

# The SFD Promotion Initiative



# Partners of the SFD Promotion Initiative

## SFD Promotion Initiative

sustainable  
sanitation  
alliance

**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH

On behalf of



Federal Ministry  
for Economic Cooperation  
and Development

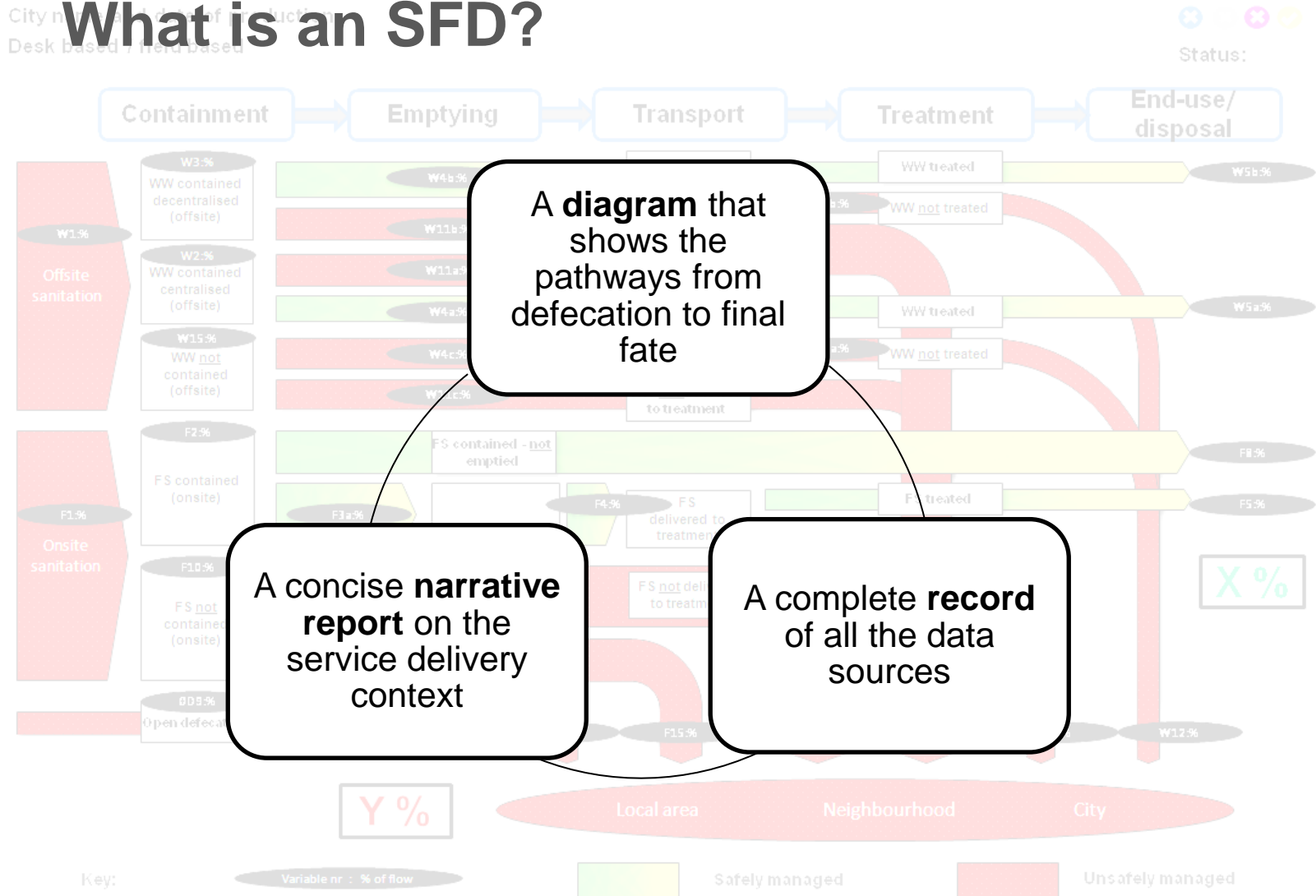


**eawag**  
aquatic research 000

**Sandec**  
Sanitation, Water and  
Solid Waste for Development

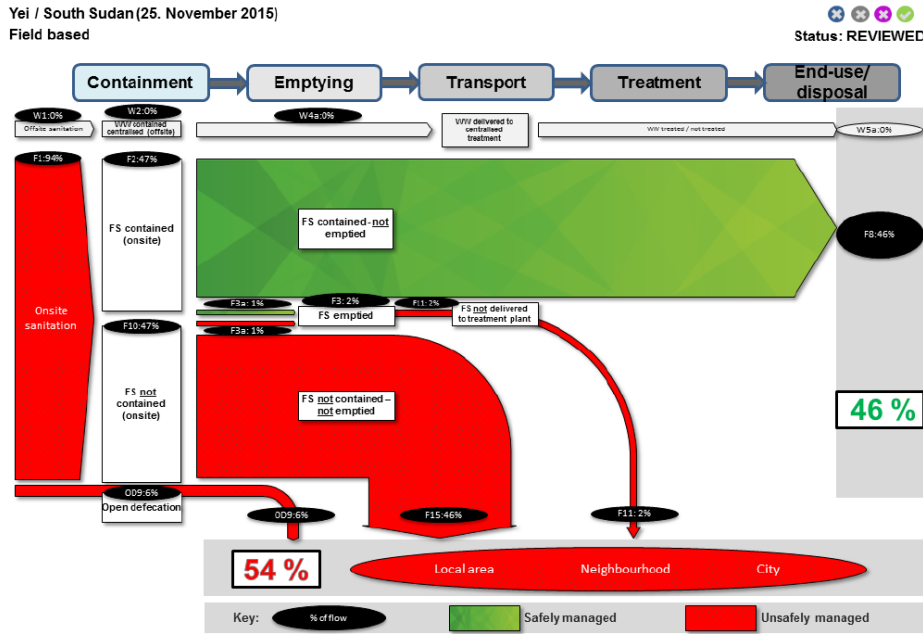


# What is an SFD?



# What is a SFD

Yei / South Sudan (25. November 2015)  
Field based

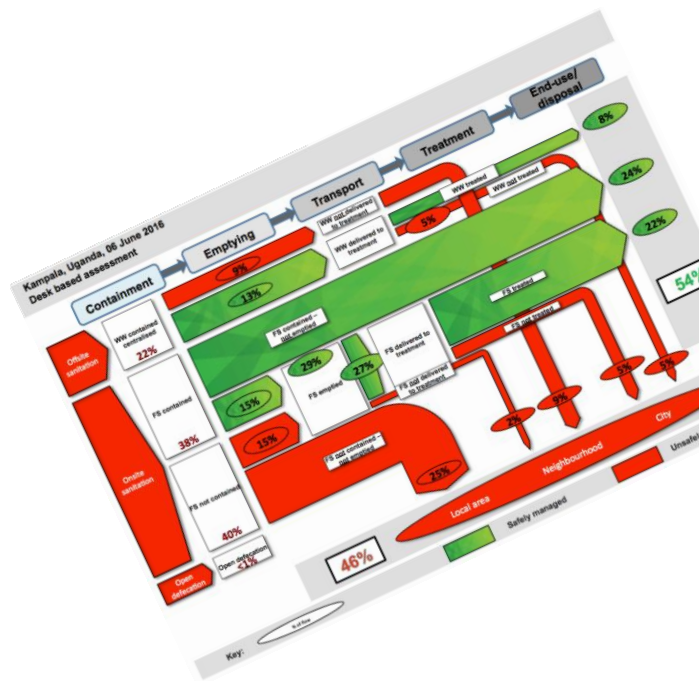


# Service Delivery Context Assessment



# Kampala, GIZ RUWASS

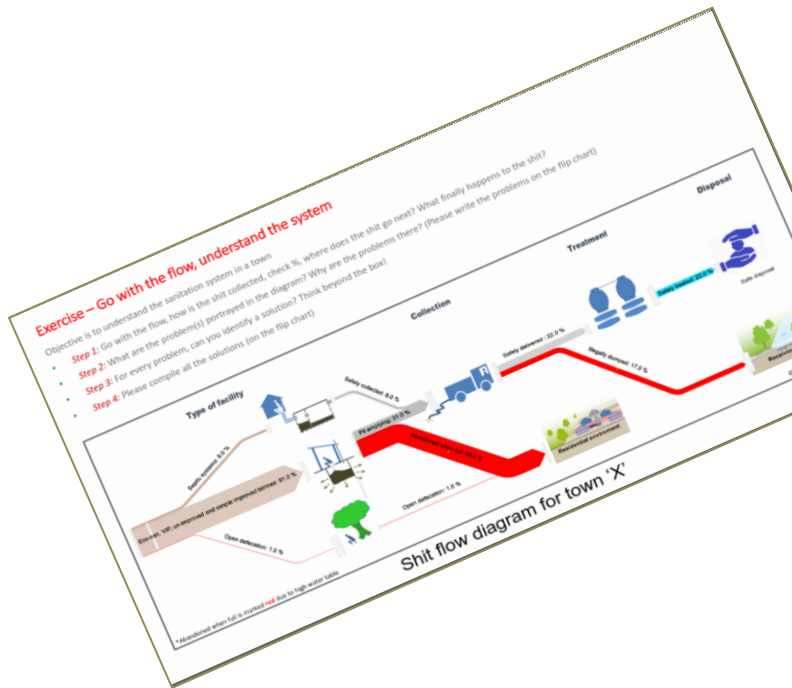
- Gain common understanding of FSM issues in Kampala amongst stakeholders - Road map
- Identify synergies amongst actors



# Town planning, GIZ Uganda

## Reform of the Urban Water and Sanitation Sector (RUWASS)

- Used in 6 towns as a platform for involvement of a wider group of stakeholders (technical and non-technical)



ISSUES/CHALLENGES	REASONS WHY THEY EXIST			SOLUTIONS		
	HOUSEHOLD	SCHOOL	HEALTH CENTER	HOUSEHOLD	SCHOOL	HEALTH CENTER
WATER CLEANING WASHING HANDS ETC	Water is not available No running water	Water is not available No running water	Water is not available No running water	Water is not available No running water	Water is not available No running water	Water is not available No running water
SANITATION FACILITY / CONTAINMENT LAWS/BYLAWS	No latrine No toilet	No latrine No toilet	No latrine No toilet	No latrine No toilet	No latrine No toilet	No latrine No toilet
# TYPE OF LATRINE - LINES OR NOT - STANDARDS	Open latrine No cover	Open latrine No cover	Open latrine No cover	Open latrine No cover	Open latrine No cover	Open latrine No cover
MONITORING & ENFORCEMENT	No monitoring No enforcement	No monitoring No enforcement	No monitoring No enforcement	No monitoring No enforcement	No monitoring No enforcement	No monitoring No enforcement
COLLECTOR'S & TRANSPORT COMPANY	No collector No transport	No collector No transport	No collector No transport	No collector No transport	No collector No transport	No collector No transport
ISSUE OF ACCESS	No access No road	No access No road	No access No road	No access No road	No access No road	No access No road
EXISTENCE OF TREATMENT PLANT	No treatment plant	No treatment plant	No treatment plant	No treatment plant	No treatment plant	No treatment plant
EXISTENCE OF COLLECTION AND TRANSPORT	No collection No transport	No collection No transport	No collection No transport	No collection No transport	No collection No transport	No collection No transport

