

Financing for climate resilient WASH services

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CWAS CENTER
FOR WATER
AND SANITATION
CRDF CEPT
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Gates Foundation

viega foundation

Impact of climate change on WASH



Floods impact drinking water access



Women walking to collect water



Droughts impacting water access



Increase in pollutants load

- ✓ Acute **shortage of clean drinking water** during disasters
- ✓ Open drains > Impact on **quality of water supplied**
- ✓ Increase in **water borne diseases**- Diarrhea and cholera
- ✓ Impact **sanitation and hygiene practices**

The impacts of climate change on the water supply and sanitation infrastructure are long-lasting and irreversible.

It may not be enough to provide WASH infrastructure!

They need to be climate resilient to ensure reliable service provision during climatic shocks



Building climate resilient WASH systems



Ensure functional sustainability of service delivery



Supported by financing and monitoring systems

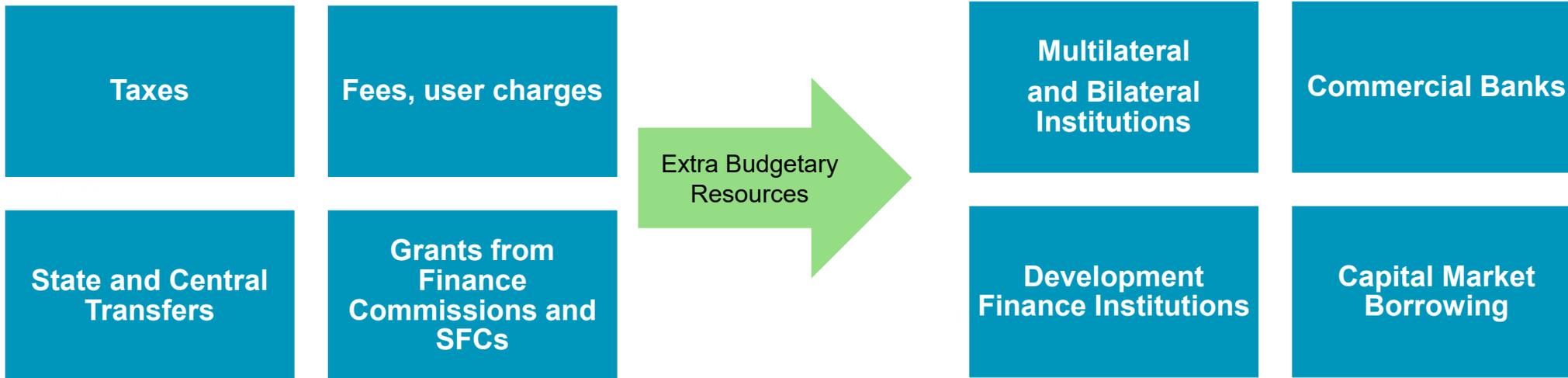
Achieving growth targets in cities will require additional financing

By 2036, India will need to invest **\$840 billion in infrastructure** - an average of **\$55 billion** or **1.2 percent of GDP per annum**.

Urban infrastructure has been generally financed through public funds however, there are hard budget constraints

Not enough to meet financing gaps

Own sources and transfers



Source: Sohaib Athar, Roland White and Harsh Goyal. 2022. "Financing India's urban infrastructure needs: Constraints to commercial financing and prospects for policy action." Washington, D.C.: World Bank.

Financing mechanisms for climate resilient WASH

Public sector Financing

- National budget allocations through Ministry of Water Supply
- Local government WASH funds
- National development banks
- National climate funds

International climate funds

- Climate funds (Green Climate Fund, Adaptation Fund)
- Multilateral and bilateral funds (World Bank, ADB)

Innovative financing options

- Microfinance for household WASH solutions
- Green bonds/ municipal bonds
- Blended finance

Strengthening urban governance and finance

Working at all level of Government

Continued support to National, state and local governments



Participation in Pre-Budget Consultation with Hon'ble Finance Minister of India



Inputs to 16th Finance Commission deliberations



MoU with Dept of Environment and Climate Change, Govt of Maharashtra



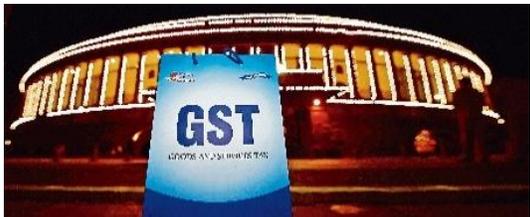
Contribution to MoHUA working group on administrative reforms



Policy Inputs through NFSSM Alliance: Liquid waste management rules, state sanitation policies



MoU with Dept of Urban Development, Govt of Maharashtra



Share of the Third Tier – Urban Local Governments in the GST



MoUs/ collaboration with six state gov., three district authorities supporting 800+ city governments and 60+ villages



