



CSE-WRC Meeting 07/2022

From SFDs to City Sanitation Planning

Dr. Arne Panesar – Component Lead « Resilient WASH » in the Sector Programm Water Policy Advice



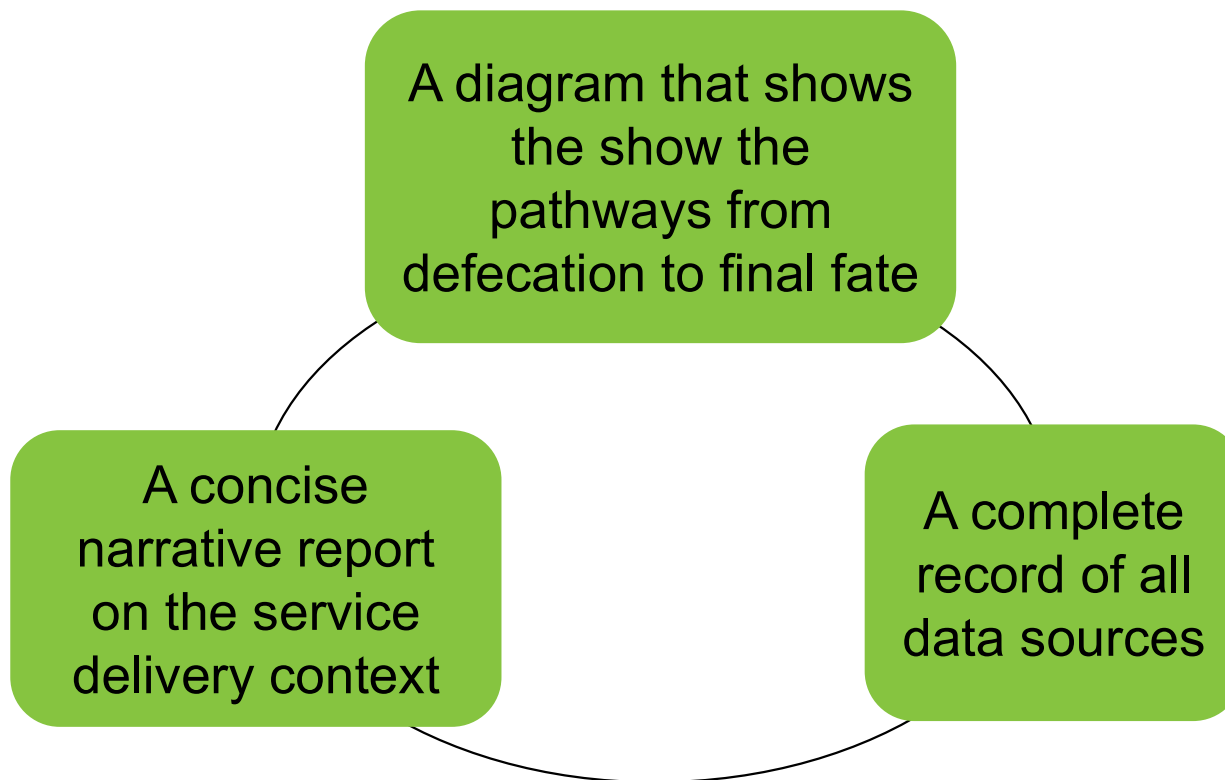
Introduction to the Shit Flow Diagram (SFD)



What is an SFD ?



An excreta flow diagram (also often described as shit flow diagram, SFD) is a tool to readily understand and communicate how (un)safe excreta flow through a city or town.



The story behind the SFD



- **In 2013:** Analysis of excreta management in 12 cities initiated by the World Bank
- **In 2014:** a group of institutions convened to create the SFD Promotion Initiative funded by Bill and Melinda Gates Foundation with the support of BMZ (through GIZ NaSa SV – SuSanA)
- **2014 – now:** SFD PI has implemented 3 consecutive phases, with the following outcomes:
 - Approach and tools development
 - Creation of a webportal <https://sfd.susana.org/>
 - Management of the webportal (including maintenance)
 - Promotion of the SFD through trainings and events
 - Support in publishing SFD reports on the webportal

Partners of the SFD Promotion Initiative



The SFD approach



<p>Purpose</p>	<p>Estimating proportion of population using safely managed sanitation as defined by SFD Promotion Initiative (SFD PI).</p>
<p>Focus</p>	<p>City or urban area</p>
<p>Outputs</p>	<ul style="list-style-type: none"> • City- or town-based SFD reports • Key component is SFD Graphic <div data-bbox="422 847 1142 1159"> </div>

<p>Methodology</p>
<ul style="list-style-type: none"> • Step 1: Define the boundary of your SFD assessment and identify the stakeholders • Step 2: Collect data (literature, reports, key informant interviews, observation on the ground, focus group discussions, etc.) • Step 3: Produce your SFD graphic (to be validated) • Step 4: Draft your SFD report (using the templates) and publish it on the webportal (possible reviews)

What type of information does SFD convey ?



- Percentages of excreta transported through sewers or emptied from containment (off-site / onsite sanitation)

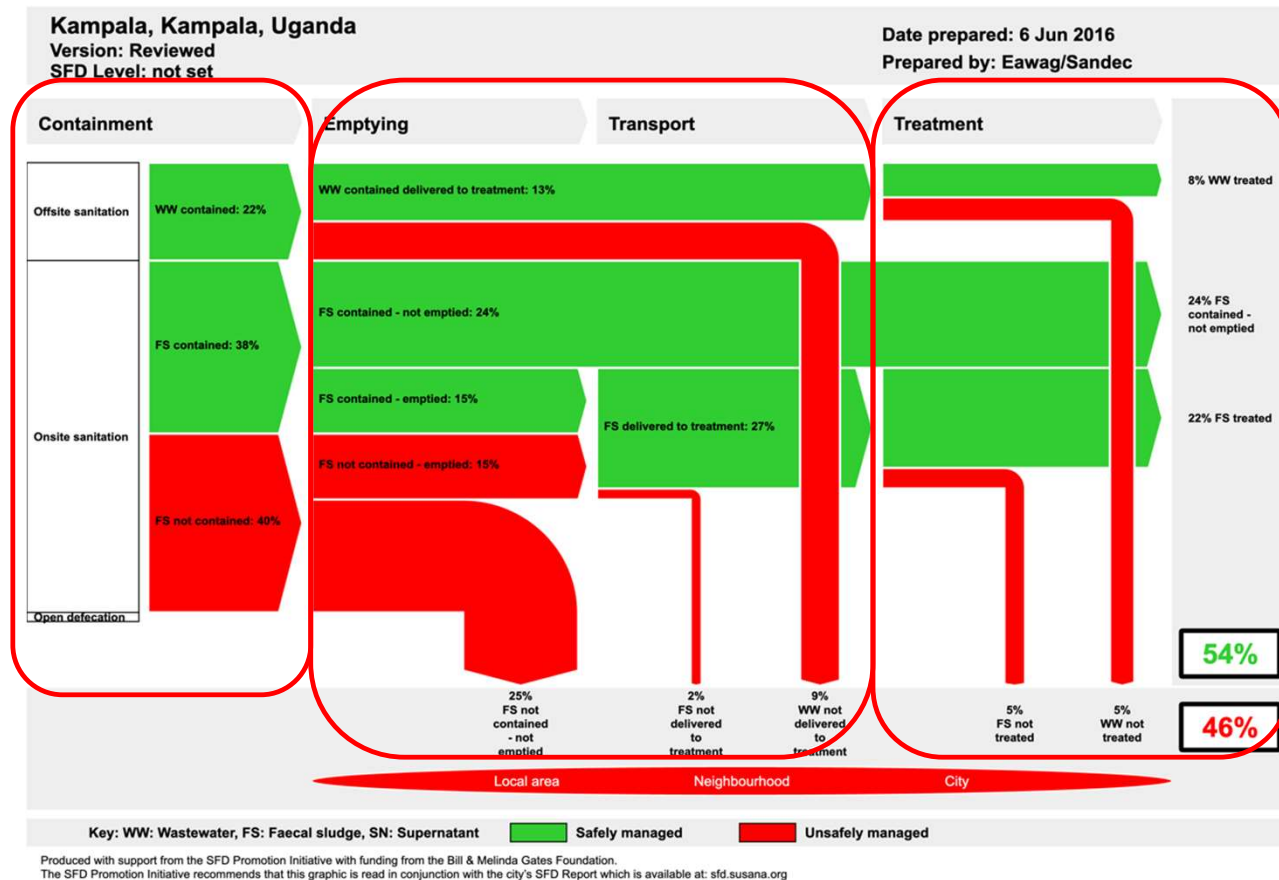
➤ Not a detailed planning tool

- Percentage of faecal sludge and wastewater delivered to treatment

➤ Not a quantification tool with accurate volumes

- Percentage of excreta treated or not treated

➤ Not a detailed assessment of treatment performance





Toolbox:

- SFD manual (*translated in 5 languages*)
- Online trainings
- Resources Hub
- Graphic generator
- Reporting templates
- SFD data page (analysis of several sets of data)
- SFD library (Worldwide map)

SFD Webportal: <https://sfd.susana.org/>

A screenshot of the SFD webportal interface. The browser address bar shows 'https://sfd.susana.org/'. The page features a navigation menu with 'ABOUT', 'KNOWLEDGE', 'NEWS & EVENTS', 'GRAPHIC GENERATOR', 'SFD DATA', and '253 SFDs WORLDWIDE'. A search bar and a 'LOGIN' button are also visible. The main content area is titled 'NEW SFD SANITATION SYSTEM DRAWINGS' and includes a 'Step One: Enter general information about the city or urban area' form. The form has fields for 'City or urban area', 'State or Province', 'Country', 'Population', and 'SFD Level'. Below the form is a section for selecting sanitation systems. A large green banner at the bottom of the screenshot reads 'NEW SFD sanitation system drawings' and includes the text 'Check out the new drawings on the SFD graphic generator - when'. On the right side, there is a diagram of a septic tank system labeled 'System T1A2C7' and a 'GET SUPPORT' button.

