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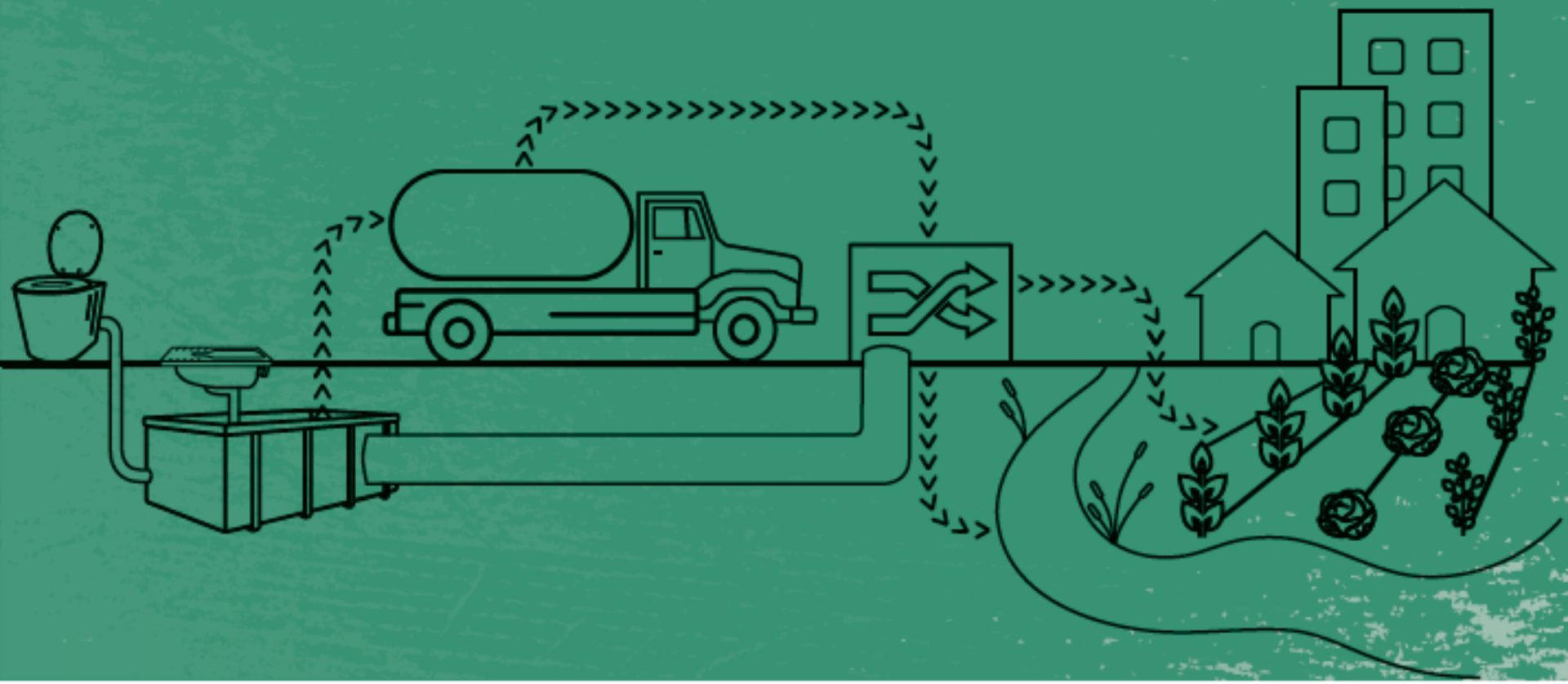
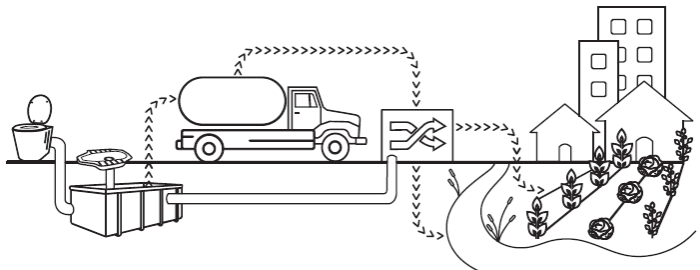


GUIDELINES ON SANITATION AND HEALTH

Showcase

- **Welcome** - Bruce Gordon, WASH Coordinator, WHO
- **Overview Presentation** - Kate Medlicott, Team Leader, WHO
- **Panel discussion** moderated by Yael Velleman, WHO
  - Peter Hawkins, expert consultant
  - Jan-Willem Rosenboom, BMGF
  - Antoinette Kome, SNV
  - Bruce Gordon, WHO
  - Robert Chambers, IDS
- **Distribution of copies of Guidelines** to the audience
- **Q&A**
- **Next Steps and Closing**



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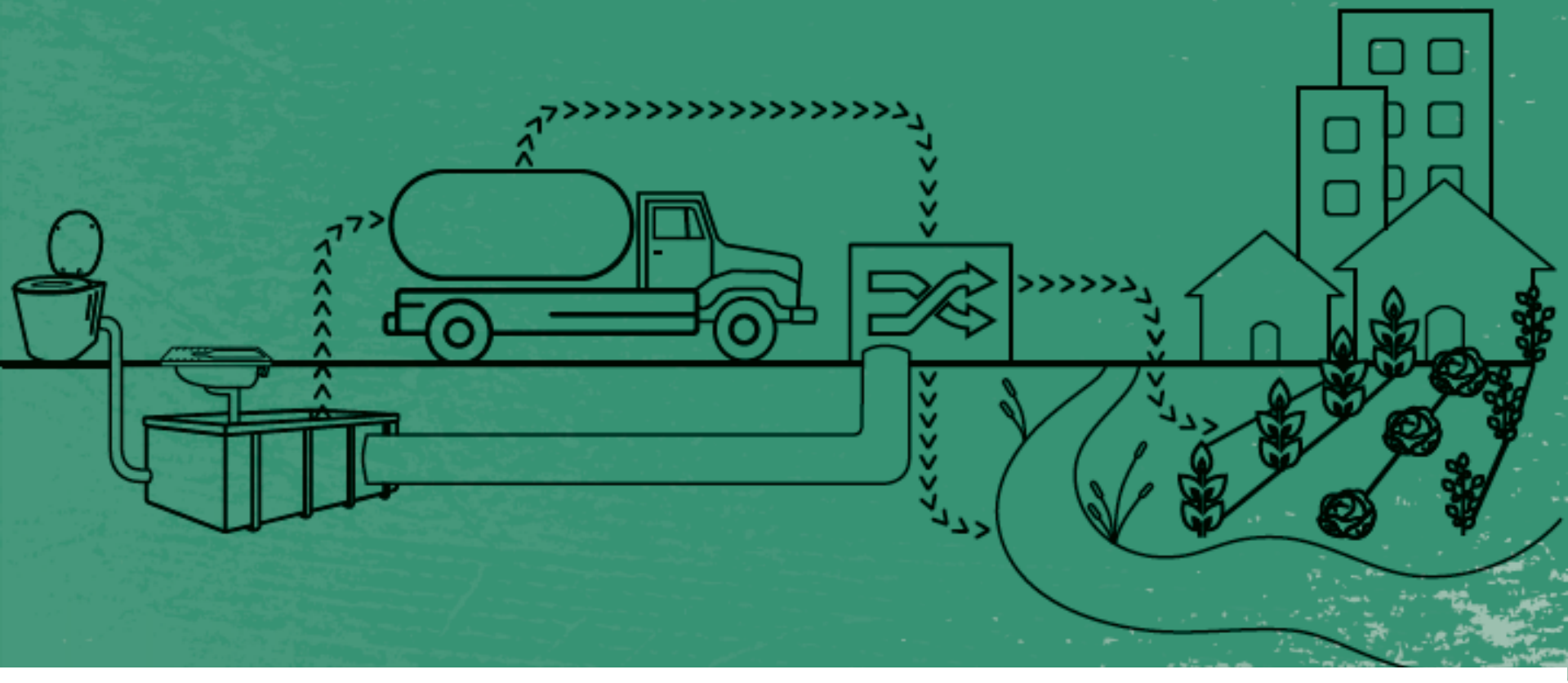


