishakhapatnam (2004)	70	308	23
Chennai (2005)	46	719	6
Indore (2000)	10	299	3
Madurai (2001)	30	139	22
Ludhiana (1999)	10	419	2
Total	**952**	**6,698**	**14**

- ✓ Between 1997 and 2005 – nearly 14 issues of municipal bonds
- ✓ **Very limited issues since 2006 after JNNURM (only by WSPF and GVMC)**
- ✓ Also some policy weaknesses on the debt market – especially for long tenor funds

Raising the importance of municipal bonds in wider public finance

Note: *Pooled bonds issues years marked

- Most Municipal Bonds in India have been raised to finance **water supply and sewerage projects.** This is because the Municipal Acts allow **levy of user charges**, it is technically easy to measure consumption, bill and collect user charges
- Due to **stringent requirements and no additional incentives offered**, municipal corporations choose to opt for municipal bonds over green bonds.
- SEBI should **relax the regulations of disclosure for Green Bonds** and GoI should offer some additional incentives to promote green projects

Incentives by GoI on raising municipal bonds

13% of bond amount

Bond amount	Incentive
100 cr	13 cr
200 cr	26 cr (Max)

Source: www.sebi.gov.in, www.mohua.gov.in, 2018, AMRUT 2.0 operational guidelines, MoHUA, 2021

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In India, USD 490 million is mobilized through municipal and green bonds for water and sanitation projects

Total 33 municipal bonds
by
14 Urban Local Governments
+
2 state development authorities raised pooled bonds to implement WASH projects for 23 ULGs

FY 1997- 2017

Total **USD 288 million** mobilized for WASH projects

FY 2017-2023

USD 202 million mobilized for WASH projects +
USD 21 million leveraged in the form incentive- based grants offered by GoI to raise bonds

128 USD million for Wastewater treatment

Note: INR to USD calculated as base index of that particular year

Type of projects

Augmentation of water supply projects

Development of sewerage treatment systems

Type of investors

Retail investors

Institutional investors

Source: SEBI (2023), Retrieved from SEBI database, available on https://www.sebi.gov.in/

Interest subsidy announced by the Union Government

- Municipal bonds, worth Rs 6,000 crores are likely to be issued over the next three fiscal years, from progressive and proactive urban local bodies (ULBs), riding on policy and regulatory facilitations.
- The government has announced an **interest subsidy scheme**, to make such issuances competitive. Union Government has proposed to give a compensation of 2% interest subsidy on the total size of the bond issue to municipal corporations.
- INR 181 crore have been released as incentive to 8 ULBs namely Ahmedabad, Amravati, Bhopal, Hyderabad, Indore, Pune, Surat and Visakhapatnam for raising funds through issuance of Municipal Bonds worth ₹3,390 crore in 2018-19.
- Under national flagship programme of AMRUT 2.0 the GOI also gives incentives of Rs. 13 cr to cities for raising municipal bonds worth Rs.100 cr in the bond market.
- However, compared to the US example – use of municipal bonds remains very limited in India.

Source: K. Merchant.2017. India set for wave of new-look municipal bonds, PIB-2019, AMRUT 2.0 Guidelines, 2021

Ahmedabad Municipal Corp has successfully issued five municipal bonds and one green bond from 1998 to 2023

1998: Over 25% of AMC's municipal bond investments were made by individuals in 1998 (on 7 year tenure).

AA+	**100** CR	25%	14%
Credit Rating	**Amount**	**Public Funding**	**Coupon Rate**

Water Supply and Sewerage Projects

Improved credit rating through structured mechanisms by CRISIL rating agency

2021: Oversubscription of AMC bond by 5.42 times (Municipal Bond for Green Projects)

AA+	**200** CR	5 year	8.7%
Credit Rating	**Amount**	**Maturity**	**Coupon Rate**

Water Supply and Sewerage Projects

2024: AMC issues first municipal green bonds worth Rs 200 crore which is oversubscribed 5.8 times

AA+	**200** CR	30	7.9%
Credit Rating	**Amount**	**Investors**	**Coupon Rate**

Due to INR 20 cr incentive by GOI, effective interest rate of bond will be 5.9% for AMC

Source: Retrieved from https://timesofindia.indiatimes.com/city/ahmedabad/ahmedabad-municipal-corporations-green-bonds-oversubscribed-by-58-times/articleshow/107442878.cms

Case Study: Lucknow Municipal Corporation issued bonds in December 2020

- **With recent SEBI guidelines on municipal bonds** and Government of India AMRUT incentive scheme (Rs. 13 crore grant for Rs. 100 crore of municipal bonds raised), many cities have once again tapped the bond markets. **Lucknow Municipal Corporation issued Rs. 200 crore of municipal bonds in 2020.**

- Lucknow had obtained an **initial credit rating of A from Brickworks Ratings** under the AMRUT scheme.

- Initially, there was a lot of skepticism about the feasibility of issuing municipal bonds in the context of huge funds available with the Government of Uttar Pradesh.

- Gradually, both the state government, elected representatives and municipal officials in Lucknow Municipal Corporation were persuaded to attempt this process as a means to improving governance and enhancing the visibility of Lucknow Municipal Corporation in the public domain.

- The process started in mid-2018 with the appointment of transaction advisor, AK Capital Ltd. who sensitized the municipal corporation on the pre-requisites for accessing the municipal bond market.

Source: Based on Sujatha Srikumar's presentation on "Accessing Capital Markets for Strengthening ULBs in India: Case Studies of Ahmedabad and Lucknow Municipal Bond Issues" at CEPT university, 2021

Case Study: Vadodara issues municipal bond with assistance from US Treasury Department's Office of Technical Assistance

- Vadodara is the second Indian city to issue a municipal bond with assistance from the **US Treasury Department's Office of Technical Assistance**, following Pune's bond issuance in 2017.

- Vadodara Municipal Corporation in Gujarat listed a **five-year Rs100-crore bond at the Bombay Stock Exchange** on March 23 for **14 Amrut projects and received 36 bids for Rs 1,007 crore, 10 times the issue size.**

- VMC had received the subscription amount of Rs 100 crore at a yield of 7.15 per cent—the lowest ever coupon rate in the category of municipal bond after SEBI regulations.

- This is the most competitive and lowest rate amongst municipal bond issuances in India.

- VMC will also **become eligible for an incentive of Rs 13 crore from the Central government** as it has been successful in raising money through bonds before March 31, 2022. Therefore, the effective coupon rate will be 4.55 per cent per year to make a total of **22.75 per cent for a period of five years.**

- The funds raised via the bonds have been deployed for a **Water Supply Project that caters to the needs of the drinking water supply** in the city as well as the Liquid Waste Management Project to help in the disposal of sewage water effectively.

- The successful listing of VMC's bond has become a **case study of good practice** for the US Treasury.

Source: Retrieved from https://indianexpress.com/article/cities/baroda/us-treasury-department-book-vadodara-municipal-bond-listing-bse-8247788/

Case Study: Indore Municipal Corporation bond opens up for retail investors

- The bond issued by the **Indore Municipal Corporation** which has a good credit rating.

- The actual rate is **8.25%** but there are two choices. If you take out the interest in the form of a payout, your rate of return **remains 8.25%.** But if you keep the money there and take it out at the end of the investment period, then the rate **becomes 8.42% because this rate is compounded every half year**. So compounding and keeping the money in there raises your return by a few bps and which is what happens when you compound money. If you compare it to many other instruments, this is a very good rate and which is why across all segments – **retail investors, HNIs or even institutions – this bond has received a good response.**

- When the bond gets listed, it **provides an exit opportunity for investors** who want to exit before the end of the tenure of the bond. So, when it is traded on the secondary debt market, you will find that any investor who wants to liquidate their investment or on the other side if you have new investors who want to take an exposure to this bond, can do so by the secondary market route.

- The interest which is earned on the bond **is taxable in the hands of the investor.** It will be taxable under the head of income from other sources so that part is there. If for example, the investor holds the bond till maturity, redemption will be at the face value and so that is not going to give any capital gains.

Source:Retrieved from: Indiatimes.com/markets/expert-view/arnav-pandya-on-indore-municipal-corporations-green-bonds-whats-in-it-for-investors/articleshow/97999433.cms?from=mdr

Good response from retail investors for Indore bond

INDORE MUNICIPAL CORPORATION (IMC FEB 2023)

ISSUER PERIOD - 10 FEB 2023 TO 14 FEB 2023

CATEGORY	ISSUE SIZE (CRS.)	SUBSC. FIGURE (CRS.)			SUBSC. PENDING (CRS.)	NO. OF TIMES
		BID AS ON EOD (LBD*)	TODAY	TOTAL		
INSTITUTION	61.00	229.35	0.00	229.35	(168.35)	3.76
CORPORATE	61.00	202.05	2.51	204.57	(143.57)	3.35
HNI	61.00	104.60	5.90	110.50	(49.50)	1.81
RETAIL	61.00	164.53	11.80	176.33	(115.33)	2.89
TOTAL	244.00	700.54	20.21	720.75	(476.75)	2.95
9,277 APPLICATION (APPROX)		*LBD (LAST BIDDING DAY)			BIDDING FIGURE AS ON :- 14 Feb 2023 17:16:24	

Source :- BSE and NSE

Disclaimer: IndiaBonds disclaims any and all liability, current or future, for any error made or omission committed with respect to the transmission of data, information or material available hereinabove

Source: BSE and NSE

Total applications received: **9277**

Retail Issue size: **61 cr – subscribed 2.89 times**

What are Green Bonds?

Green Bonds are a type of fixed-income investment used to fund projects with a positive environmental impact. Like traditional bonds, green bonds offer investors a stated return and a promise to use the proceeds to finance or refinance sustainable projects, either in part or whole.