Graphic generator



The SFD Graphic Generator is a simple tool that allows the production of SFD graphics. Once you have the data for your city, you can easily generate the SFD graphic and download the results for reports and publications.

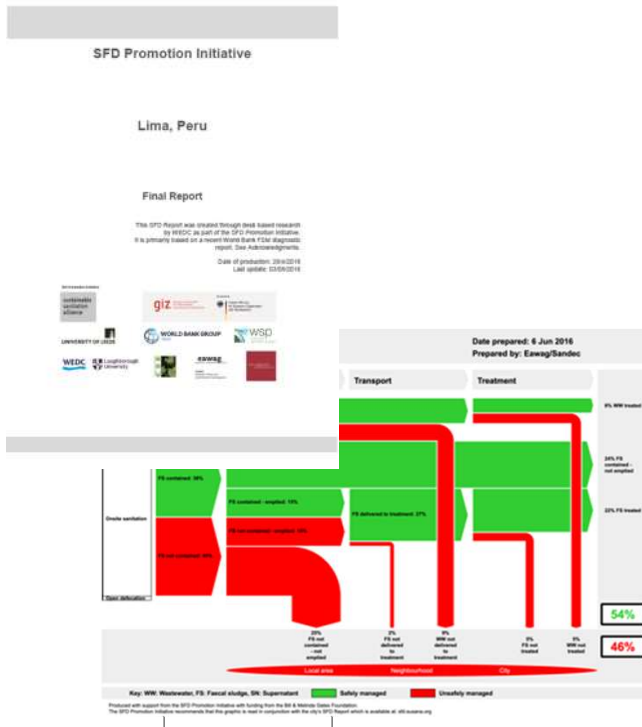
List A: Where does the toilet discharge to? (i.e. what type of containment technology, if any?)	List B: What is the containment technology connected to? (i.e. where does the outlet or overflow discharge to, if anything?)																			
	to centralised combined sewer	to centralised foul/separate sewer	to decentralised combined sewer	to decentralised foul/separate sewer	to soakpit	to open drain or storm sewer	to water body	to open ground	'to 'don't know where'	no outlet or overflow										
No on-site container. Toilet discharges directly to destination given in List B					High risk of GW pollution Low risk of GW pollution						Not Applicable									
Septic tank		T1A2C2			Significant risk of GW pollution Low risk of GW pollution															
Fully lined tank (sealed)					High risk of GW pollution Low risk of GW pollution															
Lined tank with impermeable walls and open bottom	High risk of GW pollution Low risk of GW pollution	High risk of GW pollution Low risk of GW pollution	Significant risk of GW pollution Low risk of GW pollution	Significant risk of GW pollution Low risk of GW pollution	Significant risk of GW pollution Low risk of GW pollution						High risk of GW pollution Low risk of GW pollution									
Lined pit with semi-permeable walls and open bottom	Not Applicable										Significant risk of GW pollution									
Unlined pit											Low risk of GW pollution									
Pit (all types), never emptied but abandoned when full and covered with soil											Low risk of GW pollution									
Pit (all types), never emptied, abandoned when full but NOT adequately covered with soil	Not Applicable										Low risk of GW pollution									
Toilet failed, damaged, collapsed or flooded																			T1B9 C1 TO C10	
Containment (septic tank or tank or pit latrine) failed, damaged, collapsed or flooded																				
No toilet. Open defecation	Not Applicable										Not Applicable									



Current status



222 cities with a reviewed SFD report containing an SFD graphic



Prepared by

All selected (44)

- All prepared by
- BMGF
- CEPT University
- CSE
- CSE, India
- CWIS TA Hub, South Asia/ENPHO
- CWIS TA Hub, South Asia/ENPHO and KVWSMB
- CWIS-FSM Support Cell, DPHE
- Dimple Behal
- ENPHO
- ESF, Pune
- Eawag & CDD Society
- Eawag & University of Malawi
- Eawag/Sandec
- Emanti Management
- GFA Consulting Group GmbH
- GIZ
- GIZ & Eawag
- GOPA Infra
- Gowtham & CSE
- IDB
- ITN-BUET
- KARE
- Mohd Aamir
- Mr. Abhijit Waghre & CSE
- Nalanda University
- Onushandhani Creeds Ltd.
- PRG, South Africa
- PSI
- Sanivation
- TRCSS,JNU
- UPM
- UPM GmbH
- University of Lausanne
- University of Leeds
- WEDC
- WaterAid
- WaterAid Bangladesh
- WaterAid Burkina
- WaterAid Cambodia
- WaterAid Ghana
- WaterAid Malawi
- WaterAid Nepal
- WaterAid Nigeria
- WaterAid Pakistan

Aggregated SFD data for several cities



Sprache auswählen ▼

CONTACT

SEARCH ...



LOGIN

ABOUT

KNOWLEDGE

NEWS & EVENTS

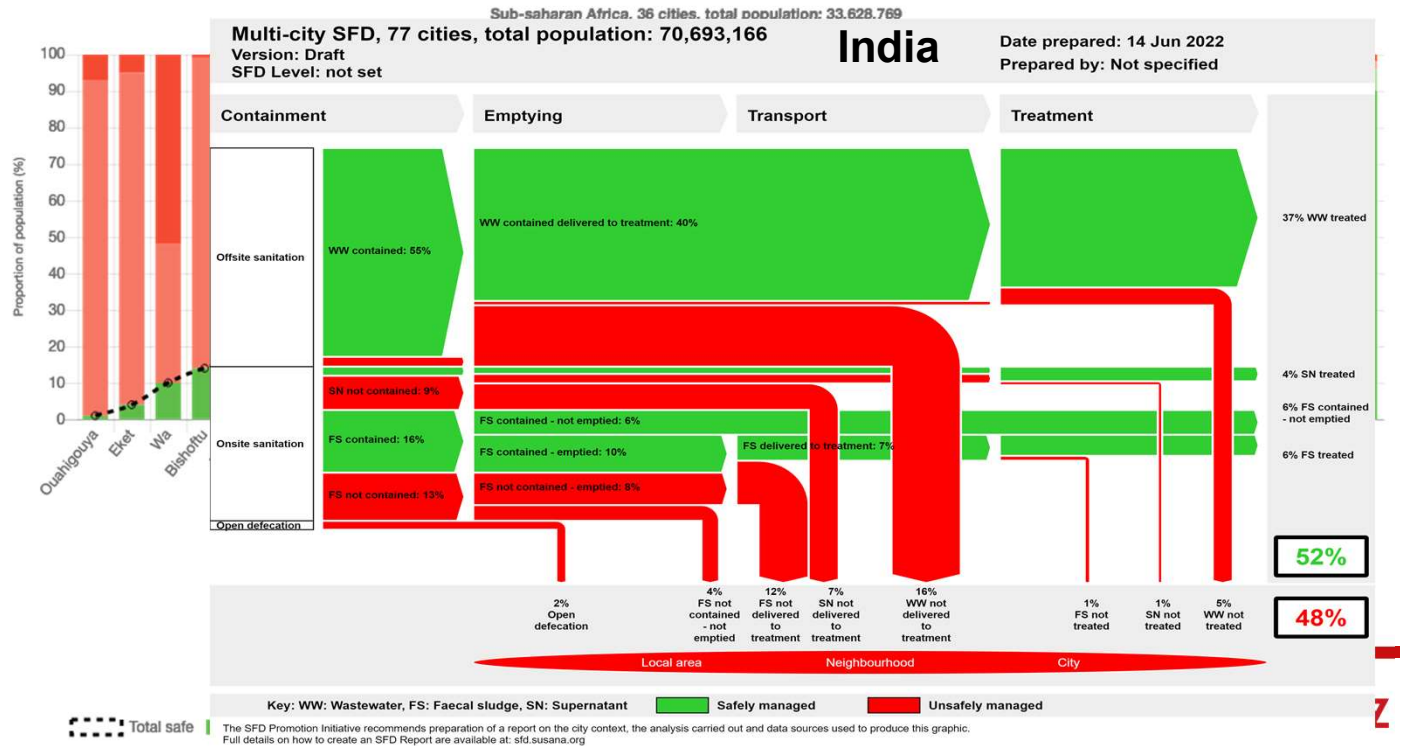
GRAPHIC GENERATOR

SFD DATA

253 SFDs WORLDWIDE

SFD data page

- multi-city SFD graphic
- summary charts to show the % of pop. with safely/unsafely managed sanitation