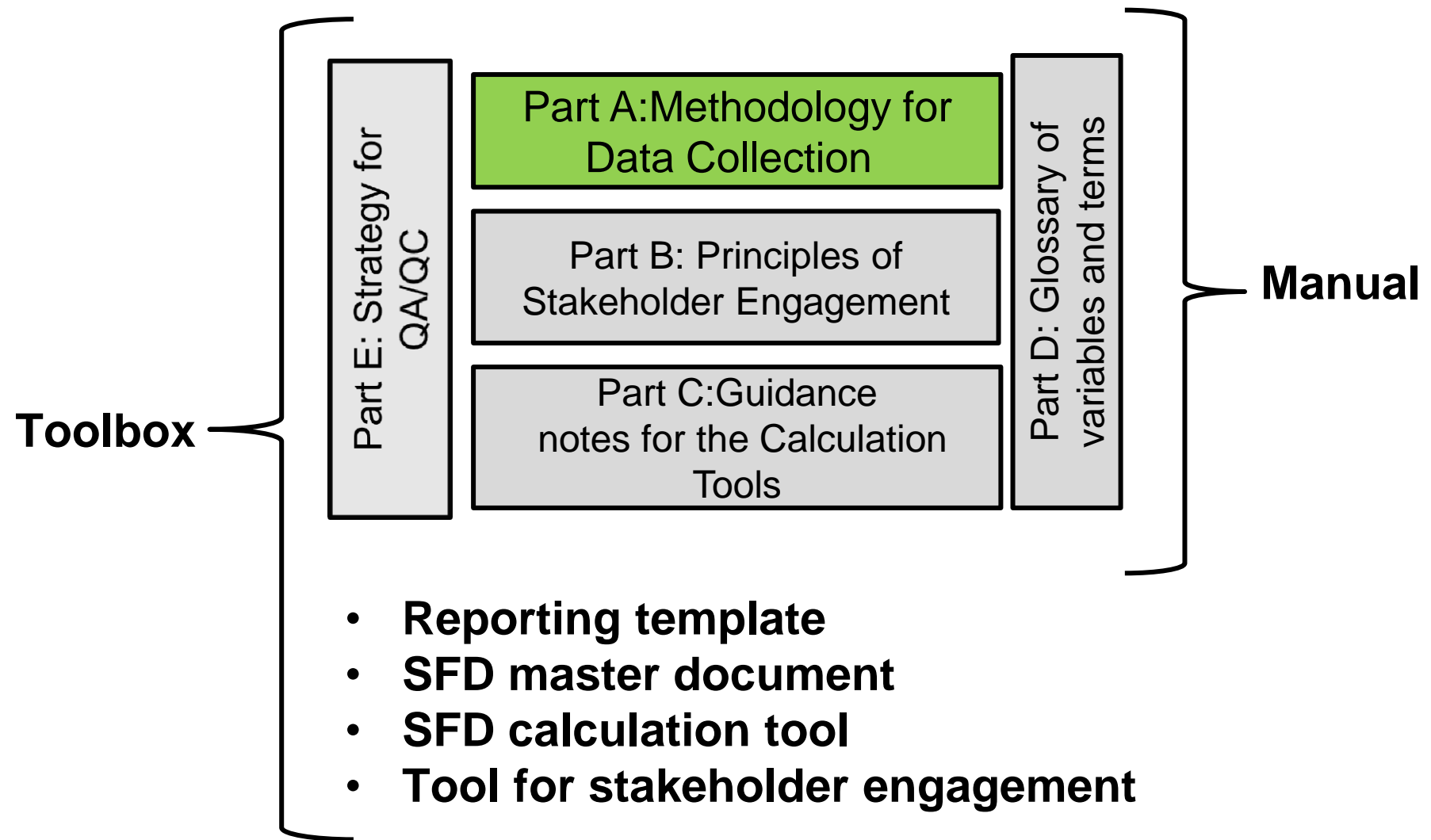
# Moshi, Tanzania





## Elsewhere...

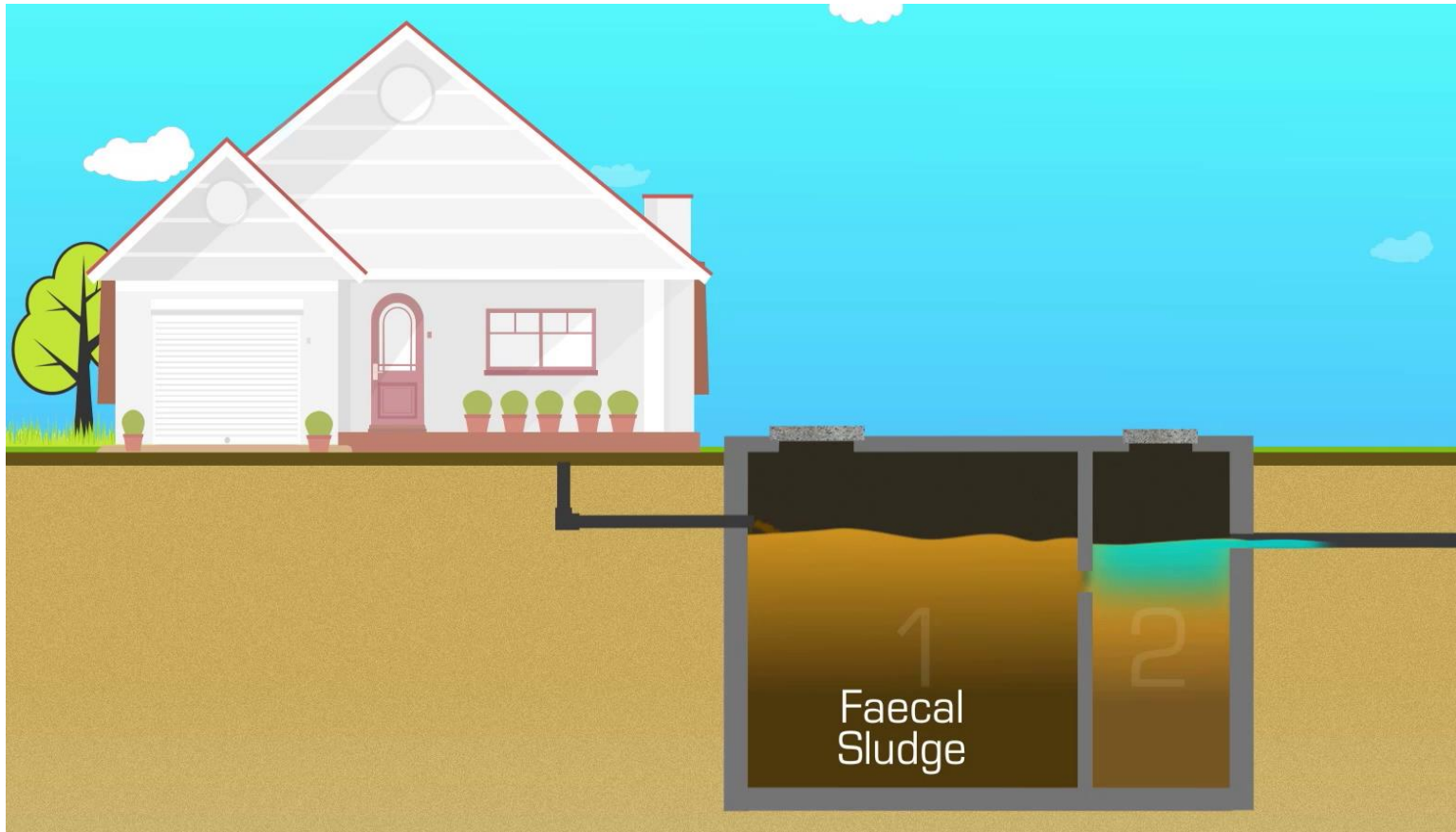
- **Zambian National Urban and Peri-Urban Sanitation Strategy (2015-2030)**, Ministry of Local Government and Housing (MLGH)
- **Urban Sanitation Implementation Manual**, Government of Uganda - Ministry of Water and Environment:
- **Huge potential in India:**
  - Used by GIZ Sanitation Program in the trainings for 30 cities
  - Widely used by CSE
- **40 SFDs** being prepared as of now.