GUIDELINES ON SANITATION AND HEALTH

World Health Organization

Guidelines structure

Introduction	Chapter 1: Introduction (scope, objectives, audience
Recommendations	Chapter 2: Recommendations (and good practice)
Implementation	Chapter 3: Safe sanitation systems Chapter 4: Enabling safe sanitation service delivery Chapter 5: Sanitation behaviour change
Technical resources	Chapter 6: Excreta related pathogens Chapter 7: Methods Chapter 8: Evidence on sanitation interventions Chapter 9: Research needs Annex I: Sanitation system factsheets

Chapter 7

METHODS

Guidelines development process

Scoping of the document

Setting up guidelines development group and external review group → Approval of guideline development proposal

Disclosure and management of secondary interests

Formulation of questions (PICO) and choice of the relevant outcomes

Evidence retrieval, assessment and synthesis (systematic reviews)

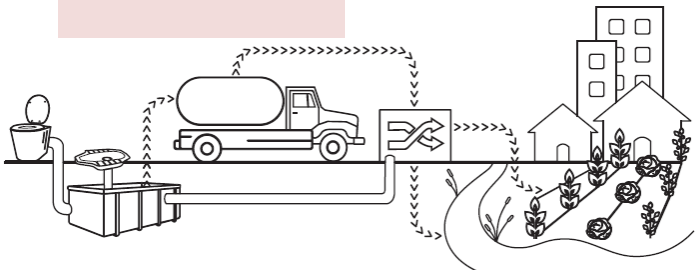
GRADE evidence profiles

Formulation of recommendations (GRADE) Including explicit consideration of:

Dissemination, implementation (adaptation) → Approval final guidelines

Evaluation of impact

Plan for updating



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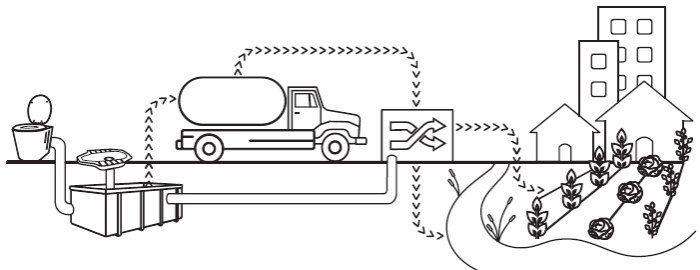
Introduction, scope and objectives



Chapter 1

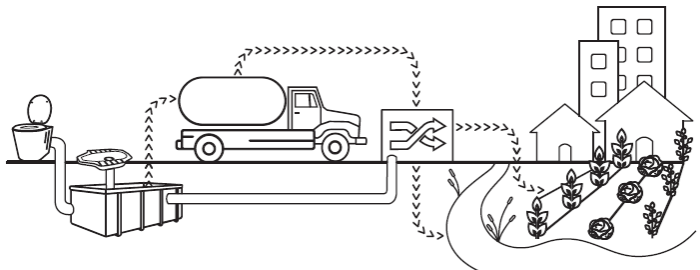
INTRODUCTION

Objectives

- Maximise the health impacts of sanitation interventions
- Articulate the role of health sector in sanitation

Audiences

- Health and non-health actors involved in sanitation
- National and international organizations responsible for developing policies, standards or guidelines, and programmes on sanitation

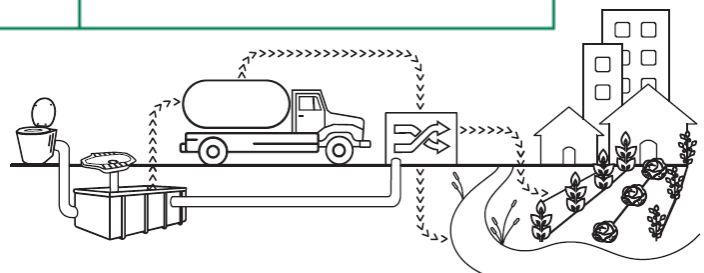


Chapter 1

INTRODUCTION

Table 1.1 The health impact of unsafe sanitation

Direct impact (infections)*	Sequelae (conditions caused by preceding infection)	Broader well-being
Faecal-oral infections • Diarrhoeas (incl. cholera) • Dysenteries • Typhoid **Helminth infections** • Ascariasis • Trichuriasis • Hookworm infection • Cysticercosis (Taenia solium/ infection) • Schistosomiasis **Insect vector diseases** * (vectors breed in faeces or faecally-contaminated water) • Lymphatic filariasis • West Nile Fever • Japanese encephalitis • Trachoma	**Stunting/ growth faltering** (related to repeated diarrhea, helminth infections, environmental enteric dysfunction) **Consequences of stunting** (obstructed labour, low birthweight) **Impaired cognitive function** **Pneumonia** (related to repeated diarrhea in undernourished children) **Anaemia** (related to hookworm infections	**Immediate:** **Anxiety** (shame and embarrassment from open defecation and shared sanitation) and related consequences **Sexual assault** (and related consequences) **Adverse birth outcomes** (due to underuse of healthcare facilities with inadequate sanitation) **Long-term:** School absenteeism Poverty Decreased economic productivity Anti-microbial resistance



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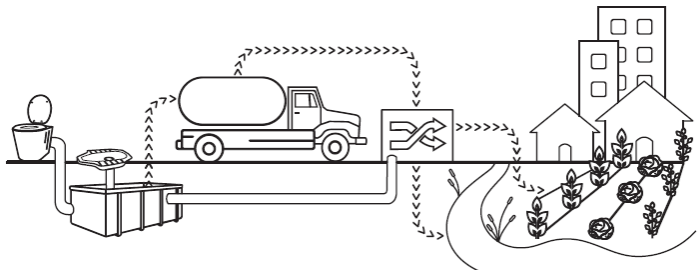
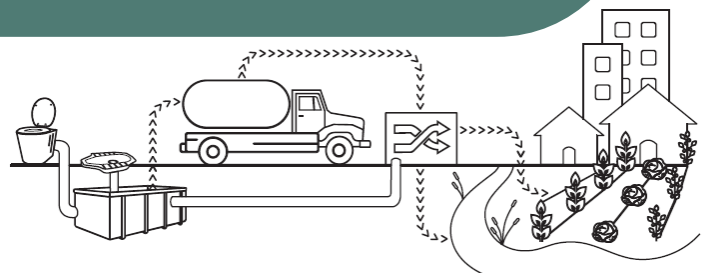
Recommendations and good practice actions



Chapter 2

RECOMMENDATIONS AND GOOD PRACTICE ACTIONS

1. Universal ***access and use*** of toilets that safely contain excreta
2. Universal access to ***safe systems*** along the ***entire sanitation service chain***
3. Sanitation as ***part of local services***
4. ***Health sector role*** in safe sanitation to protect public health



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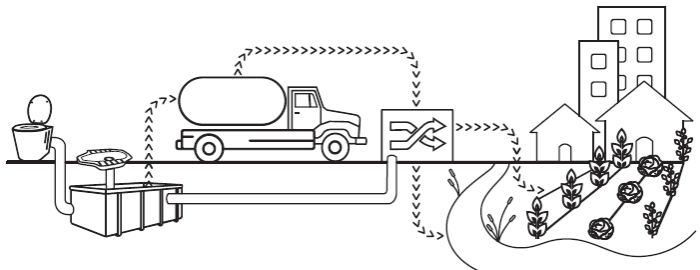
Implementation guidance