Advantages for Issuing and Investing in Municipal Green Bond

- ✓ **Green bonds** expand the quantum of clean energy finance and broaden investor base.
- ✓ Provide **access to low-cost, long-term capital.**
- ✓ Create **investment pipelines** to meet climate commitments

Source: Image retrieved from-https://corporatefinanceinstitute.com/resources/esg/green-bond/; Green Municipal Bonds in India; p1, 20, 2017 ; Retrieved from https://www.thebalance.com/what-are-green-bonds-417154

Type of Green Bonds

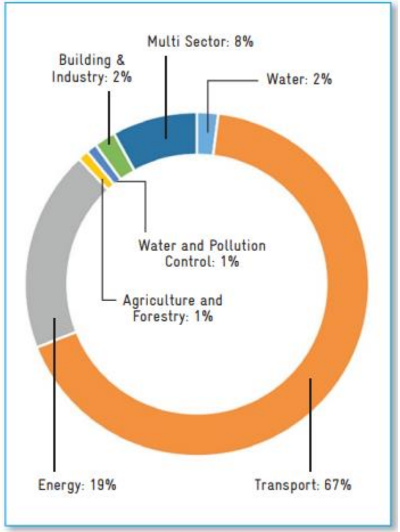
- Globally, green bonds are becoming a rapidly growing market for debt instruments. The green bond market took off in 2014 with USD 36.6 billion issued; triple the amount issued in 2013 (USD 11 billion). In 2015, **USD 41.8 billion** worth of green bonds were issued

Type	Proceeds used by bond sale are	Debt Recourse
Green "Use of Proceeds" bond	Earmarked for green projects	Standard/full recourse to the issuer; therefore, same credit rating applies as to issue other bonds
Green "Use of Proceeds" Revenue bond	Earmarked for green projects	Revenue streams from the issuers through fees, taxes, etc. are the collateral for the debt
Green Project Bond	Ring-fenced for the specific underlying green project(s)	Re-course is only to the project's assets and balance sheet
Green Securitized Bond	Either a) earmarked for green project, or b) go directly into the underlying green projects	Re-course is to a group of projects that have been grouped together (i.e., covered bond or other structures)

- Several entities in India (including banks, public sector units and power companies) have issued green bonds, with **USD 2.7bn** issued as of 12th of October 2016

Country	Amount (USD)
USA	111.3 billion
France	63.9 billion
UK	61.8 billion
Canada	27 billion
Germany	14.3 billion
Netherlands	10.4 billion
Sweden	6.1 billion
Norway	4.9 billion
India	2.7 billion
Brazil	2.4 billion
Denmark	1.4 billion
Mexico	1.2 billion

Green Bond issuance by countries



Use of Green Bonds Proceeds in 2016

Source: Green Municipal Bonds in India: Potential Barriers and Advantages, p.15 , GIZ, 2017,

Green Bonds - A bridge to the SDGs

- **All SDGs are impacted by climate action**: Achieving the climate goal is reliant on approaching the other SDGs with a climate lens, especially Clean Water & Sanitation (SDG6), Affordable and Clean Energy (SDG7) Industry Innovation & Infrastructure (SDG9), Sustainable Cities (SDG11) and Life on Land (SDG15).

- Meeting the Goals will involve investment in climate resilience, as well as mitigation.

  - **Clean water and sanitation (SDG-6)** accounts for **11% of green bond** issuance to date.
  - **Clean energy (SDG7)** remains the largest share of the green bond market **(40%)**
  - Low carbon buildings are the second largest segment of the green bond market to date (24%), followed by low carbon transport (15%).
  - Municipalities and city-linked entities, such as utilities and transport companies, are a significant issuer of green bonds. More cities issuing green bonds as a core part of their climate strategies boosts this & other SDGs
  - In the green bond market the vast majority of proceeds to date is allocated to climate mitigation and adaptation & resilience, with only a small share allocated to other green assets. Mission 2020 and Climate Bonds share a common milestone of $1trillion in green finance by end 2020.

Source: Green Bonds-A bridge to the SDGs, 2018

Revised disclosures listed by SEBI for issuance of green debt securities:

- **SEBI revised its guidelines** for issuance of green debt securities in February 2023 which got enforced from April 1, 2023.
- The revised guidelines require **additional disclosures**. The issuer will have to appoint a third-party reviewer for **green debt security for the post-issue management** of the use of proceeds from the green debt security, and verification of the **internal tracking and impact reporting.**
- Even though the **third-party reviewer requirement** would make the issuer's green activities more **reliable**, it's possible that the entities looking to issue listed green debt securities would view the increased compliance requirement as a burden, which would discourage them to opt for green bonds.

Revised Disclosures:

1. Process followed for determining eligibility of the projects/ assets in terms of Reg 2(1)(q) of ILNCS Regulations;
2. Criteria making the projects/ assets eligible for using the GDS proceeds
3. Environmental sustainability objectives of the proposed green investment.

Source:The Economic Times . (2023, February 6). The Economic Times. Retrieved from Sebi puts in place operational guidelines on green bonds: https://economictimes.indiatimes.com/markets/bonds/sebi-puts-in-place-operational-guidelines-on-green-bonds/articleshow/97659796.cms?from=mdr

In India, green bonds will help fund environmentally friendly projects..

Projects under green debt securities (As per the SEBI Regulations, 2008):

- ✓ Renewable and sustainable energy including **wind, solar, bioenergy, other sources of energy that use clean energy.**
- ✓ Clean transportation including **mass/ public transportation.**
- ✓ **Sustainable water management** including clean and/or drinking water, water recycling.
- ✓ **Climate change adaptation.**
- ✓ Energy efficiency including **efficient and green buildings.**
- ✓ **Sustainable waste management** include recycling, waste to energy, and efficient disposal of wastage.
- ✓ **Sustainable land use** including sustainable forestry and agriculture, afforestation.
- ✓ **Biodiversity conservation.**

Source: SEBI Disclosure for Green Bonds, 2023

Case Study: Green bonds to fund tertiary treatment plant in Ghaziabad

- Ghaziabad has become the **first Municipal Corporation** in Uttar Pradesh, India to issue green municipal bonds.
- On April 18, 2021, Ghaziabad Municipal Corporation issued municipal green bonds in BSE and **raised Rs.150 crore.**
- The corporation has received Rs. 19.5 crore incentive from the Union govt. for raising funds through municipal bonds.
- **Funds of these green bonds** will be used for **the construction of a tertiary treatment plant (**estimated cost approximately Rs. 239.39 crore) to benefit industries in Ghaziabad. This municipal bond was issued as green bonds as the purpose comes under **water management (recycling).**
- The **Ghaziabad Municipal Corporation (GMC)** has entered into an **understanding with Sahibabad Industries Association.** This treated water will be supplied further to industrial units and will help **reduce pressure on groundwater resources** and tariff will be collected from the industries.
- The '**green' bonds were oversubscribed** more than **four times with 40 bids** totaling **₹401 crore.**
- The project through these green bonds has a positive environmental and financial impact. The project also has strong cash-flows.

Source: Retrieved from https://affairscloud.com/indias-first-municipal-green-bond-was-issued-by-ghaziabad-uttar-pradesh/

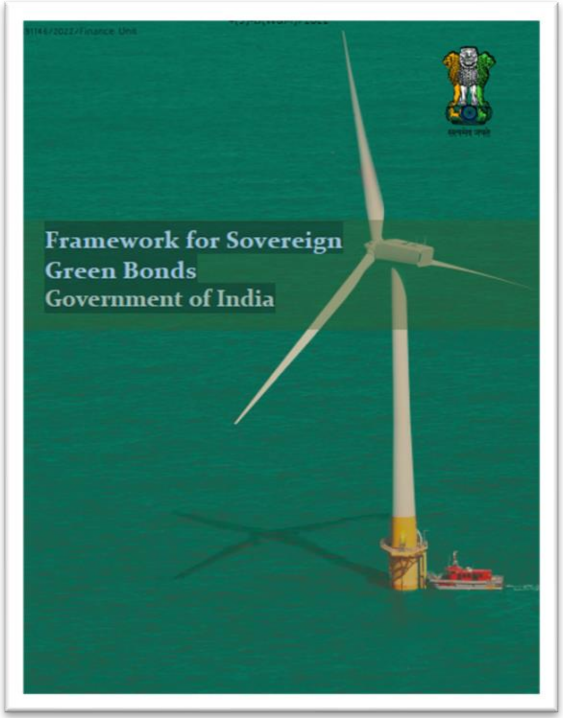
Case Study: Green bonds to fund solar power plant in Indore

- Indore Municipal Corporation (IMC) listed its green bonds on the National Stock Exchange (NSE) in February 2023.
- The public issue of IMC bonds got an overwhelming response with an **overall subscription of 5.91 times** the issue size.
- The money raised through the green bond will be used to set up a **60-megawatt solar power plant** that would **generate electricity** to bring water from Narmada river which is some 80 kilometres from Indore.
- The Indore civic body had floated green bonds to raise **Rs. 244 crore for the solar power plant**, the first of its kind offered by any municipal corporation in the country in the capital market.
- The green bonds had drawn an overwhelming response from investors and attracted a subscription of around **Rs 720.75 crore.**

Source: Retrieved from https://www.business-standard.com/article/economy-policy/indore-s-first-municipal-green-bond-a-beacon-for-india-s-urban-local-bodies-123030500436_1.html

The Government of India recently launched the framework for Sovereign Green Bonds in November 2022

- The Framework applies to **all sovereign Green Bonds** issued by the Government of India. Payments of principal and interest on the issuances under this Framework are not conditional on the performance of the eligible projects. Investors in bonds issued under this Framework do not bear any project related risks.
- The **Union Budget 2022-23** announced the issue of Sovereign Green Bonds.
- The proceeds will be deposited to the Consolidated Fund of India (CFI) in line with the regular treasury policy, and then funds from the CFI will be made available for eligible green projects.
- Allocation and utilization of Green Bonds is also under the purview of audit by CAG.



Framework for Sovereign Green Bonds by GoI launched in November 2022

Source:Framework for Sovereign Green Bonds by GoI, 2022

Advantages and challenges of issuing and investing in green bonds

Advantages:

- Green bonds increase liquidity and drive green investment by enabling refinancing.
- Green bonds expand the quantum of clean water and energy finance and broaden investor base.
- Green bonds offer a strategy for refinancing existing loans allowing proceeds to be used for further investment in renewable energy and other sustainable development projects.
- The international investor community can use green bonds to meet growing demand to support climate-friendly investments.
- Under AMRUT 2.0, GoI is offering incentives to cities of INR 10 crore to cities for issuance of INR 100 cr green bond. Maximum incentives that can be availed are INR 20 cr.

Challenges:

- In India, the eligibility requirements for municipalities to be able to issue bonds are, in general, quite stringent.
- Coupon rates at which green bonds are issued in India are not lower when compared to municipal bonds.

Source: Green Municipal Bonds in India: Potential Barriers and Advantages, p.20 , GIZ, 2017; AMRUT 2.0 Memorandum, GoI, 2023

ESG for cities can help accelerate green bond investments

- Governments' adoption and implementation of **Environmental Social and Governance (ESG)** is becoming an important ethical value in jurisdictions across the globe. Countries/ cities such as Toronto in Canada, USA and New Zealand are aligning their cities with ESG mandates. ESG a popular concepts among corporates.

- CWAS in partnership with PwC has developed an ESG readiness assessment framework for cities which is designed to encourage cities to become ESG-ready and create an enabling environment for investors to make decisions about their investments in cities.

- It aims to use publicly available information to develop ESG assessment or ESG rating of cities for demonstrating the larger role of our cities in achieving the broader goals related to environment, social and governance.

