

CITYWIDE INCLUSIVE SANITATION (CWIS): A PUBLIC SERVICE APPROACH FOR EQUITABLE SANITATION SERVICE DELIVERY

ADB – Toyo University Program on City-Wide Inclusive Policy and Innovation in Sanitation in Asia with Focus on Japanese Experiences
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Deputy Director
Water, Sanitation Hygiene, Global Growth & Opportunity

THE CHALLENGE



3.6 BILLION

PEOPLE GLOBALLY LACK ACCESS TO
SAFELY MANAGED SANITATION

- **494 million people** do not have toilet, practice open defecation
- **At least 48% of people in urban areas**, do not use toilets which provide full sanitation services

**With only 8 years left until 2030, the rate at which sanitation coverage is increasing will
NEED TO QUADRUPLE if the world is to achieve the SDG sanitation targets.**

The Urban Sanitation Challenge

- ❑ **Asia and Pacific cities are growing rapidly.** By 2030 more than 55% of the region's population will live in urban areas.
- ❑ With higher population densities and urban expansion, **managing large amounts of human waste is becoming ever more challenging.**
- ❑ **Inadequate sanitation services have a significant impact on**
 - city and national economies
 - quality of life for all residents
 - public health
 - productivity and competitiveness
 - the environment and real estate values.



Mumbai, Maharashtra, India

© J. Miller

KHULNA, BANGLADESH



SANITATION WORKERS

Source: BORDA

sanitation workers in india[Sign in](#)

A day in the life of a sanitation ...
thehindu.com



Let's talk about garbage in Covid ...
theprint.in

Sanitation Workers: The Frontline Covid ...
outlookindia.com



Swachh Bharat reality: A death every ...
indiatoday.in

Humble tribute to Mahatma Gandhi ...
hindustantimes.com



Understanding Indian sanitation workers ...
dalberg.com

The harsh reality of life for India's 5 ...
qz.com



World Toilet Day: The lives of Indian ...
bbc.com



INDIA'S UNSUNG CORONA HEROES:
PUTTING COUNTRY'S SANITATION WORKERS

India's Unsung Corona Warriors ...
youtube.com



Safe and Dignified Sanitation Work ...
cprindia.org



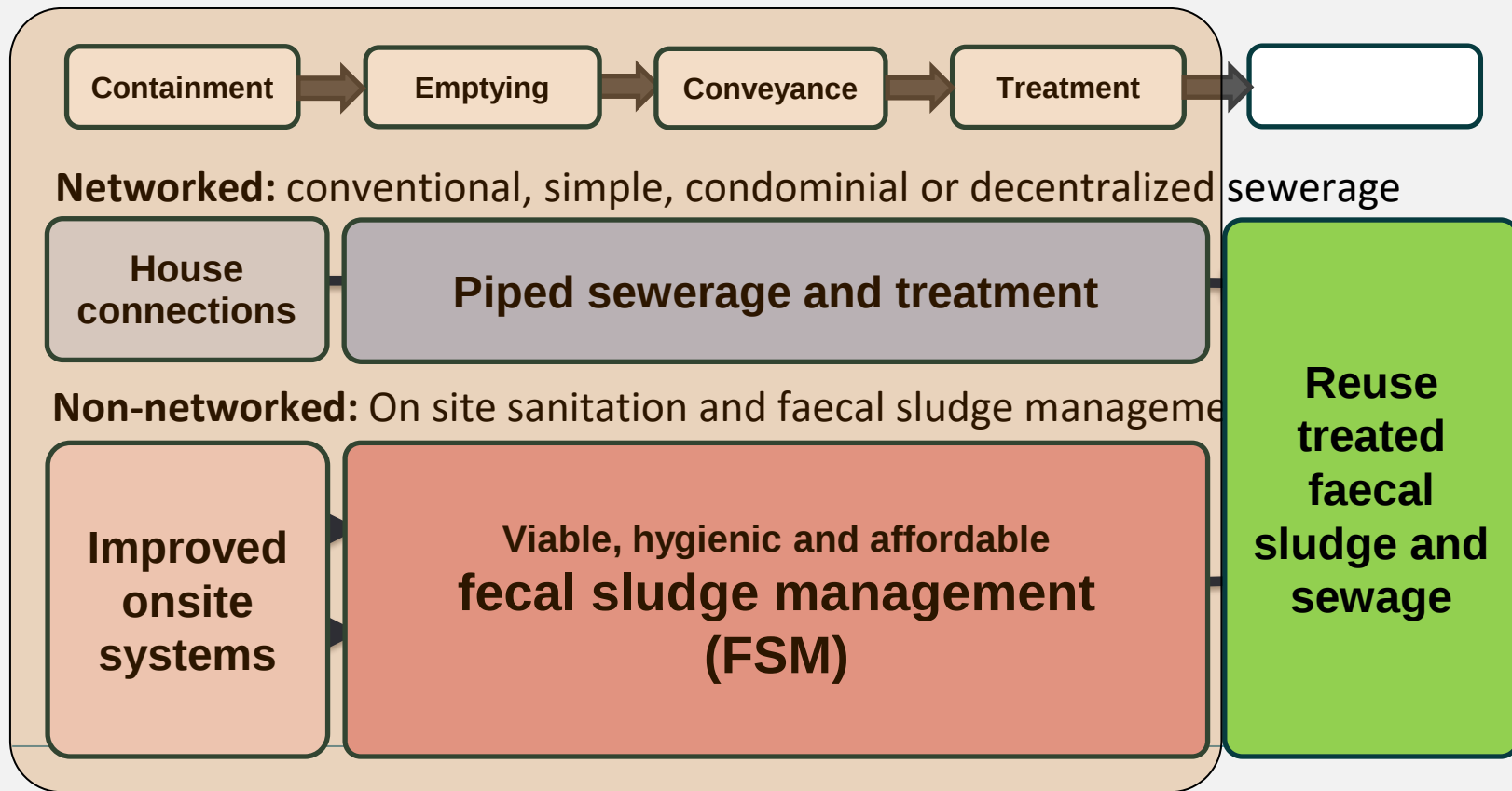
COVID-19: What about waste? | India ...
idronline.org