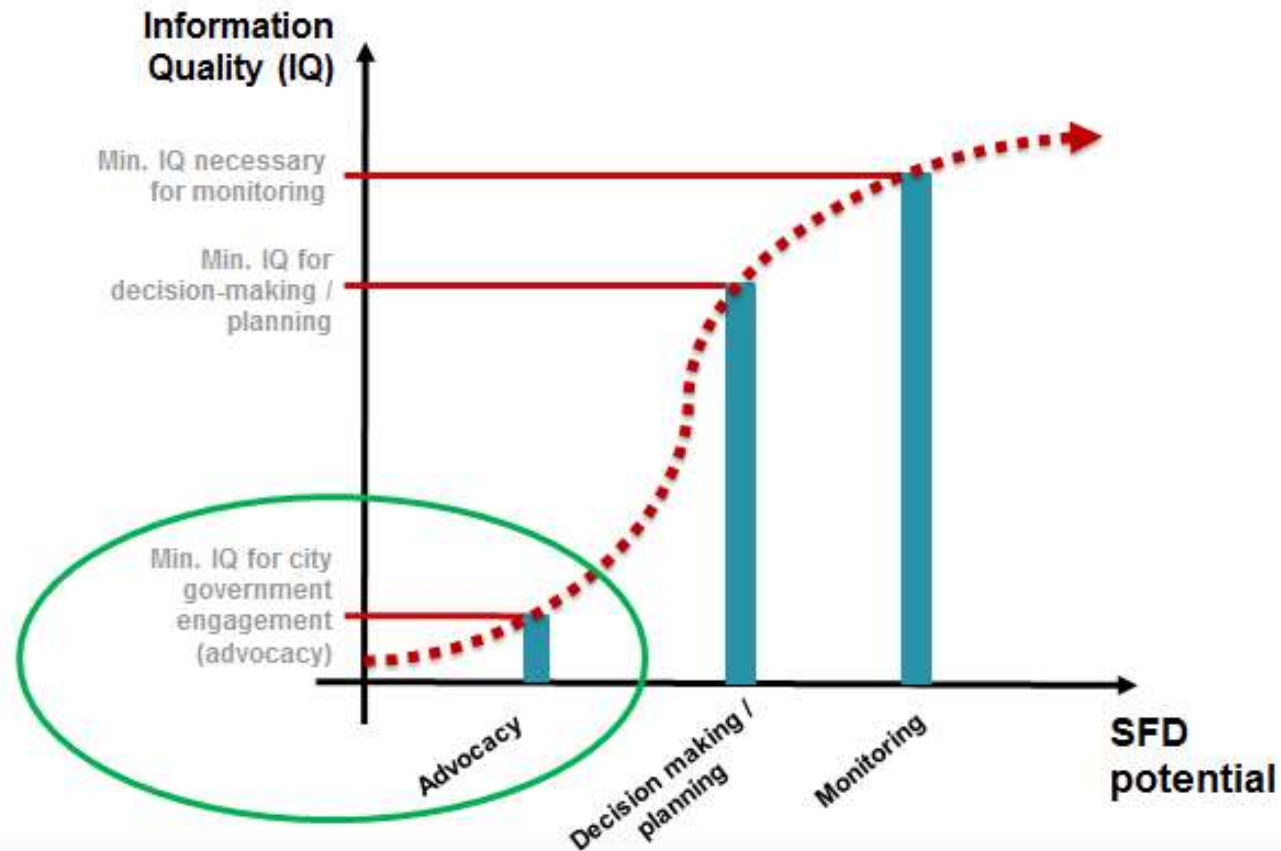




From SFDs to City Sanitation Planning



From advocacy to monitoring



Process orientation of the Indian National Urban Sanitation Policy



(Source: National Urban Sanitation Policy MoUD 2008)

IEC= information, education, communication

CSPs in India as an Example-Process



Capacity Building of 58 ULBs for preparation of CSPs



City Sanitation Plan for Kochi – Strategies and Action Plan



CITY-LEVEL GOALS: Identification of goals under the guidelines of NUSP and the accomplishment of the same would make Kochi 'a completely sanitised city'.



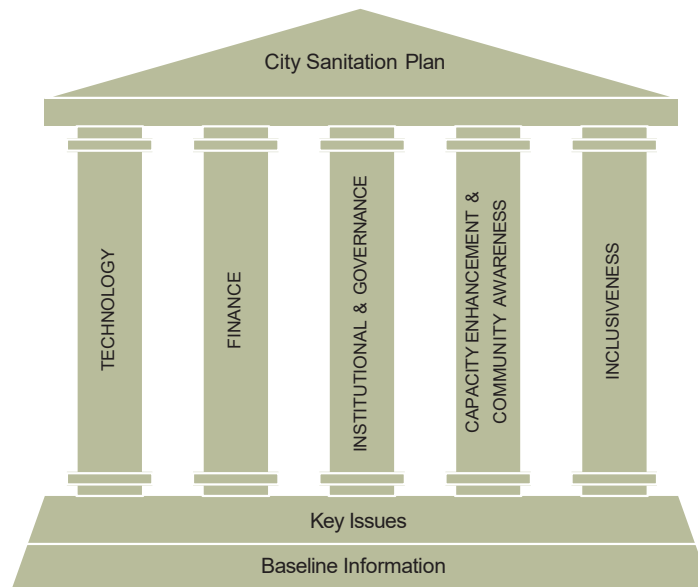
CITY-LEVEL KEY ISSUES: Critical issues are identified at ward level, zone level, and across various economic levels (urban & urban poor). The affected areas are characterized and prioritized for immediate intervention.



RECOMMENDATION FOR KEY ISSUES: Focused recommendations to address each key issue are designed. These recommendations are given in terms of technology required, costing, institutional and governance enhancement, community awareness and inclusiveness.



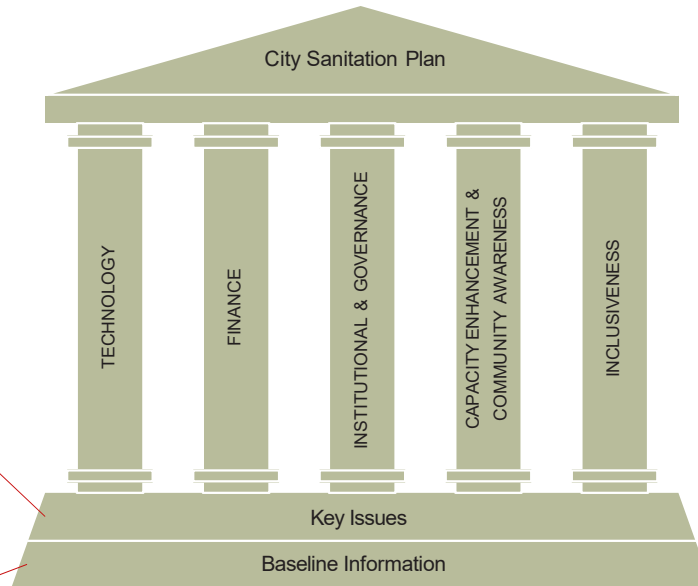
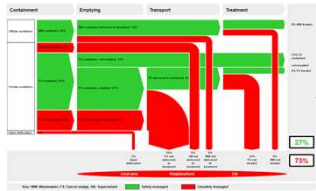
ACTION PLAN: Specific action plans are designed across the five plan components (access to toilets, wastewater management, river pollution and storm water management, water supply, solid waste management), and major strategic support components (governance and institutional framework and financial sustainability). These action plans are packaged around five pillars of intervention.