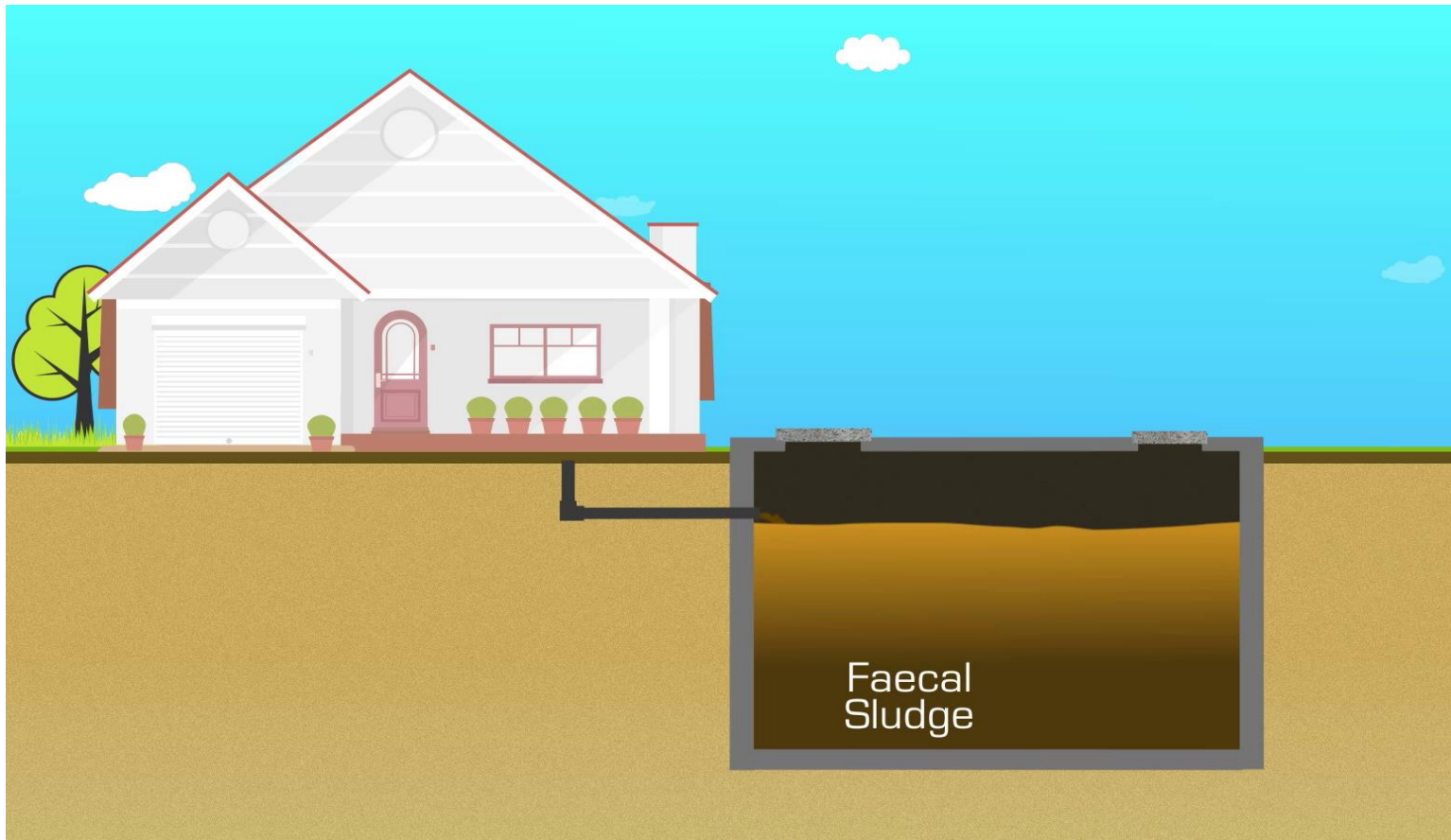
# Terms and Variables: A Glossary



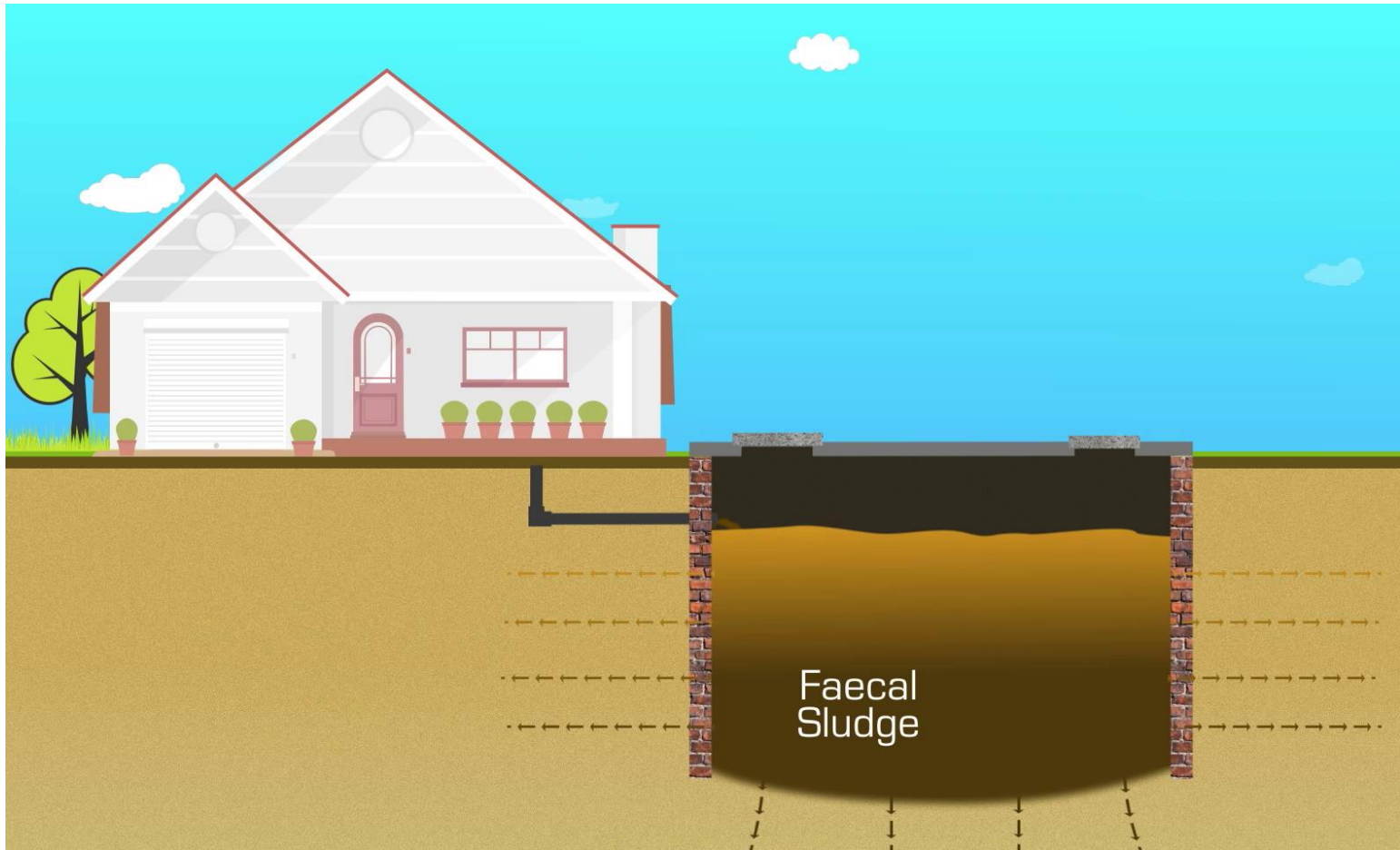
# Identify the structure



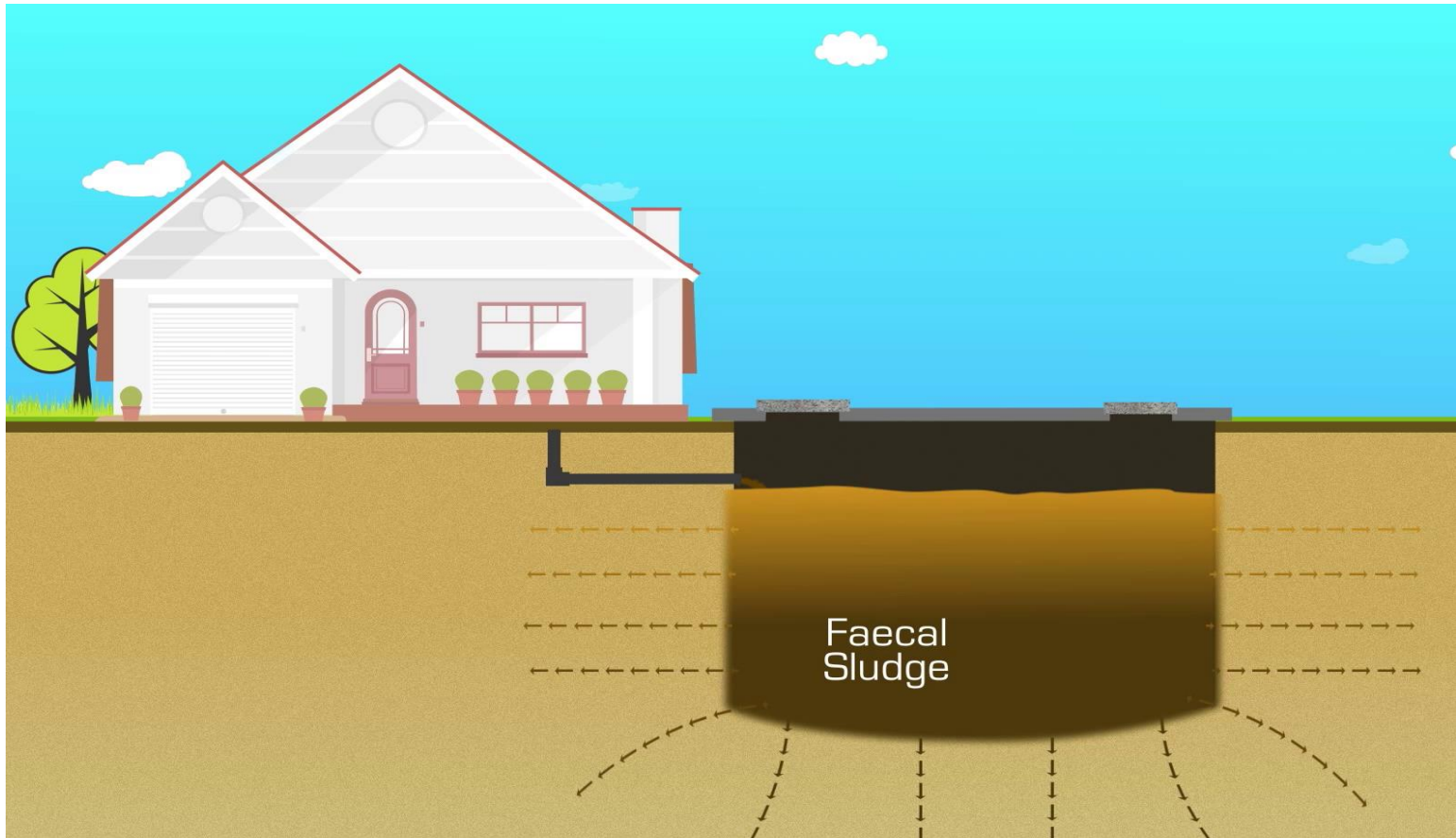
# Identify the structure



# Identify the structure



# Identify the structure



# Terms and Variables

## Purpose

- It helps the user to understand the variables and terms used in the manual (calculation tool, master SFD, methodology etc.) in much better way.
- The purpose of Glossary is to bring everyone around the globe on same page, because septic tank as it is comprehended in India might not be same for Africa.



