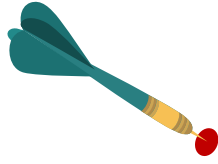


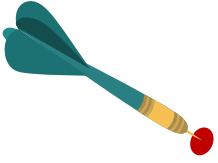
## **Part 1 – Using Diagnostics**

### **1.4 Faecal Sludge and Faecal Waste Flow Diagrams (SFDs)**

**Inclusive urban sanitation – Capacity development for consultants**



Recognize the key differences  
between faecal sludge and  
sewage



Know how to effectively use an  
SFD

## Faecal sludge

- What is faecal sludge?
- How is it different from sewage?
- What does this mean for treatment?

## Sanitation service chains and SFDs

- Sanitation service chains in practice
- SFD introduction
- Preparing an SFD
- How an SFD can help explain issues

# Faecal sludge

# Comparing sewage and faecal sludge



Video



9 mins



As you watch the video, make notes in your notebook:

- What did you see (or hear) that was new? Mark as "**N**"
- What surprised you? Mark as "**S**"
- Was there something that you wanted more clarification on? What is this? Mark as "**?**"
- What did you disagree with? Or what was different from your experience? Mark with a cross **X**.

# What is faecal sludge?

## Introduction to Faecal Sludge Management

Dr. Linda Strande



## Quiz 1.4-1

Hold up a  
**green** (you agree),  
**red** (you disagree) or  
**yellow** (not sure or maybe)  
to indicate what you think.

2 mins



1. Faecal sludge is similar to wastewater
2. Faecal sludge is less variable than wastewater
3. Faecal sludge volumes and characteristics can be easily established

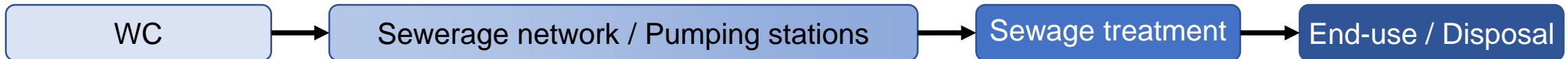
# **Service delivery chains and Faecal Waste Flow Diagrams (SFDs) explained**