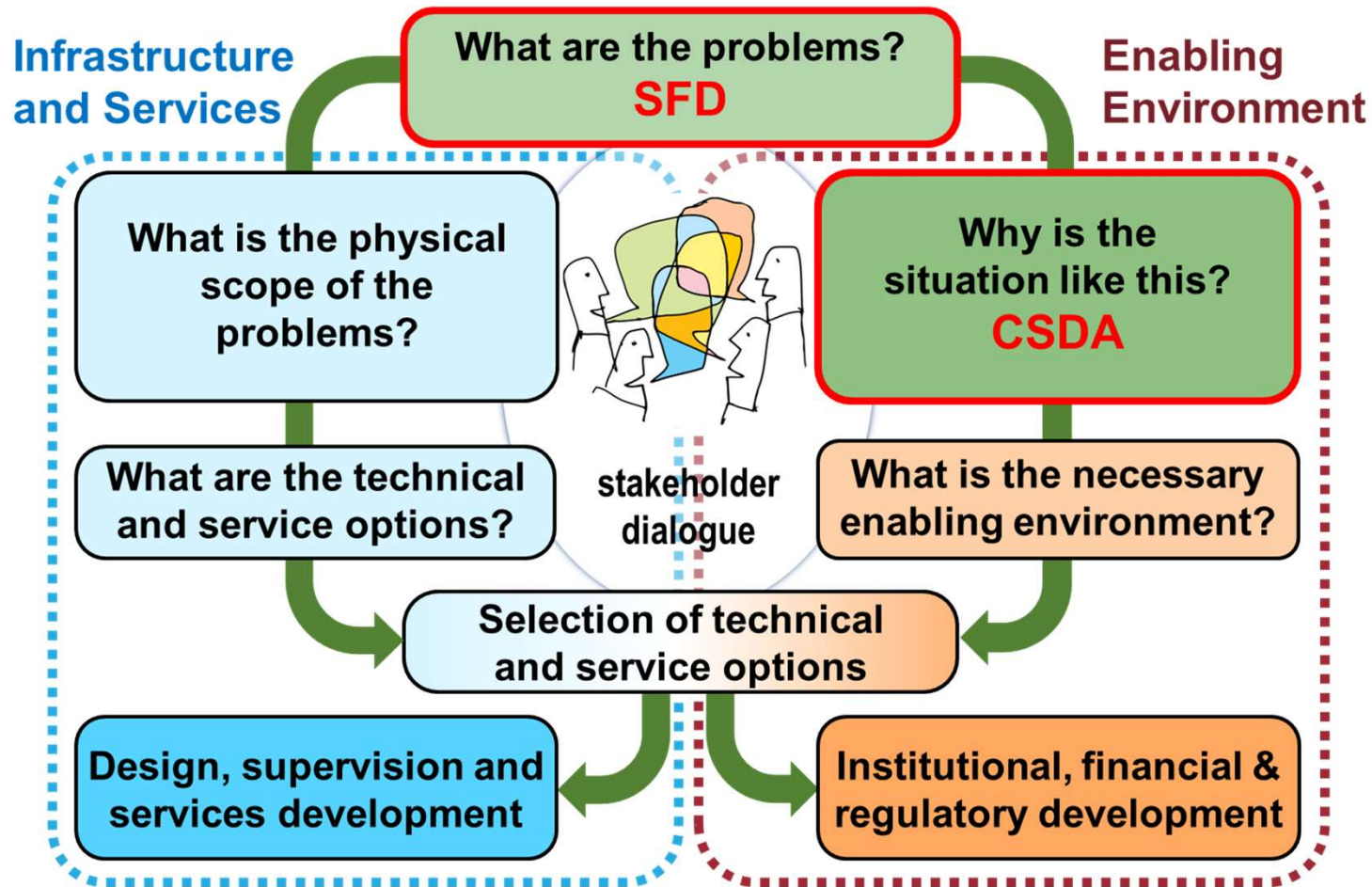


CSDA

Sewered sanitation			Non-sewered sanitation		
W. Sewer collection	Sewerage	Sludge treatment & reuse	Public, private	Planning	Sludge treatment & reuse
Enabling			Enabling		
Policy, legislation	Planning, budgeting	Inclusion	Policy, legislation	Planning, budgeting	Inclusion
Planning, budgeting	Inclusion		Policy, legislation	Planning, budgeting	Inclusion
Subsiding			Subsiding		
Funding	Capacity, outreach	Inclusion	Funding	Capacity, outreach	Inclusion
Funding	Capacity, outreach	Inclusion	Funding	Capacity, outreach	Inclusion
Sustaining			Sustaining		
Regulation, cost recovery	Institutions, service providers	Inclusion	Regulation, cost recovery	Institutions, service providers	Inclusion
Regulation, cost recovery	Institutions, service providers	Inclusion	Regulation, cost recovery	Institutions, service providers	Inclusion

