



ONLINE COURSE FAECAL SLUDGE MANAGEMENT
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Key note 5.3: FINANCING IN FSM

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Related course material | Chapter 13 in the FSM book;
Presentation C5U3;
Assignment C5U3

UNESCO-IHE INSTITUTE FOR WATER EDUCATION


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SUSTAINABLE FINANCING OF SANITATION

WASTE


Valentin Post
WASTE



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1. What is sustainable financing?
2. Sanitation elements / the chain
3. The 'Diamond' model
4. Business side: sanitation needs addressed;
product market combinations
5. Financial instruments
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1. What is sustainable financing?

1. Sustainable financing – the F

The logo consists of a yellow diamond shape with the word "WASTE" written in black capital letters inside it.

- Substantial / increasing finance local partners, preferably private;
- In (any) consortium local private partners important role
- Business plan with at the end positive net results or clear removal of bottlenecks that prevent positive results from emerging
- Continuation project at end based on local financing (e.g. local payment services)



2. Sanitation elements

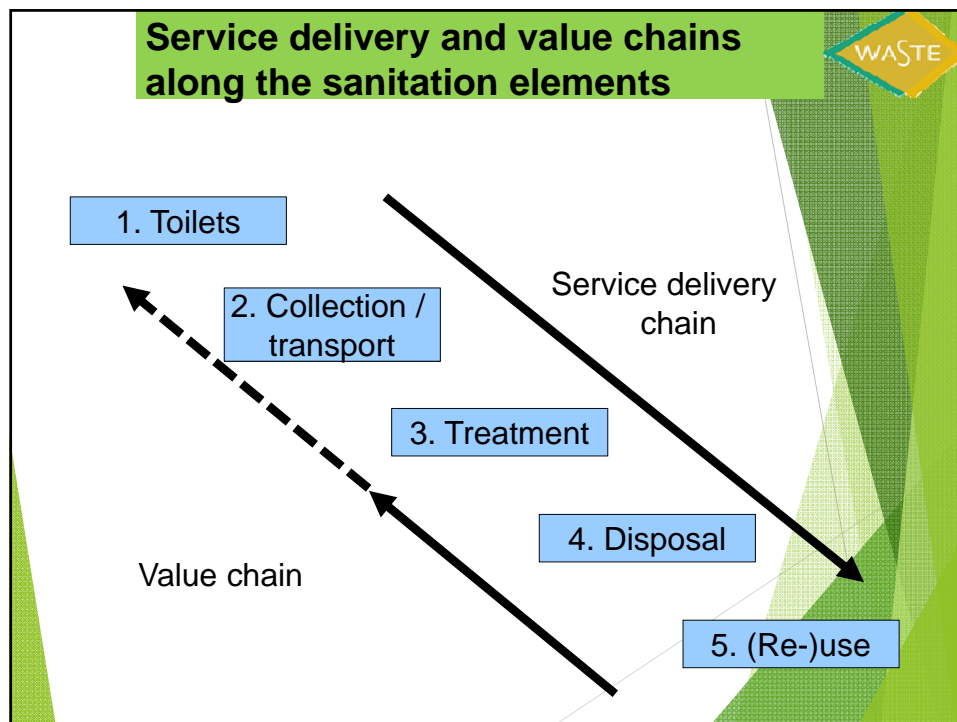
And the value and service chains

The 5 essential elements in a sanitation chain



Sanitation comprises a combination of (some of) the following elements:

1. Toilet / latrine, grey water
2. Collection system
3. Conveyance /transport system
4. Treatment system
5. Disposal /reuse system



2 questions about the arrows

Question 1: What could these arrows mean ?

Question 2: Why is the arrow in the value chain (partially) broken ?

The diagram shows the same five steps as the previous slide. The 'Service delivery chain' arrow is solid. The 'Value chain' arrow is dashed, with a break in the middle between steps 2 and 3, indicating a gap or discontinuity in the value chain.

