



This is the urban century

**Making cities inclusive,
climate resilient and
sustainable**

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**Keynote address at the International Conference on
'Future is Urban', at Nirma University**

Dec 2021

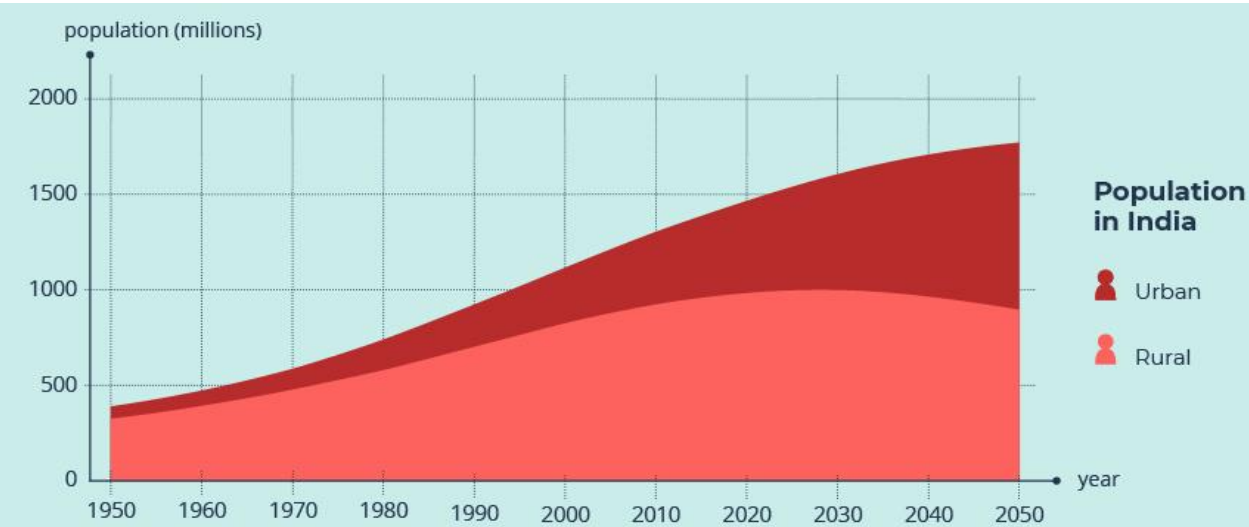
CWAS CENTER
FOR WATER
AND SANITATION

CRDF CEPT RESEARCH
AND DEVELOPMENT
FOUNDATION

**CEPT
UNIVERSITY**

India is becoming more and more urban

More people will live in cities by 2050 than in rural areas



Source: UN DESA, Urban and Rural Population India (2018)
World Urbanization Prospects: The 2018 Revision, custom data acquired via website



New role for urban planners?

Conventionally, planners in India have made **urban development plans**, and helped in the implementation of **large programs such as JNUURM, AMRUT and SBM**

Move from
Infrastructure...

to services, climate response and resilience...



Infrastructure
provision



Ensuring
services
and equity



Financing
and Climate
response



Digital
monitoring

Conventional urban development discourse has focused on urban development plans, large government led programs on infrastructure, housing, public spaces and slum development...

I plan to focus on a few other emerging critical areas...



**Achieving
SDGs**



**Climate
resilience**



**Gender
transformation
and inclusion**



**New forms of
financing**



**Use of digital
technologies**

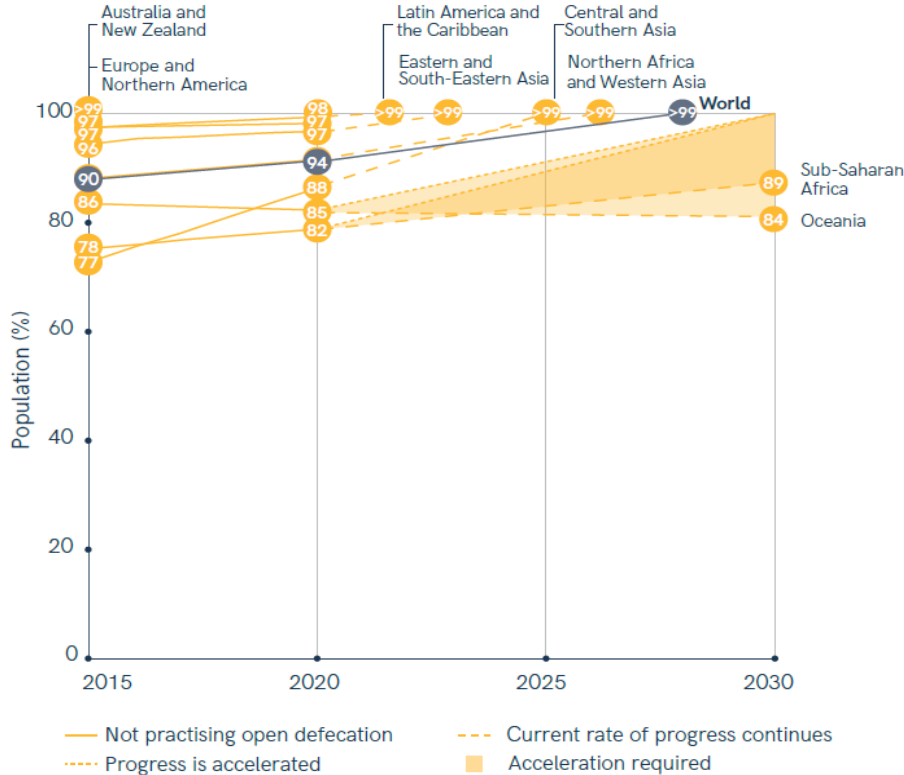
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SDGs Sustainable Development Goals in India