SFD





Source: Blackett & Hawkins <https://incsanprac.com/tools.html#CSDA>

Structure of the CSDA

Assessment of institutional barriers to sanitation service delivery

\$\$

Resources into services

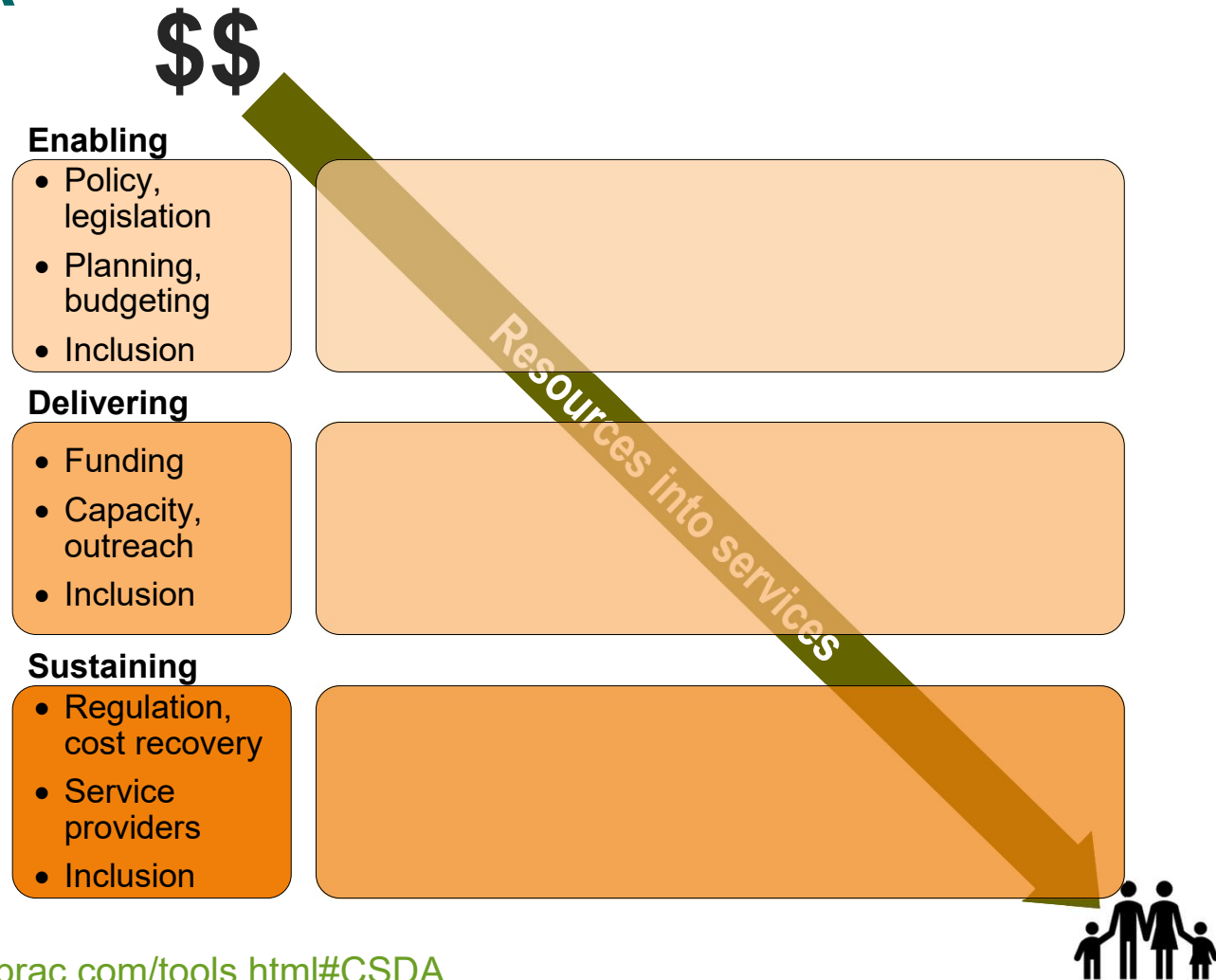


Source: Hawkins&Blackett <https://incsanprac.com/tools.html#CSDA>

Structure of the CSDA

Assessment of institutional barriers to sanitation service delivery

- Asks objective questions about service delivery mechanisms

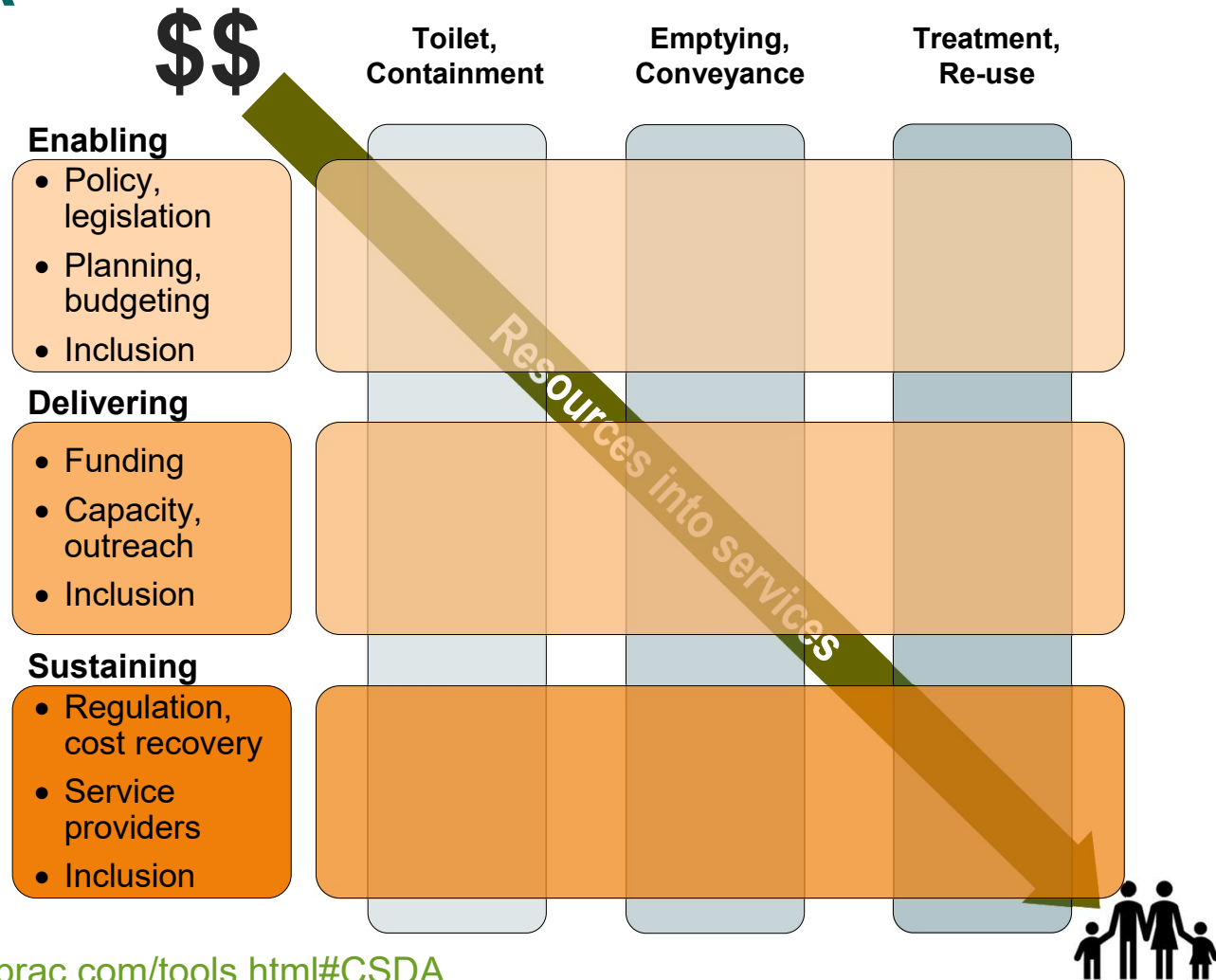


Source: Blackett & Hawkins <https://incsanprac.com/tools.html#CSDA>

Structure of the CSDA

Assessment of institutional barriers to sanitation service delivery

- Asks objective questions about service delivery mechanisms
- Along a simplified service chain

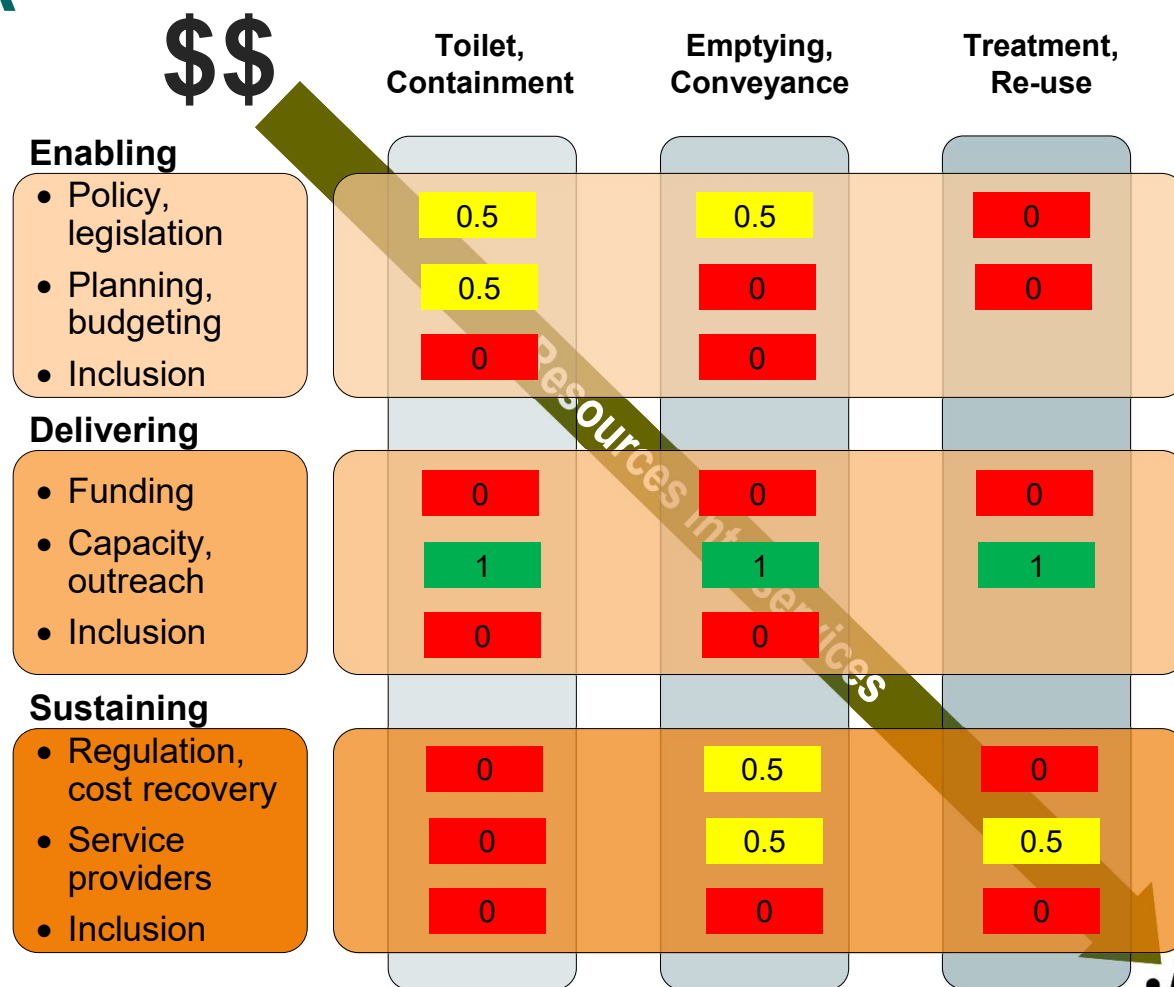


Source: Blackett & Hawkins <https://incsanprac.com/tools.html#CSDA>

Structure of the CSDA

Assessment of institutional barriers to sanitation service delivery

- Asks objective questions about service delivery mechanisms
- Along a simplified service chain
- Undertaken with stakeholders based on evidence

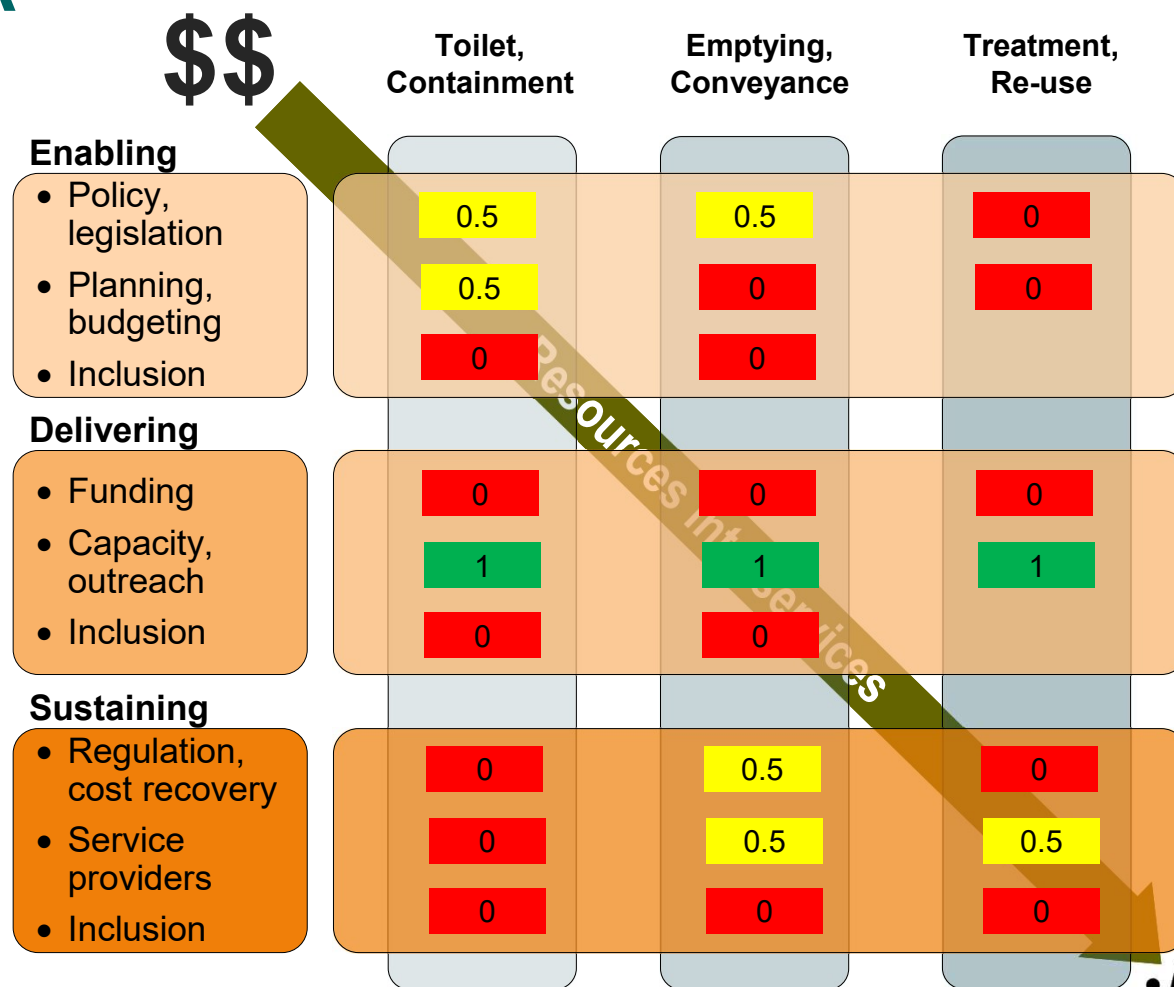


Source: Blackett & Hawkins <https://incsanprac.com/tools.html#CSDA>

Structure of the CSDA

Assessment of institutional barriers to sanitation service delivery

- Asks objective questions about service delivery mechanisms
- Along a simplified service chain
- Undertaken with stakeholders based on evidence
- Underlying questions should be adapted to the local context