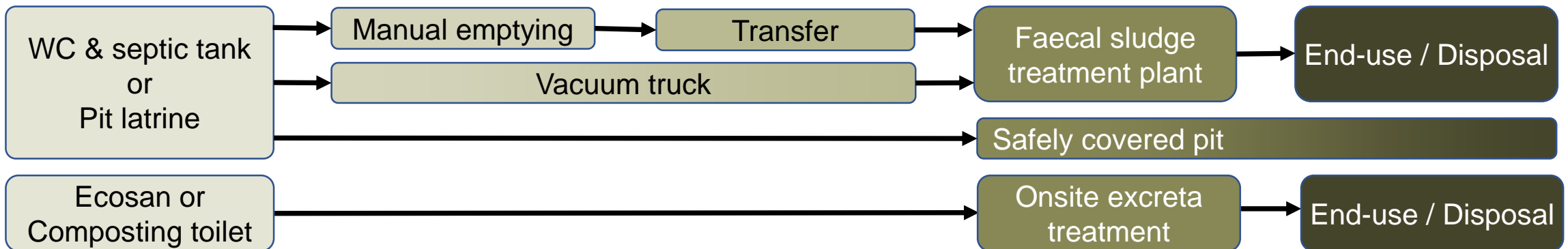
# Safe sanitation service chains



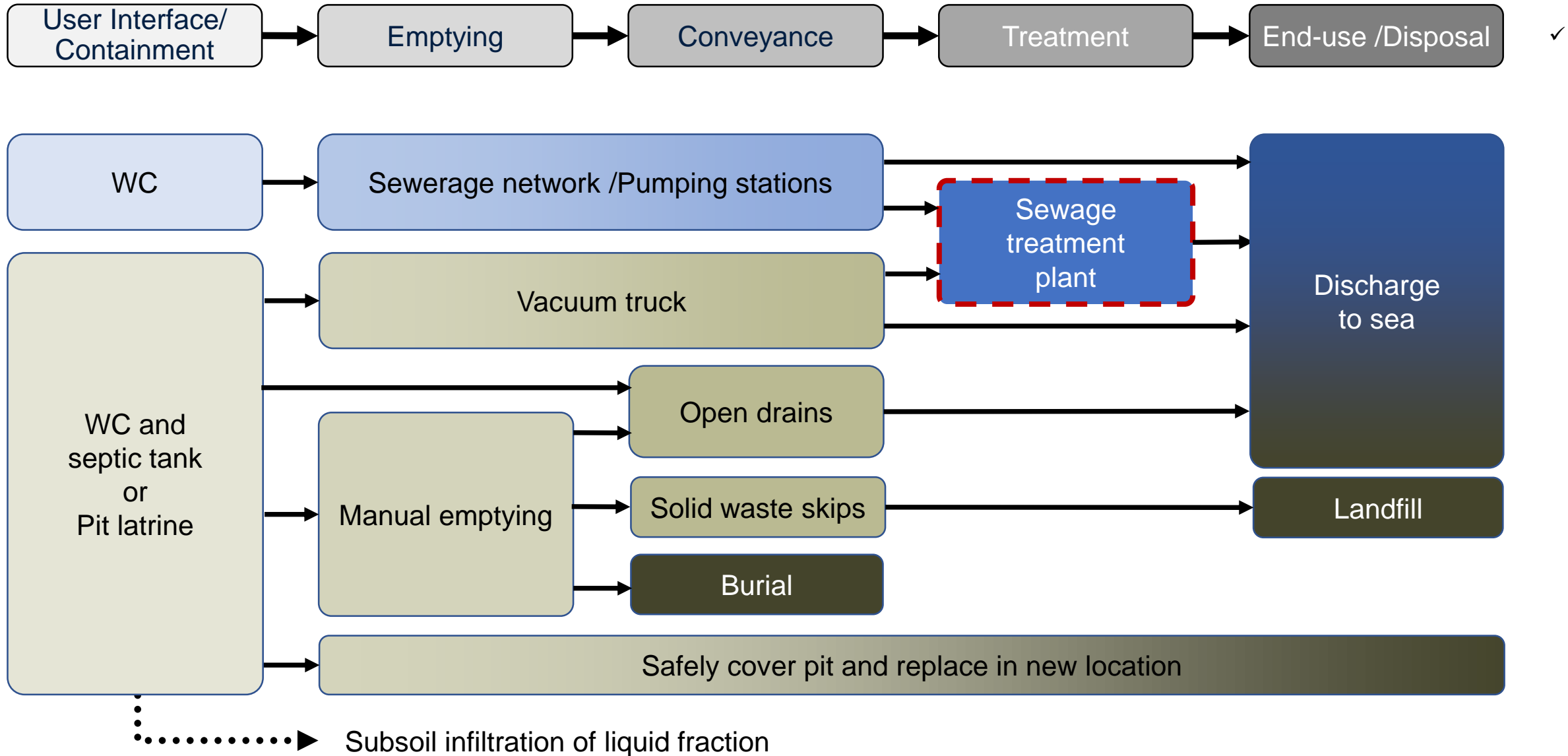
## Sewerage – centralised, decentralized, small-scale



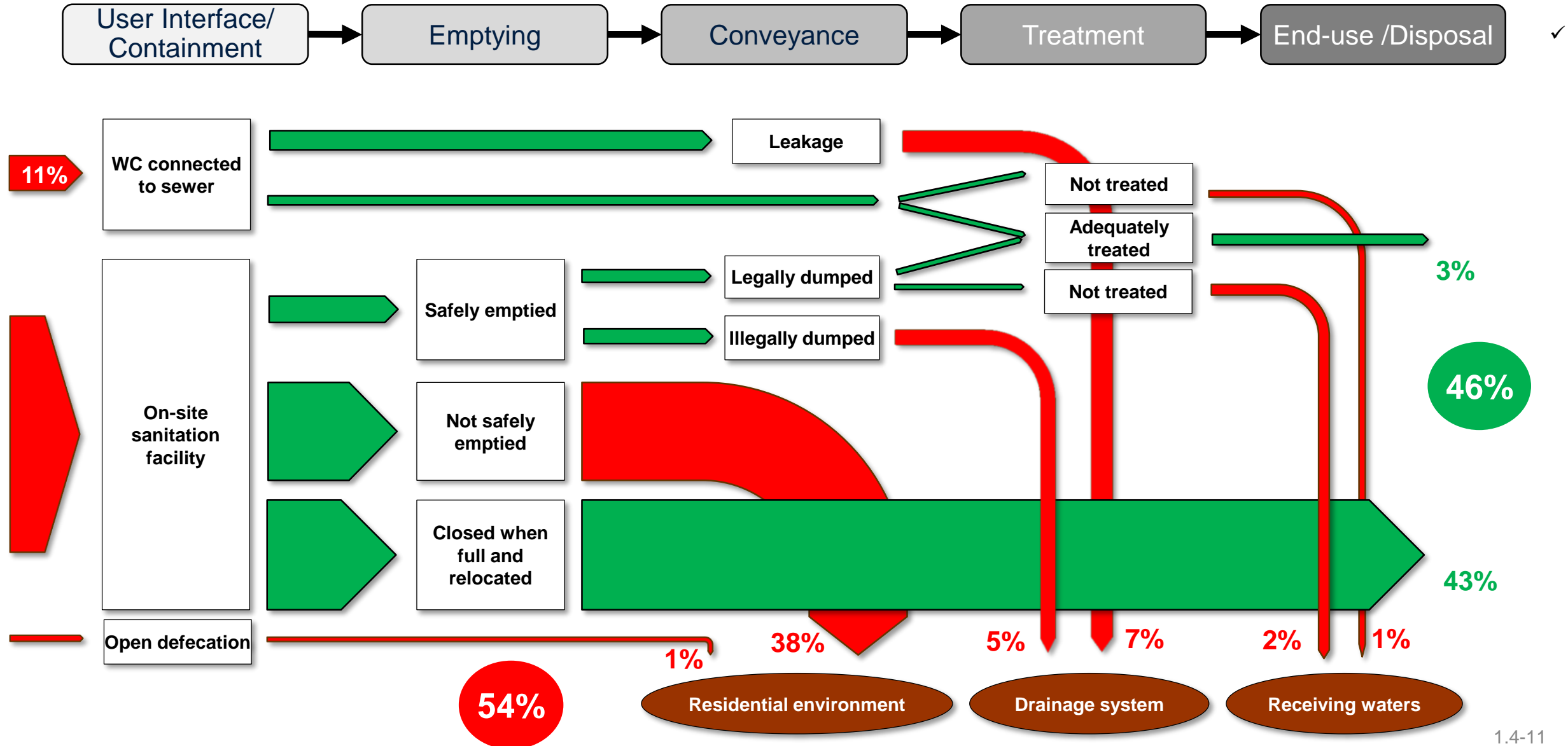
## On-site sanitation with faecal sludge management



