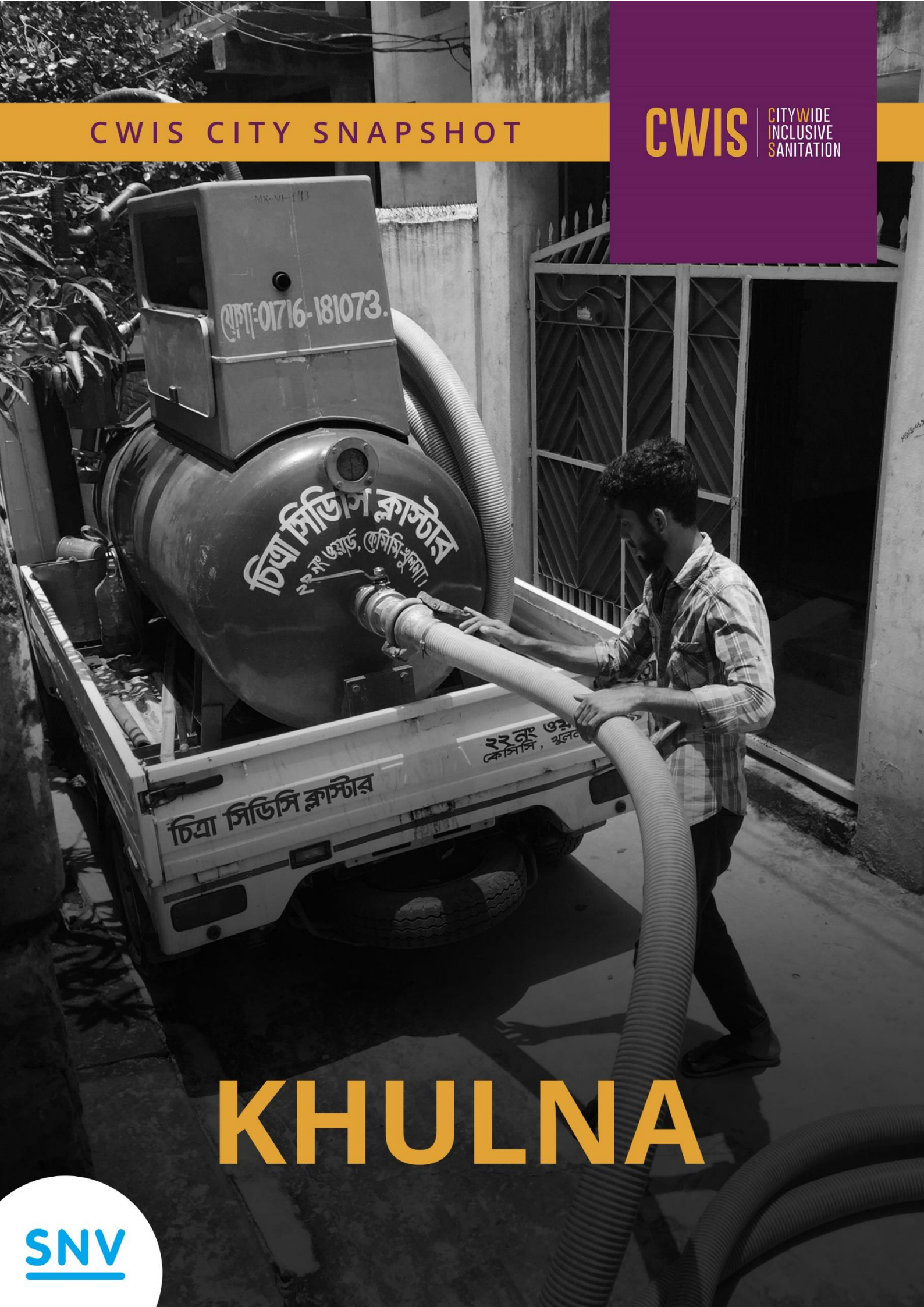
CWIS CITY SNAPSHOT

CWIS | CITYWIDE INCLUSIVE SANITATION



KHULNA

SNV

KHULNA
CWIS CITY SNAPSHOT

The Citywide Inclusive Sanitation (CWIS) city snapshots are designed to provide compact summaries of initiatives that are being implemented in eight cities, namely Lusaka, Kampala, Dakar, Khulna, Trichy, Warangal, Narsapur and Wai. Each of these cities has active investments designed to achieve the CWIS goals of equitable, safe, and sustainable sanitation service delivery. These city snapshots are part of the CWIS Monitoring and Learning initiative led by Athena Infonomics with support from the Bill & Melinda Gates Foundation.