World Toilet Day: The lives of Indian ...
bbc.com

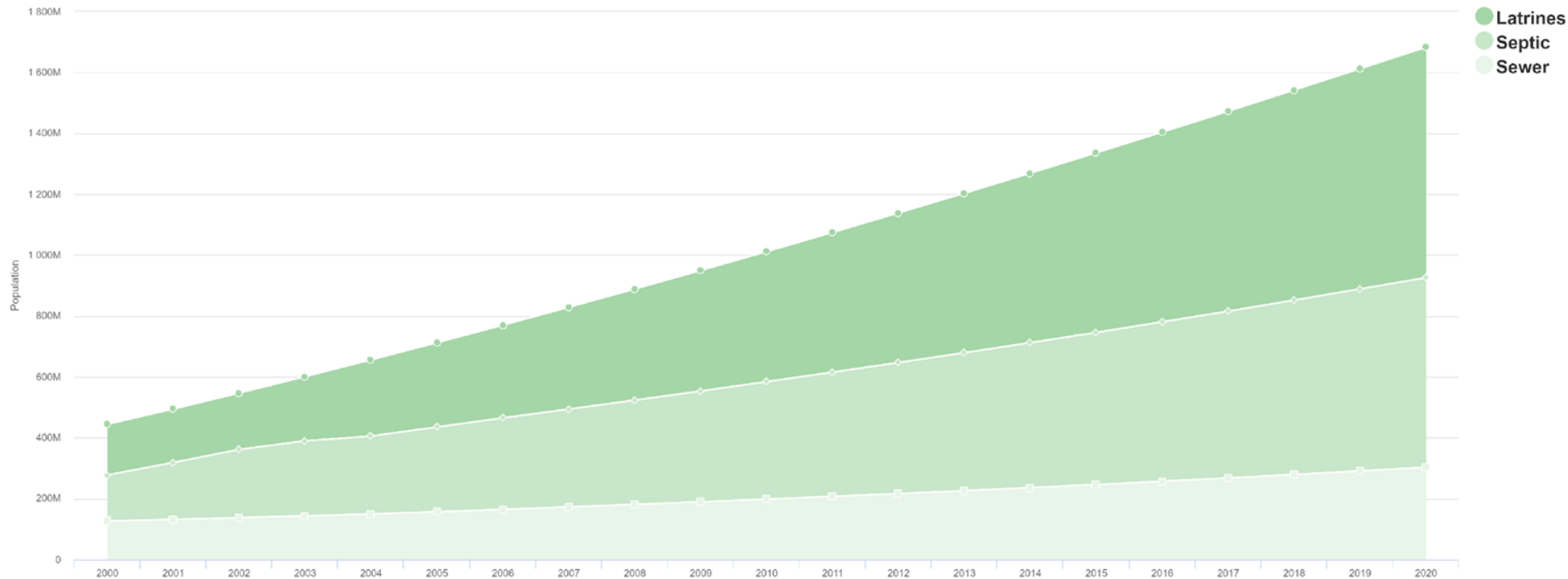
Types of Sanitation Systems

Sustainable Development Goals



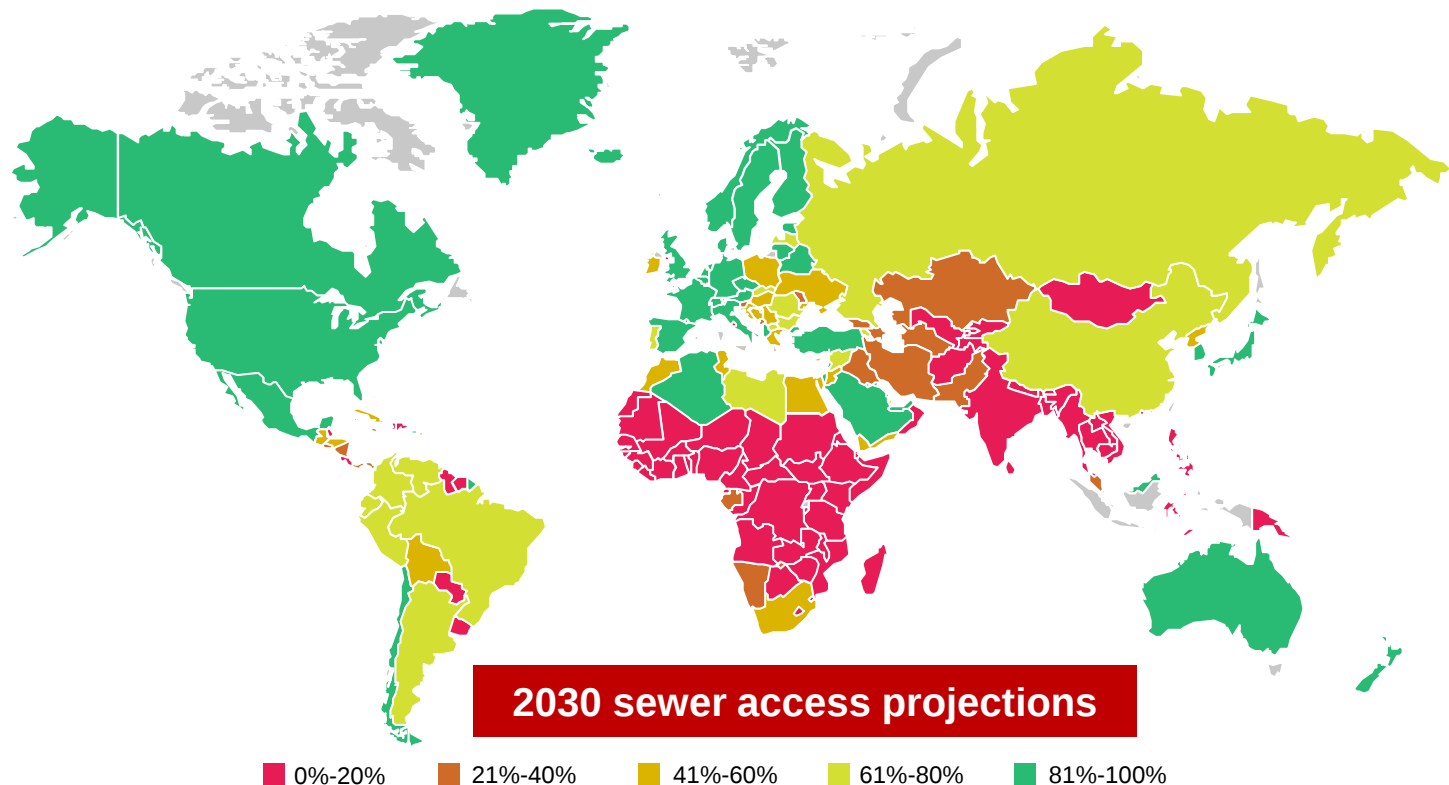
TREND OF ESTABLISHMENT OF SANITATION SYSTEM IN CENTRAL AND SOUTH ASIA

Household data - Sanitation - Central and Southern Asia - Facility Types



Source: JMP, 2020

MANY PARTS OF THE WORLD WILL CONTINUE TO LACK ACCESS TO SEWERS



WHAT WE KNOW:

IF INVESTMENTS AND SERVICES DO NOT TARGET THE POOR, THEY WILL NOT REACH THE POOR

- Low-income countries received 12% of WB WSH commitments during FY2007–16
- Most(?) of the sanitation spending was for urban conventional sewers in very limited areas of metropolitan areas
- OBA in sanitation targets poor but is often projectized
- The urban poor still fall outside of many utilities' mandates.
- Few government entities have a mandate much less targets or resources to serve these communities, adding to targeting challenges



Photo Source: E&V

■ Historical Response to the Urban Sanitation Challenge

The ADB, clients, and other development partners have invested in large urban sanitation programs, but:

- Most investment has been in wastewater treatment and sewerage systems
- Poverty targeting is weak: especially for informal settlements and onsite sanitation
- In the poorest areas there is no hygienic, organized sanitation at all
- Limited involvement of the small-scale private sector
- Institutional capacity assessments and investment in capacity building has been poor.
- The Institutions which support onsite sanitation and FSM remain weak
- Long-term operation and maintenance of sewers and WWTPs is very poor.