Operationalisation of Intergovernmental Transfers under 15th FC through City Finance Portal

New explorations



CWAS Creditworthiness Assessment Framework for Indian cities, discussed in a national roundtable chaired by MoHUA's Additional Secretary



Inputs to India's climate taxonomy



Initial research on Green bonds and blended finance for climate

City budget portal to enable uniformity and digitization of municipal budgeting in Maharashtra

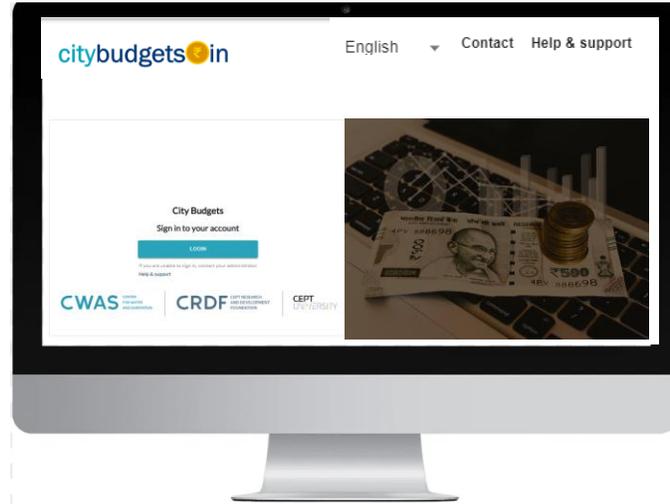
Re-casted budgets and Uniform Accounting Codes

Follows National Accounting Manual and Maharashtra Accounting Code

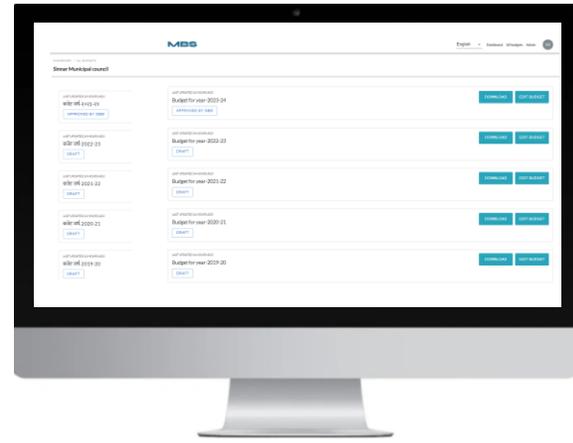
Digitized budgets and reduced human error

Multi-City Module with a State Admin

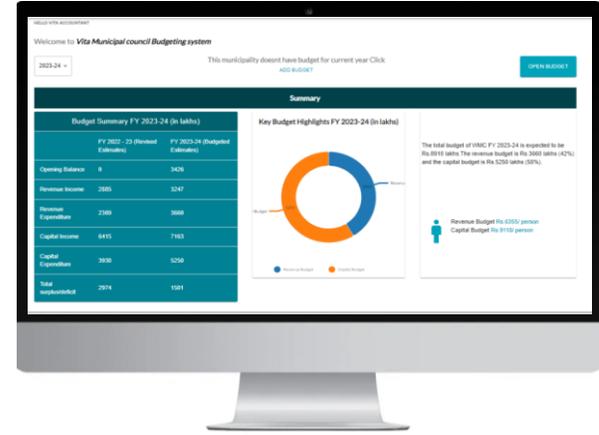
Single Window Entry System Inbuilt with 400+ Line Items