**Only 9 years are
now left to
achieve SDGs!**

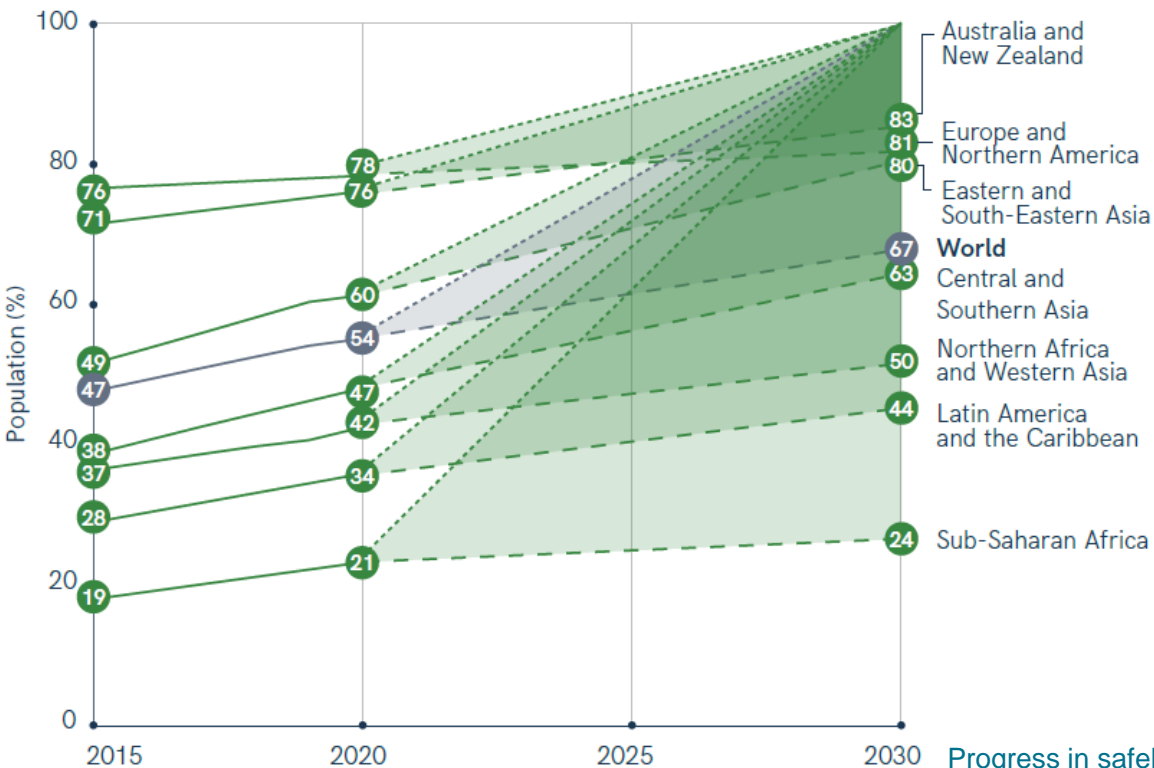
SDG 6.2 - Progress on eliminating open defecation



Significant progress in eliminating open defecation suggests that overall, the world is now on track to eliminate open defecation by 2030