Ref. Leading Factors of Success and Failure in ADB Urban Sanitation Projects. IED, ADB, 2017

HARDWARE SPENDING OFTEN FAILS TO RESULT IN SERVICES

Troubled wastewaters

Policy brief

A review of the functionality of wastewater treatment plants in low-



- Mexico, 95% of 194 WWTPs not working
- Ghana, 80% of 44 WWTPs not working
- India, 54% of 84 WWTPs operating poorly or very poorly
- Vietnam, 33% of 17 WWTPs substantially underloaded



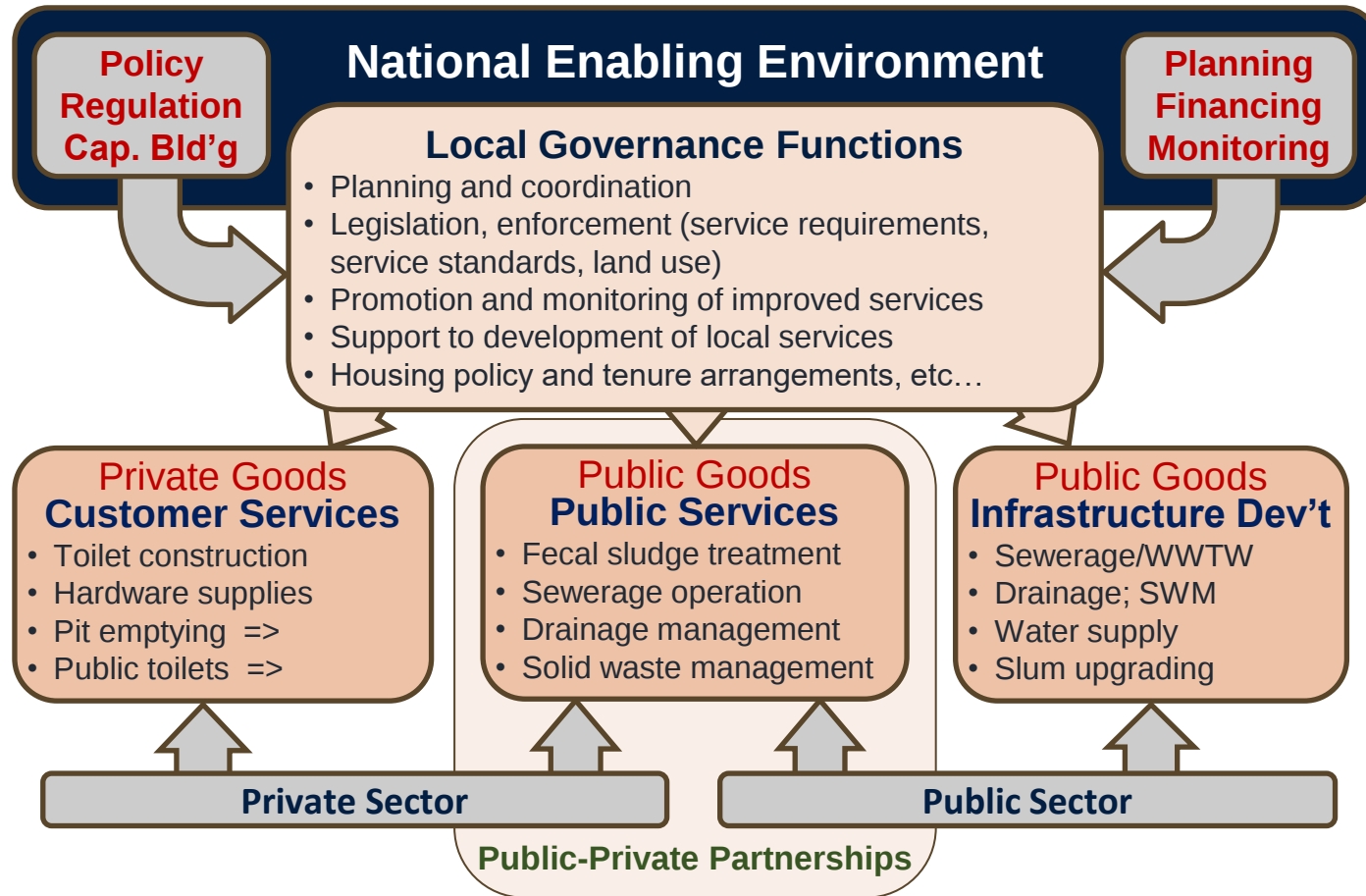
- 4% of WB wat/san projects listed a financial viability objective
- 40% face 'significant or high risk' to outcomes for financial viability risk
- Projects focus on access (hardware) over service adequacy, reliability, quality, or affordability; service outcomes from investments not quantified due to missing data
- Low-income countries with lowest WSS access, receive the lowest share lending

Small-Scale Sanitation Scaling-Up (4S) in South Asia



- Independent review of 279 SSTPs in India; 30 in Nepal; no city, state or national databases exist of SSS systems
- Operators face no incentives to meet standards, pressure to cut costs, e.g. by switching off the plant at night; no performance monitoring or accountability
- Microbial effluent quality requirements, CPCB discharge standards, nutrient levels unmanaged across plants; flow meters absent at most sites

CHALLENGING SECTOR NORMS, SYSTEMS, EXPECTATIONS



Dhaka Case

CITYWIDE INCLUSIVE SANITATION (CWIS)

- Why a new acronym
- What it is
- What cities are learning & achieving

URBAN SANITATION: WE CHANGED THE GOAL

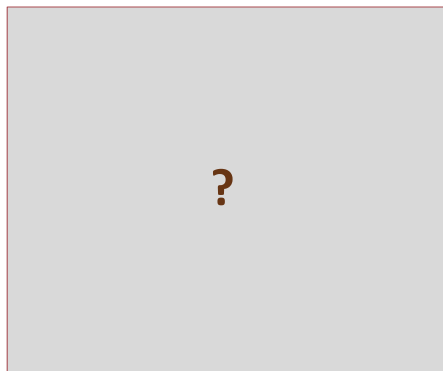
SDG 6.2: “BY 2030, ACHIEVE ACCESS TO **ADEQUATE** AND **EQUITABLE** SANITATION AND HYGIENE FOR ALL AND END OPEN DEFECATION, **PAYING SPECIAL ATTENTION TO THE NEEDS OF WOMEN AND GIRLS AND THOSE IN VULNERABLE SITUATIONS**”

Adequate - safely managed sanitation services that protect the health of individuals and communities and the environment

URBAN SANITATION: BUT KEPT A RATHER RIGID FOCUS ON HARDWARE INVESTMENTS

TRADITIONAL SEWER-CENTRIC APPROACH

- Master planning/ investment only for centralized infrastructure
- Financed by central gov't, often unviable on-lending
- Central business districts prioritized; limited, delayed expansion plans
- Sustainability challenges for O&M
- Resource recovery not considered
- No accountability or performance incentives
- On-site/decentralized networks not considered



ALTERNATIVE NSS / FSM APPROACH

- Often standalone pilots, not scaled or replicated: Orangi
- NGO / pilot financed
- FSM value chain/fecal sludge treatment plants
- Poor communities targeted but often missed
- Small businesses & NGOs working independently from service authorities
- Business models unsustainable without government services
- Limited professional capacity