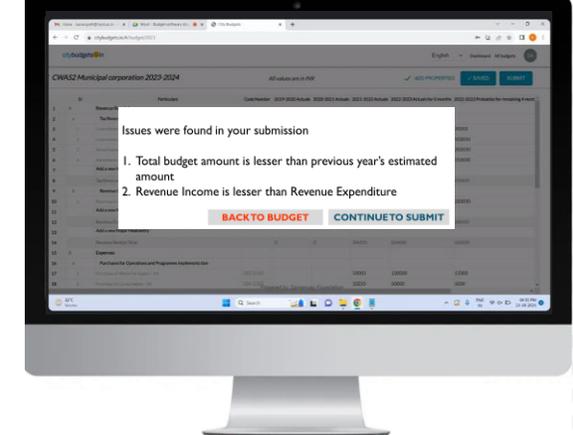
Enables to download budgets in Marathi



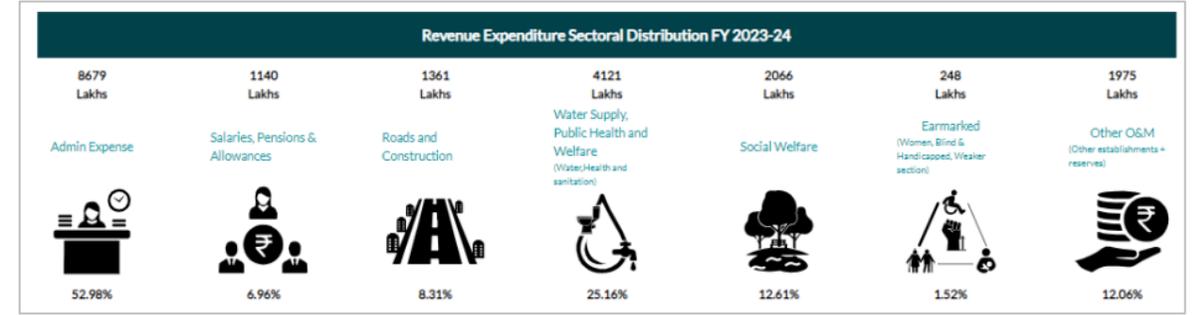
Prepares Budget Brief and Budget Summary



In-built validation checks



Income-Expenditure Sectoral Analysis

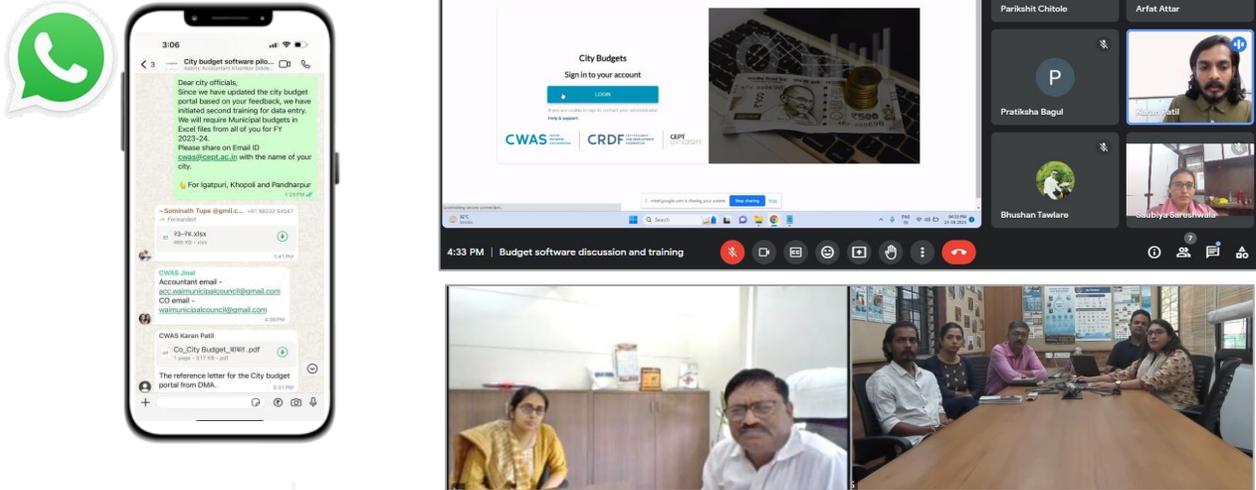


Currently operated in 10 cities of Maharashtra

- CWAS along with the Directorate of Municipal Administration (DMA), Maharashtra conducted a training workshop.
- More than 30 ULB officials : Accountants, Computer operator and Chief officer as pilot testing in nine municipal councils of Maharashtra.