## Part 1 - Definition of variables

### Variable No: W2- Wastewater contained centralised (offsite)

<b>Ref</b> <i>(refer to SFD calc tool, Tab2, col A)</i>	<b>Description</b> <i>(Refer to SFD calc tool, Tab2, col B)</i>	<b>Definition</b>	<b>Sanitation containment system reference</b> <i>(Refer to PPT document and SFD calc tool, Tab 2, col C)</i>
<b>T1A1C1</b>	User interface discharges directly to a centralised combined sewer	This is a fully functioning user interface discharging directly to a correctly designed, properly constructed, fully functioning centralised combined sewer. The excreta is raw, untreated and hazardous, but since it is captured in the sewer, all the excreta in this system will contribute to variable W2.	L1
<b>T1A1C2</b>	User interface discharges directly to a centralised foul/separate sewer	This is a fully functioning user interface discharging directly to a correctly designed, properly constructed, fully functioning centralised foul/separate sewer. The excreta is raw, untreated and hazardous, but since it is captured in the sewer, all the excreta in this system will contribute to variable W2.	L1

## Part 2 - Definitions of terms

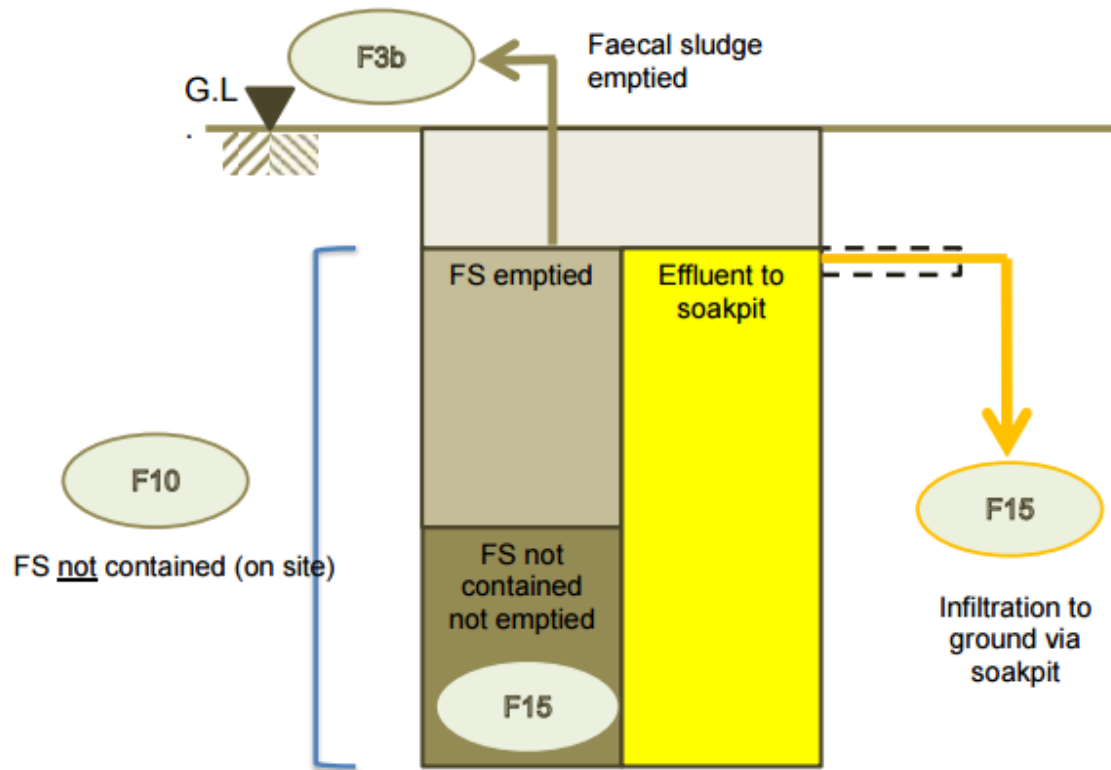
### GENERAL TERMS

Term	Definition	Comments and Regional Examples	References
<b>Abandoned Pit Latrine</b>	A pit which is never emptied but instead, once full, the content is covered over with soil and the pit abandoned.	e.g. Arbor loo	
<b>Applied to Land</b>	<p>Wastewater: May be applied to agriculture, home gardening, forestry, sod and turf growing, landscaping, parks, and golf courses.</p> <p>Faecal Sludge: May be applied to agriculture, home gardening, forestry, sod and turf growing, landscaping, parks, golf courses, mine reclamation, as a dump cover, or for erosion control.</p>		Tilley et al, 2014 "Compendium of Sanitation Systems" 2nd Edition, p148
<b>Blackwater</b>	Blackwater is the mixture of urine, faeces and Flushwater along with anal cleansing water (if water is used for cleansing) and/or dry cleansing materials		Tilley et al, 2014 "Compendium of Sanitation Systems" 2nd Edition, p10
<b>Centralised Sewer System</b>	A system used to collect, treat, Discharge, and/or reclaim Wastewater from large user groups (i.e. neighbourhood to city level applications).	In some locations, Sewer systems do not Discharge to a centralised Treatment Plant but instead Discharge unTreated Wastewater direct to a Water Body.	Tilley et al, 2014 "Compendium of Sanitation Systems" 2nd Edition, p98
<b>Combined Sewer</b>	Sewer network where Blackwater and Stormwater runoff are carried by the same Sewers.		David Blockley, 2005 "The New Penguin Dictionary of Civil Engineering"

S2

**Groundwater Pollution: Significant Risk**  
 General description: Tanks connected to soakpit

Apply to systems:  
 2A2C5  
 2A3C5  
 2A4C5



Assumptions  
 (where there is no other data):  
 50% of tank content is effluent (F15)  
 50% of remaining is FS not contained emptied (F3b); and 50% is FS not contained not emptied (F15)

# SFD Calculation Tool



# SFD calculation Tool

- Excel file with macros
- 3 tabs:
  - Groundwater Contamination
  - Sanitation Systems
  - SFD variables
- Final tab → Unique matrix with info on sanitation systems in a city
- Final purpose:
  - Calculate % of excreta for all variables in the SFD
- Definition of variables → Glossary (.docx)