URBAN SANITATION: WE WANT SERVICES FOR PEOPLE

TRADITIONAL APPROACHES

- Master planning/ investment only for centralized systems
- Financed by central gov't/loans
- Wealthy/business districts prioritized
- Limited coverage
- Sustainability challenges for O&M
- Resource recovery not considered
- No performance management
- On-site, small network not considered



EVERYONE BENEFITS from safe services and public investment equitably, with a focus on reaching the poorest



GENDER & SOCIAL EQUITY are designed into planning, management, monitoring, and finance



Human waste is **SAFELY MANAGED ALONG THE SANITATION CHAIN**, starting with containment



Authorities operate with a **CLEAR, INCLUSIVE MANDATE, PERFORMANCE TARGETS**, resources, and accountability



Authorities deploy services using a **RANGE OF HARDWARE, FUNDING & BUSINESS MODELS** to meet goals



Comprehensive long-term service planning **FOSTERS INNOVATION, PRO-POOR FINANCING**; informed by analysis of needs, resources



POLITICAL WILL & accountability incentivizes improvements in capacity, leadership, outcomes

NSS / FSM APPROACHES

- Often standalone pilots, not mainstream
- NGO / pilot financed
- FSM value chain/fecal sludge treatment plants
- Poor communities targeted but often missed
- Informal businesses, NGOs independent from service authorities
- Business models often unable to scale
- Limited professional capacity



SIMPLIFYING CWIS: INTERROGATING ANY CITY / COUNTRY SITUATION



**What service outcomes do we
want?**

SIMPLIFYING CWIS: INTERROGATING ANY CITY / COUNTRY SITUATION



What service outcomes do we want?



What needs to be in place to incentivize those outcomes?

SIMPLIFYING CWIS: INTERROGATING ANY CITY / COUNTRY SITUATION



What service outcomes do we want?



Is a local service authority legally RESPONSIBLE for ensuring those service outcomes?

Is the responsible authority ACCOUNTABLE for its performance against its obligations?

Is the responsible authority RESOURCED to implement its obligations?

CWIS: CHANGING SECTOR NORMS, SYSTEMS, EXPECTATIONS

Framework for a public service approach



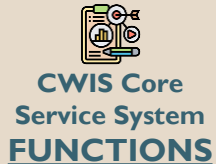
**EQUIT
Y**



**SAFET
Y**



**SUSTAINABILIT
Y**



**RESPONSIBIL
ITY**

**ACCOUNTAB
ILITY**

**RESOURCE
PLANNING
& MANAGEMENT**

CWIS: CHANGING SECTOR NORMS, SYSTEMS, EXPECTATIONS

Framework for a public service approach



EQUITY

Services reflect fairness in distribution and prioritization of service quality, prices, deployment of public finance/subsidies



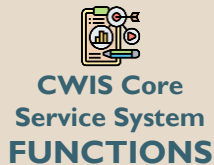
SAFETY

Services safeguard customers, workers and communities from safety and health risks by reaching *everyone* with safe sanitation



SUSTAINABILITY

Services are reliably and continually delivered based on effective management of human, financial and natural resources



RESPONSIBILITY

Authority(s) execute a clear public mandate to ensure safe, equitable and sustainable, sanitation services for all

ACCOUNTABILITY

Authority's(ies') performance against mandate is monitored and managed with data, transparency, and incentives

RESOURCE PLANNING & MANAGEMENT

Resources—human, financial, natural, assets—are effectively managed to support execution of mandate across time/space

CWIS FRAMEWORK: WHAT DO WE WANT?

& what are measurable KPIs of those outcomes?

CWIS Core Service OUTCOMES



*What do they
look like in
practice?*



EQUITY

Services reflect fairness in distribution and prioritization of service quality, prices, deployment of public finance/subsidies

- Toilet access and safe services in LICs are proportionate to citywide levels
- Equitable use of public finance across populations and communities
- HH & users' costs to access sanitation services are equitable across the city
- Gender intentional representation in decision-making
- Sanitation workers' rights, protections, and safety nets are actively fostered



SAFETY

Services safeguard customers, workers and communities from safety and health risks by reaching *everyone* with safe sanitation

- Residents and city users have access to adequate toilet facilities in residential, community & public spaces, schools & healthcare facilities.
- Toilet facilities—including *containment and containment upgrade needs*—and waste services are managed to protect public health and environmental outcomes as urban needs evolve
- Waste disposal and treatment facilities are sufficient and operational



SUSTAINABILITY

Services are reliably and continually delivered based on effective management of human, financial and natural resources

- Service delivery system has diverse streams of revenue for operating expenses, protected from predictable political influence and diversion
- Financing resources for CAPEX expansion and renewal can be accessed by local authorities
- Water/climate change/energy dependencies are understood and considered in planning
- Infrastructure and service requirements reflect human and financial capital investments and resources

CWIS FRAMEWORK: HOW DO WE GET IT?

KPIs of strong national market structures, *and indicators of local authority implementation levels*

Critical indicators of core functions being in place



- Clear and non-overlapping mandate covering the entire service chain
- Mandates cover all urban areas without exclusions related to land tenure or artificial administrative boundaries
- Mandate is explicitly pro-poor, gender intentional, and inclusive of other vulnerable groups or status
- *Authority has clear inclusive service area; sufficient staff positions exist; Positions are filled*



- Service authority performance is monitored with clear KPIs and targets
- Service authority performance is managed with data-driven incentives and/or penalties
- Accountability process is inclusive of customer and non-customer engagement, including marginalized voices
- *Data regularly collected and used to inform and manage service needs, service delivery, revenue & cost management inform KPI targets, design, monitoring and enforcement of performance incentives*



- Sanitation budget allocation is based on mandate and performance across service areas
- Sanitation investment decisions are driven by impact and cost considerations, incl. on water and energy requirements relative to their availability and cost, and are technology agnostic
- Sanitation planning is pro-poor, gender intentional, and inclusive
- *Authority sanitation budgets are ringfenced, revenue and operating costs are understood and managed*

CORE CWIS Service System FUNCTIONS



RESPONSIBILITY

Authority(s) execute a clear public mandate to ensure safe, equitable and sustainable, sanitation services for all

ACCOUNTABILITY

Authority's(ies') performance against mandate is monitored and managed with data, transparency, and incentives

RESOURCE PLANNING & MANAGEMENT

Resources—human, financial, natural, assets—are effectively managed to support execution of mandate across time/space

What is Citywide Inclusive Sanitation (ADB – CWIS Manual)

Public Health, Social,
Environmental and Economics

IMPACT

Citywide Inclusive Sanitation

Everyone in the city has access to and benefits from sustainable sanitation services, and human waste is safely managed along the whole sanitation service chain

OUTCOME

Capable Institutions

- Political prioritisation
- Clear mandates
- Monitoring, data and accountability systems

Safe & Reliable

- Diverse technical solutions
- Regulation and enforcement

Equity & Inclusion

- Affordability
- Resource allocation
- Gender, social inclusion

Sustainability

- Capacity and incentives for good management
- Viable service providers
- Resource recovery

ELEMENTS

- ✓ Evidence-based
- ✓ Incremental, with realistic, feasible steps
- ✓ Coordinated with water supply, drainage and solid waste management

- ✓ Community engagement and behaviour change
- ✓ Capacity building for public and private sector
- ✓ Integrated into long-term, adaptive planning

HOW

India videos

- [CWIS model in Wai, Maharashtra](#)
CEPT, 2020
- [Warangal: A model sanitation city](#)
Dasra India, 2017
- [Inclusive Sanitation - Faecal Sludge and Septage Management in Odisha](#)



Emptying sludge at a fecal sludge treatment plant in Maharashtra State.