India through its Swachh Bharat Mission has contributed to this agenda

Progress in safely managed sanitation – world



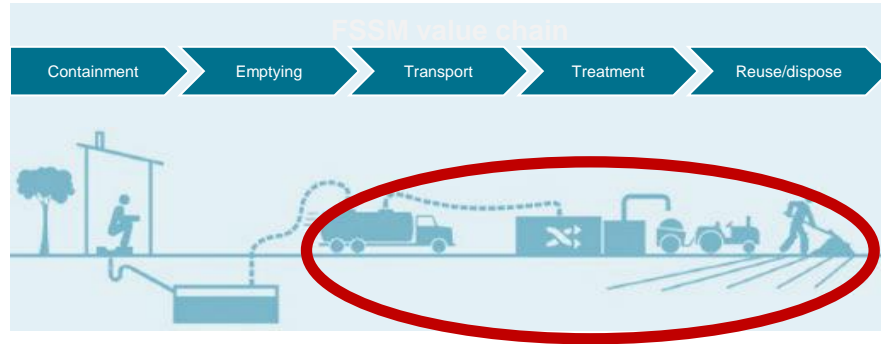
No region in the world is on track to achieve universal access to safely managed sanitation services by 2030

Progress in safely managed sanitation services, 2015 – 2020 and acceleration required to reach universal coverage by 2030

— Safely managed sanitation
 - - - Current rate of progress continues
 ····· Progress is accelerated
 ■ Acceleration required

Source: World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), (2021) "Progress on household drinking water, sanitation and hygiene 2000-2020: Five years into the SDGs", Geneva, p. 52 - 54

Onsite sanitation and FSSM as affordable options



Current focus of SBM

A proven approach to tackle the sanitation challenge is through onsite sanitation systems and faecal sludge and septage management

A service-chain based approach, from safe containment, conveyance, treatment, and disposal/reuse of treated faecal waste

Sanitation as a public service, but PPPs are possible and relevant



Sanitation, when provided in a safely managed manner generates **widespread public benefits**, and thus it is justifiable to treat it as a public service.

However, it can be provided by public agencies or through **Public-Private Partnerships** and funded by public resources

2

Climate resilient urban development

Drought and stress on water supply



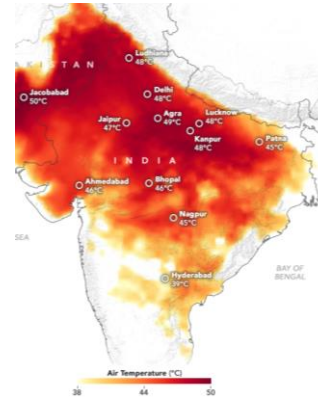
Floods and threat to life, infrastructure and economy



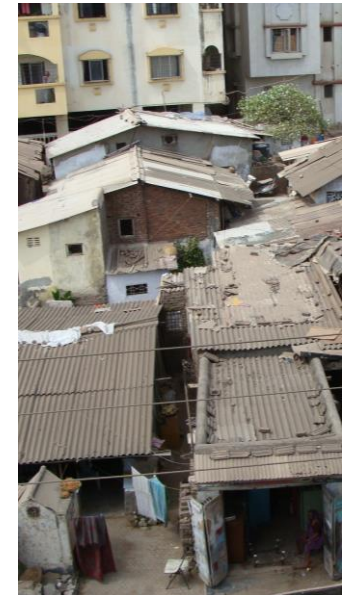
Sea level rise and threat to coastal cities



Heatwaves and carbon emissions



Inequality and resultant vulnerability



Increasingly relevant ESG assessment – city applications?



Measuring sustainability and societal impact to better determine the future performance



ESG in the corporate world – paradigm shift



Traditionally for investments and project development, corporates look at financial projections – profits and revenue flows



Paradigm shift to responsible Business, Ethical Considerations, Alignment with values



Benefits with ESG assessments for Investment stability, Lowered regulatory and legal risks, Social returns, Credibility with stakeholders, Cost reductions



Urban Local Bodies – logical ESG candidates



Primary mandate for public good: ESG topics already mandate of local governments



Building credentials for potential investors: Push from MoHUA for cities to raise their own funds. ESG assessments can help in attracting and credibility with CSR investors and philanthropists



Good ESG rating = judicious use of funds & low payment risk = Easier borrowing from banks, capital market, bi/multi lateral funds

Global interest in ESG – Making cities ESG compliant

Global organizations preferring investments with ESG outcomes

UNPRI - United Nations-supported international network of investors - We will seek appropriate disclosure on ESG issues by the entities in which we invest.

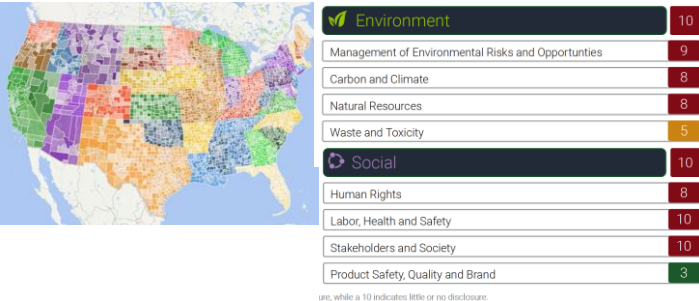
European Commission (EC) action plan for financing sustainable growth - Strengthening financial stability by incorporating ESG factors into investment decision-making