- Cities are required to raise resources from a new set of funders and investors-it is important to move away from traditional reporting approaches and adopt consolidated assessments like ESG assessments. In such a scenario, ESG assessments and ratings provided as a service to cities can help bridge the gap between city aspirations and investor needs.

Source: CWAS, CEPT and PWC (2023). Making cities ESG ready; Link: https://cwas.org.in/cwas-resources/esg-assessments-for-cities-in-india

Picture Source:https://www.moneylife.in/article/rating-of-credit-rating-agencies-the-new-imperative/58790.html

Credit Rating, Credit Enhancement and Creditworthiness Assessments

History of credit rating!!!

- **Credit rating agencies originated in the United States in the early 1900s, when ratings began to be applied to securities, specifically those related to the railroad bond market.**

- Following the 1907 financial crisis, demand rose for such **independent market information**, for independent analyses of bond creditworthiness.

- **Three companies provided opinions on creditworthiness and the US bond market** expanded to include increasing issues by local and state governments, public utilities, industrial corporations, the credit rating agency was well established.
- Standard & Poor's (S&P)
- Moody's Investor Services
- Fitch Group

Source :Evolution of credit ratings, CariCRIS-Retrieved from https://www.caricris.com/images/pdfs/article/evolutionpart1.pdf

All these bonds have a credit rating!!

Table 1: Estimated Borrowing Capacity

	Estimated Capacity	Actual Debt	Additional Capacity	Statutory Limit	Actual Debt/ Estimated Capacity	Estimated Capacity/ Statutory Limit	Rating
	Figures in Rs million				%	%	
Ahmedabad	7,000	4,940	206		70		CCR A+
Surat	10,500	240	1,026		2.28		CCR AA–
Rajkot	Nil	240	–24		NA		CCR A–
Nagpur	3,000	1,420	158	11,000	53	27	CCR A
M.C. Mumbai	43,000	28,020	1,498	111,000	65.1	39	AA
Bhopal	Nil	1,790	–179	5,760	NA	0	BBB–
Indore	900	1,070	–17	8,250	119	11	BBB
Chennai	3,000	955	204.5		32		Ir BBB+
Coimbatore	1,000	660	34		66		Ir BBB+

It is mandatory for all municipal bonds to have a credit rating

World Bank (2011): Developing a Regulatory Framework for Municipal Borrowing in India, p.17

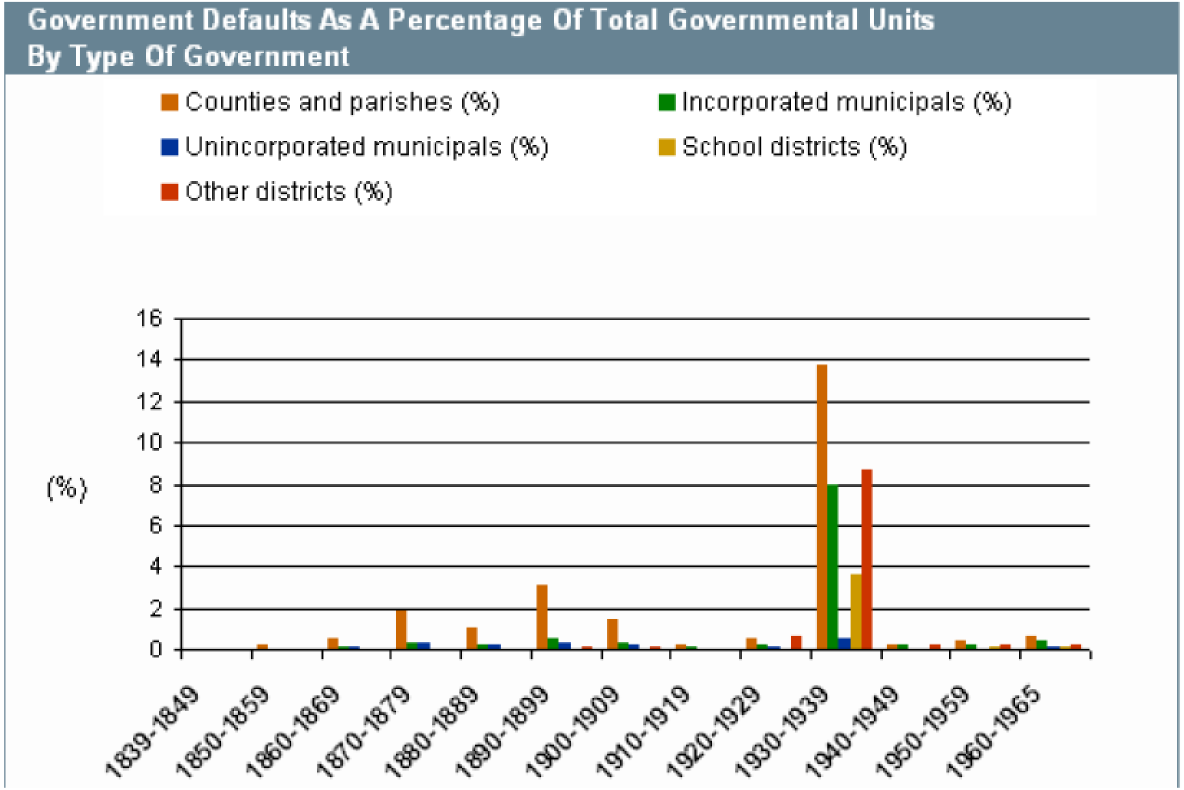
What is Credit Rating?

Credit Rating is an opinion on the relative degree of safety regarding debt obligations being met on time.

- It is an opinion, not a recommendation
- Relative degree of safety vis-a-vis other debt instruments
- Timeliness is key
- Instrument-specific – could be different for a structured instrument and stand-alone one
- Assigned by a committee of experts in finance, management and economics, after a detailed and in-depth discussion

Source : Kudwa Roopa (2004), "Financing Municipalities and relevance of Credit Rating - the Indian experience", CRISIL, Presentation made at *International Conference on Financing Municipalities and Sub-National Governments, Washington*

Sub national defaults - USA



Source: Standard and Poor (2012), "US local governments: Methodology and assumptions", Chart 2, p.8

Investors ‘need’ bond ratings

- Credit ratings help investors appraise the risk and reward of the bond
- In India Credit Ratings Agencies such as CRISIL, ICRA, CARE, FITCH etc. offer independent ratings based on a range of factors
- Many investors (insurance sector, PF etc) may require rated instruments; SEBI regulatory framework requires compulsory rating

Credit Rating of urban local bodies – Benefits

- Helps benchmarking with other urban local bodies
- Helps in monitoring overall debt level and finances
- Provides investors an independent and unbiased evaluation of credit quality
- Helps investors in pricing the debt offer
- Credit rating for all mission cities under JNNURM
- Credit rating was a part of the AMRUT reforms package.

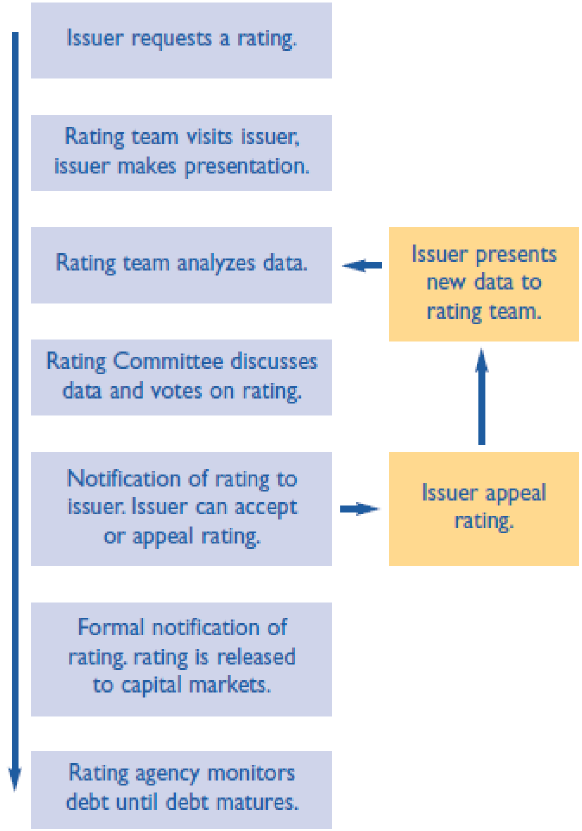
Based on Kudwa Roopa (2004), "Financing Municipalities and relevance of Credit Rating - the Indian experience", CRISIL, Presentation made at *International Conference on Financing Municipalities and Sub-National Governments, Washington*

Credit rating process

- Demand driven rating process
- Require good credit rating agencies
- Monitoring by Credit Ratings Agencies (rating watch) helps independent external monitoring

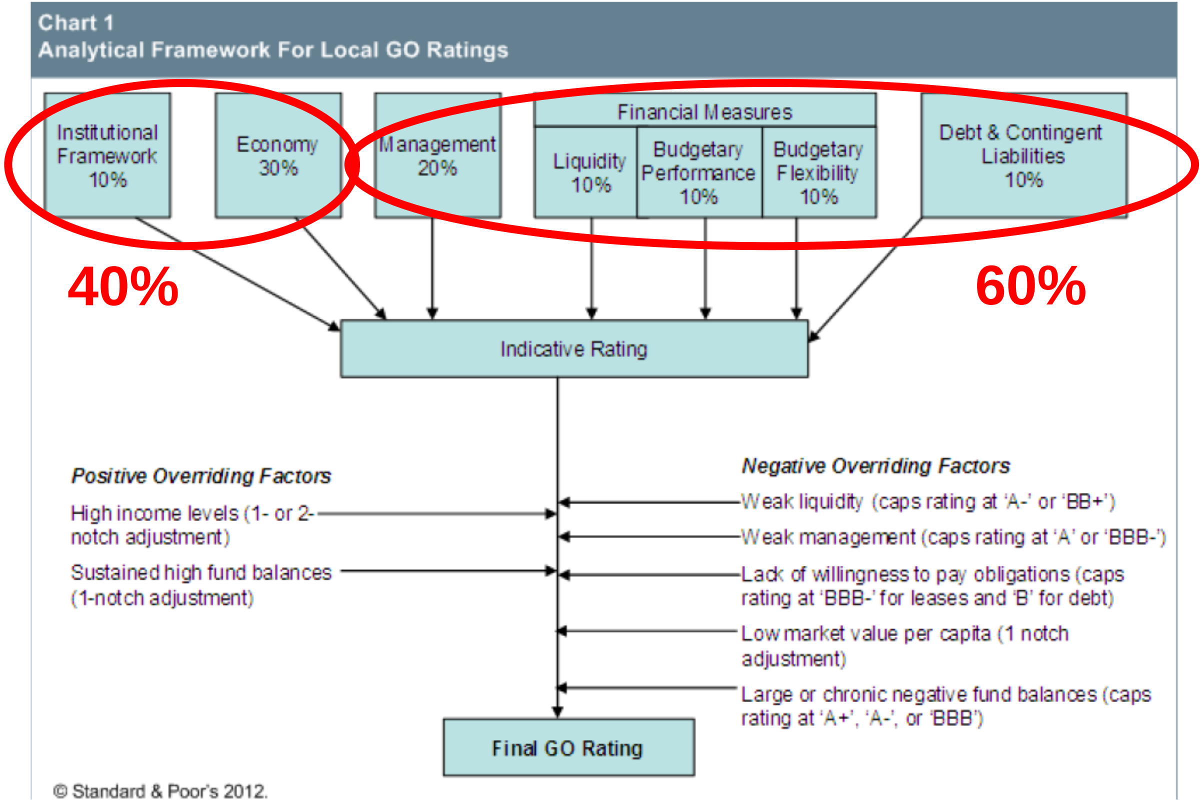
Sources: Based on Barry Jackson (n.d.), “Obtaining a municipal credit rating”, CLGF research series, p.19.