Arrows represent cash flow



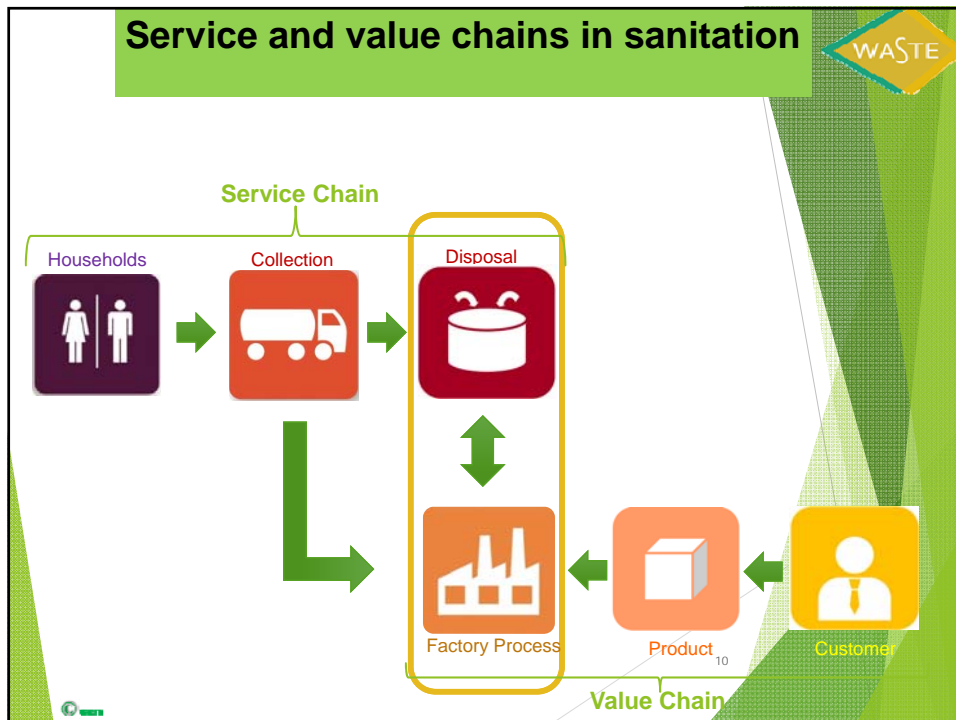
Question 1: What could these arrows mean ?

Answer: Indeed these show the way the money is flowing in the sanitation service and value chains.

Question 2: Why is the arrow in the value chain broken?

Answer: There is some evidence to support that endusers (like farmers) pay for faecal matter. This is not (yet?) translated into household getting funds for producing faecal matter, barring a few projects where people are 'paid to defecate' (show Musiri).

Service and value chains in sanitation



Sanitation element #1: toilets



Or rather: no toilets..! (OD – open defaecation)

Sanitation element #1: toilets



NGO designed Urine Diversion toilet slab

Sanitation element #1: toilets



Very low water using toilet

Sanitation element #2: collection & transport



Manual emptying



Mechanical emptying

Sanitation element 2: collection & transport



Locally assembled collection vehicle

Sanitation element #2: collection & transport



Sanitation element #3: treatment and disposal



All combined: toilets, collection, treatment, reuse & disposal



Sanitation element #5: reuse

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Dried and pelletised faecal sludge for fertilisation



Reuse of pelletised faecal sludge in tobacco farm

The urban sanitation system: how to build sustainable systems?

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- 1. Marketing and demand creation:** awareness and behavioural change through communication campaigns and social marketing.
- 2. Product & services development:** implementation and construction of waste and sanitation systems.
- 3. Consumption & use:** product use and generated waste after consumption.
- 4. Logistics:** waste collection and transport.
- 5. Treatment & disposal:** with specific focus on wastewater, faecal sludge and plastics.
- 6. Product reuse:** reuse of organic waste and faecal sludge, and recycling of non-organic waste.