World Bank Group (WBG) collaborates with investors to provide financial markets with improved sovereign ESG data and analytics for countries

Morgan and Stanley Capital International (MSCI) – prefer investments that deal with their framework of 10 themes / 37 key issues

ESG in US Municipal marketplace - ISS ESG Muni QualityScore (ACRe Data)

Risk assessment data for Municipal Bond Issuers
 ESG Scores and Rankings for all States, Cities, Counties, & School Districts - 29,500 Cities and Towns across America
 72 data inputs



Toronto's Debt Issuance Program for strategic ESG outcomes

Since 2018, Toronto has issued \$500 million worth of Green Bonds
 Objective - align with the City's strategic priorities and enhance ESG outcomes

- Housing
 - Mobility
 - Quality of life
 - Climate change
 - Financial sustainability
 - Well run city
- As ESG report to disclose outcomes



FSTPs Powered by Solar Energy . . .

Wai, India

- Consumption of electricity: **1396 Units/month**
- Estimated generation of electricity: **3208 Units/month**
- CO2 emissions mitigated: **16.06 Metric ton/annum**

Potentially **16 carbon credits** can be generated

Sinnar, India

- Consumption of electricity: **1184 Units/month**
- Estimated generation of electricity: **1258 Units/month**
- CO2 emissions mitigated: **6.3 Metric ton/annum**

Potentially **6 carbon credits** can be generated

Solar Power generation capacity: 30 KW



Solar Power generation capacity: 7.5 KW



Sinnar FSTP and Urban Forest. . . Like Oasis in a Desert. . .



- In Sinnar, **8000 square metres of urban forest and landscaped area** is growing in the midst of an otherwise barren and rocky land. **Managed by women SHG groups**
- The forest compliments the city's Faecal Sludge treatment plant by **using treated water and dried sludge from the FSTP**.
- **More than 1400 trees were planted** and since then they have been growing at a healthy pace.
- The urban forest has already started attracting various species of birds and **is helping to sustain healthy biodiversity**.

Scaling up with active city participation – Maazi Vasundhara



Government of Maharashtra is working with all the 380 urban local governments to create awareness and increase green cover with plans to create new planning templates and curricula

Source: <https://majhivasundhara.in/en/majhi-vasundhara-notice-board>, accessed on Ddec 16, 2021

Female work force participation

25.5%
(2011)  22.8%
(2020)