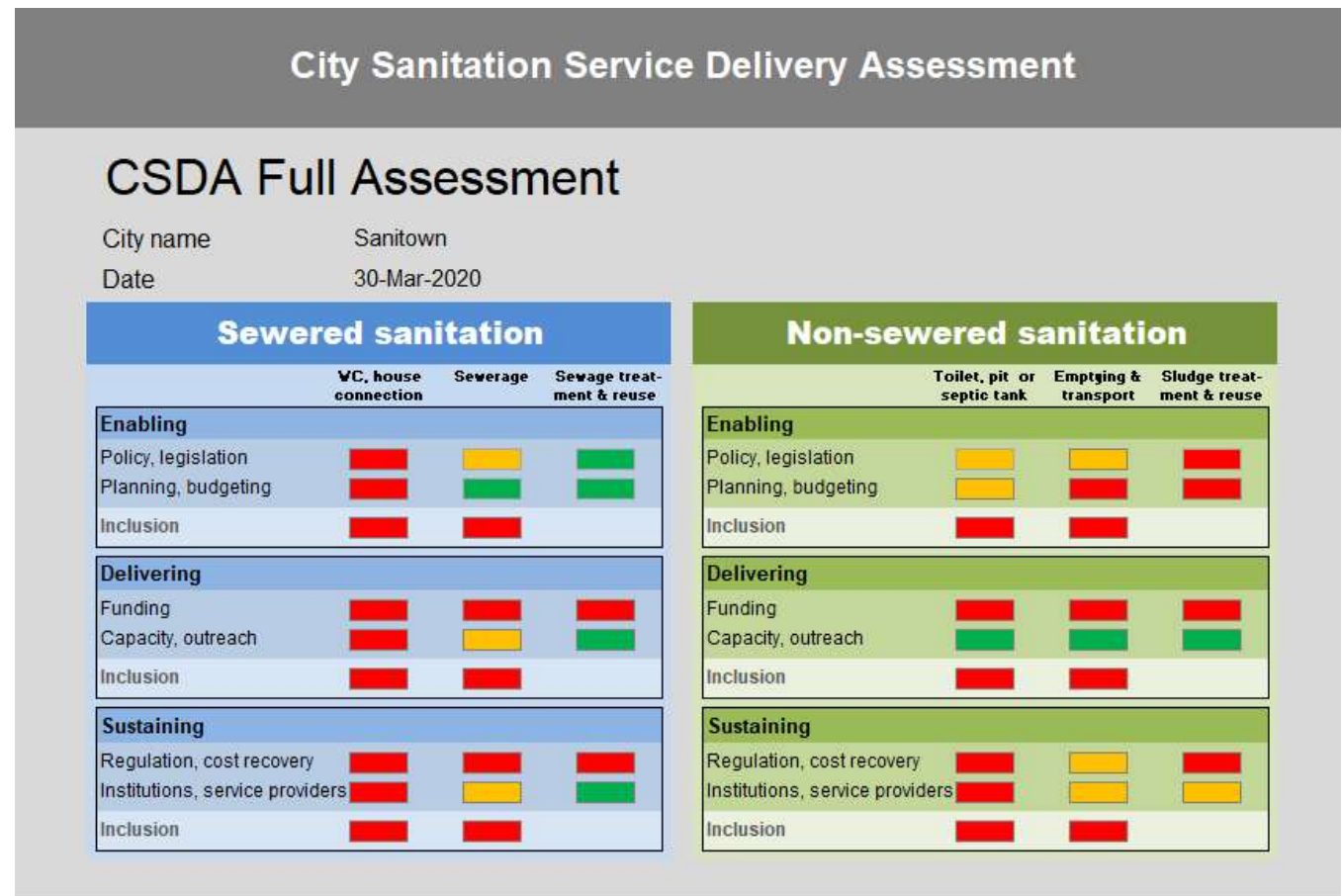


Source: Blackett & Hawkins <https://incsanprac.com/tools.html#CSDA>

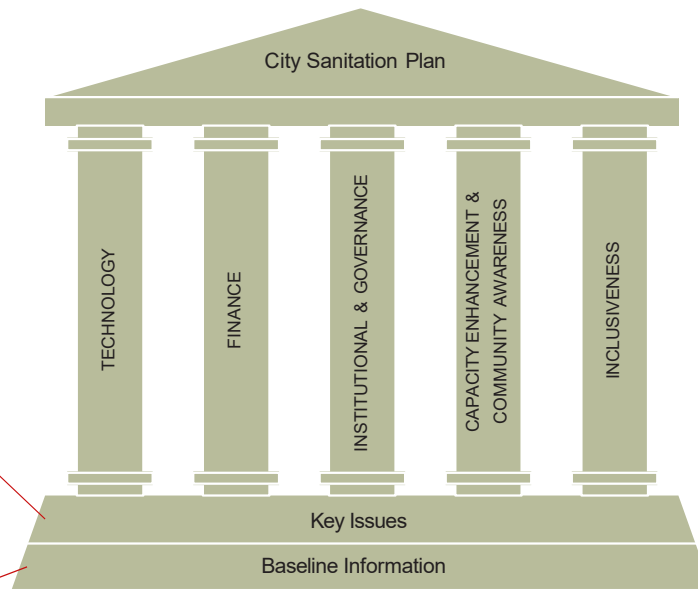
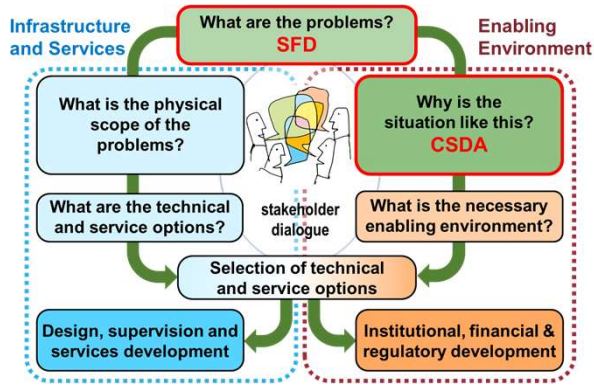
Separate assessments for sewered & non-sewered systems

Sewered and non-sewered systems assessed separately due to different:

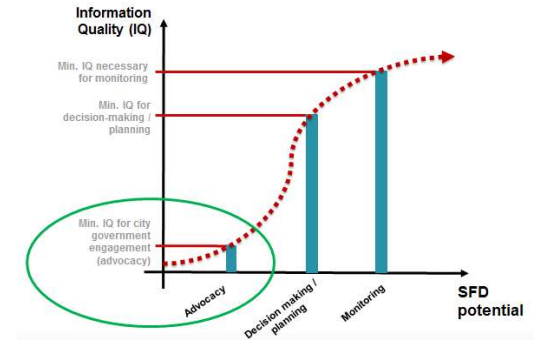
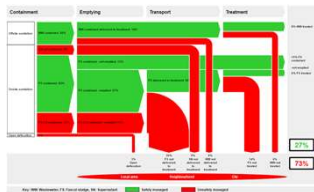
- institutions and regulations involved
- levels of development
- strengths and weaknesses
- actions needed



Source: Blackett & Hawkins <https://incsanprac.com/tools.html#CSDA>



	Sewered sanitation			Non-sewered sanitation		
	WC, sewer connection	Oversewage	Storage treatment & reuse	Filtration or septa tank	Oversewage	Storage treatment & reuse
Enabling						
Policy, legislation	Red	Yellow	Green	Yellow	Yellow	Red
Planning, budgeting	Red	Yellow	Green	Yellow	Yellow	Red
Inclusion	Red	Yellow	Green	Yellow	Yellow	Red
Subsetting						
Funding	Red	Yellow	Green	Yellow	Yellow	Red
Capacity, outreach	Red	Yellow	Green	Yellow	Yellow	Red
Inclusion	Red	Yellow	Green	Yellow	Yellow	Red
Sustaining						
Regulation, cost recovery	Red	Yellow	Green	Yellow	Yellow	Red
Institutions, service providers	Red	Yellow	Green	Yellow	Yellow	Red
Inclusion	Red	Yellow	Green	Yellow	Yellow	Red