This city snapshot focuses on the city of Khulna where SNV Netherlands Development Organisation (SNV) is the lead implementing partner. This city snapshot outlines the pathway that Khulna is taking to achieve its CWIS goals and tracks the progress being made, including key shifts in institutional and service delivery models to support safe, equitable and sustainable delivery of services.

ATHENA INFONOMICS

BILL & MELINDA GATES foundation

1. City Sanitation Overview

Category	Indicator	Value
Demographic	Administrative boundary	Khulna City Corporation occupies an area of 45.65 sq km. The city is divided into 31 wards with 70,221 holdings1. Informal settlements exist both within and outside of the KCC boundary. All information and statistics in this snapshot are based on the same administrative boundary.
	Population (resident)	15,00,689[1]
	% of population living in informal settlements (slums)[2]	6.23%[3]
	% of population living below poverty line[4]	24.3% (National Level)[5] 27.5% (Khulna Division)5
Geographic	Topography	Khulna is situated in the Ganges deltaic plain where the topography is relatively flat, with no mountains. Khulna is characterized by Ganges tidal floodplains, rivers, tidal marshes and swamps[6].
	Groundwater table	Less than 1m below the surface6. Most of the households have direction connections to open drains and water bodies, resulting in high risks of surface and groundwater contamination, which is the main source of drinking water.
Basic Sanitation Statistics (as of 2020)[7]	% of population covered by sewerage networks	0%
	% of population practicing open defecation	0.1%[8]
	% of population relying on onsite sanitation	99.9%[8]
	Treatment hardware (capacity)	1 Fecal Sludge Treatment Plant with 180 KLD operational capacity, 4.1% of which is currently utilized.

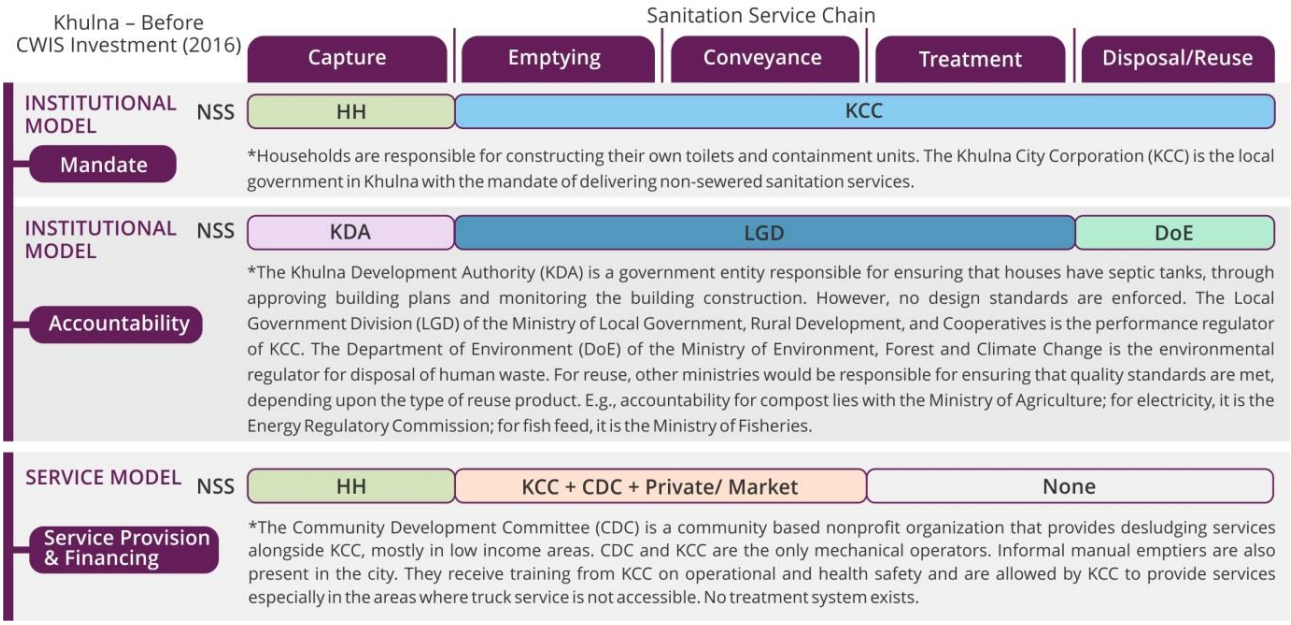
[1] http://www.khulnacity.org/
[2] A Slum is a cluster of compact settlements of 5 or more households which generally grow very unsystematically and haphazardly in an unhealthy condition and atmosphere on government and private vacant land. Slums also exeunt in the owner based household premises (Census of slum areas and floating population, 2014).
[3] Slum population projected for the year 2020 by considering 2.70% annual slum population growth and KCC slum population 79740 in 2014 (Census of slum areas and floating population, 2014).
[4] The definition of poor is taken from Bangladesh Bureau of Statistics. This poverty line is measured based on minimum intake of food (2,122 kcal per person per day) and non-food items.
[5] Household income and expenditure survey, 2016.
[6] Adhikari et al. (2006), Urban Geology: A Case Study Of Khulna City Corporation, Bangladesh.
[7] Statistics are for Khulna City Corporation administrative area.
[8] SNV Performance survey data, 2019.