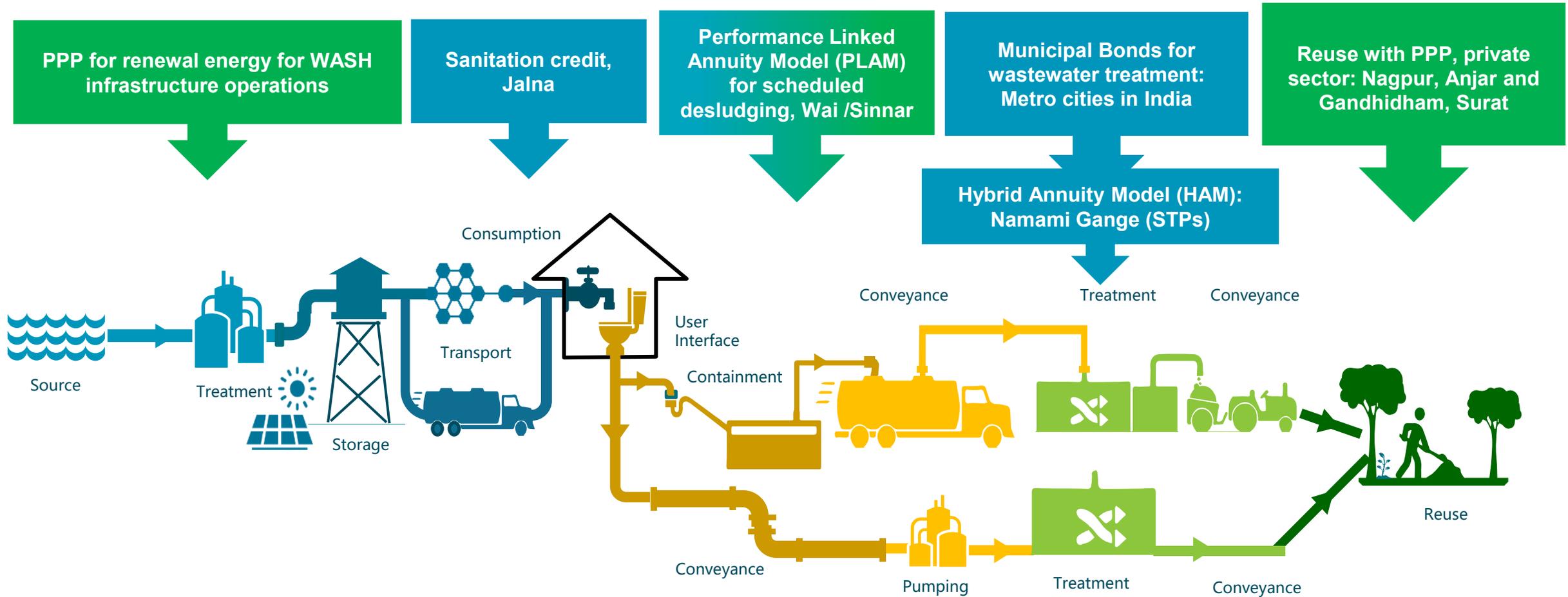
Technical support through regular query solving

- Online technical support through Google Meet and zoom trainings for query resolving for pilot cities
- Creation of WhatsApp group for communication and support.



To be scaled across 30+ cities

Blended Finance for climate resilient WASH across the service chain



<https://cwas.org.in/cwas-resources/blended-finance-for-climate-resilience-in-wash-in-india>

Mitigation measures

Adaptation measures

Green Bonds for climate finance

What are Green bonds?



Raised capital for environmental and climate focused green projects



Fixed income debt instrument



SEBI guidelines for issuing Green Bonds

Sectors eligible for Green bonds



Renewable energy



Sustainable water and waste management



Pollution prevention



Clean transportation



Climate change projects

India's green bond market



The Government of India raised **USD 1 billion** the Sovereign Green Bonds January 2023



India's first green bond was raised in 2015 by Yes bank Ltd.



Ghaziabad raised first municipal green bond for water and sanitation treatment infrastructure



Indore raised a green bond to build largest solar plant - for pumping and supplying water from Narmada



INR 10 crore incentives by GoI on raising green bonds worth **INR 100 crore**

Sources: Author's literature review on green bonds ; India sets sights on record green bond issuance entering 2022 access at <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/india-sets-sights-on-record-green-bond-issuance-entering-2022-67940627>

Green bonds may offer potential for cities to finance sustainable projects, but several key challenges persist. These include lack of awareness, limited creditworthiness, and difficulties developing bankable green initiatives, necessitating capacity building, credit enhancement mechanisms, and technical assistance.

Green bonds for WASH investments in India

Enabling environment and incentives by GOI and Regulatory framework by SEBI for issuance of green bonds

Vadodara Municipal Corporation

Municipal Bond of INR 100 crore (FY 2023)

- Deployment of funds for **Sindhrot water supply project** to cater drinking water needs of the city and liquid waste management project.
- Bid subscribed for **36 times**
- Bond has **AA rating**.
- VMC's '**successful listing**' of municipal bond now case study for US Treasury.



Green Bond of INR 100 crore (FY 2024)

- Enhancing **liquid wastewater management** infrastructure across Vadodara for developing 2 STPS of 121 MLD and 1 APS with drainage network.
- Bid subscribed for **44 times**
- Bond has **AA+ Stable rating**.
- Recorded as the **first certified green municipal bond** for sustainable WASH infrastructure.



Indore Municipal Corporation

Green Bond of INR 100 crore (FY 2024)

- Set up a **60-megawatt solar power plant** that would generate electricity to bring water from Narmada river which is some 80 km from Indore
- Bid subscribed for **5.9 times**
- Bond has **AA+ Stable rating**.
- **Selling of carbon credits** worth INR 52 lakhs which is encashed for O&M of WASH solar project



Sources: The Indian Express (2022). VMC's 'successful listing' of municipal bond now case study for US Treasury. Retrieved from <https://indianexpress.com/article/cities/baroda/us-treasury-department-book-vadodara-municipal-bond-listing-bse-8247788/>; The Climate Bonds Initiative (2024). Retrieved from <https://www.climatebonds.net/resources/press-releases/2024/02/vadodara-municipal-corporation-initiates-india-and-asias-first>, 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

Research work on financing WASH and climate

Moving Towards Climate Justice – What is needed ?