# Sanitation service chains in practice



# Safe and unsafe flows – the SFD



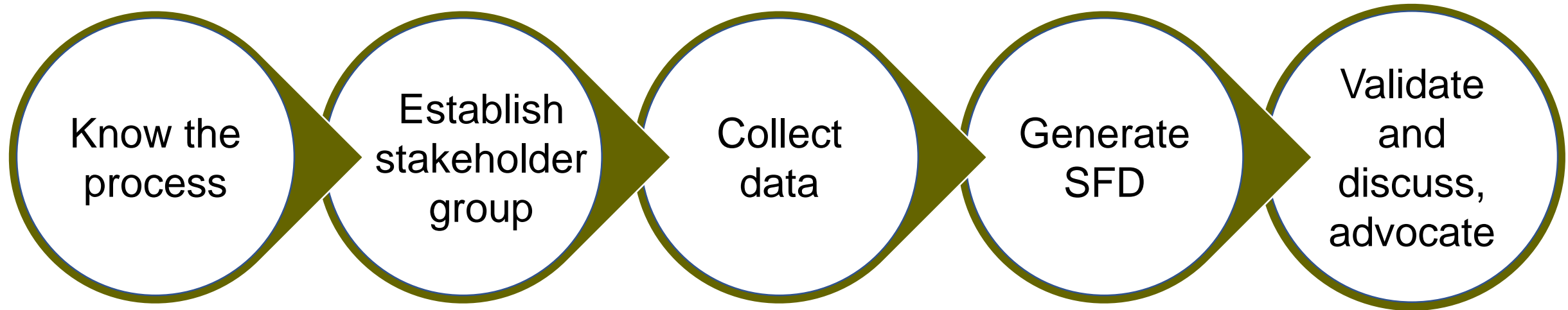
# SFD guided learning activity

Open <https://sfd.susana.org> on your computer.



# How to prepare an SFD

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- Consult reference material
- Use SFD website

- Size and composition of group will depend on context

- Understand local terminology and how it relates to SFD terminology
- Tips on next slides

- SFD must be credible for advocacy

# Tips on data for generating the SFD



- Include the **most widely used options** in the SFD matrix
- **Census, DHS**, etc. may have data – is it reliable?
- **Observation, Focus Group Discussions**, or **Key Informant Interviews** depending on level of detail required

# Tips on data for generating the SFD



- Interview **users** and **service providers**
  - How is it done?
  - Is it hygienic?
  - Is there a lot of open dumping?
- Identify the most common scenarios.



# Tips on data for generating the SFD



- May not exist
- If it exists, estimate its effectiveness



# SFD data source group work activity

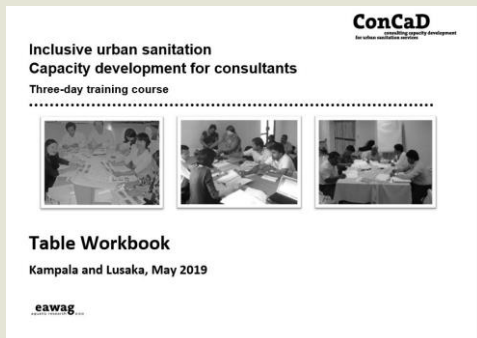


Group work 1.4-1

## Instructions

Go to 1.4-1 in the Table workbook and follow the instructions.

Header-cards and potential data-source-cards are on your table.