2. Institutional and Governance Framework of City Sanitation Service Delivery

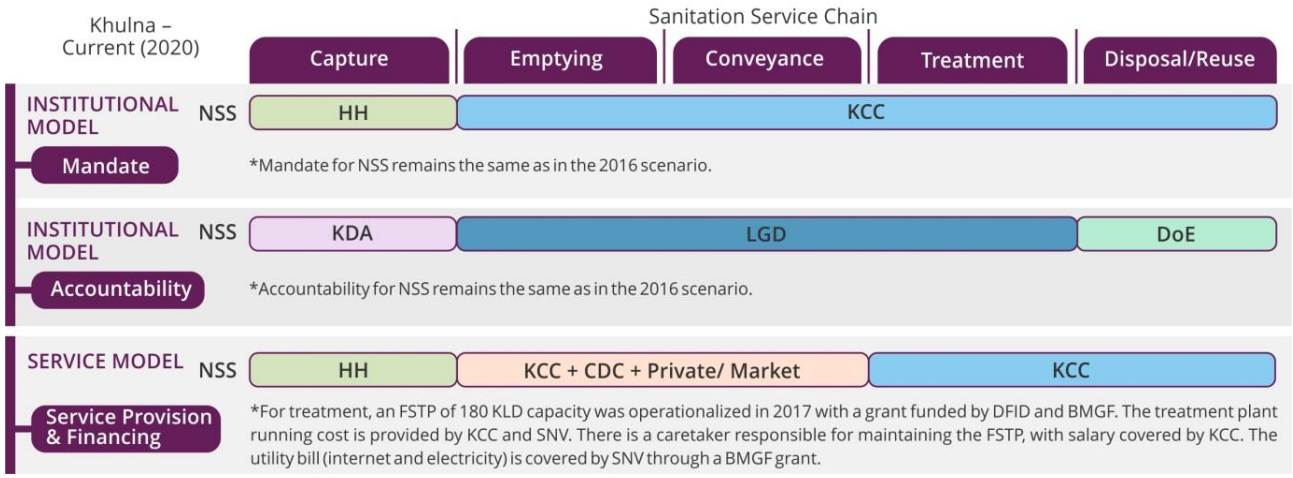
The graphics below show the institutional mandate, accountability and service provision models for Khulna before the CWIS program started and the current scenario as of 2020. The full institutional model of urban sanitation service delivery covers all three of the systems functions under CWIS—Responsibility[9], Accountability[10], and Resource Planning/ Management (financing framework)[11]. The illustration in this section presents only responsibility and accountability, as financing framework is complex and varies widely across cities. The section on service model illustrates how sanitation services are being delivered. The service model includes a wide range of options such as direct provision by the mandated service authority, public private partnerships, and direct provision by the private sector but with oversight/ regulation by the service authority or through open markets with limited oversight/regulation.

In Khulna, the main change during the course of the CWIS program is the operationalization of a FSTP, which filled in the previous vacancy in treatment and disposal/reuse.