Historical Responsibility

Developed nations caused >90% of early emissions yet developing countries face 70% of climate vulnerability and pressure to achieve net zero.



Climate Finance Gap

<USD 1 billion pledged while developed countries spent 5X of commitments on fossil fuel subsidies. Current geopolitics are further forcing back-outs.



Debt Finance Trap

Most climate finance remains debt-based rather than grants. Least developed countries pay 2X in debt of what they receive in climate finance.



Non-Negotiable Reform

Commitments must be enforceable not voluntary. Independent verification of finance must be mandated to prevent double-counting.

[Read the paper here](#)



Green Bonds for Financing Climate Resilient WASH Development



WASH as a Priority Gap

India's NDCs highlight WASH as a key adaptation area, yet climate finance favours energy transition. India's Draft Climate Finance Taxonomy omits the waste sector.



Structural Challenges

Over-subscription of recent issuance indicate investor appetite, yet issuance costs outweigh 'greenium'. Disclosure and verification requirements are complex.



Capacity Barriers

City governments lack technical capacity and depend on external consultants for pipeline readiness, thereby raising issuance costs.



Policy Reforms

Demand is limited by low investor awareness. Need tax incentives, regulatory clarity, transparent reporting, improved credit ratings and portfolio mandates.

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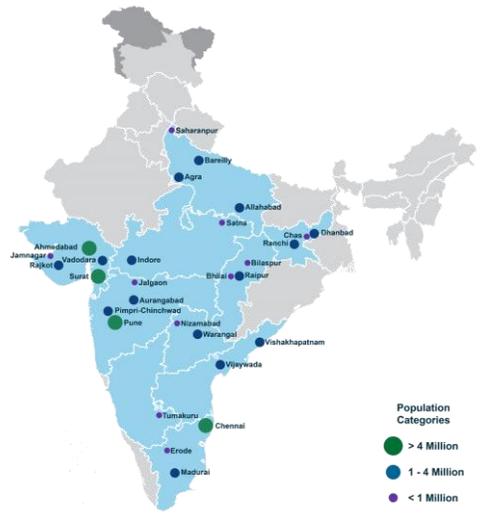
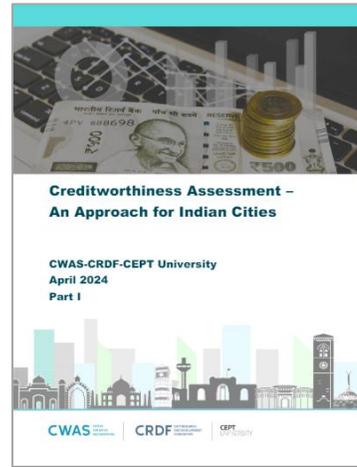
Creditworthiness assessment for cities



Cities can use a **creditworthiness self-assessment tool** as a precursor to formal credit rating

Our Framework uses both **financial performance indicators and service level indicators**

It uses **publicly available datasets**



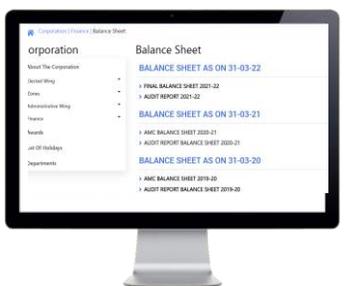
Approach and framework for 30 Indian Cities

Both larger and smaller cities have 'significantly' higher potential to borrow compared to their actual borrowings

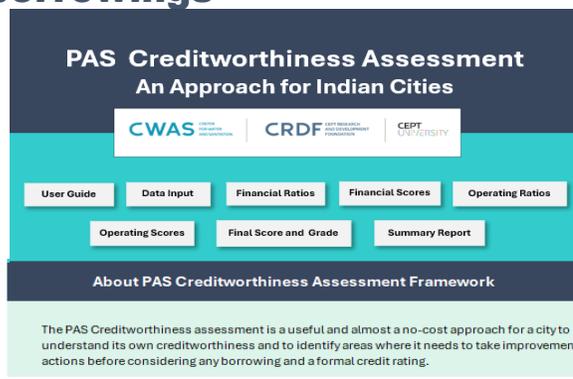
A Simple Excel Based Tool to assess creditworthiness and borrowing capacity of a city