5 mins



# Tips on information (data) accuracy

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*Get the best available – even if it's not precise* ✓

- National and city data (e.g. census)
- Secondary sources:  
project documents, plans, monitoring and appraisal reports
- Discussions with local staff, personnel, government officers
- Household surveys (scale and scope permitting)

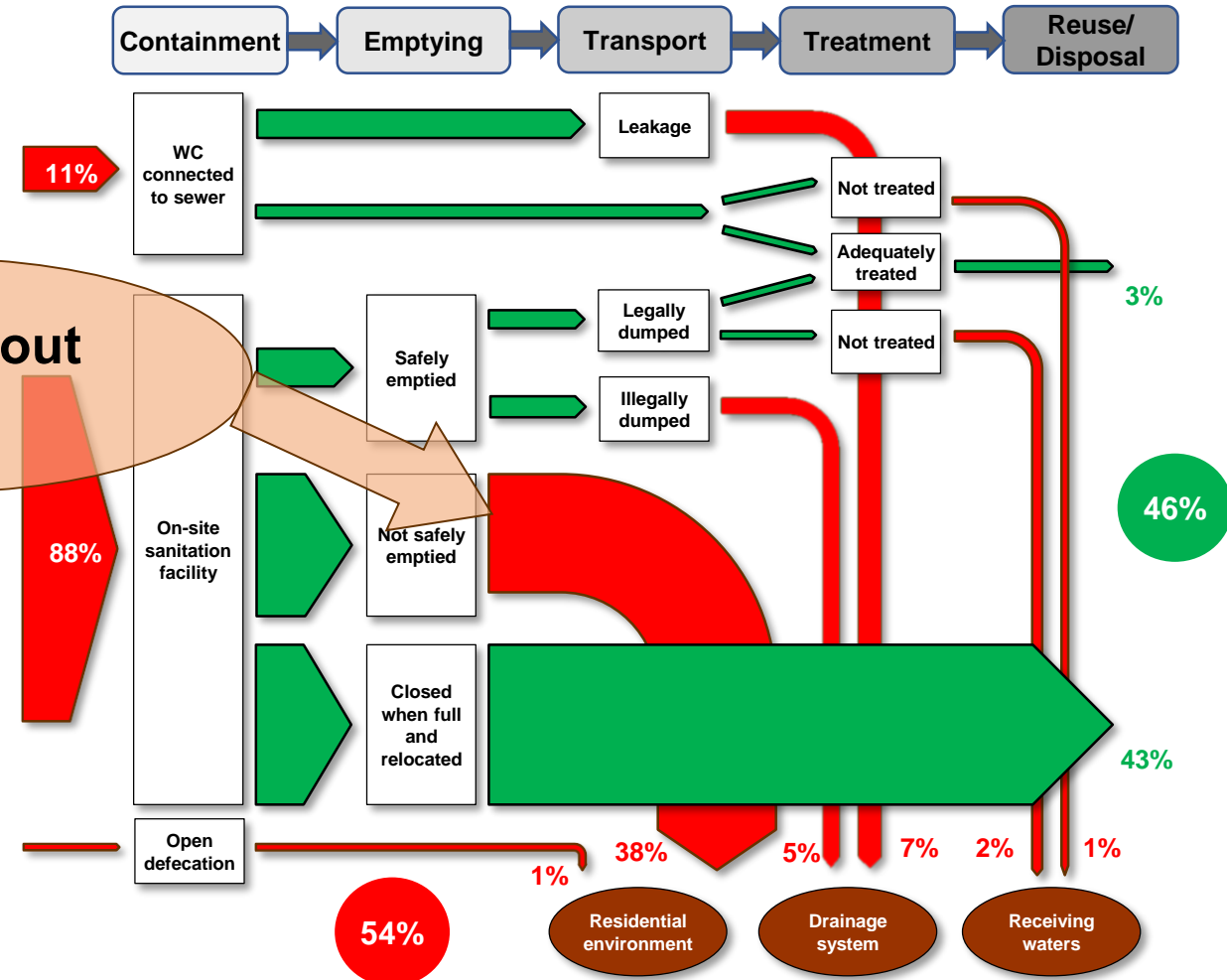
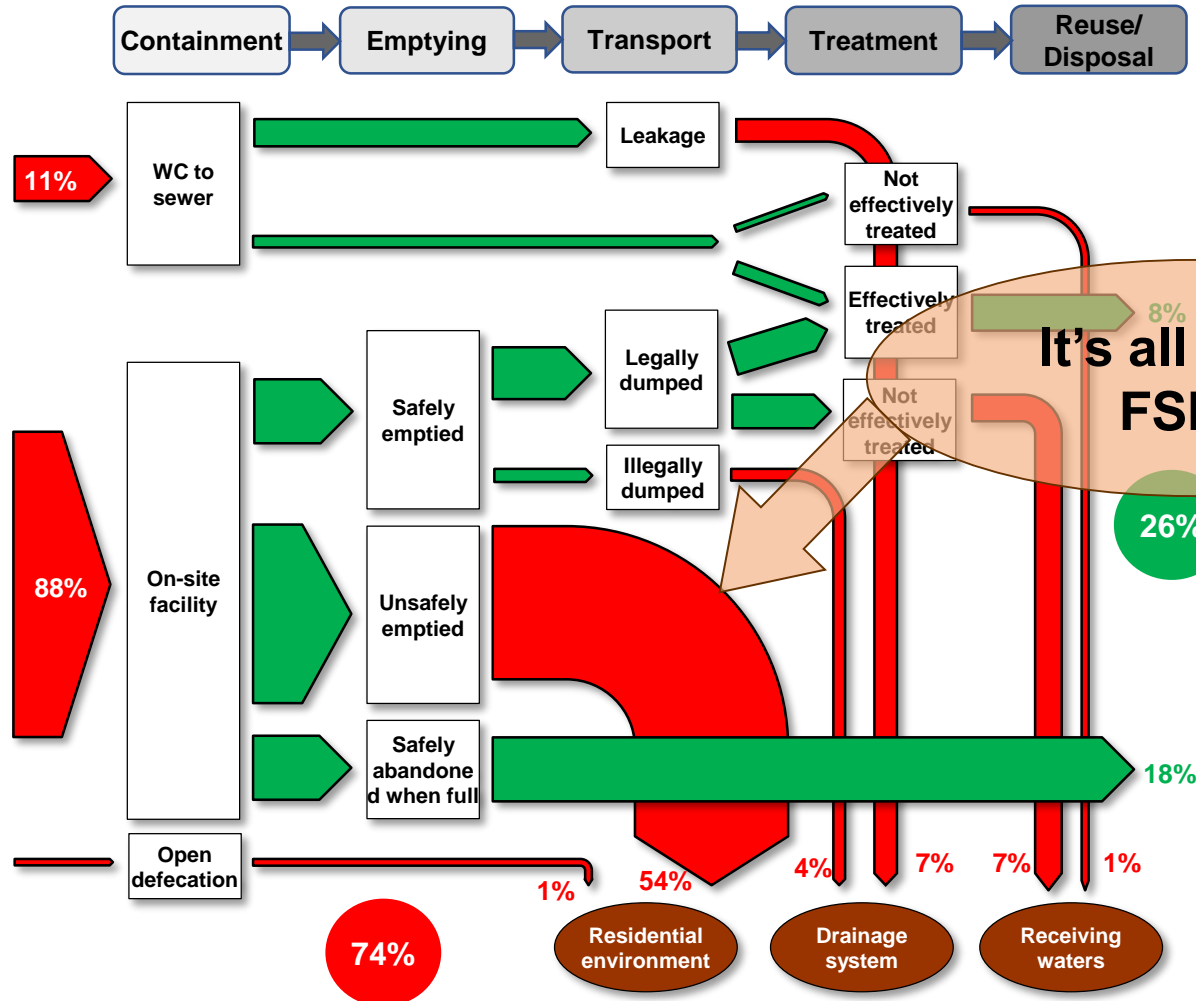
*Then, cross-check and discuss with stakeholders*