Legends: SS - Sewered Sanitation; NSS - Non-Sewered Sanitation



[9] Responsibility means that authority (ies) executes a clear public mandate to ensure safe, equitable, and sustainable sanitation for all.
[10] Accountability means that authorities' performance against their mandate is monitored and managed with data, transparency and incentives.
[11] Resource Planning/ Management means that resources – human, financial, natural, assets – are effectively managed to support execution of mandate across time / space.


Khulna – Current (2020)
Sanitation Service Chain
Capture
Emptying
Conveyance
Treatment
Disposal/Reuse
INSTITUTIONAL MODEL
NSS
HH
KCC
Mandate
*Mandate for NSS remains the same as in the 2016 scenario.
INSTITUTIONAL MODEL
NSS
KDA
LGD
DoE
Accountability
*Accountability for NSS remains the same as in the 2016 scenario.
SERVICE MODEL
NSS
HH
KCC + CDC + Private/ Market
KCC
Service Provision & Financing
*For treatment, an FSTP of 180 KLD capacity was operationalized in 2017 with a grant funded by DFID and BMGF. The treatment plant running cost is provided by KCC and SNV. There is a caretaker responsible for maintaining the FSTP, with salary covered by KCC. The utility bill (internet and electricity) is covered by SNV through a BMGF grant.

3. List of CWIS Interventions

This section seeks to capture Khulna's path to CWIS goals of equity, safety and sustainability and its performance on key functions such as clarity of mandate/responsibility, accountability and resource planning/ management. The table below is a list of Key Performance Indicators (KPIs)[12] used to gauge changes towards CWIS, followed by another table detailing the scenario in Khulna. The KPIs EQ-1 and SF-1 specifically follow the definitions as laid out in the Shit Flow Diagram (SFD) manual[13].

KPIs for Interventions

	Equity *Services reflect fairness in distribution and prioritization of service quality, prices, and deployment of public finance/ subsidies*	**Safety** *Services safeguard customers, workers, and communities from safety and health risks—reaching everyone with safe sanitation*	**Sustainability** *Services are reliably and continually delivered based on effective management of human, financial and natural resources*

Service Outcomes	• **EQ-1**: % safely managed sanitation in low income areas
	  ○ % wastewater (WW) contained
	  ○ % supernatant (SN) contained
	  ○ % FS contained
	  ○ % FS emptied
	• **EQ-2**: Women's participation in sanitation related matters
	• **EQ-3**: Gender friendly PT/CT design
	• **EQ-4**: % of sanitation workers covered by social security and health insurance
		• **SF-1**: % safely managed sanitation
		  ○ % WW contained
		  ○ % WW contained delivered to treatment
		  ○ % SN contained
		  ○ % FS contained
		  ○ % FS emptied (contained + not contained)
		  ○ % wastewater treated
		  ○ % FS treated
		• **SF-2**: Health and safety standards and SOPs exist to protect sanitation workers from occupational hazards, and compliance is monitored
			• **SS-1**: % of treated wastewater that is reused
			• **SS-2**: % of treated biosolids that is reused
			• **SS-3**: % of utility capital investments covered by budget line/ government transfers
			• **SS-4**: % of O&M cost recovered for sanitation infrastructure (STPs/WWTPs, FSTPs, CT/PTs, desludging trucks, etc.)

	Responsibility *Authority (ies) executes a clear public mandate to ensure safe, equitable, and sustainable sanitation for all.*	**Accountability** *Authorities' performance against their 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.*

System Functions	• **RS-1**: Policy mandate for service delivery covers both sewered and non-sewered sanitation across the entire sanitation service chain
	  ○ Mandate has no exclusions
	  ○ Mandate is explicitly pro-poor
	  ○ Mandate is gender intentional and inclusive of vulnerable groups
		• **AC-1**: Service authority performance is monitored externally with clear KPIs and targets
		• **AC-2**: Performance data is sufficiently collected and reported, representative, and transparent
		• **AC-3**: Incentives and/or penalties tied to performance exist for sanitation service authority
			• **RPM-1**: Clear financing framework
			• **RPM-2:** Staff are in place and capable to execute mandate
			• **RPM-3**: Quality of investment decision-making
			• **RPM-4**: Integrated citywide sanitation plan

[12] The KPIs are based on the list of CWIS indicators, which are more detailed and intended to offer comprehensive insights into a city's progress towards CWIS. This KPI list focuses on a subset of CWIS indicators and seeks to highlight interventions that can contribute to improved outcomes, as most cities are still in early stages of investment maturity. For example, the CWIS indicators measure women's usage of PT/CTs as quantitative outcomes, while the KPI EQ-3 focus on gender friendly PT/CTs as an intermediate outcome that can lead to more women using PT/CTs.