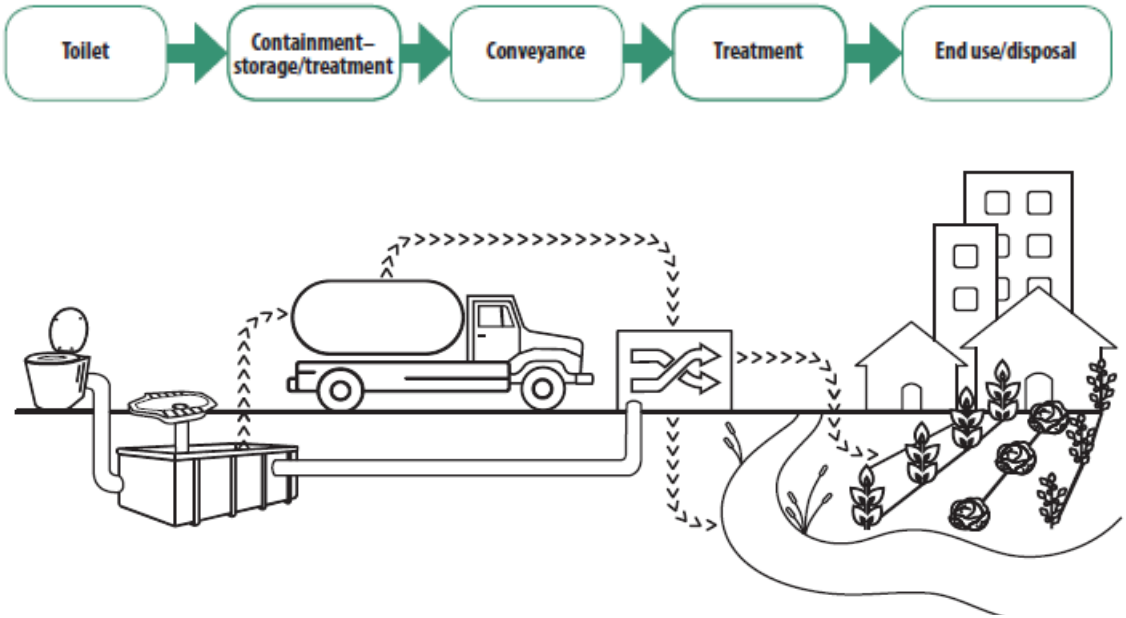
Chapter 3

SAFE SANITATION SYSTEMS

What does safe mean?

Definitions for safe management

- Design & construction
- O&M
- Incremental measures



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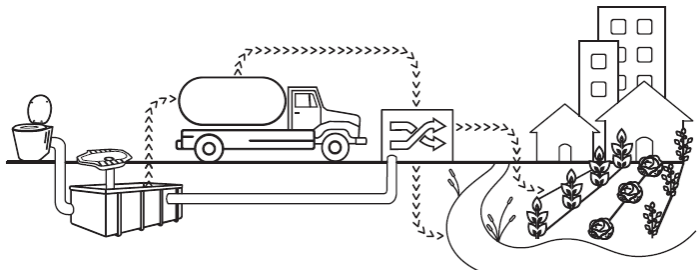
Monitoring definitions vs Normative definitions

SERVICE LEVEL	DEFINITION
SAFELY MANAGED	Use of improved facilities that are not shared with other households and where excreta are safely disposed of in situ or transported and treated offsite.
BASIC	Use of improved facilities that are notshared with other households.
LIMITED	Use of improved facilities shared between two or more households.
UNIMPROVED	Use of pit latrines without a slab or platform , hanging latrines or bucket latrines.
OPEN DEFECATION	Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches or other spaces, or with solid waste.

- Normative definitions provide more detail to guide implementation
- Aligned with measurable definitions in SDG monitoring

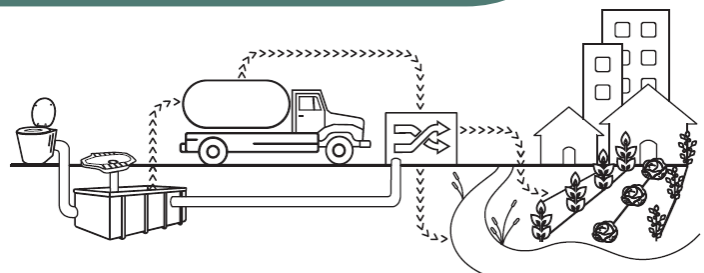


Chapter 4

ENABLING SAFE SANITATION SERVICE DELIVERY

Guidance covers:

- Policy & planning
- Legislation, regulations, standards, guidelines
- Roles and responsibilities
- Role of health authorities
- Delivering sanitation at the local level
- Developing sanitation services and business models
- Fostering the sanitation services market
- Management of special risks (emergencies, outbreaks, HCF)



Chapter 5

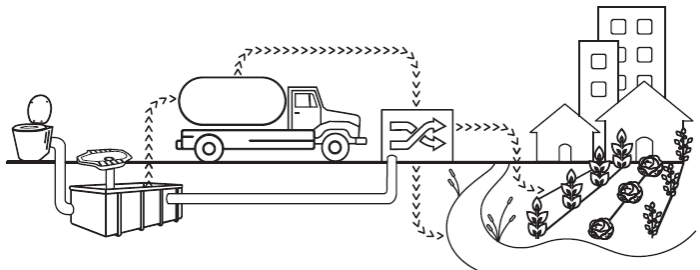
SANITATION BEHAVIOUR CHANGE

Table 5.2 Stages in behaviour change strategy design

Documenting existing behaviour	Understanding behavioural drivers	Developing the intervention	Testing intervention delivery	Implementation
• Situation analysis • Surveys • Nationally-representative data sets • Stakeholder and key informant engagement	• In-depth interviews • Direct observations • Interactive methods	• Engagement of relevant specialists and stakeholders • Content development and pre-testing • Definition of activities and protocols	• Behavioural trials/ trials of improved practice • Pilot projects	• Delivery of intervention at the desired scale • Regular review and adaptation • Evaluation

Covers:

- Sanitation behaviours and determinants
- Approaches & intervention design
- Institutional responsibilities
- Monitoring & learning



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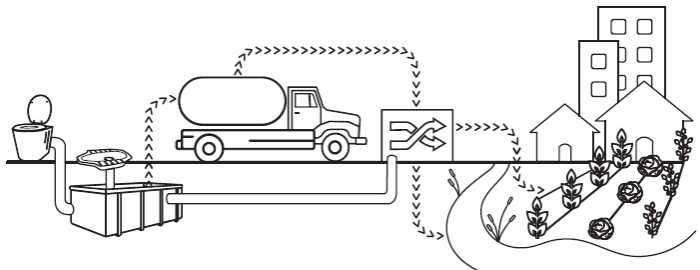
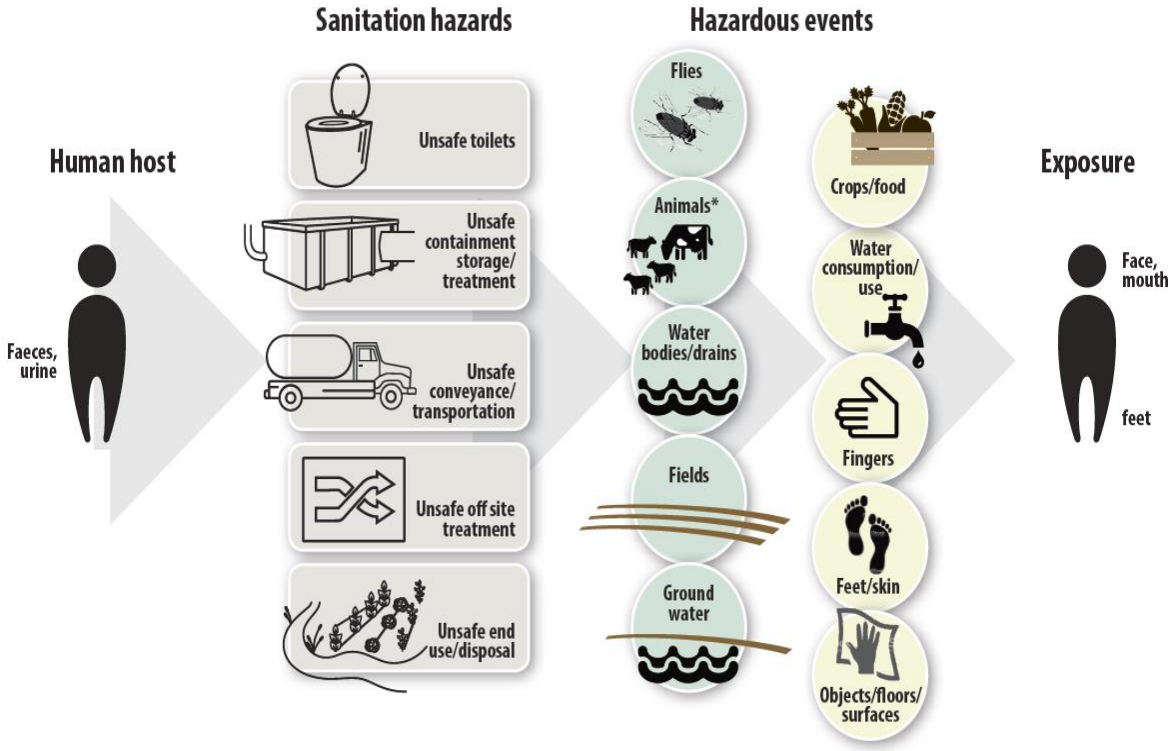
Technical resources