**Download the Graphic Converter here:**

<http://www.susana.org/en/resources/library/details/2357>

# SFD calculation Tool

## 2 SFD variables tab

SFD VARIABLES				NOTES ON SOURCES, STUDY AREA AND/OR POPULATION BOUNDARIES:		IMPORTANT NOTE:	
CITY:		Proportion of each septic tank which is FS (ie not effluent, supernatant or infiltrate) [default is 50%]:	50%			If it is necessary to assign or estimate percentages from expert opinion it is recommended approach used is one that will minimise the maximum error. For instance, where it is known faecal waste flow is along two different pathways, but the percentage split is not known, the flow is split 50:50 will minimise the maximum error.	
COUNTRY:		Proportion of each fully lined tank (sealed) which is FS (not effluent, supernatant or infiltrate) [default is 50%]:	50%				
POPULATION (N):	100	Proportion of a) each lined tank with impermeable walls and open bottom; and b) each pit (all types) which is FS (not effluent, supernatant or infiltrate) [default is 50%]:	50%				
DATE PREPARED:		DESK BASED OR FIELD BASED					
PREPARED BY:							

## 3

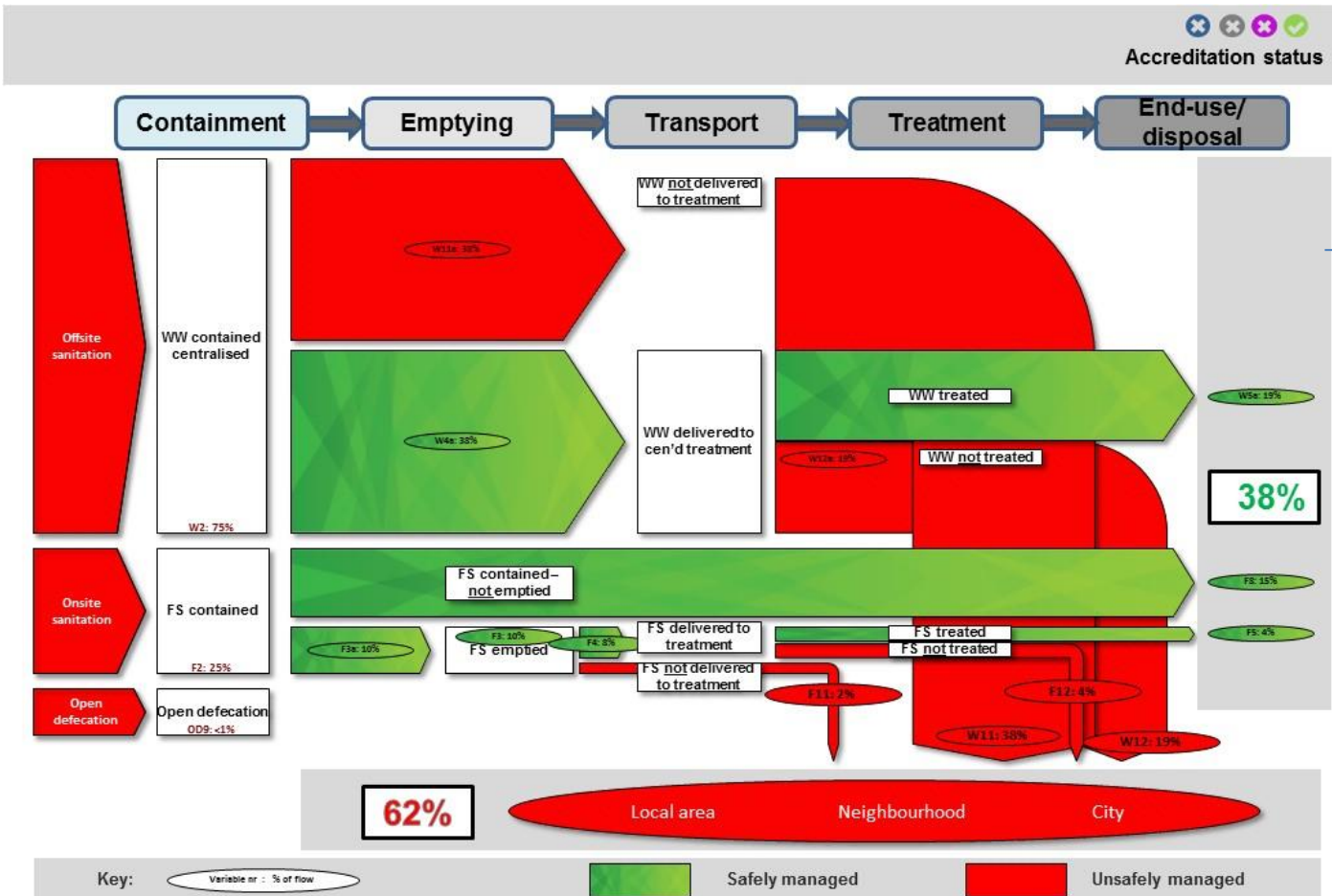
Tab 1 ref	Description of sanitation containment system	Sanitation system schematic reference (see PPT document)	Sanitation system				FAECAL SLUDGE										WASTEWATER					
			Proportion of population using this type of system? (S) (No)	Proportion of population using this system? (p) (%age of N)	Population using this system with emptying? (T) (No)	Proportion of population using this system with emptying? (e) (%age of p)	Variable F2: FS contained (onsite)	Variable F3a: FS contained - emptied	Variable F8: FS contained - not emptied	Variable F10: FS not contained (onsite)	Variable F3b: FS not contained - emptied	Variable F15: FS not contained - not emptied	Variable F4: FS delivered to treatment plants		Variable F11: FS not delivered to treatment plants		Variable F5: FS treated		Variable F12: FS not treated	Variable W2: W/w contained centralised (offsite)	Variable W4a: W/w delivered to centralised treatment plants	
			From survey and census data or, where none available, based on expert opinion	(p) (%age of N)	From survey and census data and/or from observation surveys, where none available, based on expert opinion	(e) (%age of p)	(= p) (%age of N)	(=e*p) (%age of N)	(F2-F3a) (%age of N)	(=p) (%age of N)	(=e*p) (%age of N)	(=F10-3b) (%age of N)	(%age of (F3a and/or F3b)) (%age of N)	(%age of N)	(F3a-DB, F3b-F4) (%age of F4)	(%age of N)	(%age of N)	(F4-F5) (%age of N)	(%age of N)	(%age of W2)	(%age of N)	(%age of N)
T1A1C2	User interface discharges directly to a centralised foul/sewer	Reference L1	75	75%																75%	50%	38%
T1A2C5	Septic tank connected to soak pit	Reference L7	25	25%	20	80%	25%	10%	15%				75%	8%	3%	50%	4%	4%				
Check totals = 100%			100%	100%																		
Check total = 100% (=W2+W3+2*F10+W15+OD9) Emptied (F3+F3a+F3b)							25%	10%		0%	0%									75%		38%
Sale (1/5a+V5b+F5+F8)									15%													
Unsafe (=OD9+W1a+W1b+W1c+W12a+12b+F11+F12+F15)											0%					3%		4%	4%			
Check totals = 100%			100%	25%	75%																	
Check total = 100%																						
Check total = 100% (=W2+W3+2*F10+W15+OD9) Emptied (F3+F3a+F3b)								F2	F3a	F8	F10	F3b	F4							W2		W4a
Sale (1/5a+V5b+F5+F8)																						
Unsafe (=OD9+W1a+W1b+W1c+W12a+12b+F11+F12+F15)												F15				F11		F5	F12			
Check totals = 100%			100%																			