13 Definitions as per the SFD Manual i.e., %SN contained = 0.5 * %Septic tank/ fully lined tank (sealed)/ lined tank with impermeable walls and open bottom connected to a centralized/decentralized combined sewer or foul/separate sewer; %WW contained = %Toilet discharges directly to a centralized/decentralized combined sewer or foul/separate sewer; %FS contained (all conditions when there is 'low risk' of groundwater pollution) = %Toilet discharges directly to soak pit + %Septic tank/ fully lined tank (sealed)/ lined tank with impermeable walls and open bottom connected to soak pit or no outlet + % Lined/ unlined pit, no outlet or overflow + % Pit (all types), never emptied but abandoned when full and covered with soil, no outlet or overflow + %SN contained.

Khulna Scenario

The table below presents the scenario in Khulna before the CWIS program was initiated, the target that needs to be achieved and the reforms and interventions made to reach this target. The table seeks to cover key interventions, both those completed over the past few years and those under planning, by all stakeholders that contribute to goals aligned with the CWIS idea. The table is not restricted to interventions that are part of the BMGF funded CWIS program or the CWIS grantee.

*NOTE: Acronyms are available at the end of the section.

		Equity	Safety	Sustainability

Service Outcomes	Starting Scenario (2017)	• **EQ-1**: 0% safely managed sanitation in low income areas:
		  ○ 0% WW contained (no sewer network);
		  ○ 0% SN contained;
		  ○ 0% FS contained;
		  ○ 0% FS emptied.
		• **EQ-2**: Lack of women's participation in leadership and entrepreneurship in the sanitation sector.
		• **EQ-3**: PT/CTs have separate cubicles for female/ male, but lack other gender friendly features such as MHM facilities.
		• **EQ-4**: 0% of sanitation workers are covered by social security and health insurance[14]. All are hired on daily payment basis.
			• **SF-1**: 0% safely managed sanitation:
			  ○ 0% WW contained (no sewer network in the city);
			  ○ 0% SN contained;
			  ○ 0% FS contained[15];
			  ○ 0% FS emptied;
			  ○ 0% FS treated.
			• **SF-2**: Health and safety standards exist, but no SOPs exist to protect sanitation workers from occupational hazards, and compliance is not monitored.
				• **SS-1**: Not applicable--no treatment system exists.
				• **SS-2**: Not applicable.
				• **SS-3**: 36% of capex for vacutugs/ KCC owned desludging vehicles is covered by government budget [16]; 0% infrastructure cost for FSTP is covered by government budget[17].
				• **SS-4**: 35% of O&M cost is recovered for vacutugs[18]; 100% is recovered for PT[19].

[14] Health insurance is not provided by government to any employee regardless of job position. This is also quite same in private sector except some international organizations. People usually do policy insurance personally for their health coverage.
[15] Most households in the city rely on septic tanks connected to open drains/ storm sewers. A very small percentage have septic tanks connected to soak pits; however, there is a high risk of groundwater contamination in most of the city.
[16] As per the "Cost calculation and Tariff Setting Study" conducted by SNV, there were 5 vacutugs in KCC donated by LGED, UNDP and SNV. Total costs of these vacutugs were 11million BDT (approx.). LGED provided vacutug costs 4 million BDT.
[17] The total construction cost was 19.0 million BDT (240,000.00 USD). DFID funded the facility under BMGF's project. KCC provided the land.
[18] As per the "Study on willingness to pay for FSM services" conducted by SNV, the yearly O&M cost of emptying service for KCC was 588,000 BDT (approx.) and total income from emptying service was 207,070 BDT.
[19] PTs in KCC are leased out to private organizations/individuals for O&M. As per the Public Toilet Demand Scanning study conducted by SNV in 2016, 100% O&M cost are recovered for these PTs. For CTs this is the users' responsibility to cover the O&M cost. There are CT management committees within the user group who manages their respective CTs.