3. The urban sanitation system

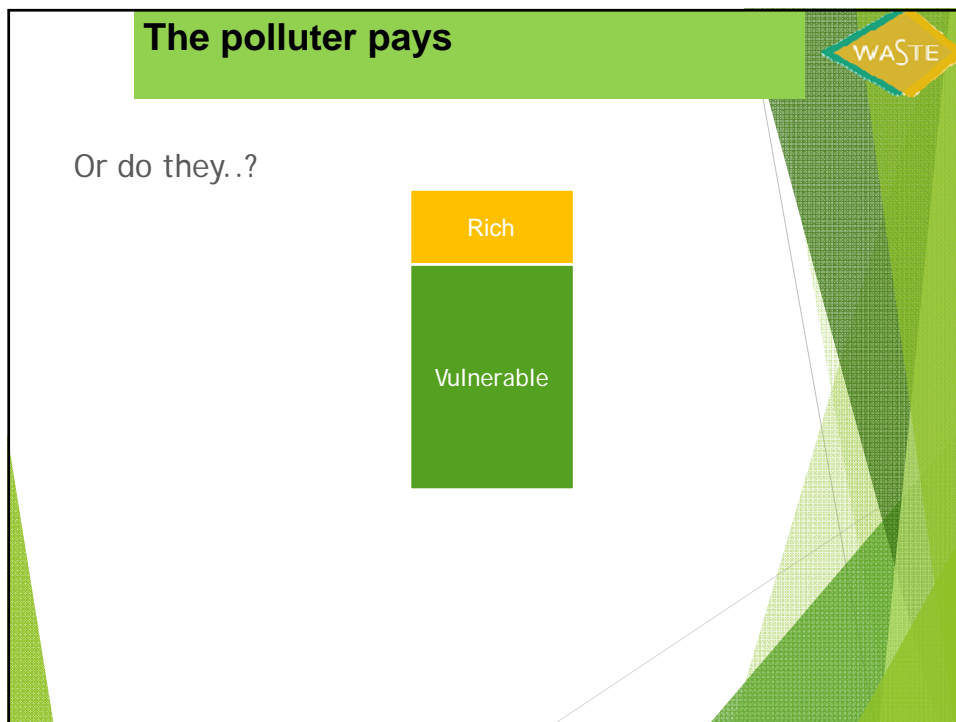
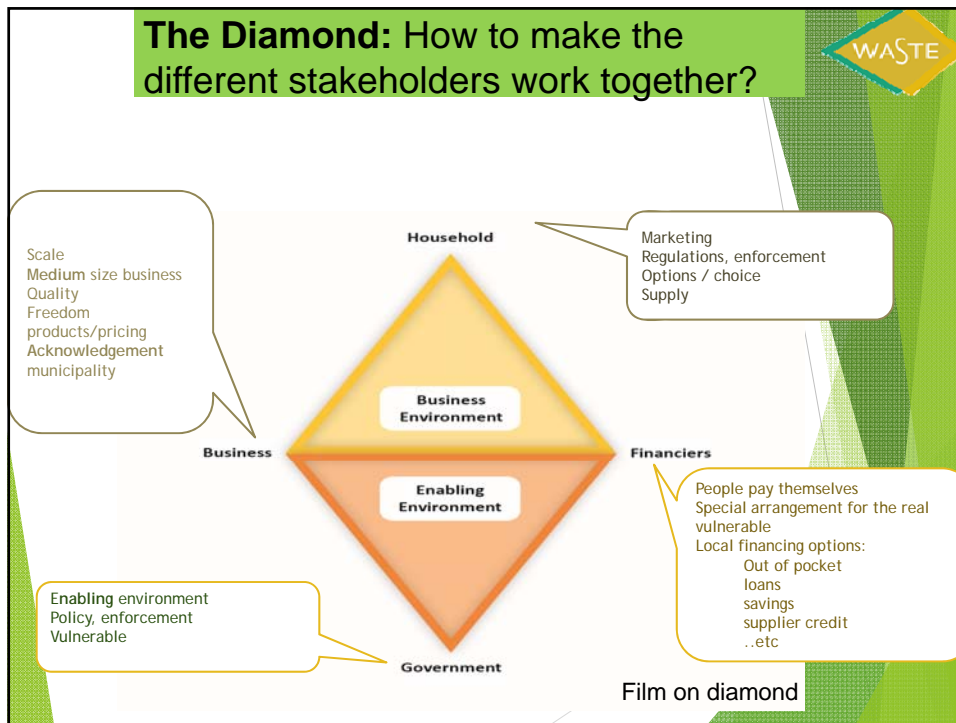