## 4

## 5

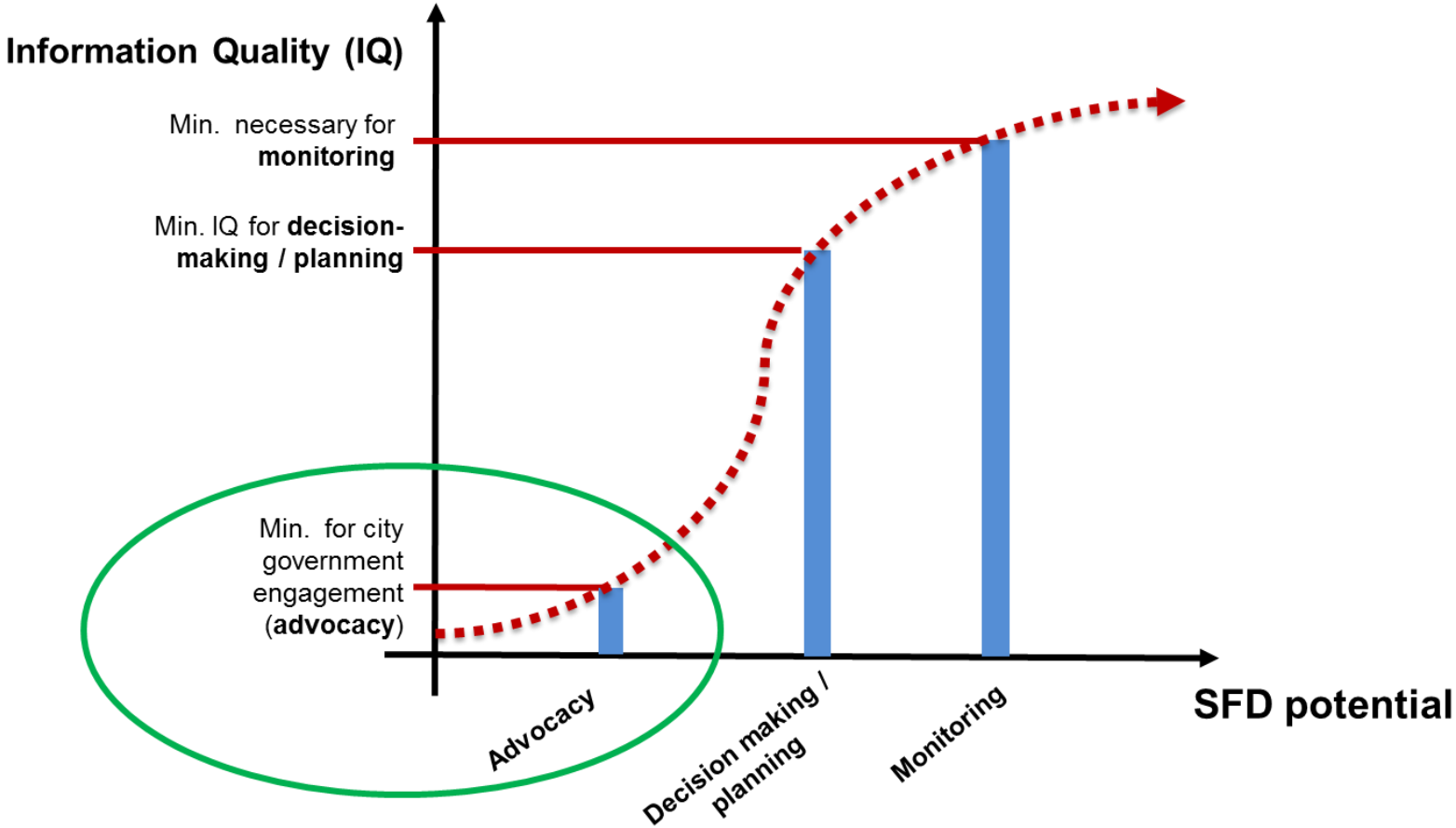
Button -1022

# SFD calculation Tool



2 files:  
 1. .pptx (editable)  
 2. .png

# SFD potential in relation to information quality





# Soon: the SFD helpdesk



Juergen Eichholz  
working on your SFDs

**Any questions?  
Ask for support**

Ask a Question

Edit your profile Log out

City Name	Country	Year of Data
<input type="text" value="Kumasi"/>	<input type="text" value="Ghana"/>	<input type="text" value="2016"/>

Your organisation's name

Has there been a previous SFD for this city?

Yes

No

Was there an earlier SFD done for this city by you or by another author/organisation?

Size of Population

< 100.000

100.000 - 500.0000

500.000 - 1.000.0000

> 1.000.000

What is the citie's population size?

City context

**Enter information in prepared boxes**

This section should be a maximum of one page. Insert basic information (summary) about the city context here: Country/City /Region, Population, Population growth rate, Significant variations in population (e.g. diurnal, seasonal), Topography, Climate, Key physical and geographic

status of SFD  
SFD under preparation

**Report is finished?  
Send to Review**

save your SFD submit for Review

## Files & Media

your calculation basis (Excel)

no file uploaded yet

your SFD diagram (Powerpoint / Excel / PDF)

no file uploaded yet

your SFD report (WORD - optional to webform)

no file uploaded yet

**Upload your documents**

Thank you!

Please visit  
[www.sfd.susana.org](http://www.sfd.susana.org)

[sfd@susana.org](mailto:sfd@susana.org)

SFD Promotion Initiative

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On behalf of



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UNIVERSITY OF LEEDS

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