	Reforms & Interventions	• KCC, SNV and LIUPC are developing a ward sanitation strategy for slum areas to improve sanitation situation in LICs, including identification of low cost sanitation systems, sanitation mapping, developing ward sanitation action plan, etc. • SNV and KCC have reactivated Community Toilet Management Committees in 36 slums to revamp dysfunctional CTs. • SNV conducted Gender Equality and Social Inclusion (GESI)[20] assessment, and developed a gender action plan based on study findings for implementation, which covers women's representation in political activities, HH sanitation decision-making, role played as sanitation worker and ownership in sanitation business. • SNV plans to coach all female councilors, KCC women sanitation officials, and CDC leaders from three selected wards to raise their voice in municipal decision-making on sanitation. • KCC supported by SNV is piloting DEWATS in one ward as an innovative sanitation solution for LICs. SNV is also supporting KCC to develop Development Project Proposal (DPP) for constructing DEWATS in three wards worth 5 million USD. • SNV conducted public toilet surveys on the availability of facilities to meet the needs of women, children, and people with disabilities.	• KCC operationalized a 180 KLD FSTP based on vertical flow constructed wetland system (funded by DFID and BMGF) and implements its performance monitoring. • Supported by SNV, Khulna Community Development Organization (KCDO) and KCC is providing 4 million BDT equivalent seed capital to sanitation entrepreneurs, such as for vacutug owners to repair dysfunctional trucks, for masons, and for shop owners who sell sanitation related supplies (toilet fittings, etc.). So far, 29 entrepreneurs have received loans. • SNV and KCC are working to reach 50,000 people through BCC campaign for all consumer segments to spread awareness about safe emptying services, and expand to non-HH segments i.e. institutions (schools, hospitals), businesses and other premises producing sludge. • KCC introduced GPS monitoring of vacutugs to prevent illegal dumping. • SNV developed septic tank construction training modules and provided training to masons. • SNV and KCC developed Occupational Health Safety (OHS) guidelines and provided training to all sanitation workers in KCC, CDC and some informal emptiers in the city. They are developing by-laws for Local Government Institutions (LGIs) to implement OHS guidelines.	• KCC is reusing the water from the polishing pond at the FSTP for cleaning of inlet box and vacutugs. • KCC plans to implement learnings from the action research on impact of treated sludge in agriculture and aquaculture, including piloting with commercial farmers and extension works. SNV and KCC are currently developing action research on carbonized briquettes as an energy source. • SNV is supporting KCC to map funding gaps and barriers and introduce financial resources, i.e. cross-subsidies, taxes and other means, to assure regular revenue streams for KCC across the sanitation service chain.

[20] Gender Equality and Social Inclusion (GESI) Assessment in Khulna, SNV, 2019. This study aims to assess the current norms, practices and gaps to address GESI issues and to deepen the understanding of marginalization on the basis of gender, age, disability, ethnicity, religion, poverty or any other for increasing access and use of WASH services for all.

	Target Scenario (2020 & beyond)	• **EQ-1**: 30% safely managed sanitation in low-income settlements by the end of the project (2020). • **EQ-2**: Gender targeted interventions based on study findings are integrated into KCC's annual sanitation plan. • **EQ**-3 DPP developed for public toilets covering the entire city and addressing the needs of women and people with disabilities.	• **SF-1**: 20% safely managed sanitation citywide by the end of the project (2020) • **SF-2**: 80% of certified service providers are compliant with OHS and performance standards.	• **SS-4**: FSTP resource recovery plan in place-- tariff recovery is above 70% and income is adequate to cover ongoing O&M costs, including repair and replacement.
System Functions	Starting Scenario	**Responsibility**	**Accountability**	**Resource Planning/ Management**