WASH and administrative Data – Performance Assessment System
www.pas.org



City Balance sheets, Audited account statements and City Budgets

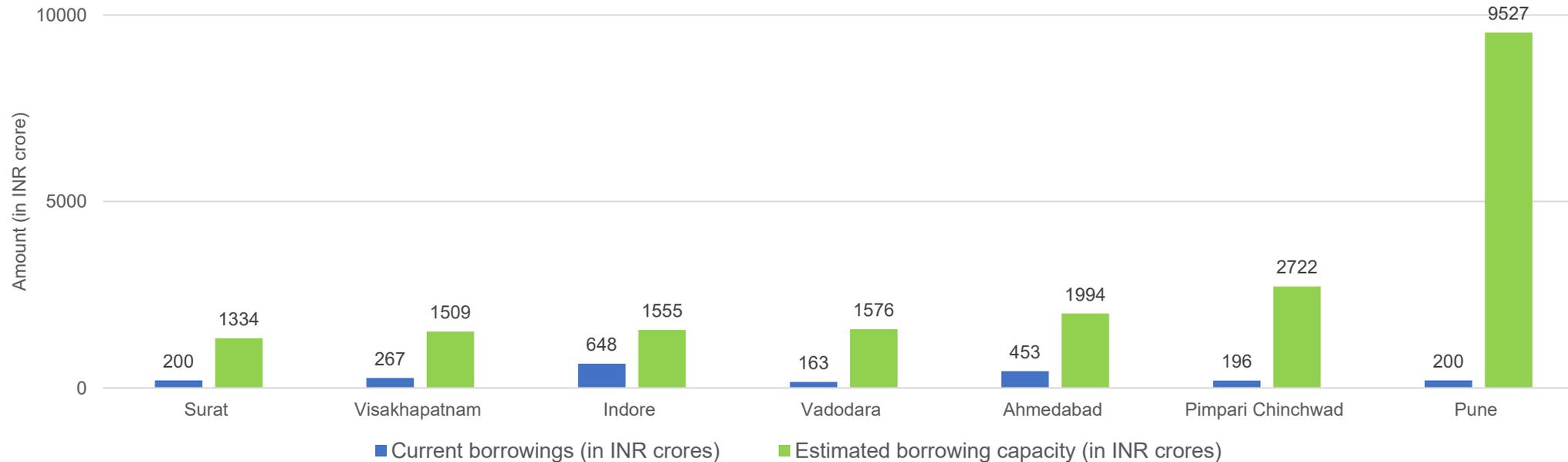


Source: CWAS (2024). Creditworthiness Assessment for Indian cities

Larger cities have ‘significantly’ higher potential to borrow compared to their actual borrowings

- Larger cities with higher revenue size like Surat, Vishakhapatnam, Indore, Vadodara, Ahmedabad, PCMC and Pune have issued municipal bonds worth **INR 100-200 crore for infrastructure projects**. These cities have a much higher ability to borrow from the market ranging from **INR 1000-9500 crore** and other sources than what they have borrowed.

Current borrowings vs Estimated borrowing capacity (in INR crore)