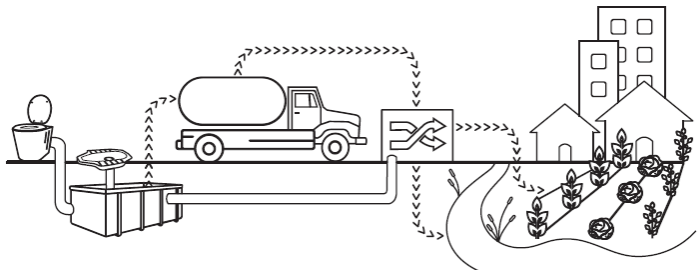
Chapter 6

EXCRETA-RELATED PATHOGENS



Covers:

- An updated F-diagram
- Sanitation related pathogens
- Treatment and control
- Focus on emerging Antimicrobial resistance



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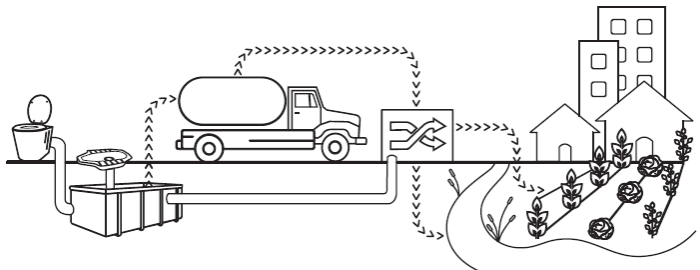
EXCRETA-RELATED PATHOGENS

Table 6.1 Excreta-related pathogens (main source: Mandell, Bennett & Dolin, 2000)

Pathogen	Health significance	Transmission pathways	Important animal source	Likely importance of sanitation for control†	Concentration excreted in faeces	Duration of excretion	Additional references
BACTERIA							
Campylobacter spp.	Most common bacterial	Predominantly food and water	Poultry and other	Low	106 – 109 / g	Up to 3 weeks	
VIRUSES							
Adenoviruses	A large group of distinct viruses	Person-to-person, through both		None – strict human	Low	10^{11}/g (lower with	Months after
PROTOZOA							
Cryptosporidium spp.	One of the most common causes	Person-to-person, and		Of the two main species, C. parvum	High	—	—	Hunter & Thompson,
HELMINTHS							
Ascaris lumbricoides (roundworm)	One of the most common human helminth infections globally. Largely asymptomatic. Can lead to bowel/ intestine obstruction,	Via consumption of contaminated soil and food, and hand contamination.		No (animal roundworm species not thought to be pathogenic to human).	High	10^{5} eggs/g	While infection persists	Bethony et al., 2006

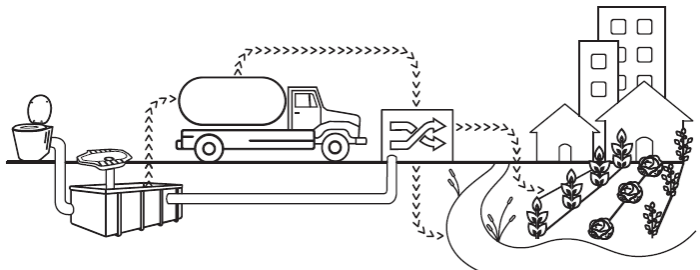


Chapter 8

EVIDENCE ON THE EFFECTIVENESS AND IMPLEMENTATION OF SANITATION INTERVENTIONS

Brief overview:

- ***Limited increase in coverage and use leads to limited impact*** on transmission
- Evidence of a ***protective effect of sanitation on infectious diseases and nutrition***.
- Evidence of association with ***wider health outcomes***, including ***cognitive development, personal wellbeing***, especially among women and girls.
- ***Strength of the evidence is generally low***, though this may is due in part to limited studies and is common for environmental interventions.
- ***Significant gaps*** remain in epidemiological, implementation and other areas of sanitation research.



Chapter 9

RESEARCH NEEDS

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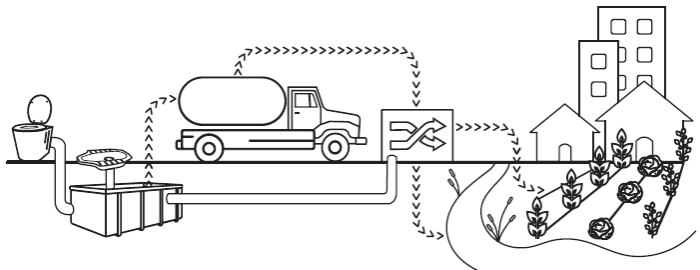
- Strategies for encouraging governments to prioritize, encourage and monitor
- Improving coverage and securing correct, consistent, sustained use
- Estimating health impacts from sanitation interventions
- Methods for assessing presence of and exposure to sanitation-related pathogens in the environment
- Leakage and fate of faecal pathogens in the environment
- Alternative designs and services
- Culturally-appropriate interventions respect human dignity and rights
- Mitigating occupational exposures
- Links between sanitation, animals and their impact on human health
- Ecological effects
- Sanitation and gender



Annex I

SANITATION SYSTEM FACT SHEETS

Factsheet 1

Dry or flush toilet with onsite disposal

Summary

This system is based on the use of a single pit technology to collect and store excreta. The system can be used with or without flushwater, depending on the toilet. Inputs to the system can include urine, faeces, cleansing water, flushwater and dry cleansing materials. The use of flushwater, cleansing water and cleaning agents will depend on water availability and local habit. The toilet for this system can either be a dry toilet or a pour flush toilet. A urinal could additionally be used. The toilet is directly connected to a single pit or a single ventilated improved pit (VIP) for containment. As the pit fills up, leachate permeates from the pit into the surrounding soil.

When the pit is full, it can be backfilled with soil and a fruit or ornamental tree can be planted. The sludge acts as a soil conditioner with the increase in organic matter resulting in improved water holding capacity and providing additional nutrients, which are slowly reduced over time. A new pit has to be dug and this is generally only possible when the existing superstructure is mobile.

Applicability

Suitability: This system should be chosen only where there is enough space to continuously dig new pits. In dense urban settlements, there is not sufficient space to continuously dig new pits.