The Credit Rating Process



Source: *Credit Rating and Bond Issuing at the Sub-national Level, a Training Manual*, The World Bank 1999.

Methodology for credit rating of GO bonds – US S&P



Source: Standard and Poor (2012), "US local governments: Methodology and assumptions", Chart 1, p.4

Assessment of Bond Rating

Issuer Rating

Legal, Policy and Economic Framework

- Legal & Policy Framework
- Social & economic profile

Operational Effectiveness

- Operating & service Efficiency
- Property Tax Collection
- Efficiency of Tax Administration

Municipal Finance

- Past financials
- Future financial position

Bond Rating – Issue Rating

Assessment of Issuer's Credit Rating

Legal Aspects and Payment Mechanism

Other Credit Enhancement Measures

Source: Sujatha Srikumar.(2024), Presentation on "Accessing capital markets through issuance of municipal bonds" at CEPT University

Assessing The Credit Quality of Bond through Credit Rating

Credit Rating Scale for Bonds

- ✓ AAA : Highest Safety
- ✓ AA: High Safety
- ✓ A:Adequate Safety
- ✓ BBB: Moderate Safety
- ✓ BB: Inadequate Safety
- ✓ B: High Risk
- ✓ C: Substantial Risk
- ✓ D: Default

Investment Grade

Sub Investment Grade

"+" or "-" sign is given in bonds for AA and below rated bonds to reflect comparative standing within the category. Example: AA+, AA, AA-

VARIOUS INVESTOR CLASS

- Provident/ Superannuation/ Gratuity/ Pension Funds
- Banks, FIs and Insurance Companies etc.
- Foreign Portfolio Investors
- Mutual Funds
- Merchant Banker / Trader etc

Source: Sujatha Srikumar.(2024), Presentation on "Accessing capital markets through issuance of municipal bonds" at CEPT University

CRISIL's rating scale

Rating Symbol	Definition
Investment Grades	
AAA	Highest Safety
AA	High Safety
A	Adequate Safety
BBB	Moderate Safety
Speculative Grades	
BB	Inadequate Safety
B	High Risk
C	Substantial Risk
D	Default

Only 30 out of 63 mission cities under JNNURM received investment grade rating.

94 cities assigned Credit Ratings as Smart Cites and AMRUT cities gear up to issue Municipal Bonds*

Based on Kudwa Roopa (2004), "Financing Municipalities and relevance of Credit Rating - the Indian experience", CRISIL, Presentation made at *International Conference on Financing Municipalities and Sub-National Governments, Washington,* * PIB,2017

Credit rating of Indian cities under AMRUT and Smart city Mission, 2022

- Under AMRUT programme by Ministry of Housing and Urban Affairs (MOHUA), credit rating was completed for

467 ULBs Completed

163 ULBs Investment Grade

36 ULBs A- and above

- However, only 10 ULBs and 1 Development Authority have issued municipal bonds between 2017 and 2022.
- Most of the potential issuers would need suitable credit enhancements to take their credit rating up to 'AA' (high safety category) that most investors require as per regulatory guidelines.
- **13 crore incentive** to cities by GOI for raising **100 crore** through municipal bonds.
- 35 municipalities across India with good credit ratings have been identified by MoHUA that could actually go to the bond market.

Source: PIB, AMRUT 2.0 guidelines, 2021

State	Credit Rating	Number of cities	City Names with Credit rating Agencies
Maharashtra	AA+	2	Navi Mumbai(IRR),Pune(IRR)
	AA-	3	Nashik, Thane, Pimpari-Chindwad(ALL Three CRISIL)
	A-	1	Mira Bhayandar(CRISIL)
	BB+	2	Nanded, Solapur (Both CRISIL)
	BBB	2	Kolhapur, Nagpur (Both IRR)
	BBB-	1	Amaravati (CRISIL)
Gujarat	AA	1	Ahmedabad(CRISIL)
	AA-	1	Surat (CARE)
	A+	1	Vadodara (IRR)
	BBB+	1	Jamnagar
	BBB-	2	Bharuch, Bhavnagar
	BB+	3	Kalol, Navsari, Nadiad
	BB	1	Dwarka
	BB-	1	Mori
Andhra Pradesh	AA	1	Visakhapatnam (CARE)
	BBB	4	Kakinada, Anantapur, Kurnool and Tirupati
	BBB-	2	Chittor and Cuddapah
	BB+	3	Proddatur, Nandyal and Nellore
	BB	2	Adoni and Tadipatri
Odisha	BBB-	1	Cuttack(Brick work)
	BB	3	Berhampur, Rourkela and Sambhalpur(All three ICRA)
	B+	2	Baripada and Puri (Both by ICRA)
	B	1	Bhadrak (Brick work)
Telangana	AA	1	Greater Hyderabad Municipal Corporation (CARE)
	A+	1	Warangal (CARE)

Methodology developed by CWAS to assess creditworthiness of cities

- Formal credit ratings is mostly a one-time process. Also, human resource and time-consuming process.
- **Creditworthiness approach by issuer** to obtain provisional while it awaits its **full credit rating to be underwritten**.
- CWAS has developed the **creditworthiness assessment framework** which is very close to the actual credit rating assigned to these borrowers through formal credit rating exercises undertaken by accredited Credit Rating Agencies.

✓ **Publicly available data**
✓ **Operational parameters** as finetuned based on PAS Service Level Benchmarking for ULB
✓ **Self-assessment tool which can be used by ULBs to assess and improve creditworthiness**

- The main benefit of this methodology is that cities planning to issue municipal bonds or raise other forms of debt can get an **indication of their creditworthiness score** and likely credit rating.

- Self-assessment and improvement tool to evaluate and **improve creditworthiness of cities** through improved municipal financial and operational performance.

Source: CWAS.(2024), Creditworthiness Assessment-an approach for Indian cities, Link: https://cwas.org.in/cwas-resources/creditworthiness-assessment-an-approach-for-indian-cities

Debt service coverage ratio (DSCR)

The **debt service coverage ratio (DSCR)** is the ratio of cash available required for debt servicing including interest and principal repayments.

When **is DSCR used ?**

when a utility/ULB applies for external debt to fund their projects

Why **is DSCR used ?**

to evaluate capacity of utility/ULB to repay the debt amount for a specific time period

Calculating DSCR

Calculating

DSCR

Net operating income

Revenue surplus available after all operating expenditures are met from gross revenue income.

- Revenue income : Income from own sources in the form of taxes and user charges.
- Revenue expenditure : Establishment, administration, operating and maintenance expenses of a utility.

Net operating income

> 1.25

To ensure sufficient funds available for repayment

Debt service

It is calculated for each year based on interest and principal repayment amount derived from terms and conditions of debt.

- Rate of interest
- Moratorium period
- Repayment period

Total debt service

Example of DSCR calculation

Step 1 : Evaluating Net operating income (A)

Financing Plan	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Revenue account statement										
1. Revenue income	6.6	6.6	6.0	7.1	9.0	10.6	11.8	12.2	7.7	7.8
2. Revenue expenditure	5.0	4.6	5.0	5.6	5.7	6.0	6.2	6.8	8.0	8.0
Surplus/ Deficit (A)	**1.6**	**2.0**	**1.0**	**1.5**	**3.3**	**4.6**	**5.6**	**5.4**	**4.9**	**4.7**

Step 2 : Evaluating debt servicing requirement (B)

External borrowings										
1. Debt requirement from projects	-	1.8	4.6	11.6	10.2	7.7	-	-	-	-
2. Terms of conditions										
Rate of interest (%)		10%								
Moratorium period (Number of years)		1								
Period of Borrowing (Number of years)		10								
3. Debt servicing calculation										
Principal amount	-	-	-	0.1	0.4	1.2	1.9	2.4	2.4	2.4
Interest amount	-	-	0.2	0.6	1.7	2.6	3.2	3.0	2.7	2.5
Total (B)	**-**	**-**	**0.2**	**0.7**	**2.2**	**3.8**	**5.1**	**5.4**	**5.1**	**4.9**

Step 3 : Calculating DSCR (A / B)

Debt service coverage ratio										
DSCR (A/B)	**NA**	**NA**	**NA**	**2.00**	**1.50**	**1.20**	**1.10**	**1.00**	**0.95**	**0.95**

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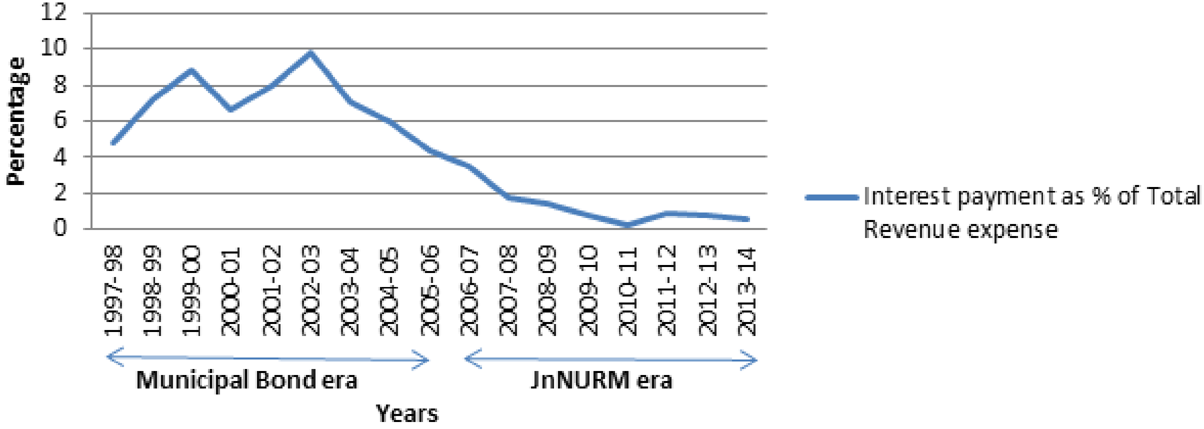
Ahmedabad Municipal Corporation Debt capacity



Ahmedabad Municipal Corporation could have mobilised additional Rs 2100 crore of capital income resources through borrowing without crossing a DSCR of 2.5 !!!