Gender Wage Gap

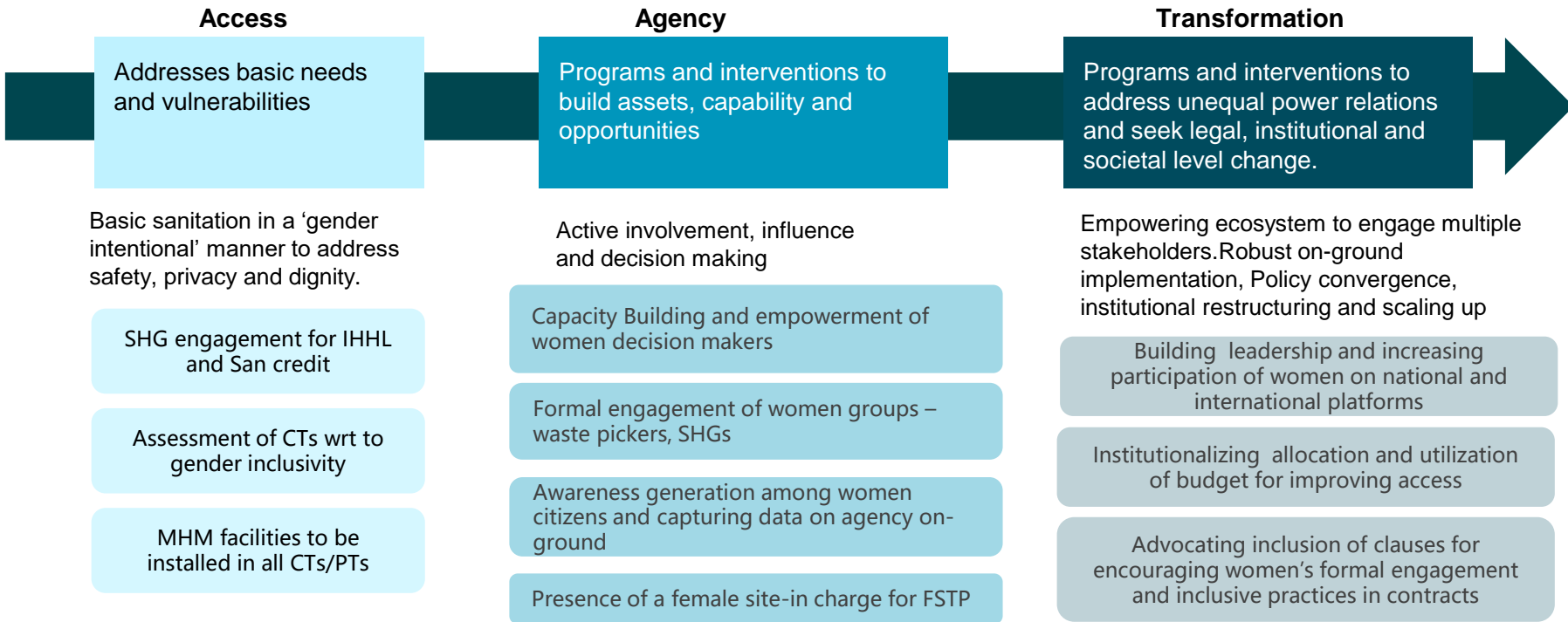


Economic Disparity Gini Coefficient

34.4 %
(2014)  35.7%
(2011)  47.9%
(2018)

While overall incomes have risen,
there are issues of equity – and of gender roles

Moving from access to agency and gender transformation for women and marginalized groups



Initiatives for inclusivity and building women's agency in Maharashtra

1 Interventions towards moving from access to agency to transformation



Provisions at state towards building agency of women

2 Engaging SHGs with ULBs for sanitation, solid waste and FSSM awareness activities



SHGs have been engaged directly or through a contractor in several ULBs. Some ULBs have undertaken initiatives that facilitate women's entrepreneurial skills.

3 Provision of Credit - enabling access by collectivizing women



Cities have undertaken initiatives to mobilize women's groups to access sanitation credit through state led agencies to increase access to individual toilets

4 Initiatives towards welfare of sanitation workers



Cities have conducted workshops for sanitation workers, developed resources for awareness and collectivised workers into cooperatives.

5 Involvement of NGOs and CBOs to support ULBs' own initiatives



NGO have partnered with cities for inclusive sanitation infrastructure. Sanitation Access: Facilitating access to IHHT. Deploying 'Bus Models'

Rise of SHGs as a force in urban India – examples from Maharashtra

Increased **access to credit** by leveraging Self Help Groups

- SHGs mobilised in Jalna district for access to credit for construction of individual household toilets
- The city of Pathri mobilised credit through cooperative because of their knowledge of local on ground situations, access and understanding of the community behavior patterns.
- Wai Urban Cooperative Bank has disbursed loans to 30 women by forming SHGs under NULM.
- Credit mobilization was implemented with the help of NULM in Sinnar.

Formal engagement of Self Help Groups with Municipal Contracts

- SHGs in Vasai Virar - maintenance of septic tanks
- Community awareness and composting + CT/PT Maintenance by SHGs in Hingoli
- SHGs contracted for Door to Door waste collection at Bhadravati
- Waste Segregation by Women SHG in Tuljapur, Panchgani
- Urban Forest and Garden O&M + maintenance of hand washing facilities in by SHG in Sinnar
- SHG trained as entrepreneurs for production of sanitary napkins.

Self Help Groups and programme awareness

- Workshops were conducted with SHG members on toilet construction, components of individual toilets and cost of construction
- SHG Awareness programs for subsidies available under Swachh Bharat in Wai and Sinnar
- Inviting SHGs for inauguration of FSTP in Sinnar