When it is not possible to dig a deep pit or the groundwater level is too high, a shallow, raised pit can be a viable alternative: the shallow pit can be extended by building the pit upwards with the use of concrete rings or blocks. A raised pit can also be constructed in an area where flooding is frequent in order to keep water from flowing into the pit during heavy rain [1].

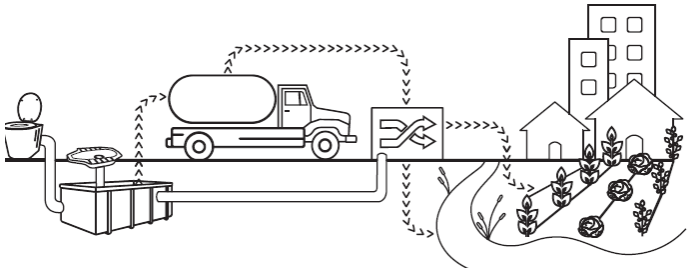
Cost: This system is one of the least expensive to construct in terms of capital cost and maintenance cost, especially if the superstructure is mobile and can be reused [2,3].

Design considerations

Toilet: The toilet should be made from concrete, fibreglass, porcelain or stainless steel for ease of cleaning and designed to prevent stormwater from infiltrating or entering the pit [2,3].

Containment: On average, solids accumulate at a rate of 40 to 60L per person/year and up to 90L per person/year if dry cleansing materials such as leaves or paper are used. In many emergency situations, toilets with infiltrating pits are subjected to heavy use, consequently excreta and anal-cleansing materials are added much faster than the decomposition rate, the 'normal' accumulation rates can therefore increase by 50% [1].

- 11 system factsheets covering applicability, design considerations and measures to protect public health
- Table comparing applicability of system in different contexts



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EXCRETA-RELATED PATHOGEN FACT SHEETS

11.1 Bacterial pathogens

Most bacterial pathogens potentially transmitted by water infect the gastrointestinal tract and are excreted in the faeces of infected humans and animals. However, there are also some waterborne bacterial pathogens, such as *Legionella*, *Burkholderia pseudomallei* and atypical mycobacteria, that can grow in water and soil. The routes of transmission of these bacteria include inhalation and contact (bathing), with infections occurring in the respiratory tract, in skin lesions or in the brain.

- COMING SOON
- Harmonized with Drinking water quality factsheets and the global water pathogens project (GWPP)

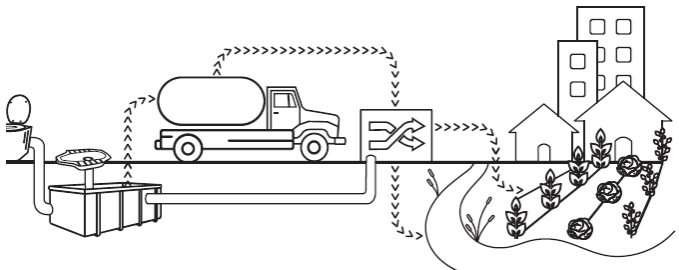
Acinetobacter

General description

Acinetobacter spp. are Gram-negative, oxidase-negative, non-motile coccobacilli (short plump rods). Owing to difficulties in naming individual species and biovars, the term *Acinetobacter calcoaceticus baumannii* complex is used in some classification schemes to cover all subgroups of this species, such as *A. baumannii*, *A. iwoffii* and *A. junii*.

Human health effects

Acinetobacter spp. are usually commensal organisms, but they occasionally cause infections, predominantly in susceptible patients in hospitals. They are opportunistic pathogens that may cause urinary tract infections, pneumonia, bacteraemia, secondary meningitis and wound infections. These diseases are predisposed by factors such as malignancy, burns, major surgery and weakened immune systems, such as in neonates and elderly individuals. The emergence and rapid spread of multidrug-resistant



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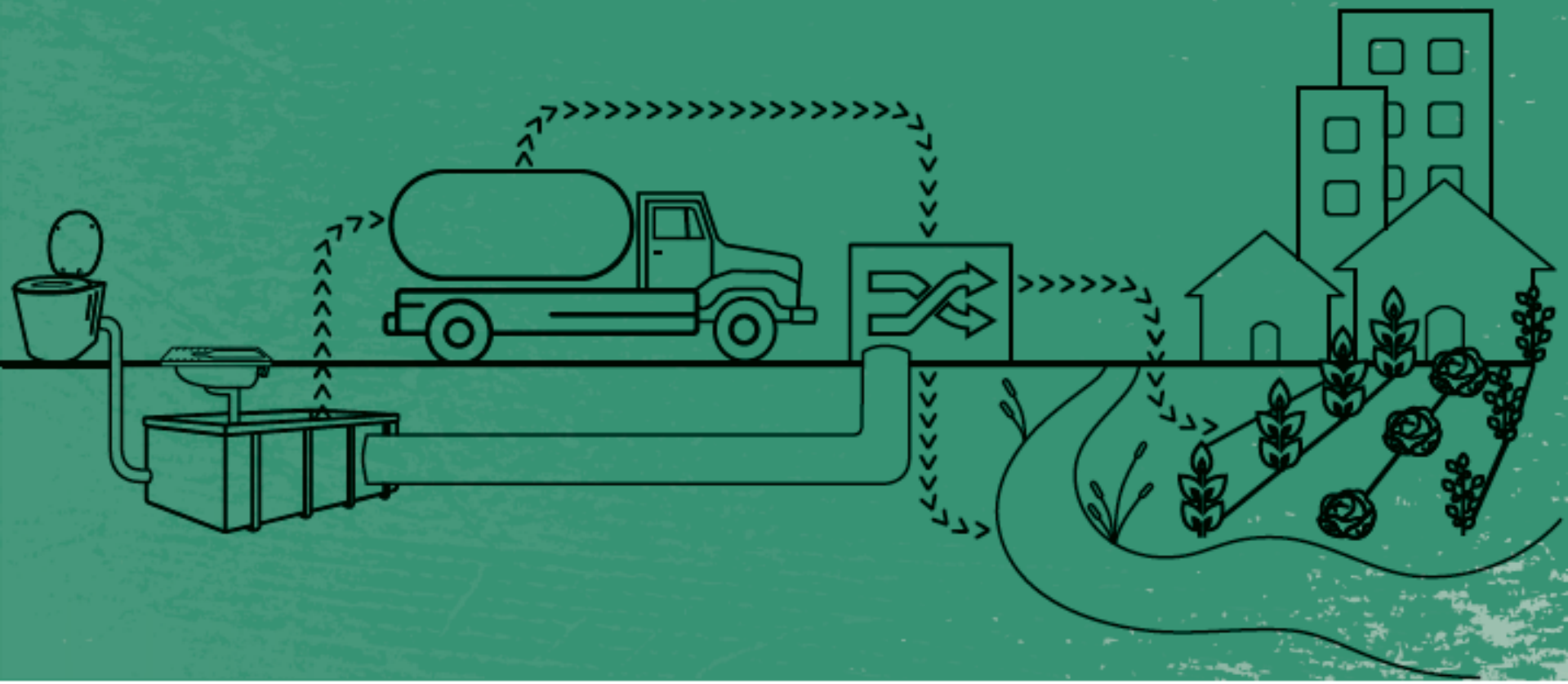

THANK YOU!