Source: Based on Chinmay Talegaonkar (2014) "Municipal Bond as an instrument of local borrowing: Case of AMC in pre and post JNNURM Era", Unpublished dissertation, CEPT University,

Credit enhancement

- Relatively low standalone credit quality of many local bodies/ water boards may necessitate credit enhancement
- Rating can be enhanced to a target rating through credit enhancement mechanisms

Credit enhancement alternatives

- Escrowing of dedicated revenue streams
- Full /partial guarantee from an entity with superior credit profile, but with a cos
- Credit Enhancing Mechanisms
  - Debt service reserve funds
  - Over-collateralisation of cash flows (asset pool more than debt by 20%)
  - Flow of funds structure
  - Letters of credit from banks
- Pooled financing

Based on Kudwa Roopa (2004), "Financing Municipalities and relevance of Credit Rating - the Indian experience", CRISIL, Presentation made at *International Conference on Financing Municipalities and Sub-National Governments, Washington*

Municipal bonds and their ratings

SO is a structured obligation

Credit ratings/issuance of municipal bonds

City	Rating	Date	Amount (Rs. Billion)	Issued
Ahmedabad	A+	Feb. 96	1.00	Yes
	AA-(SO)	Jan 98		Part Public
Mumbai	AA-	Jan. 97	0.25	No
Pune	AA	Feb. 97	2.00	No
Vijayawada	A-(SO)	Nov. 97	0.30	No
Bangalore	A-(SO)	Nov. 97	0.30	Yes
Nashik	AA(SO)	May. 99	1.00	Yes
Ludhiana	LAA (SO)	Aug. 99	0.17	Yes
Nagpur	LAA-(SO)	Dec. 00	0.50	Yes
Madurai	LA+(SO)	April 01	0.30	Yes
Indore	NO	July 01	0.50	Yes
TNUDF	LAA+(SO)	Aug.01	1.06	Yes
Ahmedabad	AA(SO)	March 01	1.00	Yes
Hyderabad	AA+(SO)	March 02	0.82	Yes
Tamil Nadu (Pooled Finance)	AA (SO)	Dec. 02	0.30	Yes
	LAA (SO)			
Nashik	AA (SO)	April 03	0.50	Yes
Vishakapatnam	N/A	April 04	0.70	Yes
Ahmedabad	N/A	2004	0.58	Yes
CMWB	N/A	2005	0.42	Yes
CMWB		2005	0.58	Yes
Chennai		2005	0.44	Yes
Ahmedabad			1.00	Yes
Karnataka (Pooled Finance)	LAA(SO)	July 05	1.00	Yes

Total Issued (22) Rs. 12.17

SEBI Regulation for municipal securities, 2015

- In March 2015 (revised in July, 2015) the Securities & Exchange Board of India (SEBI) passed regulations to facilitate issuance of municipal debt and listing of debt securities by municipalities in India.

- Municipalities can raise money in the form of bonds that are traded across stock exchanges and use the money to invest in public infrastructure projects.

THE GAZETTE OF INDIA

EXTRAORDINARY

PART – III – SECTION 4

PUBLISHED BY AUTHORITY

NEW DELHI, JULY 15, 2015

SECURITIES AND EXCHANGE BOARD OF INDIA

NOTIFICATION

Mumbai, the 15th of July, 2015

SECURITIES AND EXCHANGE BOARD OF INDIA

(ISSUE AND LISTING OF DEBT SECURITIES BY MUNICIPALITIES) REGULATIONS, 2015

No. SEBI/ LAD-NRO/GN/2015-16/006.- In exercise of the powers conferred by Section 30 of the Securities and Exchange Board of India Act, 1992 (15 of 1992), to put in place a framework for public issue of debt securities by municipalities, listing and trading of such securities and matters incidental thereto, the Board hereby makes the following regulations, namely, —

CHAPTER I

PRELIMINARY

Short title and commencement.

1. (1) These regulations may be called the Securities and Exchange Board of India (Issue and Listing of Debt Securities by Municipalities) Regulations, 2015.

(2) These regulations shall come into force on the date of their publication in the Official Gazette.

Definitions.

2. (1) In these regulations, unless the context otherwise requires, the terms defined shall bear the meanings assigned to them below, and their cognate expressions shall be construed accordingly,–

(a) "Act" means the Securities and Exchange Board of India Act, 1992 (15 of 1992);

(b) "advertisement" includes all forms of communication including notices, brochures, pamphlets, show cards, catalogues, hoardings, placards, posters, insertions in newspaper, cover pages of offer documents, pictures, films, etc., in any print media or electronic media or social media, radio, television programme;

Page - 1 - of 29

Source: https://www.sebi.gov.in/sebi_data/attachdocs/1436964571729.pdf

Who can issue municipal bonds?

SEBI regulations (2015) suggest…

- “Issuance of securities or Municipal Bonds directly by the ULBs - Municipal Body.
- “Issuance of securities or Bonds through Corporate Municipal Entity (Subsidiary) created by the Municipality.
- “Creating a statutory body which can borrow from market through issue of bonds for onward lending to Municipal Bodies.
- “Under Pool Finance Development Fund Structure, through Issuance of securitized debt instruments by a special purpose distinct entity (Trust) created by one or more municipalities by securitizing the receivables.”

Source: SEBI (2015), “Issue and listing of debt securities by Municipalities”, Gazette notification.

SEBI Regulatory framework for issuance of debt securities by ULBs

Eligibility

- The municipality should not have negative net worth for the last three financial years
- The municipality should not have defaulted in repayment of debt securities or loans
- As per SEBI regulation published in January,2015, **minimum credit rating of BBB- is required from at least one of the recognized credit rating agencies.**

General requirements

- Minimum tenure of the debt securities issued will be 3 years
- The municipality's contribution for each project shall not be less than 20% of the project costs, which shall be contributed from their internal resources or grants

Security of debt

- The issue will have to be listed on one or more recognized stock exchanges
- The debentures shall be secured through the properties or assets or the receivables of the municipality.
- In case unsecured debentures are intended to be listed on stock exchange(s), then the debt securities shall either be backed by guarantee from state government or central government or shall have a structured payment mechanism

Minimum subscription

The minimum subscription limit shall not be less than 75% of the issue size

Monitoring of debt

Public finance institution or nationalized bank will be appointed to monitor the revenues in the escrow account

Source: https://www.sebi.gov.in/sebi_data/attachdocs/1436964571729.pdf

Recent Municipal Bonds in India

Ahmedabad- 2019:

- Raised through NSE Bond platform
- Received 5.42 times of oversubscription.

Vishakhapatnam-2019:

- GVMC listed on BSE.

Bhopal Bond-2018:

- Raised through NSE Bond platform
- Received 1.06 times of oversubscription

Surat Bond-2019:

- Raised through BSE Bond platform

Lucknow Bond:

- Raised through BSE Bond platform

Indore Bond:

- Raised through NSE Bond platform
- It is a green bond.

PCMC Bond:

- Raised through BSE Bond platform
- Oversubscribed 1.58 times
- Received incentive of INR 26 cr from GoI

City	Type	india	Interest rate	Tenure periods	Credit Rating	Escrow	Purpose	Remarks
AMC	**-**	100 Cr.	8.7%	-	AA+ (SO)	-	Urban Infrastructure AMRUT Mission	**Credit rating Agencies (CRA):** CRISIL, India Rating
GVMC	Secured Taxable Non-Convertible Redeemable Debentures	80 Cr.	10%		AA (SO)	GVMC's collections in property tax, vacant land tax and bulk water charges	Development of sewerage system	**CRAs:** India Ratings **Payment of Interest** : Half yearly
SMC	Unsecured Taxable Non-Convertible Redeemable Bonds	200 Cr.			AA+		Enhancement of sewerage treatment projects	**CRAs:** CRISIL **Payment of Interest** : Half yearly
BMC	Secured, Non-Convertible Debentures	175 Cr.	9.55%	10 years	AA(SO)	-	Implement AMRUT projects	**CRAs:** Acuite **Payment of Interest** : Half yearly
LMC		**200 Cr**	8.5%	10 years	AA& AA		Infrastructure projects	**CRAs: Brickwork & India ratings Payment of Interest** : Half yearly
IMC		**244 Cr**	8.25%	3-9 years	AA & AA+	Own revenues and cash flows of IMC (property, water, advertisement tax)	Solar Power Plant	**CRAs:** CARE & ICRA
PCMC		**200 Cr**	8.15%	5 years	AA+, AA+		Development of river	**CRAs:** CRISIL, CARE Ratings

Source:, Financial Express, BSE India, Economic Times, Ahmedabad: LiveMint , Economic Times, Vishakhapatnam : India Ratings, BSE India, BSE Notice-2019, Business today,2018, Indiabonds.com, 2023

Escrow Account Mechanism

- The issuer shall create a separate escrow account for servicing of revenue bonds with earmarked revenue.
- PMC, IMC and GHMC have developed a structured payment mechanism.

Case of PMC:

- An agreement was executed between PMC, the Trustee and the Escrow Banker (Bank of Maharashtra, as defined under the Tripartite Agreement)#
- PMC has established no-lien escrow account with the Escrow Banker*
- PMC has established following accounts with the Escrow Banker in respect of Issue:
  - (a) Escrow Account
  - (b) DSRA Account : for maintaining of reserve for servicing of the interest on Debentures

(c) Interest Payment Account : for payment of interest:

(d) Sinking Fund Account: for repayment of principal amount of the Debentures

- PMC has also incorporated a mechanism to ensure a 'rolling coverage' for the Escrow Payment Account. **

*wherein the amounts lying to the credit of the Issuer's property tax account(s) and due to the Issuer would be deposited.

**The rolling coverage factor attempts to compensate for potential variance in property tax collections. This mechanism deposits cash in excess of the debt service requirement in the account. It then makes the debt service payment when due, and then the excess cash can be remitted back to the municipal general account.