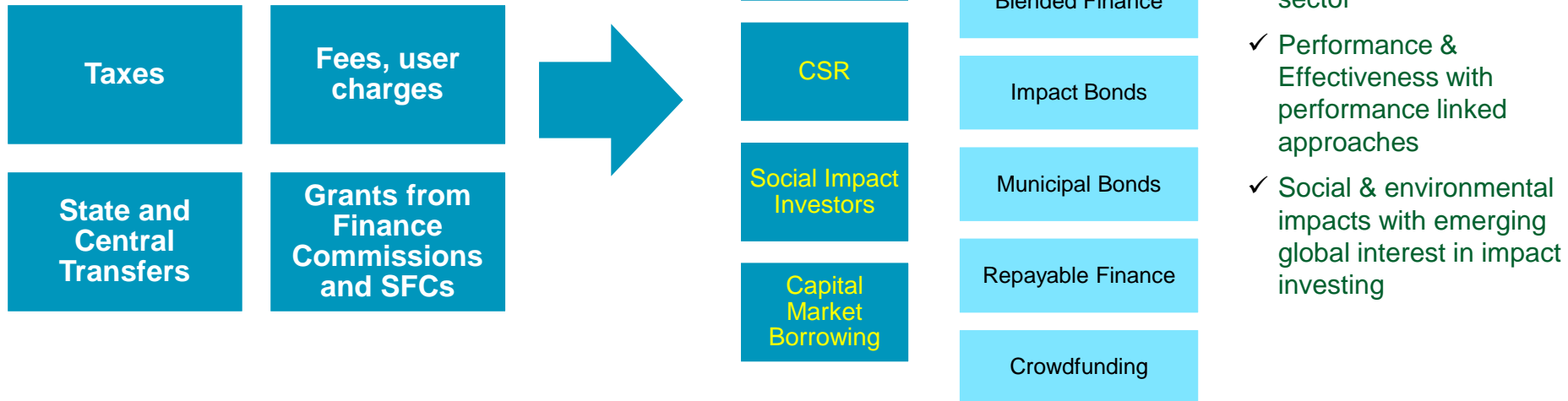


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New forms of financing and ensuring sustainability

Urban infrastructure has been generally financed through public funds but innovative options are emerging

Own sources and transfers



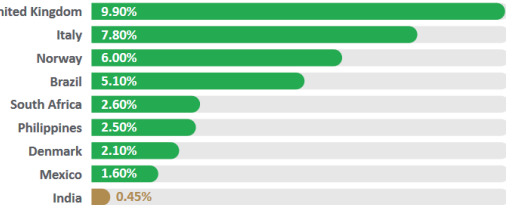
Raising the importance of municipal in wider public finance

Need to focus on greater transfers (IGTs) to ULBs...

Share of ULBs in GST?

- Indian cities contribute 2/3rd of GDP but are fiscally poor
- “...sharing of the revenues from GST among all three levels of government.”

Figure 10: IGT to Municipal Governments as a Proportion of GDP



Sources: UK, Denmark, Norway, Italy and India – Mohanty (2016) as cited in Ahluwalia et al. (2019) p.11; Brazil – Organisation for Economic Co-operation and Development (OECD) (2016a); Mexico – OECD (2016b); South Africa – OECD (2016c); Philippines – Diokno-Sicat, J. (2019) p. 10

Also need municipal strengthening for improved property tax collections...

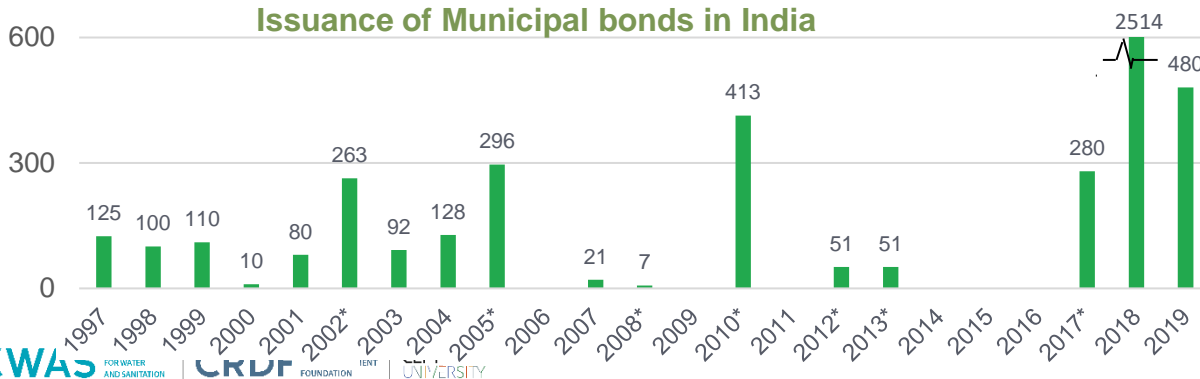
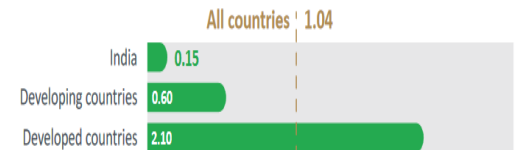


Figure 16: Property Tax as a Percentage of GDP in Select Countries



Sources: For India 2017-18: Ahluwalia et al. (2019), p. 9; for Organisation for Economic Co-operation and Development (OECD) and developing countries in the 2000s: Bahl and Martinez (2007), Table 1, p. 16; and for 18 OECD and 29 developing countries, based on International Monetary Fund Government Finance Statistics, various years.

Options to leverage private resources and impact investments

Outcome based funding



Funder makes payments only if pre-agreed outcomes are achieved

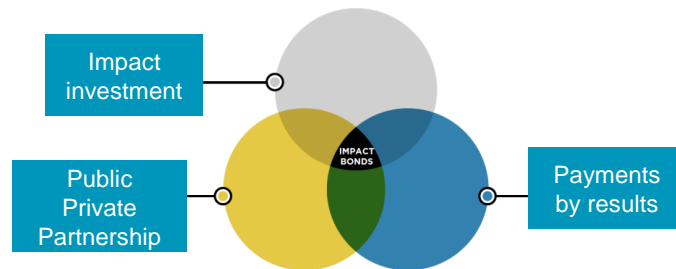
Blended financing



The combination of return seeking and philanthropic capital to achieve development outcomes

Development Impact Bonds

Confluence of outcome based funding and blended financing and leveraging PPP.