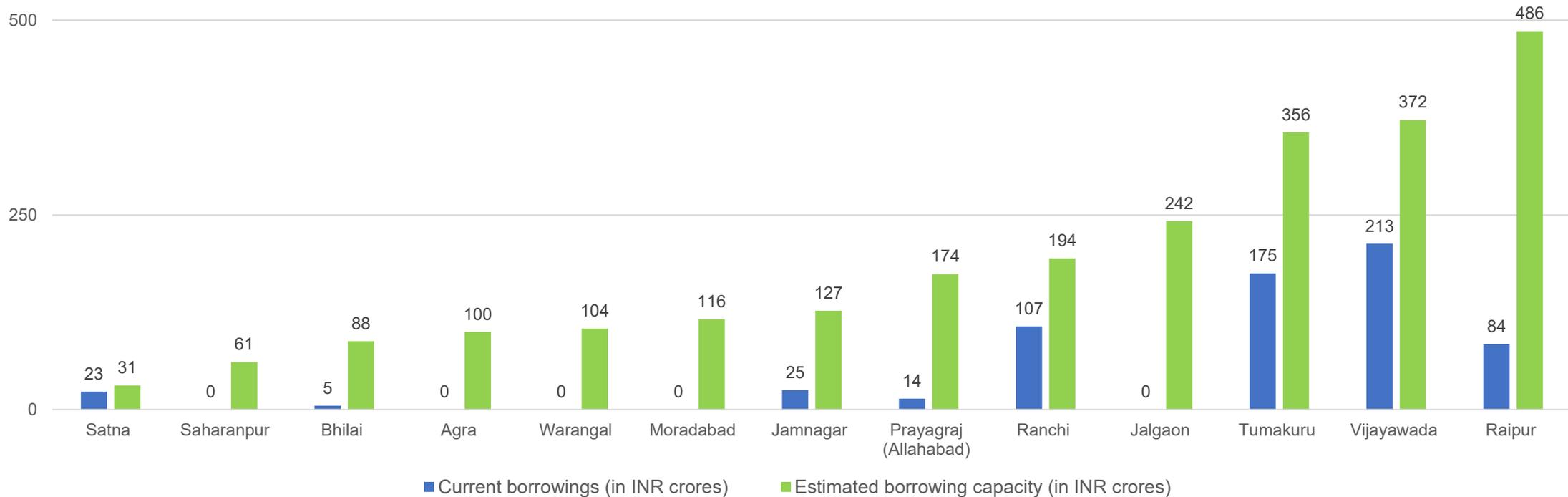


Note: The thumb rule for assessing the borrowing capacity of the municipal corporation is ideally considered as 2.5 times the operating surplus prior to depreciation and interest. If one assumes that a typical borrowing would be for a tenure of 10 years and for simplicity assume an interest of 10%, this covenant translates into borrowing limit of 2.5 times annual operating surplus.

Source: Audited balance sheets of Surat, Vishakhapatnam, Indore, Vadodara, Ahmedabad, PCMC, Pune FY 2018-22

Many smaller cities also have reasonable potential to borrow, yet they haven't borrowed

Current borrowings vs Estimated borrowing capacity (in INR crore)



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Source: Audited balance sheets of Satna, Saharanpur, Bhilai, Agra, Warangal, Moradabad, Jamnagar, Prayagraj, Ranchi, Jalgaon, Tumakuru, Vijayawada, Raipur FY 2018-22

ESG assessments for cities



ESG Assessments, disclosures and investing

Measuring sustainability and societal impact to better determine future performance

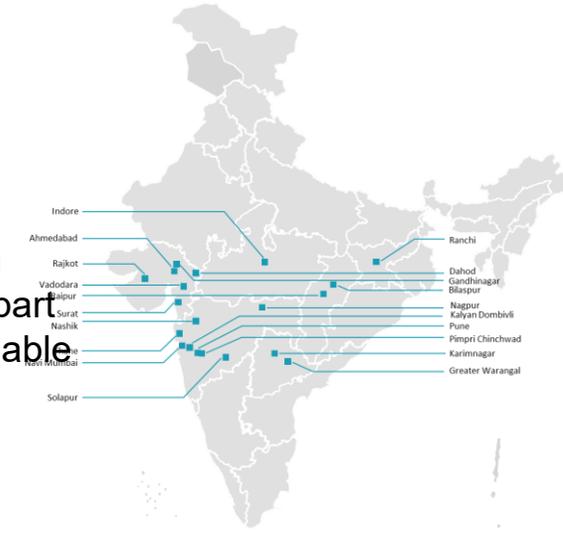
Popular amongst corporates but city governments are also adopting

Access new markets for development funds
Build credibility for investors

ESG for Indian cities



Indian cities already reporting on multiple ESG relevant topics as part of govt. initiatives – publicly available data



Framework by CWAS and PwC India

19 themes, 62 indicators - City mandates, service performance, Laws and policy, National commitments/ programs

Tested on **20 cities** - ESG ratings, profiles



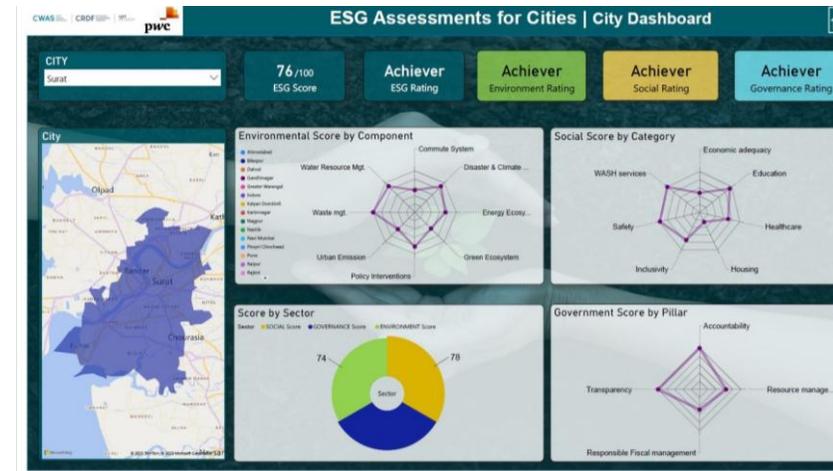
US Municipal Bond marketplace - ISS ESG Muni QualityScore (formerly ACR Data) maintains ratings and data for all cities



Toronto's Debt Issuance Program linked to strategic ESG outcomes and reporting



Vancouver, Montreal adopting TCFD recommendations in financial reporting



Leader
Achiever
Performer
Aspirant
Initiator

Key Findings

- Accessing **international funding portfolios** is long term and remains a **challenging process**. Eg: GCF requires accredited institutions to prepare project proposals to access funding.
- International funding is a **combination of grants, concessional funding, co-financing, loans** etc. Climate finance in this form not directly accessible by local governments.
- Make **existing financing by the public sector**, national programs, and multilateral development banks more **climate-responsive**.
- **Mainstreaming Climate Resilience in India's Flagship Water and Sanitation Programmes**
- **Carbon credit markets need to be expanded**. Regulatory market, frameworks and standardized guidelines, methodologies need to be created. Bundling of projects to avail carbon credits.