		• **RS-1**: KCC is responsible for overall sanitation service provision in Khulna City Corporation area; KWASA will be developing sewer networks and be responsible for sewered sanitation once the service begins.
		  ○ There is ambiguity around responsibility for shallow sewers and DEWATS;
		  ○ Neither KCC or KWASA has an explicit pro poor mandate mentioned in the policy documents that define their mandates;
		  ○ Mandate for neither KCC nor KWASA explicitly mentions the needs of women.
			• **AC-1**: KCC signs Annual Performance Agreement (APA) every year with the LGD including sanitation and FSM targets. Reporting on this APA performance monitoring system is unclear and not transparent.
			  ○ Institutional and regulatory framework (IRF) for FSM exists, but there is no action plan to implement this IRF;
			  ○ No formal sanitation related grievance redressal system exists.
			• **AC-2**: Sanitation related data is limited—citywide baseline data has been collected but no MIS exists for sanitation data.
			• **AC-3**: No incentives and/ or penalties tied to performance exist for KCC.
				• **RPM-1**: 20% of central government transfer is allocated for sanitation. However, KCC is allowed to, and often reallocates unspent budget to other sectors during the revised budget.[21] Monitoring system for the usage of sanitation budget is not in place within KCC.
				• **RPM-2**: Shortage of dedicated staff for sanitation.
				• **RPM-3**: KCC's sanitation investment depends on central government's ADP allocation and donor investment decisions.
				  ○ Assessment of all project related capital, O&M on full lifecycle cost basis, and the impact of new investment on overall system cost and revenue are required in the DPP
				  ○ KCC has to obtain a No Objection Certificate (NOC) from the Department of Environment (DoE) for initiating any

[21]Sanitation sector received less importance compared to water logging, drainage and solid waste management in the city. Hence, any unspent sanitation budget is often used for the development of these sectors.

				project with potential impact on the environment, energy and water availability. • **RPM-4**: KWASA has been working on a citywide sewerage plan; no city sanitation plan exists for NSS services.
	Reforms & Interventions	• SNV is providing advocacy support to KCC and KWASA to integrate low cost DEWATS infrastructure in NSS/SS services. • SNV has developed a pro-poor, gender and social inclusion strategy which will be implemented by KCC. Among other areas, the strategy covers: o A needs assessment of different community segments across the sanitation value chain; o Proper access and safety for women/ adolescent girls on bathing/ using the toilet; o Financing mechanism for sanitation provision in slum and LICs.	• SNV is advising KCC on the development of by-laws, incl. guidelines, tools and procedures to operationalize the IRF. • SNV and KCC are developing KPIs for sanitation and FSM finance and performances. • SNV is supporting KCC to develop an Integrated Management Information System (IMIS) to aggregate data from the FSM truck tracker, community toilet, public toilet and public places information, and holding tax database (tax identification number).	• With support from SNV, KCC integrated FSM in municipal planning, ward planning and budget. • SNV has worked with KWASA and KCC to develop a strategy/ citywide plan for zonification of the city to reflect the gradual transition to sewer. • SNV supported KCC to include the establishment of FSM units with dedicated staff for FSM in LGIs within the national action plan (NAP) for IRF. A draft ToR for the FSM unit equipped with designated personnel is developed.
	Target Scenario (2020 & beyond)	• **RS-1**: Clarity among KWASA, KDA and KCC about their specific roles when the sewerage plan is implemented. o Within KCC's existing mandate, pro-poor focus and gender inclusion is incorporated into the legal and regulatory tools for KCC to execute its mandate.	• **AC-2:** Sanitation related data is comprehensively collected and captured in an IMIS. FSM and sanitation targets of APA are integrated into the IMIS.	• **RPM-1**: KCC maintains a separate bank account for FSM income and expenditure, with clear KPIs on financing. • **RPM-2**: Sufficient and dedicated staff in place for KCC to provide FSM services. • **RPM-4**: DEWATS is integrated into KWASA's sewerage plan, and a sanitation plan exists for NSS.

Acronyms

ADB- Asian Development Bank
ADP - Annual Development Program
APA - Annual Performance Agreement
DoE - Department of Environment
DPP - Development Project Proposal
DEWATS – Decentralized Waste Water Treatment System
FSTP – Faecal Sludge Treatment Plant
GESI- Gender Equality and Social Inclusion
HH- Household
IMIS - Integrated Management Information System
IRF - Institutional and Regulatory Framework
KCC- Khulna City Corporation
KDA- Khulna Development Authority
KWASA- Khulna Water Supply and Sewerage Authority
LGD- Local Government Division
LGI – Local Government Institution
LIC- Low Income Community
LIUPC - Livelihoods Improvement of Urban Poor Communities
MHM – Menstrual Hygiene Management
NOC – No Objection Certificate
NSS- Non-Sewered Sanitation
OHS – Occupational Health Safety
ToR – Terms of Reference
SOP- Standard Operating Procedures
SS – Sewered Sanitation
STP- Sewage Treatment Plant