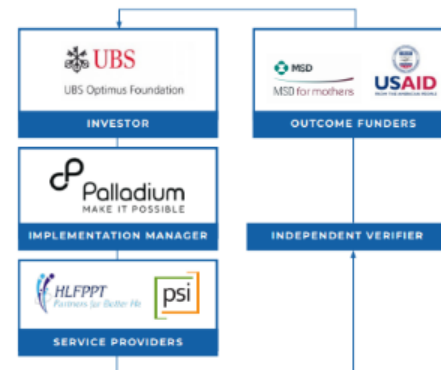
Recent Development Impact Bonds in India – Education and Health

Success of DIBs in education and healthcare in India

THE EDUCATE GIRLS DEVELOPMENT IMPACT BOND:
A NEW FINANCE MODEL FOR INTERNATIONAL DEVELOPMENT



THE UTKRISH IMPACT BOND.
IMPROVING MATERNAL AND NEWBORN HEALTH CARE IN RAJASTHAN, INDIA



- DIB of USD 267,000 - Three-year intervention focusing on improved learning outcomes and enrolment numbers for out-of-school girls.
- It targeted 18,260 school-going children in the Bhilwara district of Rajasthan.



Quality Education India Development Impact Bond:

A case study produced as part of the independent evaluation of the Department for International Development's Development Impact Bond Pilot Programme

| Impact Bond Details | Educate Girls DIB | Utkrish DIB | Quality Education India DIB |
|----------------------------|---|---|---|
| Target Sector | Primary Education | Maternal and Newborn Healthcare | Primary Education |
| Objective | <ul style="list-style-type: none"> Improve enrollment of girls in Grade 2-8 Improve Learning for ~18K boys and girls in Grade 3-5 | <ul style="list-style-type: none"> Support up to 444 private healthcare facilities to achieve and sustain a standard of quality that will result in decreased maternal and newborn mortality | <ul style="list-style-type: none"> Improvement in numeracy and literacy learning of ~3,20,000 students |
| Partners | <ul style="list-style-type: none"> Service Provider(s): Educate Girls Impact Investor: UBS Optimus Foundation Outcome Funder: Children's Investment Fund Foundation Outcomes Evaluator: IDinsight | <ul style="list-style-type: none"> Service Provider(s): HLFPPPT, PSI Impact Investor: UBS Optimus Foundation Outcome Funder: Merck for Mothers, USAID Outcomes Evaluator: Mathematica | <ul style="list-style-type: none"> Service Provider(s): Gyanshala, KEF, PIF & EL SARD Impact Investor: UBS Optimus Foundation Outcome Funder: British Asian Trust, MSDF, Comic Relief, BT, The Mittal Foundation, The Ellison Foundation Outcomes Evaluator: Gray Matters |
| Period of Performance | H2 2015 – H2 2018 | H1 2018 – H1 2021 | H1 2018 – H2 2022 |
| Bond Size | ~0.4M USD | ~9M USD | ~11M USD |
| Results / Expected Results | <ul style="list-style-type: none"> Achieved 160% of total learning target Achieved 116% of total enrollment target | <ul style="list-style-type: none"> Up to 600,000 pregnant women positively impacted; up to 10,000 lives saved over a five-year period | <ul style="list-style-type: none"> ~0.2-0.4 SD per annum depending on intervention type |



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Regular and effective digital monitoring is critical



History teaches us that it is critical to evolve and adopt new approaches – but it is important to ensure that these sustain over time.

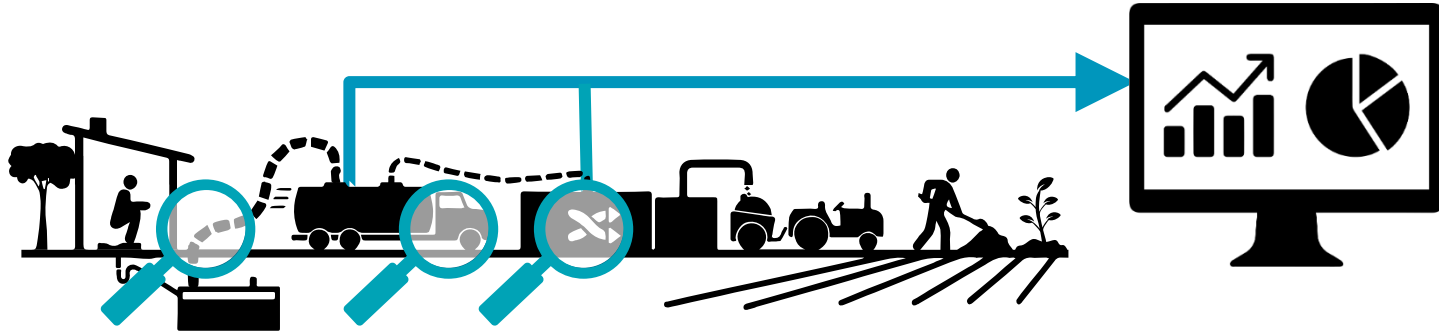
Sustained monitoring of universal access to safe sanitation is essential through country owned systems at city, state and national levels