Menstrual hygiene kit purchase counter



kiosk



Incinerator for menstrual hygiene pad

Innovative Public Toilet in Kathmandu – ranked as top five in a recent global award. Toilets has following facilities:

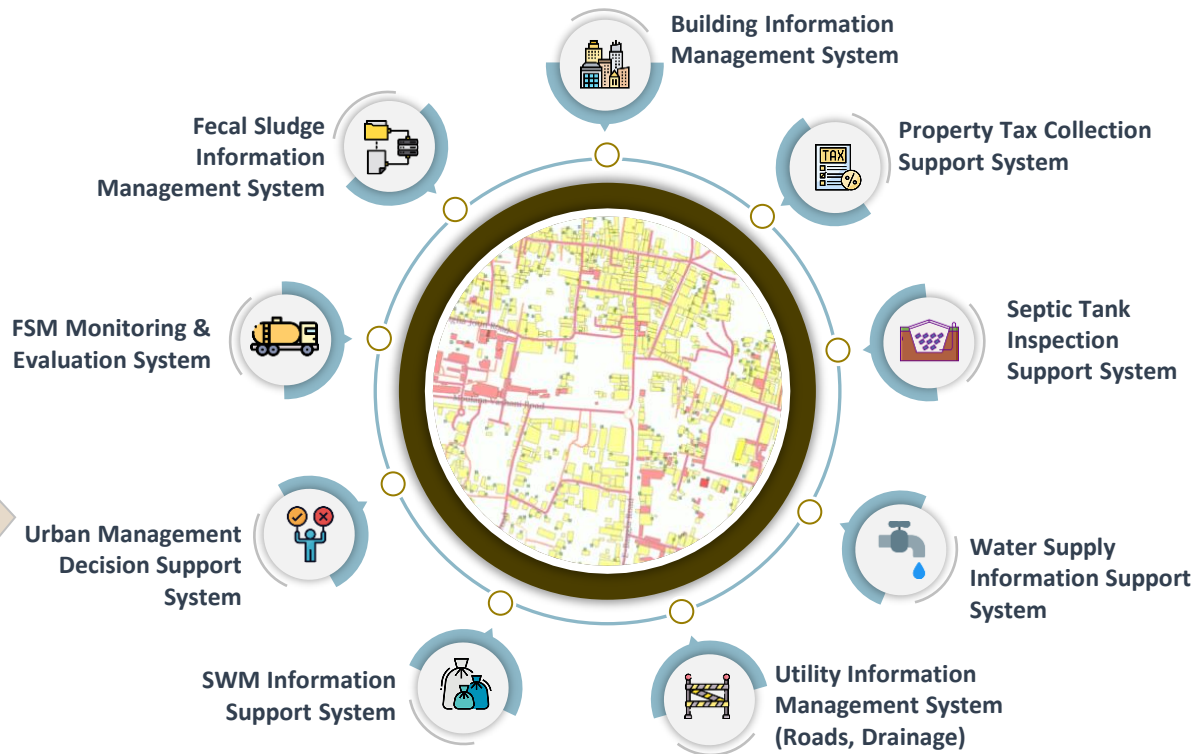
- PPP model, operated by the women, disabled and minority communities
- Gender friendly
- safely managed – well maintained safety and hygienic issues both inside and outside the toilet
- Generate biogas, rainwater harvesting, water reuse, greywater treatment etc..



INTEGRATED MUNICIPAL INFORMATION SYSTEM (IMIS) & CWIS

IMIS Landscape

- Municipal GIS-based database and CWIS baseline of the town
- Strategic sanitation planning and decision-making tools for authorities
- Service delivery management
- Municipality's 'regular business process mapping
- Real time monitoring and evaluation – tax payments, service delivery, KPIs
- Link to external databases – health, emergency response
- Plan infrastructure investment

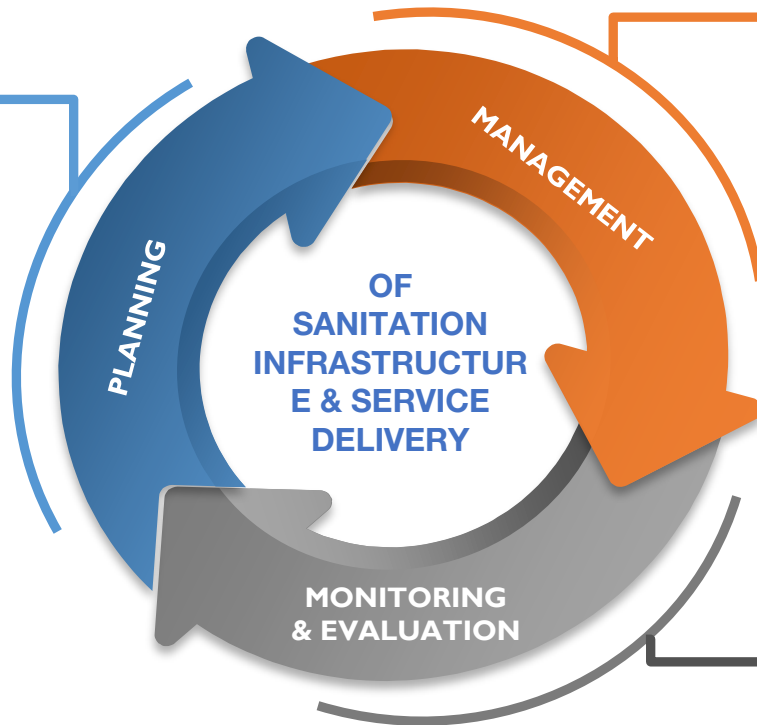


ACCURACY, RELIABILITY, RELEVANCE AND TIMELINESS OF DATA FACILITATED

WHAT WILL IMIS FACILITATE?

PLANNING

- a) **equitable** access to safe, adequate & efficient infrastructure
- b) **sustainable** infrastructure, assets and services
- c) **gender** intentional and socially **inclusive** services and infrastructure
- d) fair and strategic **pricing** of services
- e) the use of **public finances** for the expansion of infrastructure and services and
- f) sanitation **workers' rights**, protections and safety nets

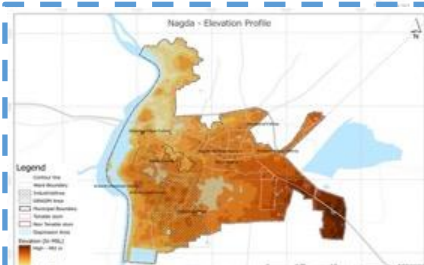


MANAGEMENT

- a) **safe** management of sanitation infrastructure and services
- b) the fair distribution of **public finances** for the expansion of infrastructure and services;
- c) implementation of equitable costs and efficient cost recovery
- d) implementation of pro-poor, gender intentional and socially inclusive mandate;
- e) institutionalization of **key performance indicators** (KPIs)
- f) implement **accountability** measures as well as enforce **regulations** including incentives and penalties.