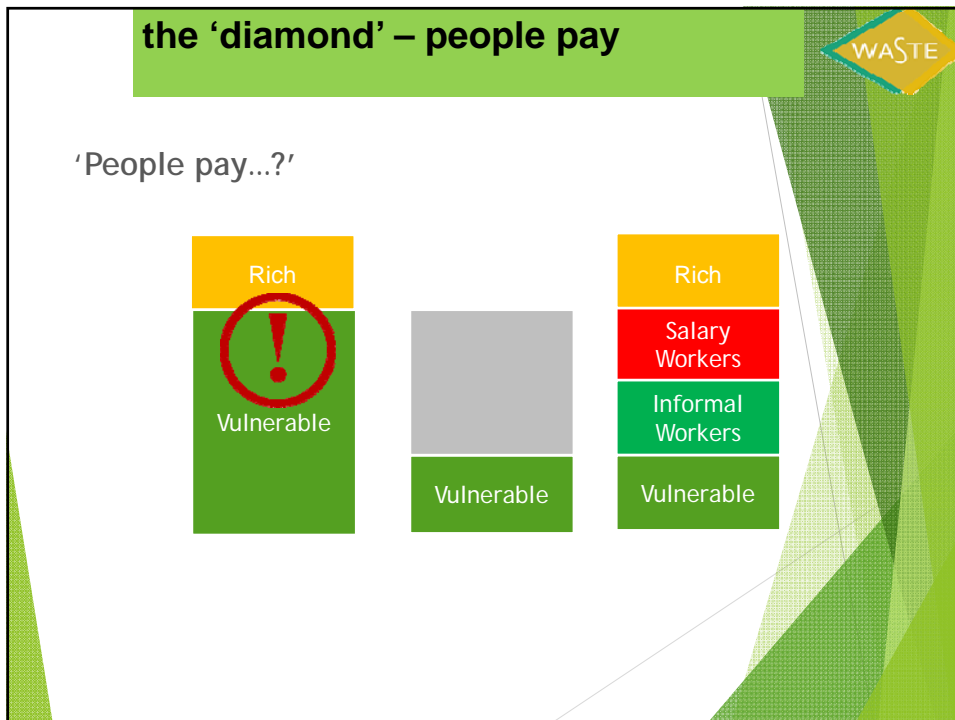
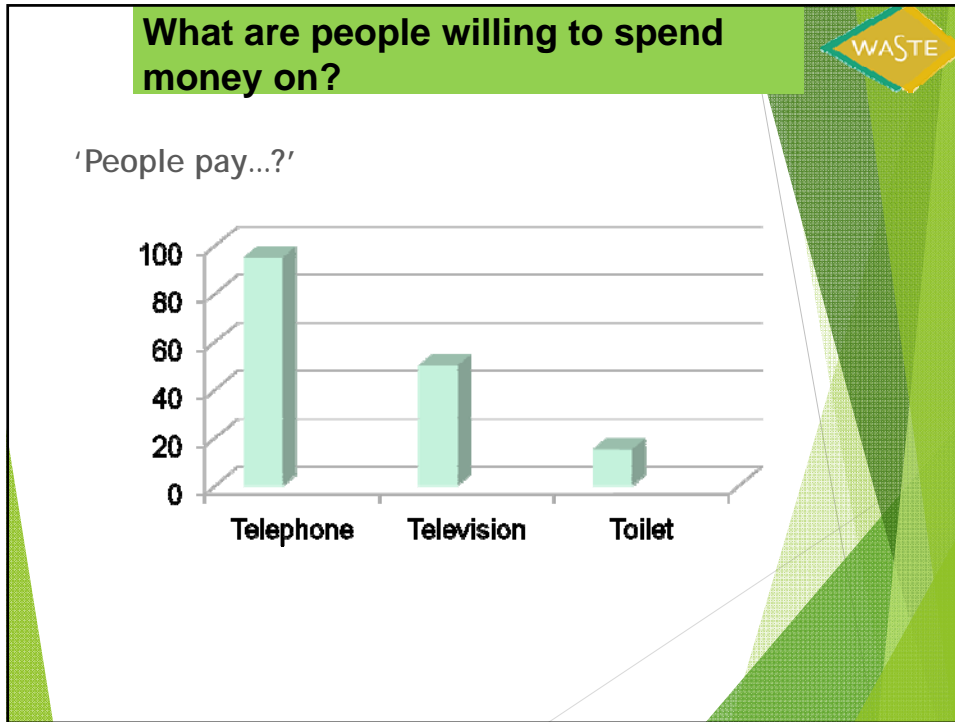
Who are the main stakeholders in urban sanitation?

We can use the DIAMOND to determine that

Diamond model

Inclusion of and cooperation between all stakeholders





The business side of sanitation

Sanitation needs addressed; Product market combinations

Which needs exist; how can they be addressed?



Sanitation needs	Sanitation element	Description
Privacy, convenience, safety & comfort	Toilet	Household toilet construction; Public toilets
Prevention of bad smell and overflow	Toilet, collection and transport	Small scale sewage systems (simplified sewerage); manual / mechanical pit emptying; transport
Excreta removal	Treatment and disposal	manual / mechanical pit emptying; transport
Agricultural inputs	Reuse	Fertilizers, compost (enrichment), fish feed, waste water reuse
(Renewable) energy	Reuse	Biogas Briquettes Feeding kilns
(Public and environmental) health	Entire sanitation system High coverage	All clusters

Translating needs, clusters & description: Product Market Combinations (PMC)



Assignment: identify possible
Product Market Combinations
in the sanitation service and value chains (\pm 10
min.)