Panel Discussion

Moderated by Yael Velleman, WHO

Panelists:

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- **Jan-Willem Rosenboom, BMGF**
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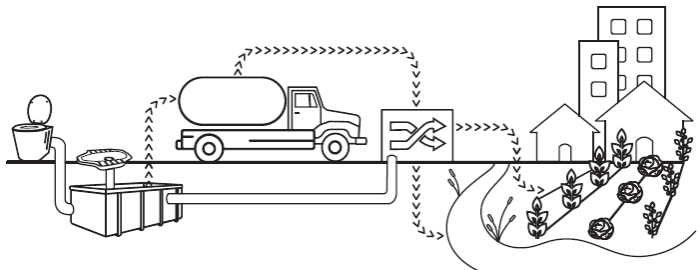
- **Bruce Gordon, WHO**
- **Robert Chambers, IDS**

Distribution of copies of Guidelines to the audience

Q&A

Next Steps and Closing



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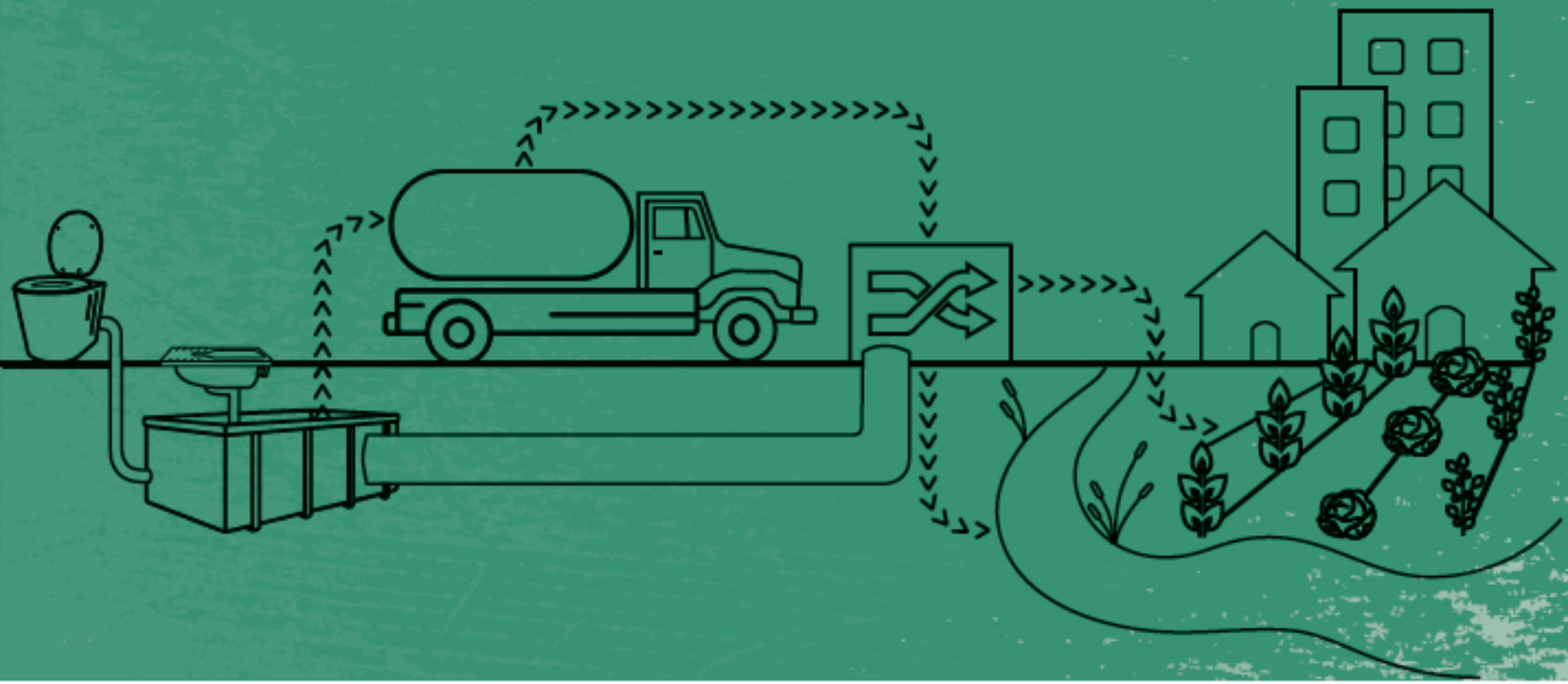
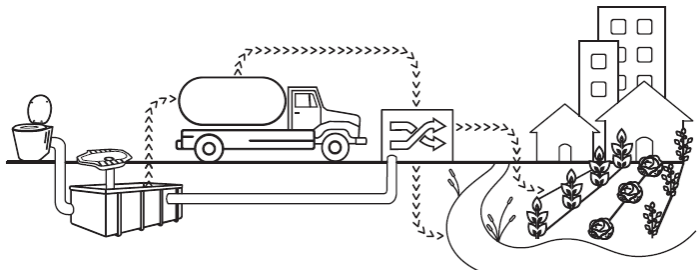


GUIDELINES ON SANITATION AND HEALTH

Next Steps

- **Launch October 2018**
  - final touches
  - mobilizing partners
- **Implementation from 2019**
  - through networks and with partners
- **Supporting materials**
  - additional details
  - context specific



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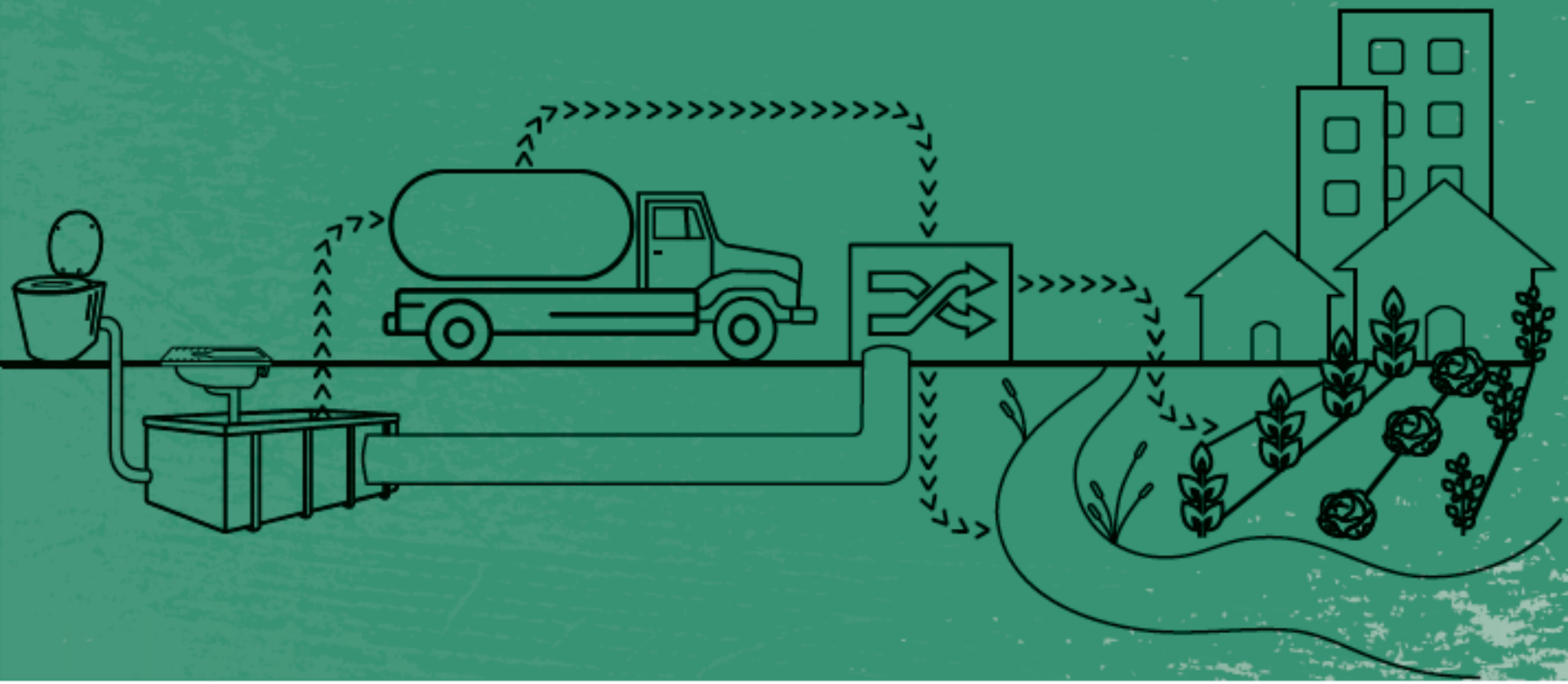