MLE

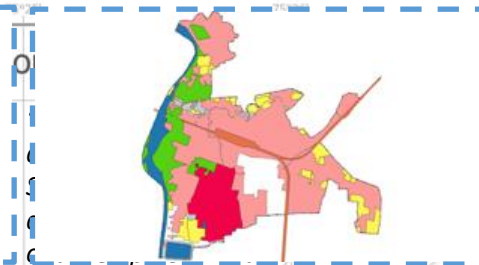
- a) the **quality** and **distribution** of services and infrastructure,
- b) service **authority performance** vis-à-vis the KPIs and targets;
- c) **financial sustainability** of service delivery and infrastructure,
- d) public health and environmental **outcomes** and
- e) pro-poor, **gender** intentional and socially **inclusive** targets.



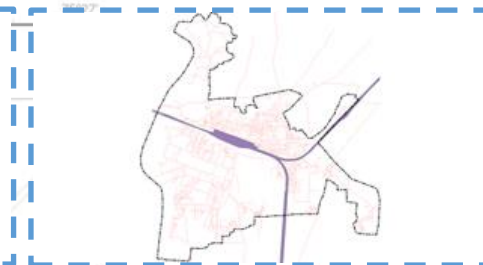
DEM - SRTM Global DEM



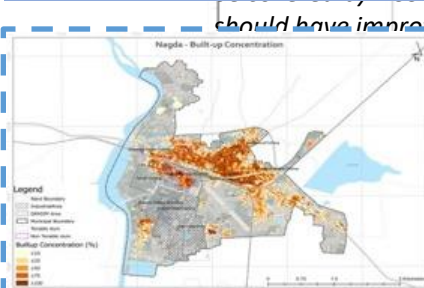
Low Income Settlements, Source: Town



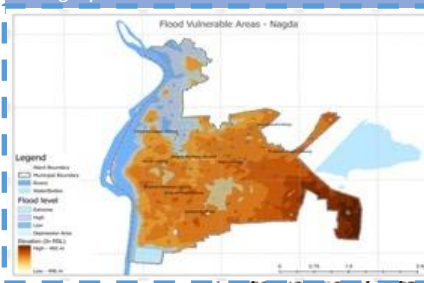
Landuse - Town



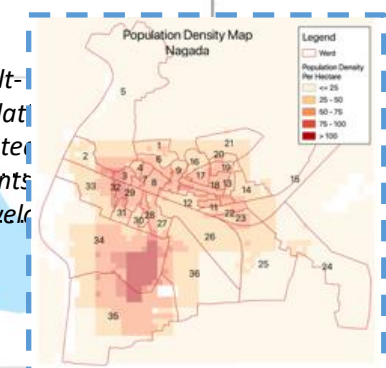
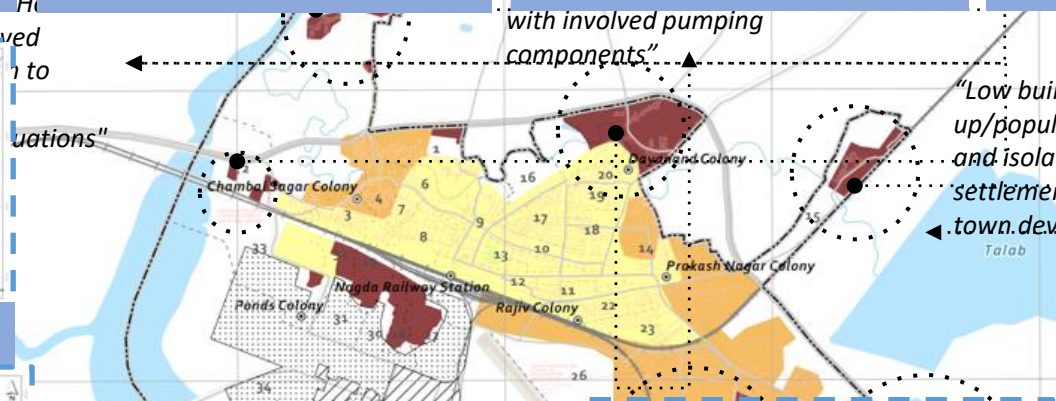
Infrastructure - Town



Property Data from Town & Landsat Imagery



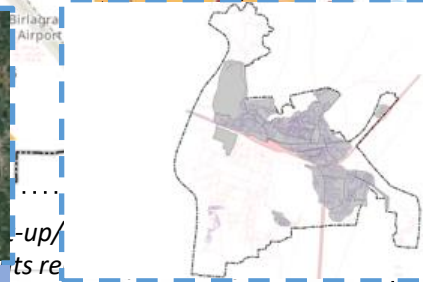
DEM & Water danger line from Water Resource Department MP