PMC 1 - Household toilet construction



- Micro Small and Medium Enterprises (MSMEs) – artisans / masons, construction/ plumbing etc.
- Material suppliers
- Aggregators (based on aggregated demand for sanitation) bulk purchase & storage sanitation materials
- MSMEs can be organized under a franchise

PMC 2 - Household toilet financing

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- Micro Finance Institutions (MFIs) / housing finance (HF)
- Refinancing MFIs / HF
- Demand generation via local partners – CBOs/ NGOs
- Technical liaison - consulting companies / NGOs

PMC 3 – Public toilets

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- Hardware of public toilets CAPEX – both super & substructure – public financing / Corporate Social Responsibility / commercial (loans) / self financing
- OPEX - Pay per use,
- Offering other services (bathing, rental (shoe polishing, phone recharge), advertisement space)
- New IT based models
- A main bottleneck is that licenses to operate are often short term (1 Year)

PMC 4 – Mechanical collection and transport



- Clear revenue model (household pays for emptying services)
- Range of examples from many different countries
- Main bottleneck – lack of disposal site(s) for faecal sludge
- Main bottleneck – licenses to operate difficult to obtain or short term

PMC 5 – Manual collection and transport



- Clear revenue model
- Common practice though limited visibility as it often happens at night
- Main bottleneck – health aspects
- Main bottleneck – transport & disposal
- Positive side – liquidity – good cash flows – film: “these guys are extremely liquid” – see at the end

PMC 6 – Treatment and reuse



- Biogas
- Compost and compost enrichment
- Treated Waste Water reuse in irrigation
- Fertiliser – struvite (urine)
- Land application

Financial instruments

Microfinancing and other forms

Microfinancing



Wide spectrum of microfinance: financial literacy, micro credit, micro savings, micro insurance and micro pensions.

Most relevant:


1. Financial literacy
2. Micro credit
3. Micro savings and micro credit
4. Bank - Self Help Group (SHG) linkage
5. Bank lending following Joint Liability Group (JLG) Model
6. Table Banking
7. Individual microfinance
8. Merry Go Rounds

OTHER TYPES OF FINANCE




1. Impact investing
2. Local Govt. Subsidies
3. 1st / 2nd loss
4. Cooperative financing
5. Bank financing
6. Self-financing
7. Output Based Aid / Result Based Financing
8. Use of Guarantee Fund
9. Leverage on fixed deposit
10. Corporate social responsibility (CSR)
11. Supplier's credit
12. Equity investment
13. Co-investments
14. Non-convertible debentures

OTHER TYPES OF FINANCE



15. Revolving Fund
16. Small Investment Facility
17. Convertible grant
18. Social Equity Fund
19. Technical assistance component covered under spread / interest differential
20. Blended finance
21. Sanitation line of credit (under dev.)
22. Carbon financing (under dev.)
23. Bond financing (under dev.)

Tailormade financing




Tailor made

- Differs for each business opportunity
- Depending on legal framework


Or

- Look into existing financial products – example of existing bank products next slide



Example: bank existing instruments Ghana

	Trade & working capital loan	Loan against property
Target group	Medium businesses	Small businesses
Loan types	Overdraft/Trade Loans/ Term Loans Auto loans	Working capital needs/ Bus. expansion needs ODs, Term loans
Business existence	At least 3 years	At least 3 years
Turnover requirement	GHC 0.34–14.7 million	GHC 78,400 – 4.61 million
Business registration required?	Yes	Yes
Minimum loan amount		GHC 20,000 (= € 10,000)
Interest	Base + 3 to 7 %	Base +
Term	4 – 48 months	12 – 60 months
Grace period	Max 3 months	?
Collateral	Cash/T-bills/FD etc.	Landed Property etc.



Most relevant financial instruments

- Bank loan and micro finance loan
- Revolving Fund mechanism (if existing)
- Guarantuees (personal, contracts – local/WASH, future cash flows etc)
- First loss guarantuee / Second loss guarantuee
- Line of credit
- Shared guarantuees (MF), suppliers credits and special schemes (WVF)
- Mixtures

Two examples of sustainable financing

Malawi and India

6. An example from Malawi - ROM



**6. An example from India
– Morarka Foundation**



Some references on
Financing

Suggested reading

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- WSP – various macro calculation showing (very) positive returns on investment. Vietnam, India, many more, e.g. Kenya loses US\$ 324 million p.a. due to poor sanitation (wsp.org, select region and subsequently country of your choice)
- www.waste.nl; financing sanitation series, different financial instruments used
- www.susana.org; Working Group #2
- IRC Tops – various cases; WASHCost, life cycle costs of mainly water; Triple S
- www.ecosan.at: [Sanitation as a business](#); Financing for sanitation