Strong and regular monitoring systems will make it possible to ensure that any issues related to sustainability are identified early and addressed.

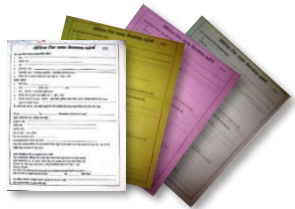
Digital monitoring for effective service delivery

City level monitoring systems in Maharashtra, India

Use of monitoring systems across sanitation service chain – digital systems with dashboards



FROM Paper based –
TO digital systems



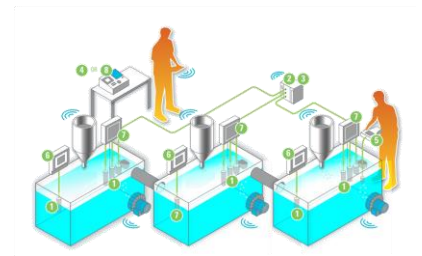
SaniTab



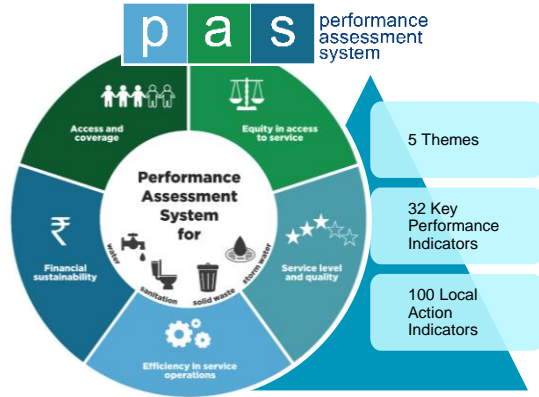
SaniTrack



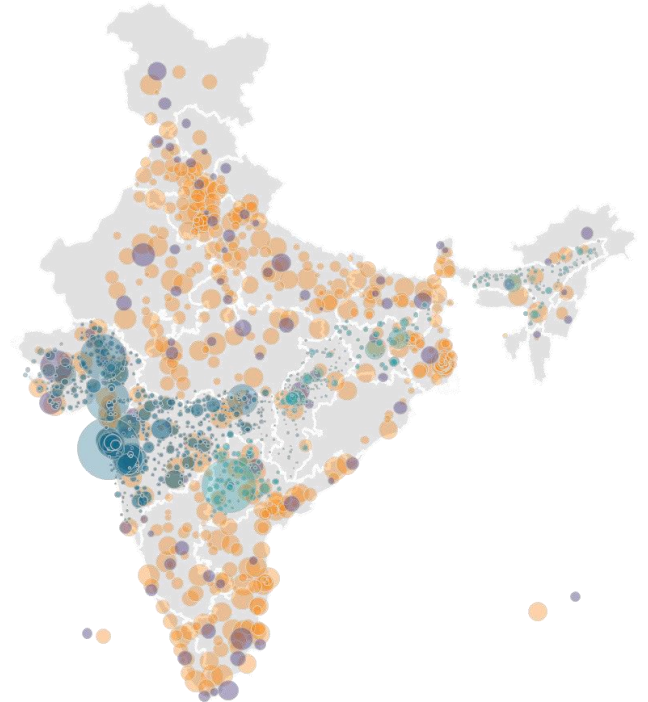
SanQ



Monitoring city level water and sanitation services at scale



- ✓ Nationally owned
- ✓ Digital platform for self reporting
- ✓ Supported by capacity building
- ✓ Sustained implementation at scale
- ✓ Currently being used | 1000+ cities across India



In summary

Achieve
SDGs for
Goals
3, 5, 6, 11

Assess and
address for
**climate
resilience**



From access to
agency and **gender
transformation** –
Leveraging Self Help
groups



Adapt new and
**innovative forms
of financing** -
ensuring
sustainability



Use **digital tech
for monitoring**
and citizen
engagement for
sustainability