Pop Density, Source: worldpop.org



Satellite Image, Source Google

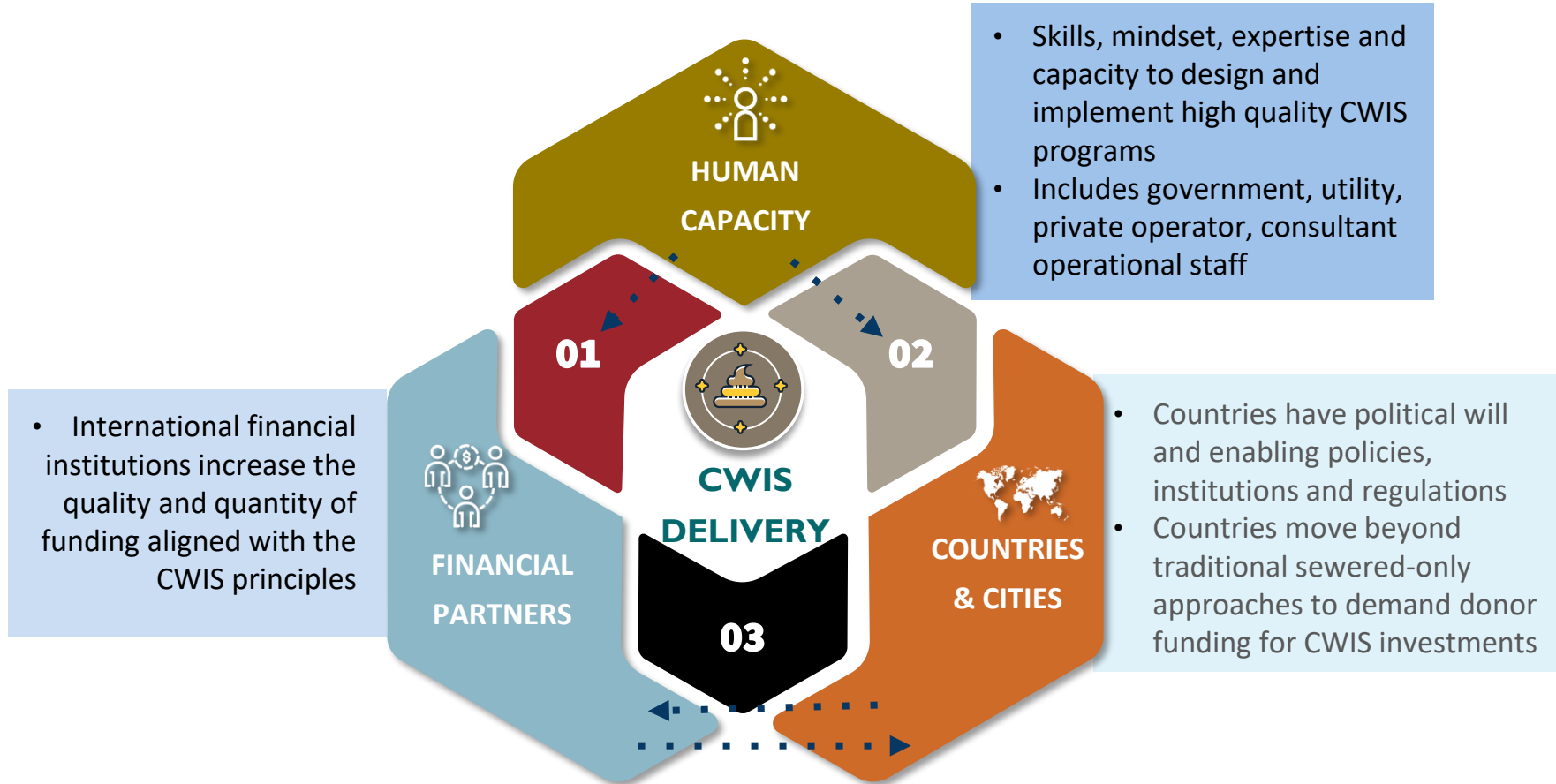


Sewerage Area (AutoCAD) - Proposed by Consultant

"Low built-up/population density and with organic settlement growth of town; may be covered with SS during 2nd phase of interventions"



WHAT WILL IT TAKE TO SCALE CWIS?



BUILD CAPACITY FOR CWIS-FSM IMPLEMENTATION

SUPPLY

Institutionalized & delivered sustainable high quality CWIS/NSS/FSM capacity building programs via at least 50 universities/training institutions that generate more than 500 qualified gender balanced cadre of leaders and champions in the sector.



RESOURCES

New tools (CWIS-SAP, FSM Toolbox, IMIS etc), case studies, training materials & evidence-based knowledge products developed to improve planning and implementation of CWIS and NSS



PROFESSIONAL & INSTITUTIONAL DEVELOPMENT

Two government (Bangladesh and Senegal) departments, at least three IFIs partners (ADB, IsDB, AfDB and JICA), seven utilities, two private entity and regional networks (FSMA, AfWA, and EASWAS) capable to replicate and scale high quality CWIS, NSS/FSM solutions



MSc 370 | 53 inst | 27 countries (Top 5 enrolment - Kenya, India, Indonesia, Bangladesh, Zambia)

54% Africa; 44% Asia; 2% Europe and LA

45% Female

Professional trainings, OLC – 600

Funding \$100K to 150K/Univ

GLOBAL
SANITATION
GRADUATE
SCHOOL

BILL & MELINDA
GATES foundation

FSMA



unicef



UNITY KNOWLEDGE LLC

UTEC

TU Delft

eawag



THE HONG KONG
UNIVERSITY OF SCIENCE
AND TECHNOLOGY



CEPT
UNIVERSITY



CAPACITY BUILDING COURSES AND TOOLS

Education & Training

IHE Delft offers a wide range of flexible, high quality, specialized educational programmes to respond to the needs of diverse clients from the water sector.

- MSc programmes
- Short courses
- Online courses
- Tailor-made training



ConCaD

consulting capacity development
for urban sanitation services



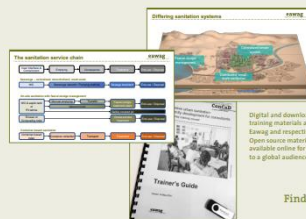
ConCaD training at ITN-BUET in Dhaka, Bangladesh. Participants comparing different non-sewered sanitation solutions for urban low-income contexts along the sanitation service chain.



ConCaD training in Kampala, Uganda. Participants preparing a sanitation improvement bid to consult a real world tender process.

Target audiences are consulting firm staff and freelance consultants working or bidding for 'at-scale sanitation investment projects' anywhere in the world and especially in the ConCaD target or nearby countries (India, Nepal, Bangladesh, Uganda, Ivory Coast and Zambia).

Course delivery is through face-to-face short courses at selected partner training institutes (PTIs). Additionally, a three-week on-line course will be delivered on the Coursera learning platform and made available on YouTube for a global audience.



Digital and downloadable print learning materials are available at Eawag and respective PTIs. Open source materials are readily available online for downloading to a global audience.

Find out more: www.sandec.ch/concad

eawag
aquatic research

FSM
FOOD SAFETY
MANAGEMENT

The FSM toolbox offers a suite of tools to assess the overall FSM ecosystem in the city and plan for infrastructure improvements

LEARN MORE



WATCH VIDEO



This initiative is funded by the Bill & Melinda Gates Foundation.

Multi-Country Twinning Program FSM Knowledge Exchange

Facilitating sustainable FSM programs through collaborative, knowledge-sharing, and action-oriented partnerships.



Our Mission

Advance the knowledge and expertise of FSM professionals and their organizations through exposure visits to successful FSM programs and lessons learned in other countries. Develop a platform and initiate actions to encourage knowledge sharing within and among countries. Create opportunities for FSM professionals to network and foster development of long-term twinning relationships between organizations and utilities.

To tackle urban sanitation challenges, the World Bank's Water Global Practice and partners have jointly advanced **Citywide Inclusive Sanitation (CWIS)** and put it into action.