**Accurate data is not essential, but  
transparency about data sources is!**

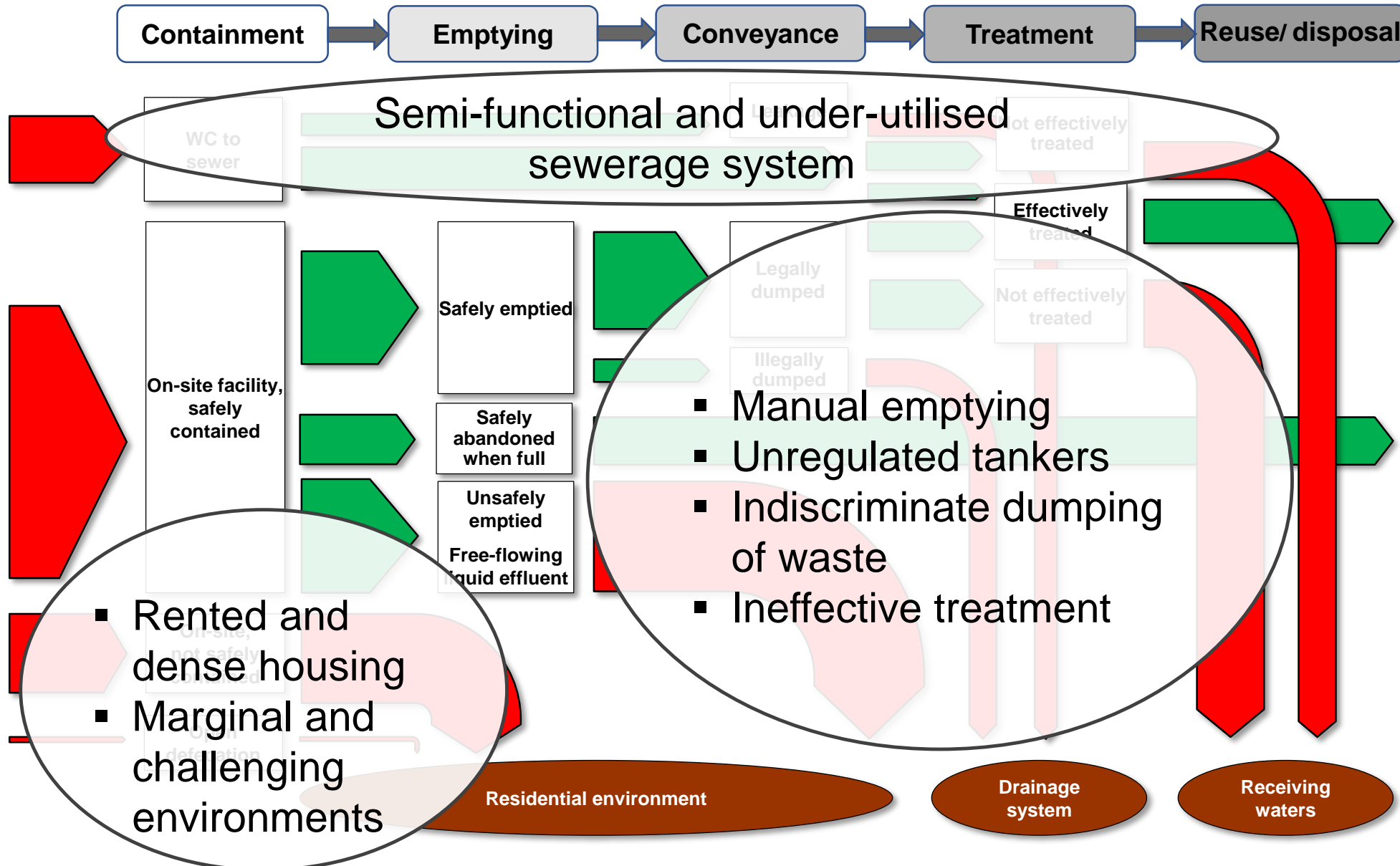
# Even approximate information can tell a good story