Examples of SFDs in Practice

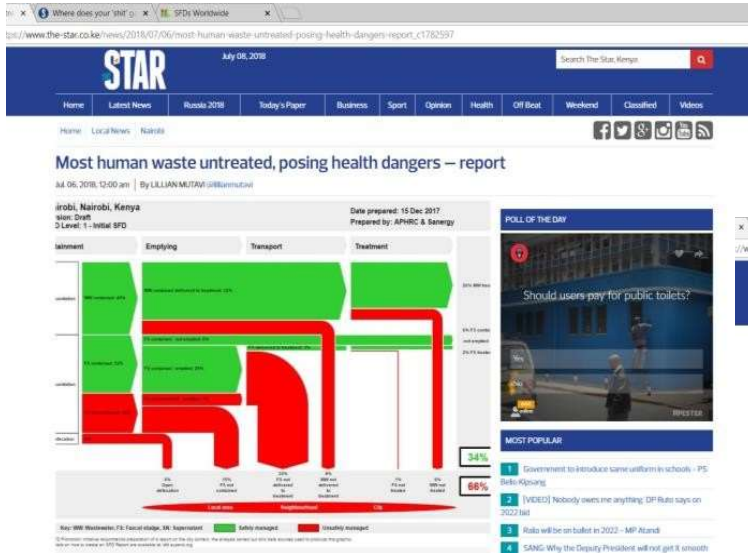


Selected SFD examples in the GIZ projects



- **RUWASS in Kampala:** gain common understanding of FSM issues in Kampala amongst stakeholders and identify synergies amongst actors to create a road map
- **RUWASS in Uganda:** used in 6 towns as part of town planning processes
- **CFS-Lusaka project:** investments (KfW, EIB, Worldbank and AfDB) were prioritized with the use of an SFD baseline and projected SFDs looking at 3 different post project scenarios [The development and use of SFDs for better sanitation investment planning - Resources • SuSanA](#)
- **ConNex in Norther Irak:** development of the “Smart Sanitation Concept” → combination of different diagnostic tools (SFD, CSDA, ECAM) for a holistic sanitation assessment of 2 refugee camps and one host community to ensure the sustainability of the future intervention in these areas
- **CoTriSan in Costa Rica:** used in two pilot municipalities to inform a technical-social strategy for the counterpart agencies (Ministry of Health and Water-Sewerage Authority) with complementary cap-building and awareness raising activities for the stakeholders involved
- **RWS II in Zambia:** Using a data collection exercise on climate data/energy efficiency in commercial utilities to produce SFDs that illustrate the sanitation data for better planning of services around wastewater, onsite sanitation and faecal sludge management

Kick-start a discussion on sustainable sanitation in Kenya

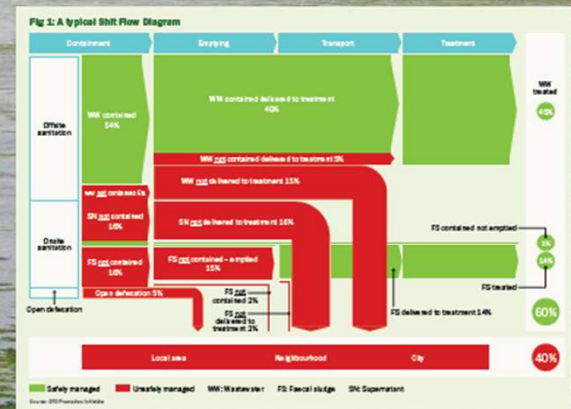


<https://www.the-star.co.ke/news/2018/07/05/where-does-your-shit-go-66-of-nairobi-human-waste-unaccounted- for c1782731>

Kick-start a discussion on sustainable sanitation in India



Gain political support for more sustainable sanitation in India

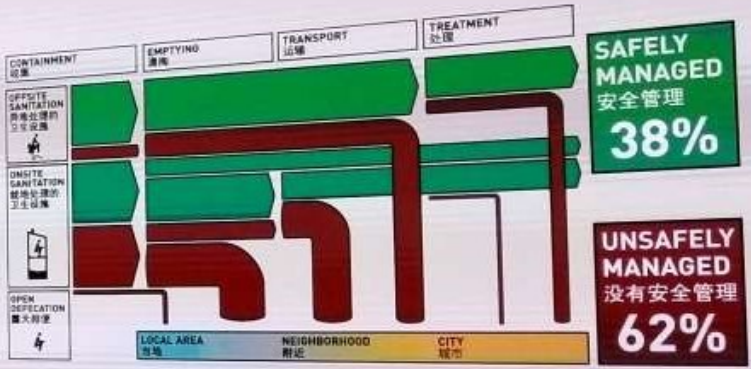




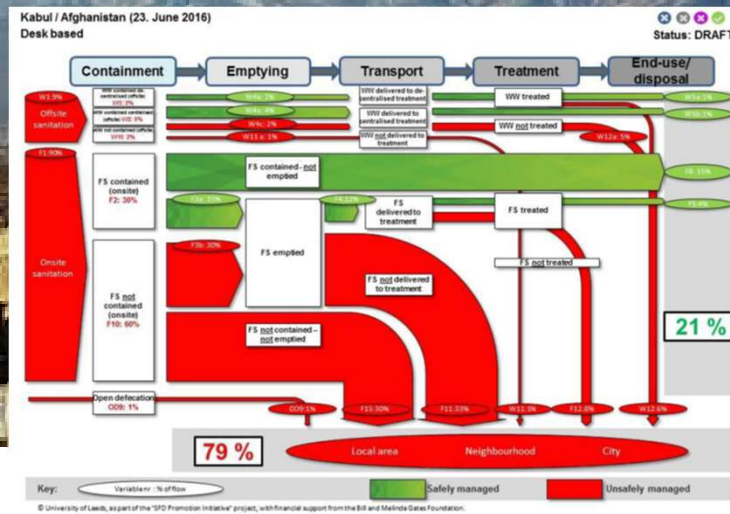
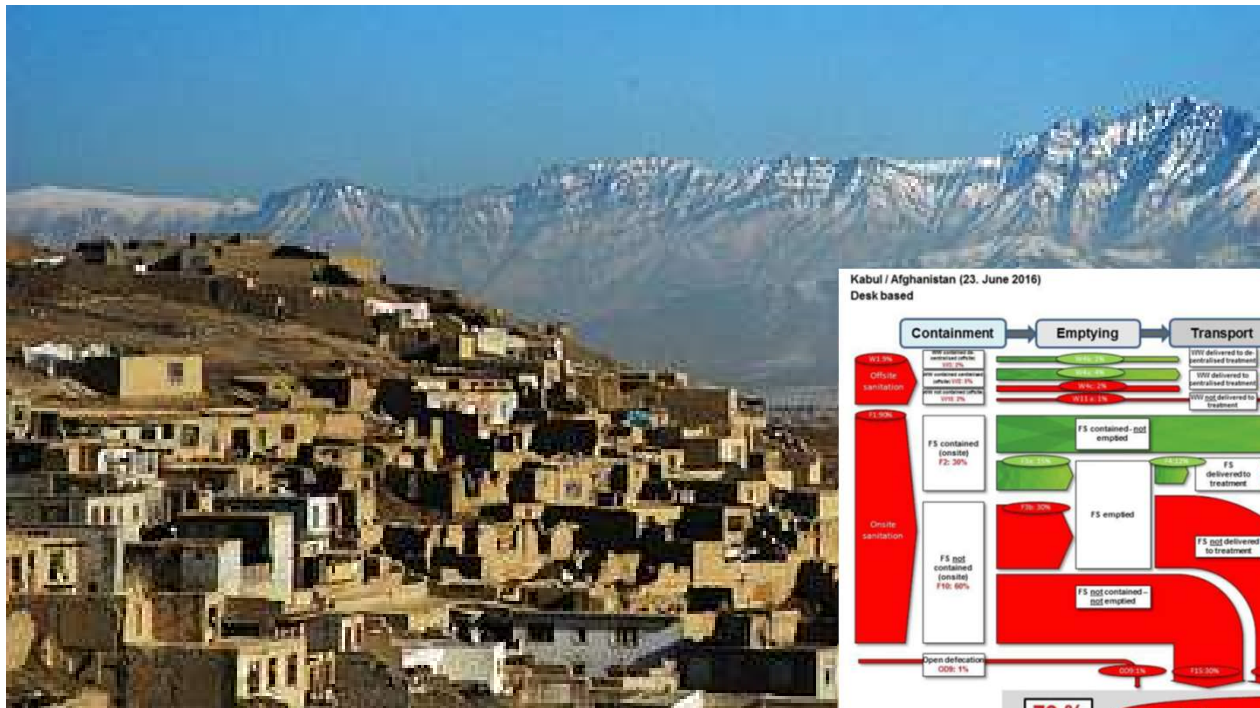
Bill Gates pitching for financing non-sewered sanitation in Beijing