Learn more about CWIS:
www.worldbank.org/cwis



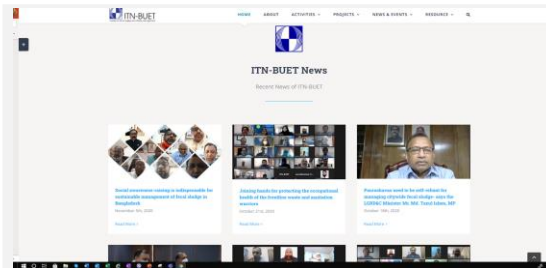
CAPACITY BUILDING PARTNERS AND KNOWLEDGE PRODUCTS



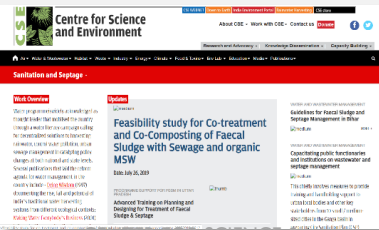
CENTER FOR WATER & SANITATION



FSM ALLIANCE



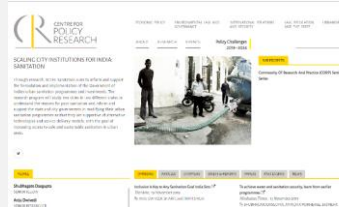
ITN BUET



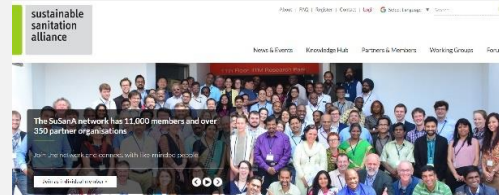
CENTER FOR SCIENCE & ENVIRONMENT



CDD SOCIETY – INDIA



CENTER FOR POLICY RESEARCH



SUSTAINABLE SANITATION ALLIANCE



NIUA



ASIAN DEVELOPMENT BANK INSTITUTE

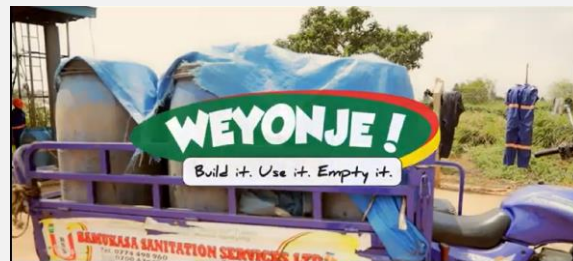


SNV



ENPHO

CAPACITY BUILDING PARTNERS AND KNOWLEDGE PRODUCTS



NEW PUBLICATIONS Citywide Inclusive Sanitation as a Public Service

Please download our new reports which review the CWIS functions - Responsibility, Accountability and Resource Planning & Management

RESPONSIBILITIES



Full Report @

Brief Report @

ACCOUNTABILITY



Full Report @

Brief Report @

RESOURCING



Full Report @

Brief Report @

Framework for Addressing Occupational Safety of De-sludging Operators: A Study in Two Indian Cities

Mamta Gautam, Kavita Wankhade, Gayathri Sarangan, Srinithi Sudhakar



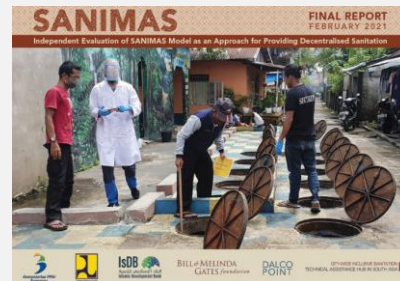
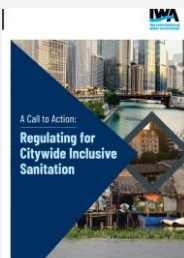
Heart-felt thanks to the entire field team, and all sanitation workers who participated in this study

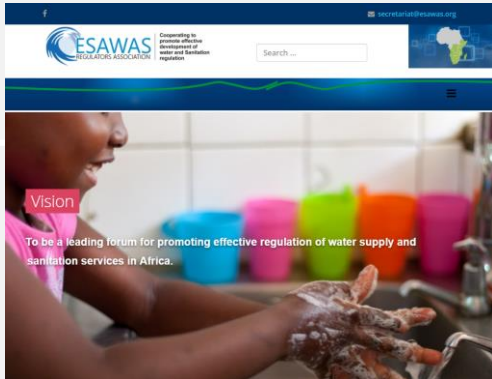


Integrated decentralized water and sanitation for unserved areas in small Indian towns

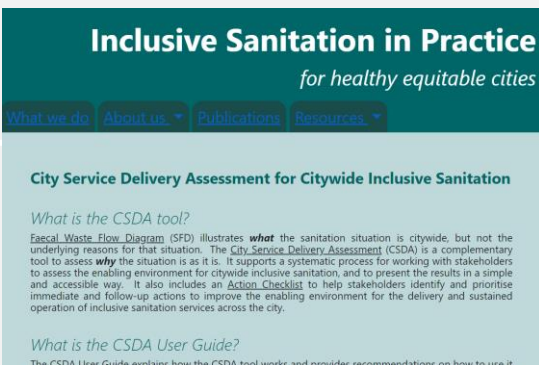


Public Health and Engineering (PHE) Department
Union Territory of Ladakh





ESAWAS



CITY SERVICE DELIVERY ASSESSMENT



ATHENA CWIS DASHBOARD

1. CWIS cities program – BMGF: <https://www.cwiscities.com/> - there are numerous city-level resources and cases here - <https://www.cwiscities.com/home/learn/documents>
2. CWIS measurement approach: <https://s3.amazonaws.com/resources.cwis.com/learning/201/CWISMeasurementNote2021Julyv3.pdf>
3. CWIS indicators – full list: https://s3.amazonaws.com/resources.cwis.com/assets/documents/Full+List+of+CWIS+Indicators_July2021_v2.pdf
4. Asian Development Bank CWIS Knowledge Hub: <https://adb.eventsair.com/online-adb-sanitation-dialogue-2021/cwis-knowledge-hub>
5. World Bank CWIS resources: <https://www.worldbank.org/en/topic/sanitation/brief/citywide-inclusive-sanitation>
6. City-level Resources: <https://www.cwiscities.com/home/learn/documents>
7. CWIS Measurement Approach: [https://s3.amazonaws.com/resources.cwis.com/learning/2021/CWISMeasurementNote2021Julyv3.pdf](https://s3.amazonaws.com/resources.cwis.com/learning/201/CWISMeasurementNote2021Julyv3.pdf)
8. CWIS Indicators: https://s3.amazonaws.com/resources.cwis.com/assets/documents/Full+List+of+CWIS+Indicators_July2021_v2.pdf
9. [ESAWAS Briefs & Guidelines](#)
 - *Who has Responsibility?*
 - *Ensuring Accountability*
 - *Resources Planning & Management*
 - *Guidelines for CWIS Planning*
 - AMCOW [African Sanitation Policy Guidelines](#)

10 EAWAG-Sandec [Sanitation 21: A Planning Framework for Improving City-wide Sanitation](#)

Tools

1. [Shit Flow Diagram](#) (SFD)
 2. [FSM Toolbox](#) Tools
 - a. *Stakeholder Engagement Planning*
 - b. *City Service Delivery Assessment (CSDA)*
 3. [SaniPath](#)
 4. [CWIS Service Assessment & Planning \(CWIS-SAP\)](#)
 5. [WaterAid Political Economic Analysis](#)
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ADB and WB Publications

1. Asian Development Bank CWIS Knowledge Hub: <https://adb.eventsair.com/online-adb-sanitation-dialogue-2021/cwis-knowledge-hub>
2. World Bank CWIS resources: <https://www.worldbank.org/en/topic/sanitation/brief/citywide-inclusive-sanitation>

1. What Is Citywide Inclusive Sanitation and Why Is it Needed?

<https://www.adb.org/publications/citywide-inclusive-sanitation-needed>

2. Addressing Gender Equality and Social Inclusion in Urban Sanitation Projects

<https://www.adb.org/publications/gender-equality-social-inclusion-urban-sanitation-projects>

3. Inclusive Financial Mechanisms: Improving Access to Sanitation Services for Poor Households

<https://www.adb.org/publications/inclusive-financial-mechanisms-access-sanitation-poor>

THANK YOU!