## Desk-based SFD for Maputo

## Maputo SFD from survey data



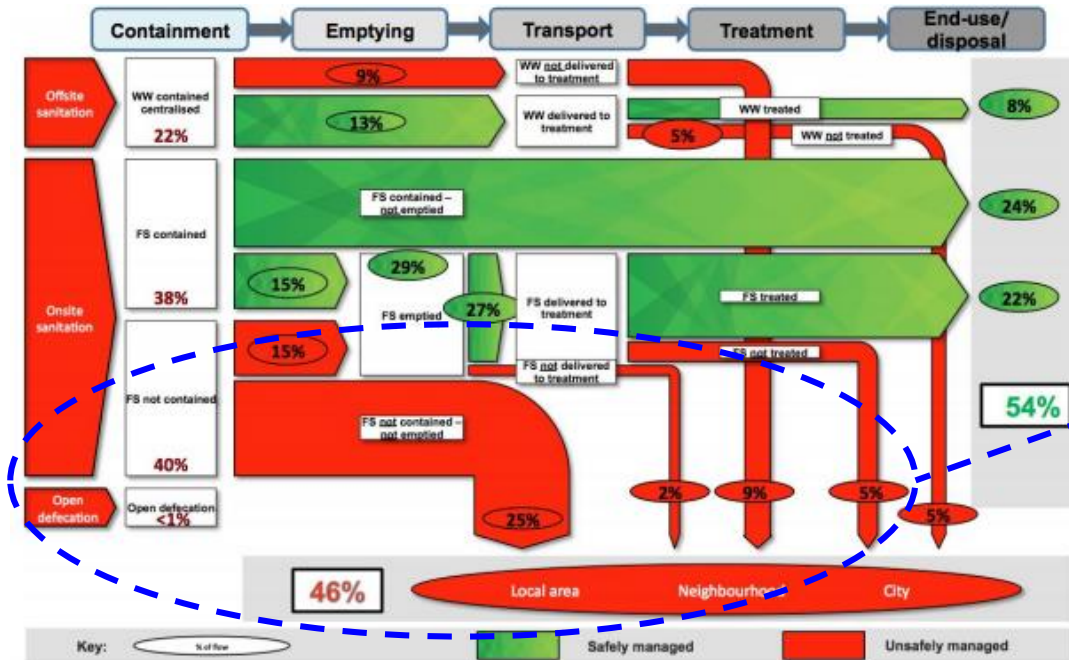
# Where does the faecal waste go?



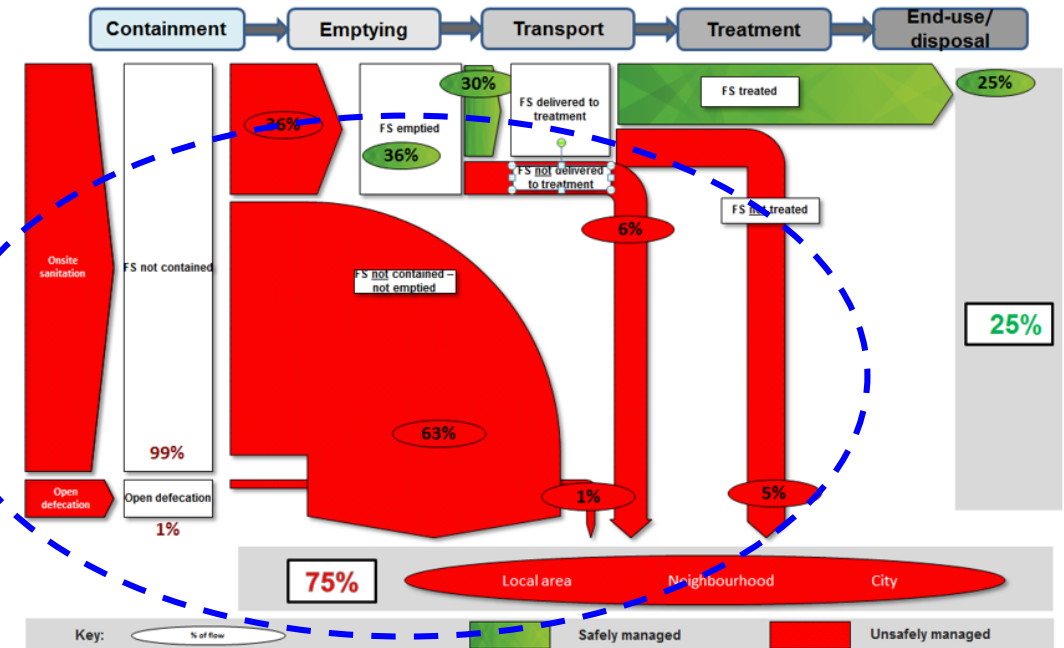
# Area-specific sanitation issues – Kampala, Uganda