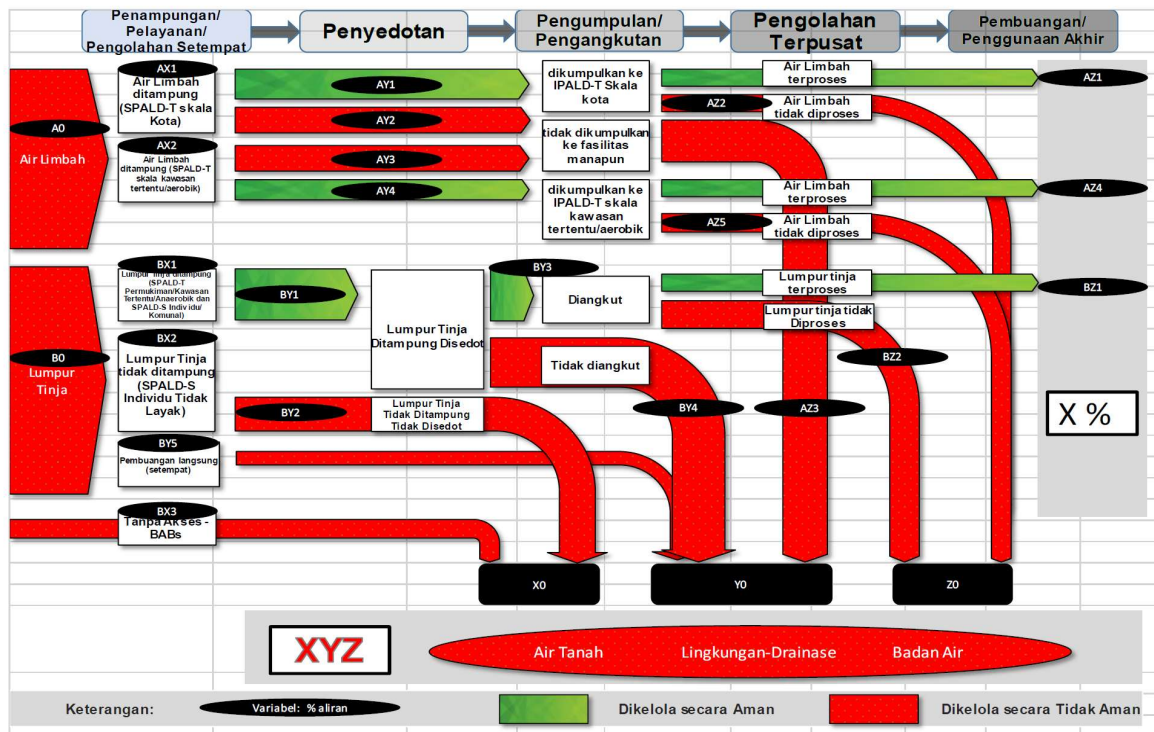
URBAN SANITATION SERVICE CHAIN 城市卫生设施服务链



70% of Afghanistan's population are covered by the SFD approach



Nationwide use of an adapted SFD in Indonesia in the design of city sanitation strategies



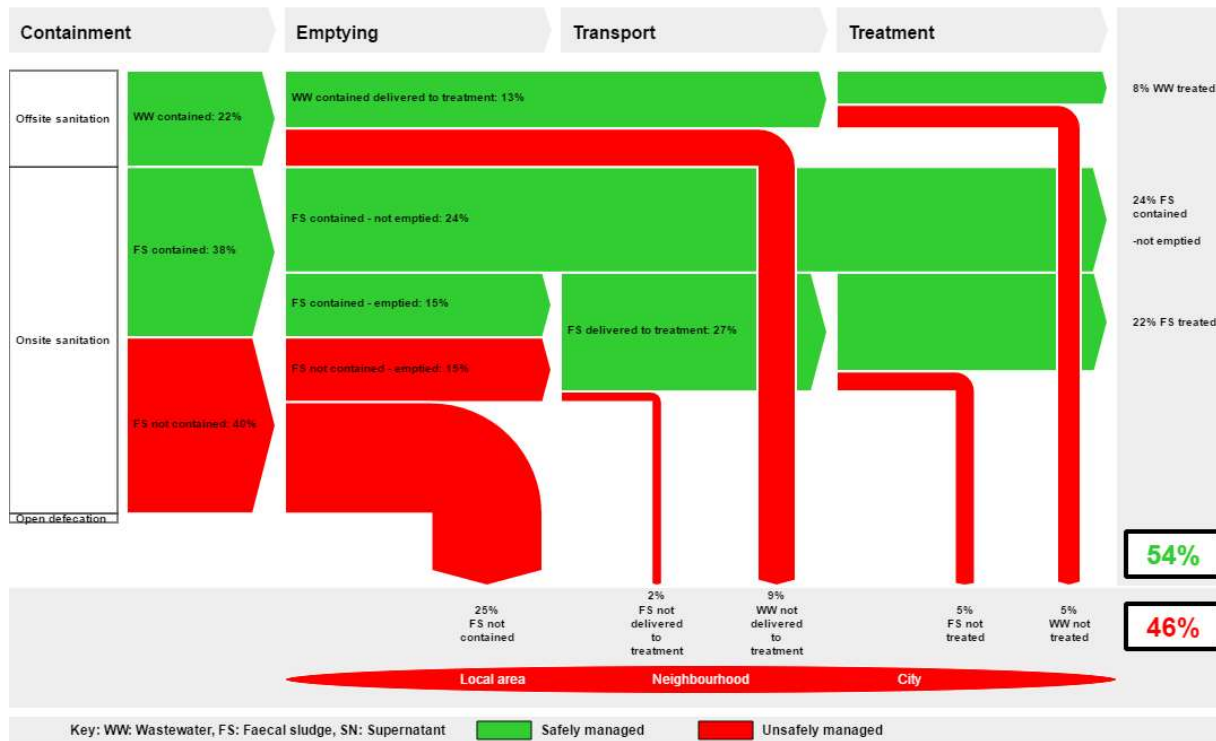
A template of an SFD graphic in Indonesian (Source: SSK Guideline)

Establish baselines and monitor progress (I/II)

Kampala, Uganda
Version: Reviewed
SFD Level: not set

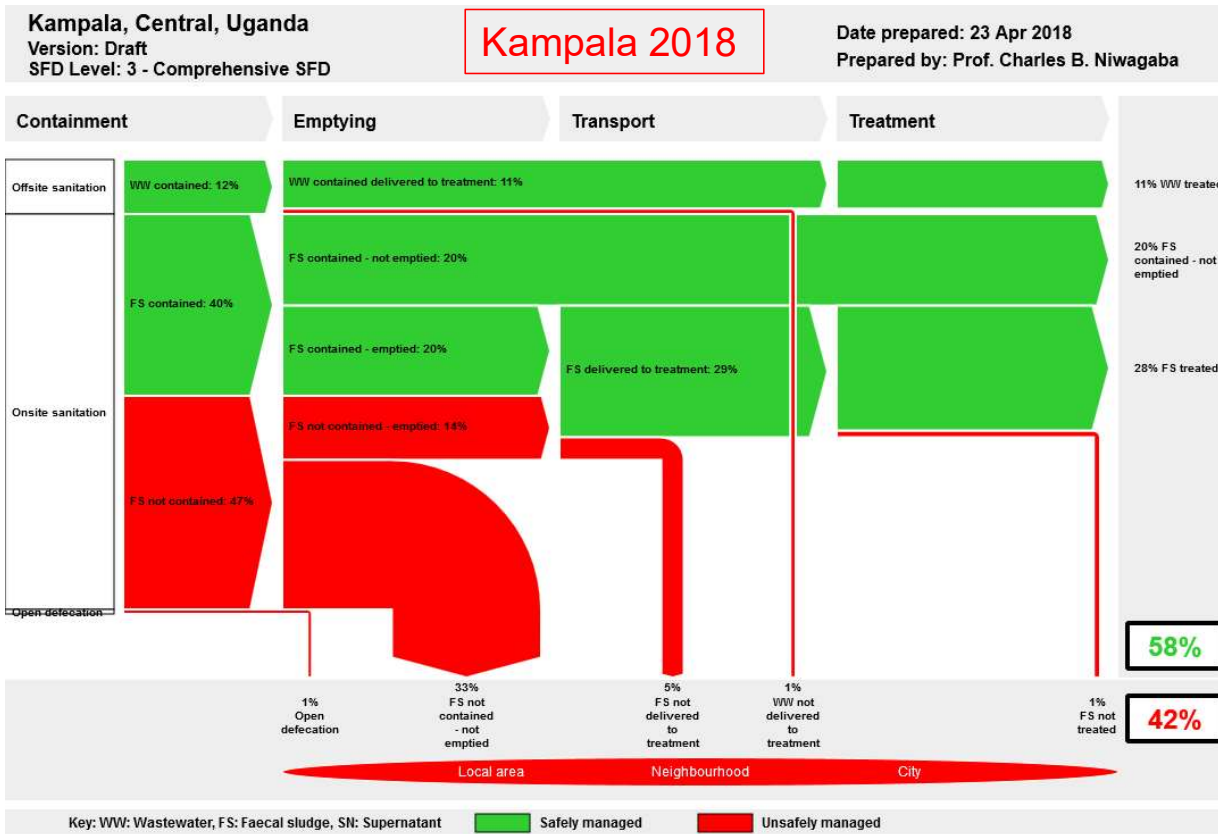
Kampala 2016

Date prepared: 6 Jun 2016
Prepared by: Lars Schoebitz, Eawag/Sandec



Produced with support from the SFD Promotion Initiative with funding from the Bill & Melinda Gates Foundation.
The SFD Promotion Initiative recommends that this graphic is read in conjunction with the city's SFD Report which is available at: sfd.susana.org

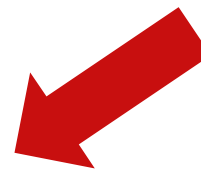
Establish baselines and monitor progress (II/II)



Possible uses and purposes of an SFD



1. Engage sanitation experts, political leaders and civil society in coordinated discussions about excreta management in their city
2. Awareness raising on excreta management
3. Advocacy to demonstrate the targeted need for improved sanitation service delivery
4. Inform decisions regarding urban and sanitation planning processes
5. Support the design process of an intervention or a project
6. Monitor the sanitation situation at city/town/county level
7. Together with e.g. an CSDA, SFDs can contribute to the further development of national (sector) policies





THANK YOU !