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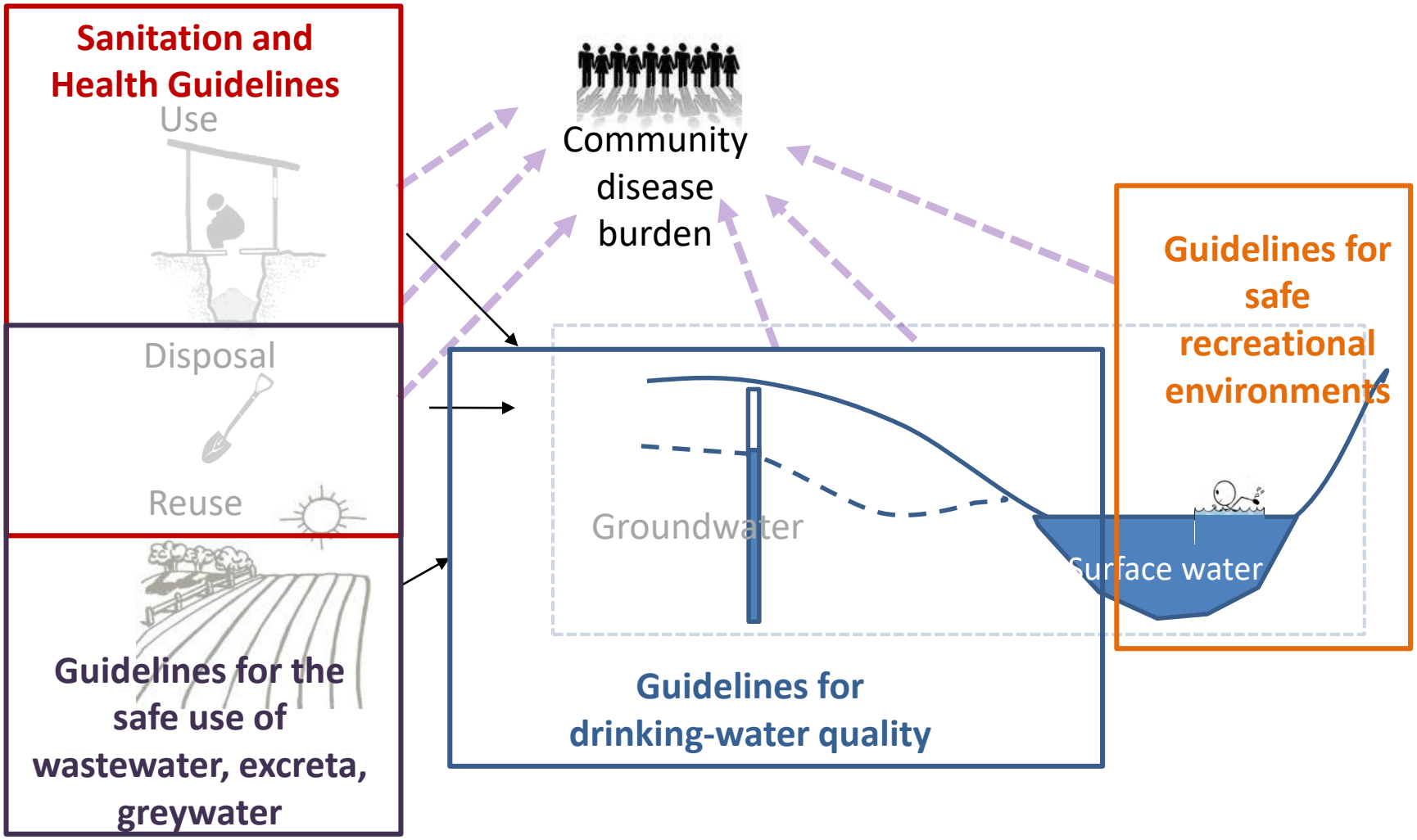
WHO WASH Guidelines



Slide: Susan Petterson

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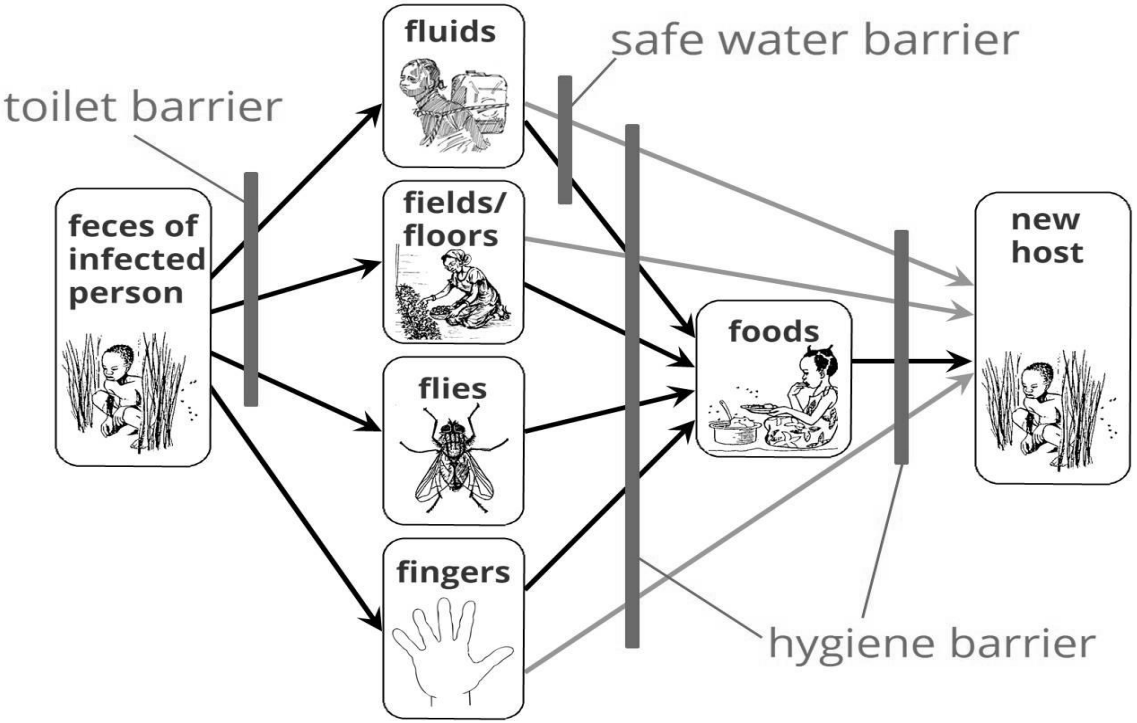
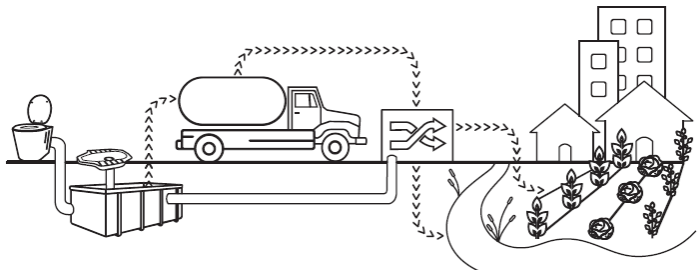
Old F–diagram