For IMC trustee to bondholders i.e. Vista ITCL (India) Ltd and the Escrow Bank i.e. Kotak Mahindra Bank shall act upon

Source: Pune's Path Breaking success in municipal bond: www.pmc.gov.in

Picture Source:https://en.m.wikipedia.org/wiki/File:Ahemdabad_Skyline.jpg

Municipal Development Funds

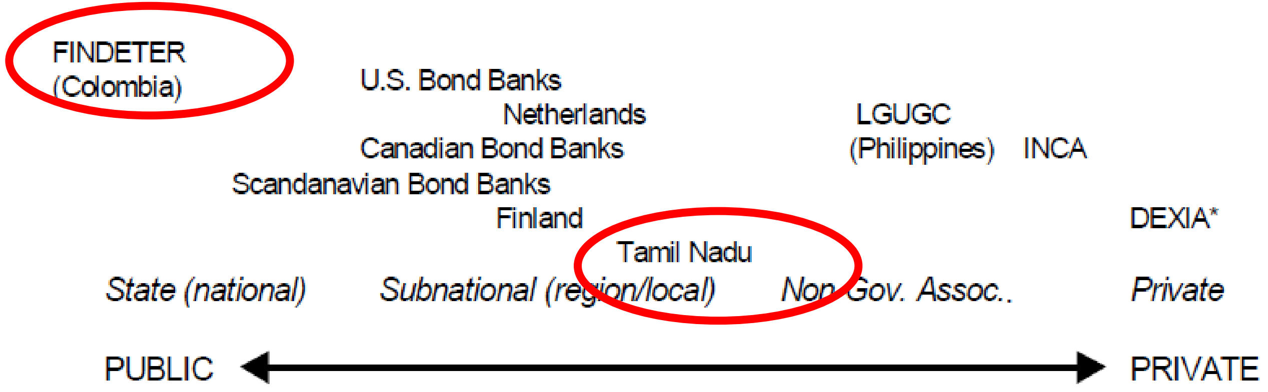
Municipal Development Funds

- Municipal Development Funds can provide a much needed link between civic infrastructure financing needs and domestic capital markets.

- MDFs usually start as an intergovernmental approach to municipal credit supply, structured as parastatal organizations, but then evolve to become financial intermediaries focusing on municipal credit

MDF Ownership Structures – A review

Figure 2: MDF Ownership Structures
Arrayed by Nature of Ownership:



*/ has minority government stock ownership

Peterson John (2006), “Municipal funding arrangements: global experience and lessons learned”, paper for International Workshop on Strengthening Local Infrastructure Financing, Aug. Mimeo.

MDF performance linked to government finance

- Those revolving funds that perform well, typically require an intercept pledge of central or provincial government transfers in case of default, and
- Lend within national guidelines that limit local government borrowing to prudential levels.
- A management contract with a private entity and a Board of Directors that gives some independence from government is another positive indicator
- Most obtain capital exclusively from central or provincial government subsidy or loans from Multi-lateral Development Banks. Neither the national government nor MDBs can satisfy all investment needs of local governments
- Danger that they may substitute public for private capital especially when they enjoy special advantages

Source: Pelligrini, A (n.d.)

Case of TNUDF

- Under the World Bank credit of Rs.167 crores, the Municipal Urban Development Fund (MUDF) was set up in 1988 to fund urban infrastructure needs

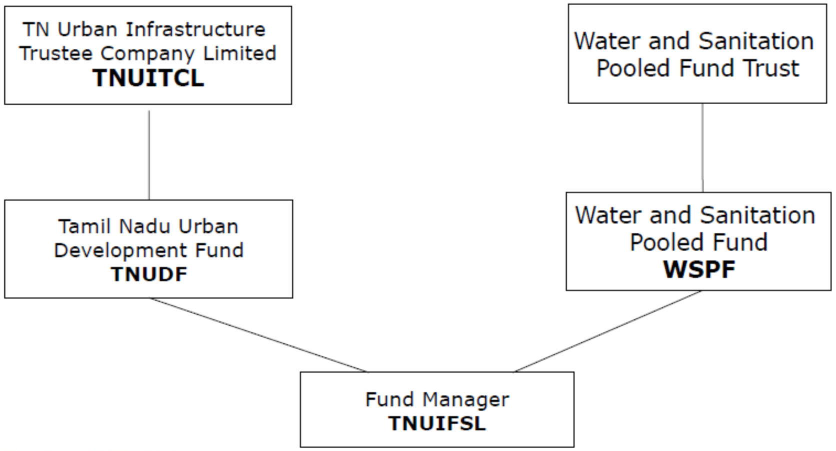
- TNUDF was established in 1996 as a trust under the Indian Trusts Act 1882, and is managed by an Asset Management Company, Tamilnadu Urban Infrastructure Financial Services Limited (TNUIFSL)

- GoTN's equity in the venture is restricted to 49%, based on the motivation to facilitate private sector management in investment decisions.

- Other shareholders of TNUIFSL are ICICI (21%), HDFC (15%) and IL&FS (15%). ICICI, the lead institution, took up management responsibility, putting in place appraisal systems and key personnel.

TNUDF structure and institutional arrangements

Overall Structure Managed by TNUIFSL



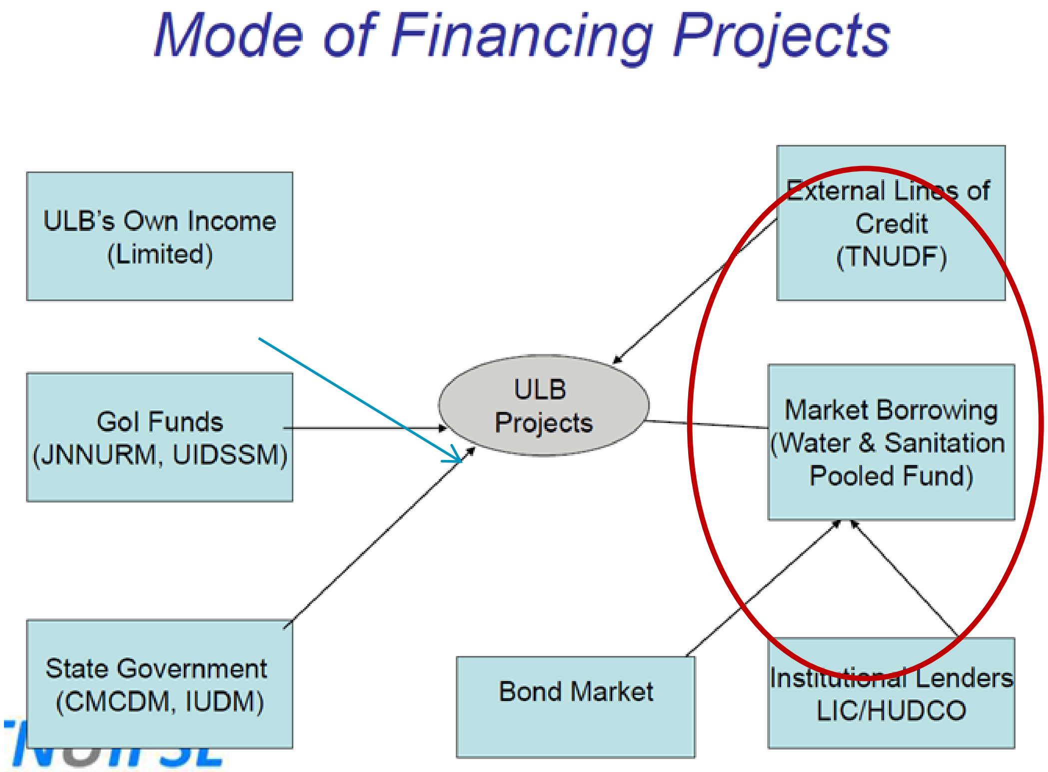
TNUIFSL
TAMIL NADU URBAN INFRASTRUCTURE FINANCIAL SERVICES LTD

Institutional Arrangement

- Funding : TNUDF
  - Dedicated Municipal Development Fund
  - Created with the intention to strengthen financial capacity of ULBs
  - To pool Government and Private funds for urban infrastructure
  - Finance viable urban projects in the form of term loan
- Technical Assistance: TNUIFSL
  - Dedicated service provider with PSP
  - Professionally managed
  - Provides one-stop solution for all services in urban sector from concept to commissioning
- Market Borrowings: WSPF
  - SPV to mobilize resources on pooled finance framework
  - Operates on no-profit, no-loss basis

Based on Anita Praveen (n.d.), “Tamil Nadu : Financial sector innovations for Urban Development”, TNUIFSL, presentation

TNUDF – financing of projects: combining grants and loans



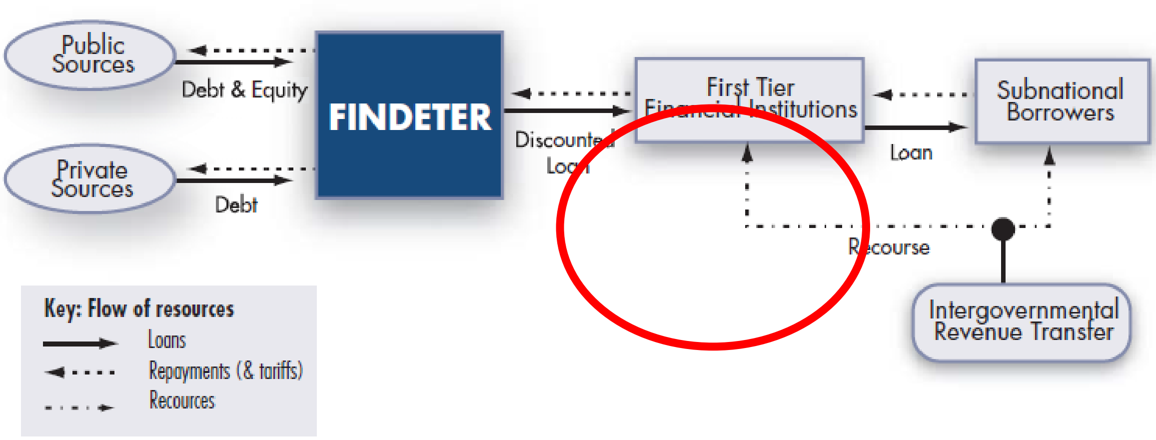
Based on Anita Praveen (n.d.), "Tamil Nadu : Financial sector innovations for Urban Development", TNUIFSL, presentation

An example of TNUDF Financing - Madurai toll road

- First Toll Road in Tamil Nadu State
- TNUDF provided loan to Madurai Corporation
- After the project construction and materialization of toll revenues, Madurai Corporation issued bond15 years with an interest rate of 12.25% payable semi annual.
- This bond was used to replace the debt of TNUDF loan which carries an interest rate of 15.5% p.a with 15 years repayment period.
- Madurai could reduce loan costs
- TNUDF could re-deploy the resources for other projects.