## Desk-based SFDs, 2016

### City-wide



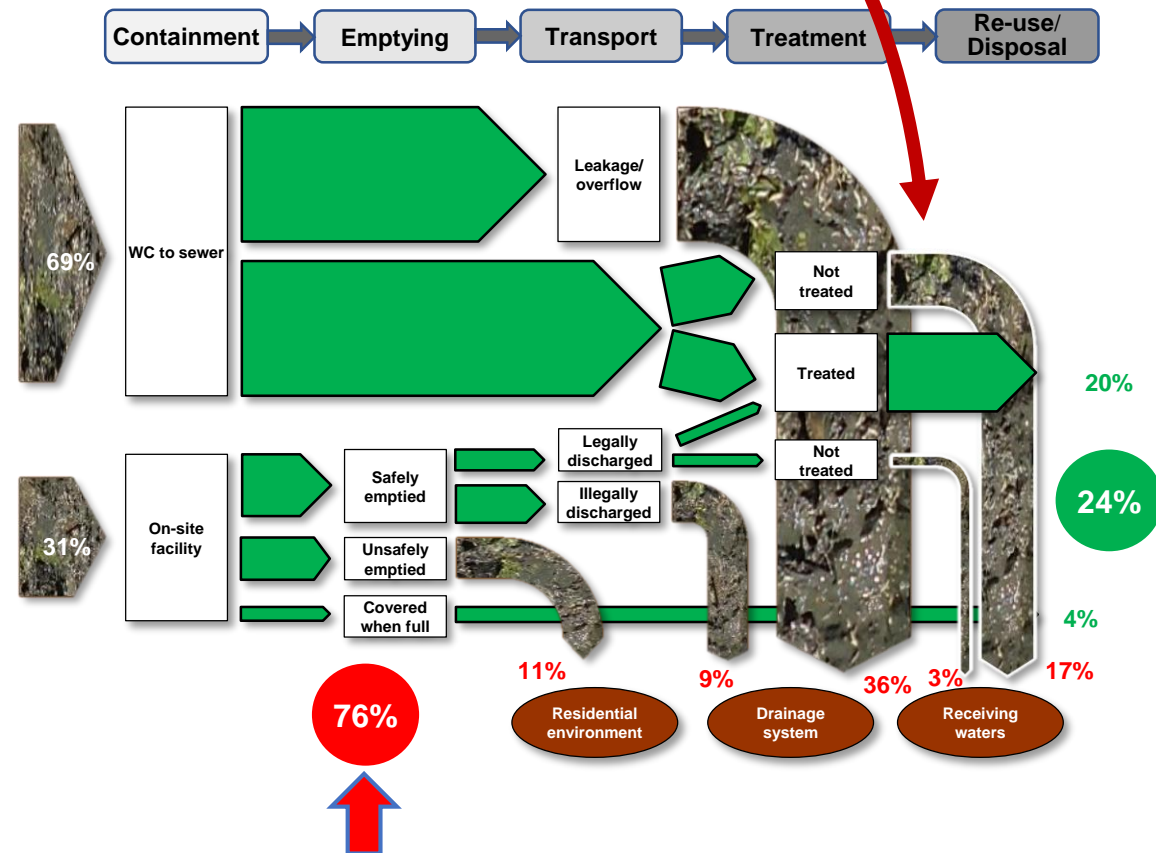
### Low-income areas



# Area-specific sanitation issues – Maputo, Mozambique

Failure of sewerage  
system and treatment

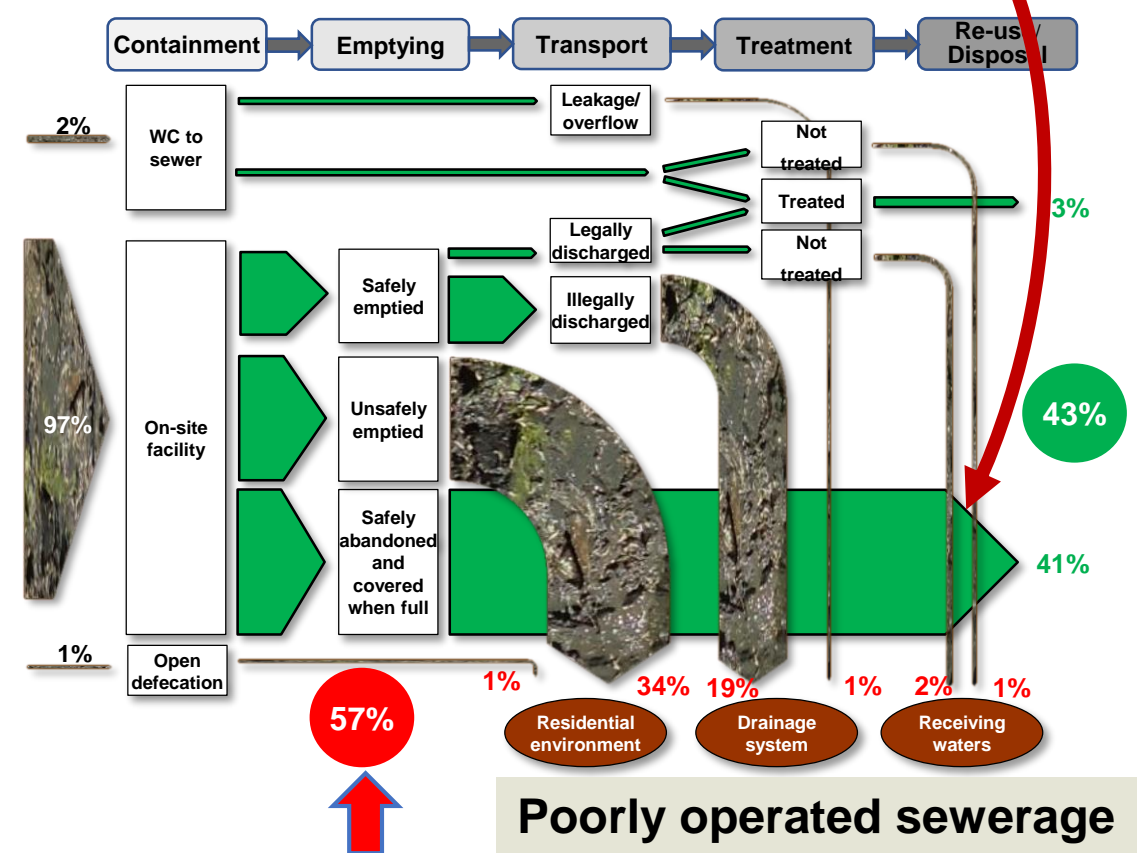
## SFD for fully urbanised area



Urbanised area has a worse outcome than peri-urban!

Widespread single-use latrine pits

## SFD for peri-urban areas



Poorly operated sewerage  
may cause more pollution  
than pit latrines!

# **SFD quiz**

## **Overall summary**





## Quiz 1.4-2

Hold up the coloured card (green, red or yellow) to indicate what you think.

4 mins



1. An SFD is based on the actual or estimated volume of faecal waste produced by the city's population
2. SFDs must have green horizontal and red downward arrows
3. An SFD is primarily a communications tool
4. An SFD is a precise scientific analytical tool



# What is an SFD?

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## □ It IS

- A representation of public health ***hazard***
- Based on contributing populations
- Primarily a communications tool
- A conceptual framework to support other work



# What is an SFD?

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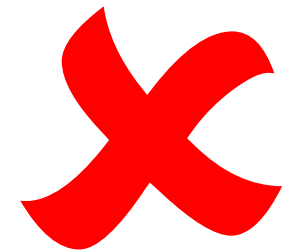
## ☐ It IS

- A representation of public health **hazard**
- Based on contributing populations
- Primarily a communications tool
- A conceptual framework to support other work



## ☐ It is NOT

- Based on actual volumes/mass – these are determined by many other related factors
- A representation of public health **risk** (= *hazard x exposure*)
- A precise scientific analytical tool



- Explain to decision-makers and other stakeholders the scope of the sanitation problem
- Motivate stakeholders to take action
- Identify the most important steps in sanitation chains that are failing
- Highlight specific sanitation issues in subsets of the urban area e.g. low-income settlements, business district, low-lying areas, etc.

- **Sewage is homogenised** by mixing in sewers, but **faecal sludge is highly variable** in composition, depending on:
  - Containment type, seepage and infiltration
  - Frequency and method of emptying
  - Input of non-faecal materials (water, refuse, anal cleansing material, etc.)
- **Key characteristics** in selecting treatment technology include:
  - Solids and moisture content
  - Organic and nutrient content
  - Pathogens

- **An SFD is a communication and advocacy tool**
  - it shows where the main sanitation hazards are
- **Support for preparing SFDs**
  - available at <https://sfd.susana.org>
- **SFDs may show sanitation hazards**
  - for the entire city
  - or for sub-areas, such as:
    - low-income settlements
    - business district
    - low-lying areas
    - etc.