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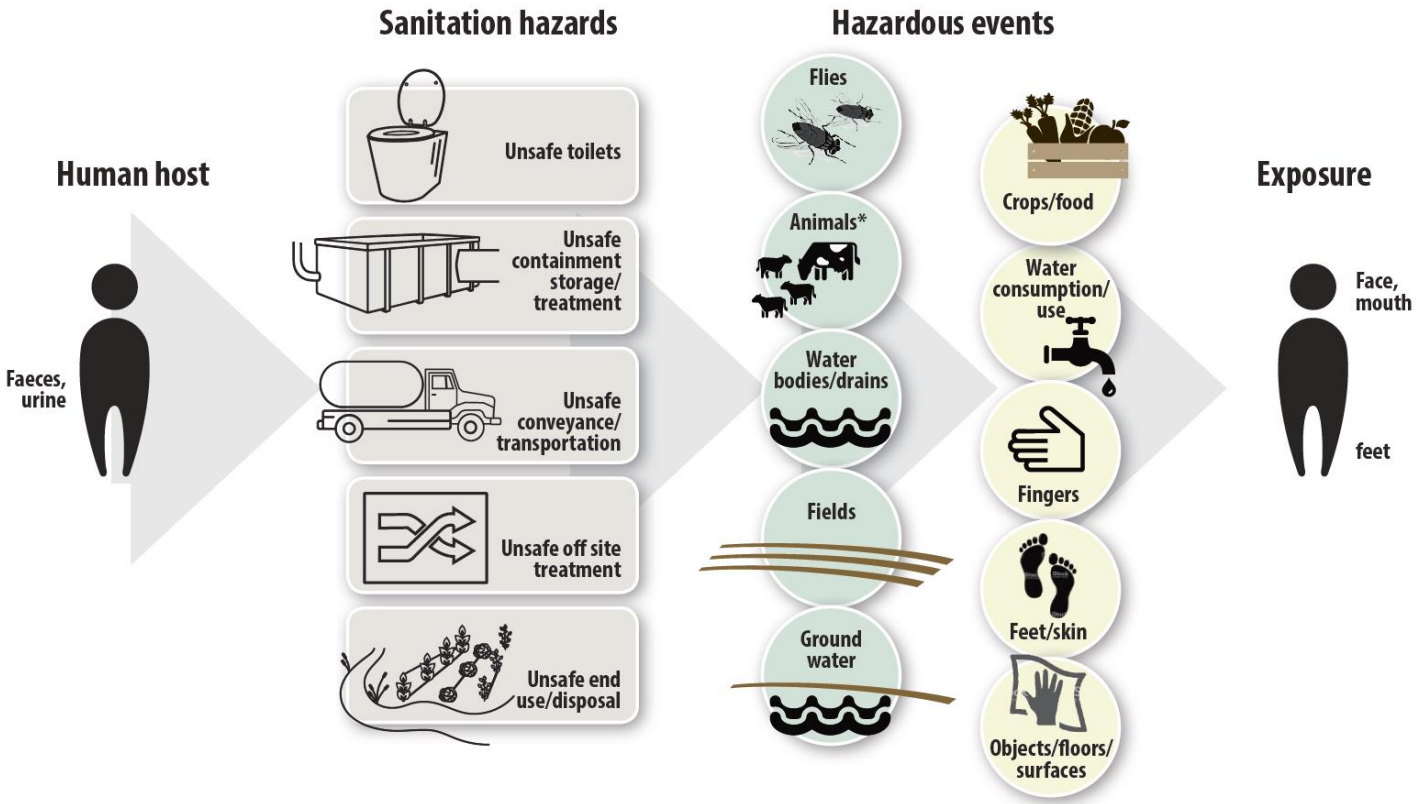
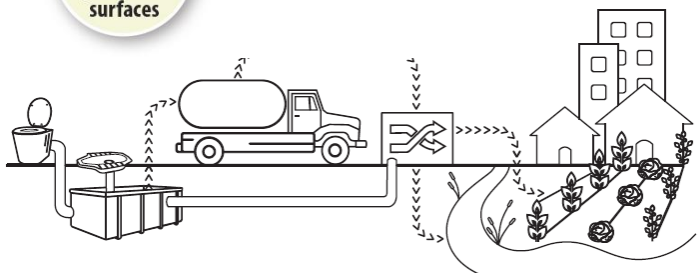
Transmission of excreta-related pathogens



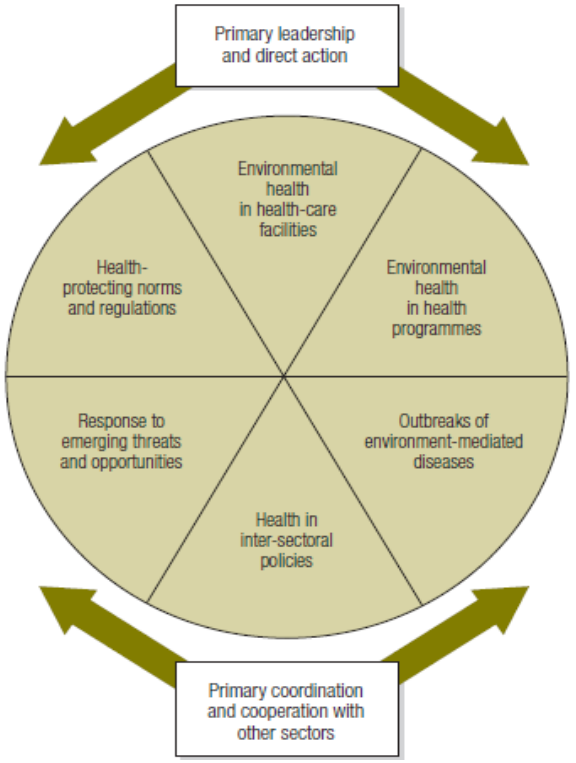


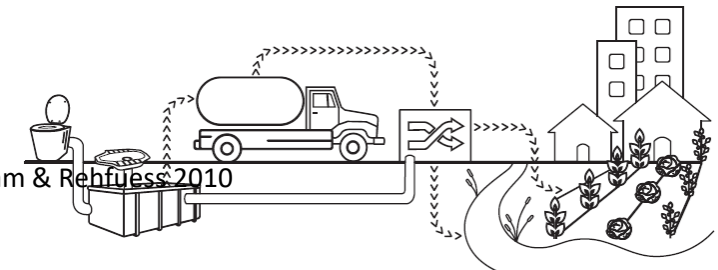
Chapter 1

INTRODUCTION

Health sector functions

- Contribution to sanitation sector coordination
- Health in sanitation policies
- Health protective norms and standards
- Health surveillance
- Health programme delivery
- Sanitation behaviour change
- Healthcare facilities





Bartram & Rehfuess 2010

Chapter 5

SANITATION BEHAVIOUR CHANGE

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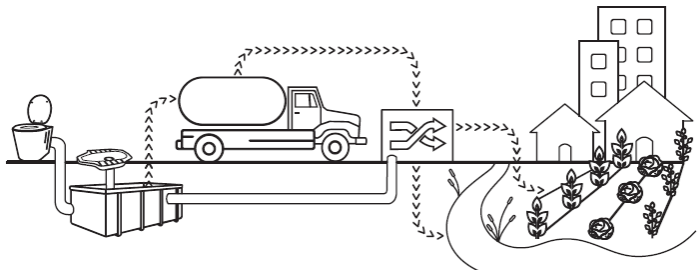
Guidance covers:

- Institutional and government responsibilities for sanitation behaviour change
- Sanitation behaviours and determinants
- Changing behaviours: approaches, intervention design
- Monitoring and learning



Chapter 5

SANITATION BEHAVIOUR CHANGE

Figure 5.1 Example of behavioural determinants for open defecation

Table 5.2 Stages in behaviour change strategy design

Documenting existing behaviour	Understanding behavioural drivers	Developing the intervention	Testing intervention delivery	Implementation
• Situation analysis • Surveys • Nationally-representative data sets • Stakeholder and key informant engagement	• In-depth interviews • Direct observations • Interactive methods	• Engagement of relevant specialists and stakeholders • Content development and pre-testing • Definition of activities and protocols	• Behavioural trials/ trials of improved practice • Pilot projects	• Delivery of intervention at the desired scale • Regular review and adaptation • Evaluation