Case of FINDETER, Colombia

Figure A-1. FINDETER as a Second-Tier Financial Institution: Flow of Funds



FINDETR worked more as a rediscount facility for local financial institutions. It helped build capacity of both local lenders (banks) and borrowers

Source: R Kehew, T Matsukawa and G Peterson (2005), "Local financing for sub-sovereign in Developing countries", World bank, p.21

Government of Himachal Pradesh developed a medium term loan program to improve WSS services and performance standards in Greater Shimla Area

Set of Governance Indicators used for baseline assessment and setting targets

Financial Indicators

- **Percentage of decisions** on investment, expenditure and staff recruitment
- **Leverage and Liquidity ratios (assets and liabilities)** from Annual audited financial statements
- Timely determination of **annual tariffs and subsidies**

Service Levels

- **Collection efficiency of water taxes and charges**
- **O&M cost recovery of WSS** Services
- **Percentage of WSS complaints redressed** within the specified redressal period
- **Reduction in Non-Revenue water**

Staffing

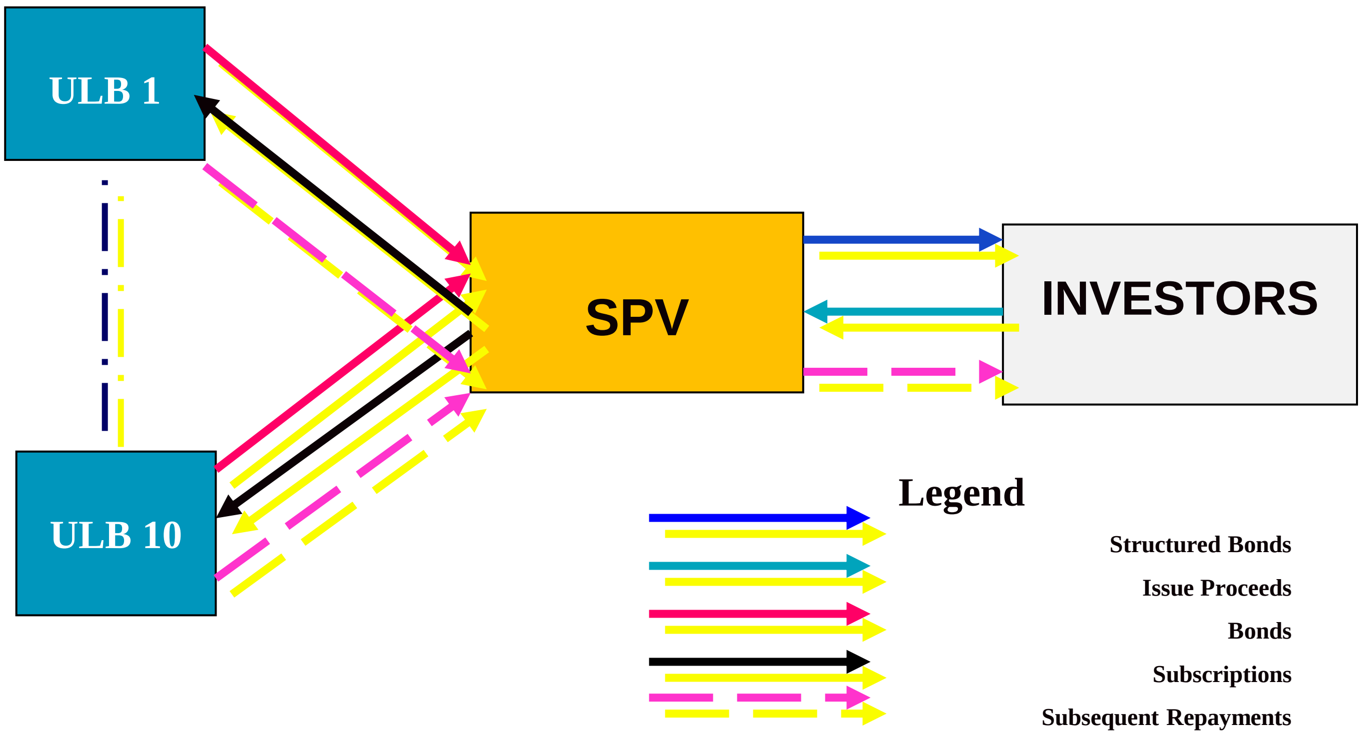
- **Performance incentives** based on employee performance evaluation
- **Females as percentage of total staff** in various services

Source: Shimla Water Supply and Sewerage Service Delivery Reform Programmatic Development Policy Loan 1, World Bank

Picture Source: https://thebluediamondgallery.com/financial05/p/pooled-investments.html

Pooled Finance

Pooled financing structure



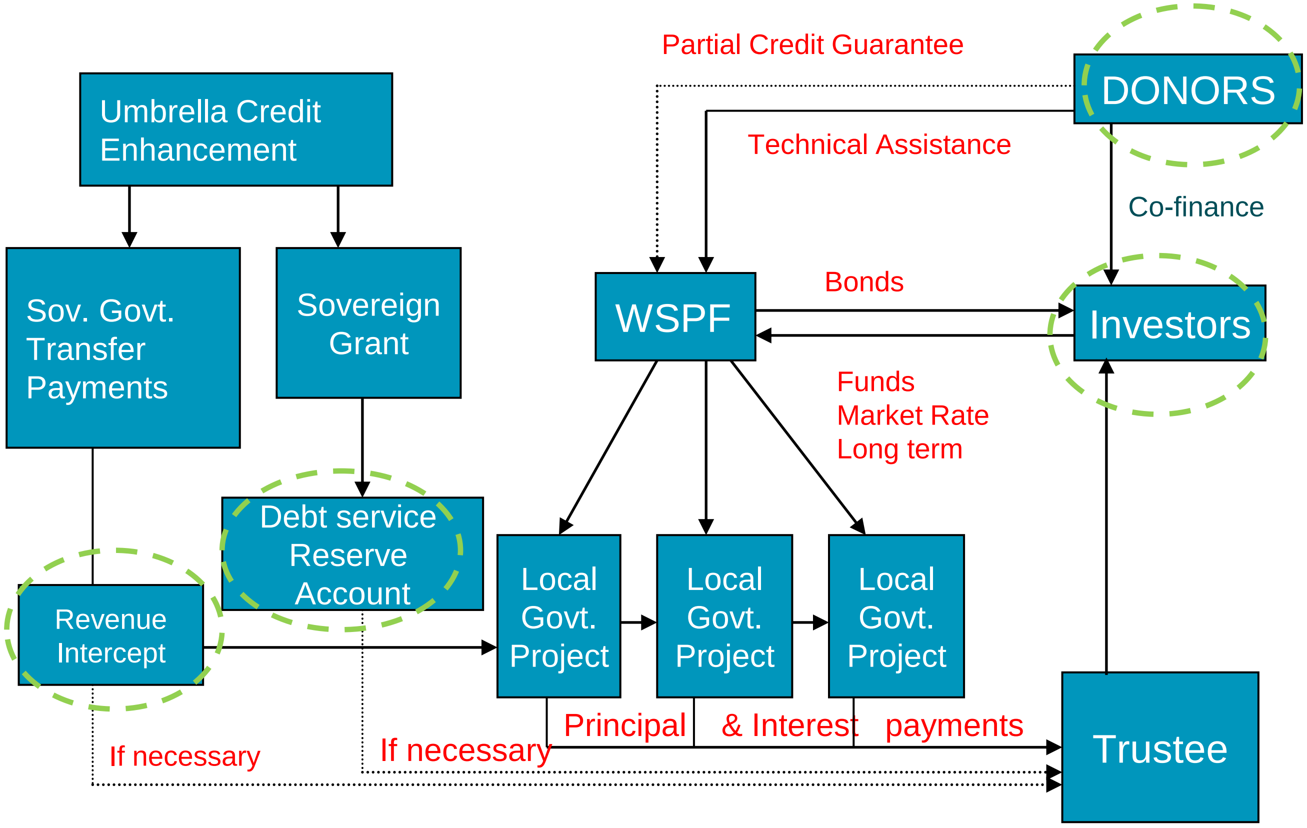
Source: Based on Kudwa Roopa (2004), "Financing Municipalities and relevance of Credit Rating - the Indian experience", CRISIL, Presentation made at *International Conference on Financing Municipalities and Sub-National Governments, Washington*

Main advantages of Pooled Financing

- Diversification of risk
- Structuring possible to enhance credit quality
- Optimum use of credit enhancement
- Credit enhancement by multilaterals or Government
- It becomes possible for small ULBs to access credit markets

Based on Kudwa Roopa (2004), "Financing Municipalities and relevance of Credit Rating - the Indian experience", CRISIL, Presentation made at *International Conference on Financing Municipalities and Sub-National Governments, Washington*

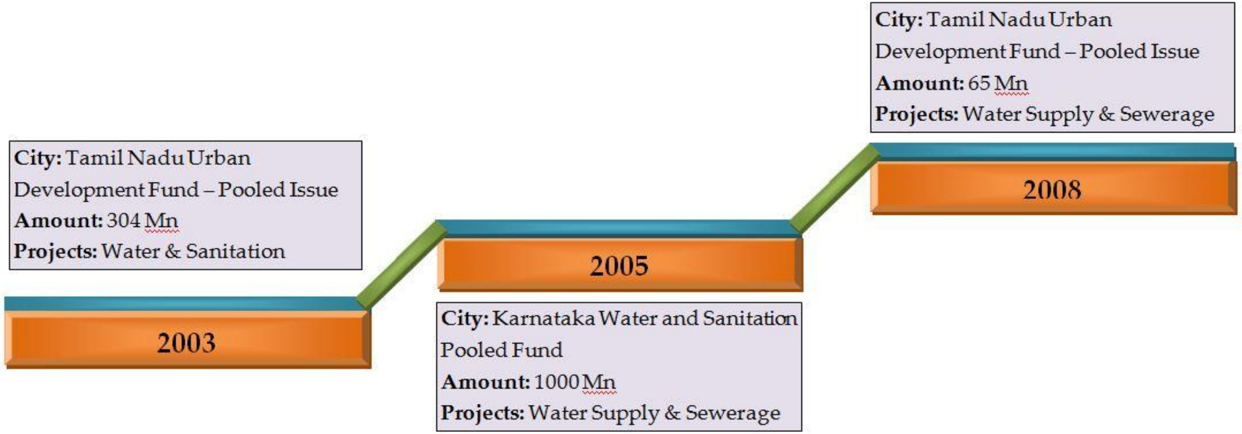
Pooled financing structure - 2



Source: Based on OECD (2003), "State revolving funds: The Indian context", Paris, presentation.

Pooled financing – adapting US experience

- In the United States and elsewhere it is a common practice that small local bodies pool their resources and jointly access the capital market.
- The FIRE-D project developed a similar model for India's ULBs that enables capital investments to be pooled under one borrowing umbrella, based on this model, the governments of Tamil Nadu and Karnataka issued municipal bonds by pooling municipalities.