Summary

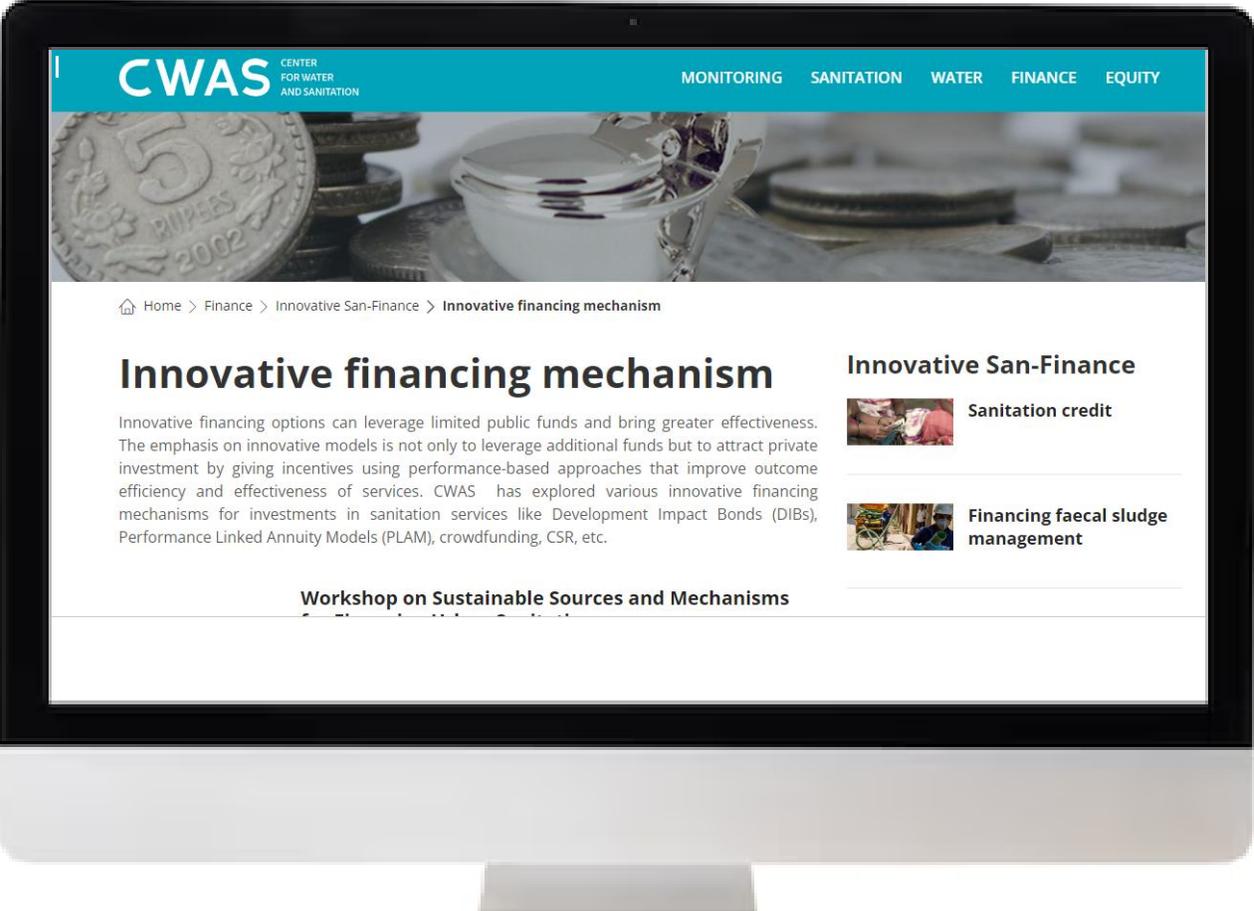
Important to recognize and tap the **new sources of funds** such as from social investors and from the domestic lenders and capital markets.

Training and capacity building of local and state government officials to access climate funding through workshops, round-table meetings etc.

Ensure that **climate finance is distributed equitably, with a focus on reaching the most vulnerable, exposed and underserved communities.**

Need to make cities **creditworthy and ESG ready**

Visit us at www.cwas.org.in to know more on Innovative financing...



<https://cwas.org.in/theme/finance/innovative-san-finance/innovative-financing-mechanism>

Thank You

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