Source: Sujatha Srikumar (n.d.), "Municipal bonds: International experience", presentation

Achievements – Water and Sanitation Pooled Fund -1

LIST OF POOLED PROJECTS				
			Rs. In Million	
S.No.	Particulars	Project Cost	Loan amt sanctioned	Loan disbursed
	Water Supply Schemes:			
1	Ambattur Municipality	33.656	6.732	6.732
2	Tambaram Municipality	18.200	10.920	10.920
3	Madhavaram Municipality	32.500	10.575	10.575
4	Rajapalayam Municipality	8.500	5.100	5.100
	Adjacent Urban Areas - AUA			
5	(I) Alandur Municipality	42.700	40.300	40.300
6	(ii) Pammal Municipality	37.800	35.700	35.700
7	(iii) Ankapathur Town Panchayat	18.800	17.800	17.800
8	(iv) Ullagaram Town Panchayat	29.800	28.100	28.100
9	(v) Porur Town Panchayat	57.900	54.700	54.700
10	(vi) Maduravoyal Town Panchayat	14.600	13.800	13.800
11	(vii) Valsaravakkam Town Panchayat	18.900	17.900	17.900
12	(viii) Meenambakkam Town Panchayat	1.700	1.600	1.600
	Under Ground Drainage:			
13	Madurai Corporation	140.700	50.000	32.500
		455.756	**302.152**	**275.727**

Refinancing of project funding – Rs. 30 crore through cheaper and longer term funds from the market

9.2% rate of interest and 15 year tenor

Sl. No.	Subscribers	No. of Bonds allotted
1.	Karnataka Bank Ltd.	2000
2.	ICICI Bank Ltd.	1000
3.	Gujarat Industries Power Co., Ltd, Provident Fund Trust	11
4.	Metlife India Employees Provident Fund Trust	5
5.	City Union Bank Ltd.,	25

Source: Based on OECD (2003), “State revolving funds: The Indian context”, Paris, presentation.

Achievements – Water and Sanitation Pooled Fund - 2

WSPF bonds have created quite an active

secondary market. The bonds have been sold by the original holders to the following entities at a premium!

1. The Karnataka Bank Ltd
2. The Tata Engineering And Locomotive Company Ltd Superannuation Fund
3. The Tata Engineering And Locomotive Company Ltd Provident Fund
4. Credit Capital Investment Trust Company Ltd Trustees Taurus Mutual Fund A/C Libra Bond Fund
5. The Tata Engineering And Locomotive Co. Ltd Employees Pension Fund
6. The Baghat Urban Co Operative Bank Limited
7. The Indian Hotels Co. Ltd Employees Provident Fund
8. Trust Capital Services (India) Pvt. Ltd.
9. Digital Globalsoft Limited Provident Fund Trust
10. Staff Provident Fund of Nicholas Piramal India Ltd
11. City Union Bank Limited - Mount Branch
12. Gujarat Industries Power Co. Ltd. Provident Fund Trust
13. Metlife India Employees Provident Fund Trust
14. Advanta India Management Staff Provident Fund

Source: Based on OECD (2003), "State revolving funds: The Indian context", Paris, presentation.

Pooled financing development fund (PFDF) scheme by MOUD

- The success of pooled finance model in the States of Tamil Nadu and Karnataka subsequently led Government of India to create a central fund called the Pooled Finance Development Fund (PFDF) – with Rs 2500 crore allocated under 12th Plan.

- This fund enables capital investments to be pooled under one state borrowing umbrella with its objective to provide:

✓ Cost effective and efficient approach for smaller and medium sized ULBs; and

✓ to reduce the cost of borrowing.

- MoUD formulated PFDF guidelines help small and medium-sized ULBs to access market funds for their infrastructure projects.

- The guidelines also encourage municipalities undertake fiscal, financial and institutional reforms required to create efficient and equitable urban centres.

- However, this was not taken up by any state or agency.

Key questions?

- Why municipal borrowing?
- Forms of borrowing, how can ULBs / utilities mobilize debt? Why focus on credit markets?
- What will be needed in India to maximize the potential of municipal debt in a sustainable manner?

Steps in building a credit market for local debt

- Building creditworthiness of local governments/ borrowers ✓
- Developing precedents for commercial borrowing (Municipal Development Funds) ✓
- Establishing fiscal and regulatory building blocks (SEBI) ✓
- Ensure services for credit rating, information on credit quality ✓
- Promote pooled financing mechanisms ✓
- Almost all boxes ticked to some extent – but still municipal debt has not really picked up in India !!!

Source: Based on Mehta Meera (2004), “Meeting the financing challenge for water supply and sanitation” World Bank

What are the other constraints?

- Demand side and capacity of ULBs…
  - to develop largescale – multi-year programs with associated funding plans, and implementation capacities, and to develop multi-year borrowing programs
  - Absence of treasury skills among ULBs
  - Lack of credit history for ULBs except in Tamil Nadu

- Supply side constraints..
  - Lack of availability of long term debt at reasonable price

Future of municipal borrowing in India

Positives

- There is an enabling environment for municipal and green bonds in India which is supported through national initiatives like AMRUT programme
- New SEBI regulation has been issued
- Possibility of greater leveraging by ULBs required by new programmes
- Good experience of building a debt culture for ULBs by TNUDF/ AMC
- Emerging municipal bonds experience pre-2005 crowding out and after recent interest subsidy
- New opportunities emerging with Green Bonds

However, main constraints relate to

- Design of government programs with free and easy grants that crowd out local fund mobilization
- Lack of treasury capacity and reporting readiness of local governments

Municipal debt

SEBI Regulation

GO Bonds/ Revenue bonds

Municipal bonds

credit rating

Shadow rating

Pooled finance

Debt Service Coverage Ratio

Crowding out

Municipal development funds

Public Banks

Annex : List of municipal bonds in India: 1997 to 2004

City	Year	Project	Amount (in USD)	Interest rate	Tenore Period (Years)	Type of Bond
Bangalore	1997	Street Drains and City Roads	3.9	13%		Taxable Bond
Ahmedabad	1998	Sanitation and Water Supply	2.3	14%		Taxable Bond
Ludhiana	1999	Sanitation and Water Supply	0.2	13.5-14%		Taxable Bond
Nashik	1999	Sanitation and Water Supply	2.3	14.75%		Taxable Bond
Nagpur	2001	Water Supply	1.1	13%		Taxable Bond
Ahmedabad	2002	Sewerage and Water Supply	2.1	9%	10	Tax-free Bonds
Nashik	2002	Underground sewerage and storm water drainage	1.0			Tax-free Bonds
Tamilnadu- TNUDF / TNUIFSL- WSPF(Water and sanitation pooled bonds)	2002	Water and sanitation projects for 13 ULBS	0.6	9.20%	15	Pooled Bond-Taxable Bond
Hyderabad	2003	Drinking water	1.0			Tax-free Bonds
Chennai	2003	Augmentation of Water Supply	0.9			Tax-free Bonds
Visakhapatnam	2004	Water Supply	0.4	7.75%		Taxable Bond
Ahmedabad	2004	Water supply, storm water drainage, roads, bridges and flyovers	1.3			Tax-free Bonds
Visakhapatnam	2004	Water Supply	1.1			Tax-free Bonds

Note: Amount in USD is calculated based on the conversion value of INR to USD in that year.

Source: SEBI (2023), Retrieved from SEBI database, available on https://www.sebi.gov.in/

Annex : List of municipal bonds in India: 2005 to 2013

City	Year	Project	Amount (in USD)	Interest rate	Tenure Period (Years)	Type of Bond
Karnataka- Water supply and sanitation pooled bond-KWSPF-KUIDFC	2005	Water supply component of a greenfield project for 8 ULBs, Greater Bangalore Water Supply and Sanitation project (GBWASP)	2.3	5.95%	10	Pooled Bond:
Chennai	2005	Water Supply- Chennai Metropolitan Water Supply & Sewerage Board	0.0			Tax-free Bonds
Ahmedabad	2005	Water Supply and Road Construction	1.2			Tax-free Bonds
Nagpur	2007	Sewerage and Water Supply	2.3			Tax-free Bonds
Tamilnadu- TNUDF / TNUIFSL-WSPF(Water and sanitation pooled bonds)	2008	Water and sanitation projects for 13 ULBS	0.5	7.25	10	Tax-free bond
Vishakhapatnam	2010	water supply project	0.1			Tax-free Bonds
Tamilnadu- TNUDF / TNUIFSL-WSPF(Water and sanitation pooled bonds)	2010	Water and sanitation projects for 7 ULBS	0.6	7.5	10	Tax-free bond
Tamilnadu- TNUDF / TNUIFSL-WSPF(Water and sanitation pooled bonds)	2012	Water and sanitation projects for 10 ULBS	1.8	10.6	10	Tax-free bond
Tamilnadu- TNUDF / TNUIFSL-WSPF(Water and sanitation pooled bonds)	2013	Water and sanitation projects for 10 ULBS	0.9	8.71	10	Tax-free bond

Source: SEBI (2023), Retrieved from SEBI database, available on https://www.sebi.gov.in/

Annex : List of municipal bonds in India: 2018 to 2023

Name of city	Year	Project	Amount (in USD)	Coupon rate	Tenure (in years)	Type of Bond
Indore	2018	Water supply and sewerage	2.0	9.25%	7	Secured, Non-convertible, Redeemable bonds (First Municipal Bond to be listed on Debt Market platform of NSE)
Bhopal	2018	Implement AMRUT projects	2.5	9.55%	10	Secured, Non-Convertible Debentures
Ahmedabad	2019	Urban Infrastructure development proposed under AMRUT mission	2.8	8.70%	5	Taxable Municipal bonds (Raised through NSE Bond platform)
Vishakhapattanam	2019	Development of sewerage system	1.1	10%	9	Secured Taxable Non-Convertible Redeemable Debentures (Raised through BSE Bond platform)
Surat	2019	Enhancement of sewerage treatment projects	2.8	8.68%	5	Unsecured Taxable Non-Convertible Redeemable Bonds (Raised through BSE Bond platform)
Lucknow	2020	Water supply project being implemented under AMRUT scheme of the Government of India and a housing project	2.6	8.50%	10	Raised through BSE Bond platform
Ghaziabad	2021	For setting up tertiary water treatment plants and supplying piped water via water meters in Ghaziabad.	2.0	8.10%	10	Green Bond through BSE platform
Vadodara	2022	To implement 14 projects under the AMRUT scheme(water and sanitation projects)	1.2	Coupon rate was 7.15%. Effective coupon rate to be around 4.55% as the central government provided an incentive of Rs 13 crore to subsidize the interest burden on the civic body due to the bonds.	5	Municipal bond through BSE platform
Indore	2023	Solar plant	3.0	8.25%	3,5,7,9	Green bond raised through NSE

Source: SEBI (2023), Retrieved from SEBI database, available on https://www.sebi.gov.in/

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Thank you

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About us

The Center for Water and Sanitation at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.

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