

# Sanitet i et udviklingsperspektiv

Hvad kan man gøre, når det bare er SÅ svært?

Henrik Bregnhøj  
UBU, KU

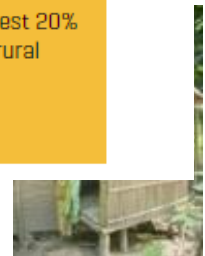
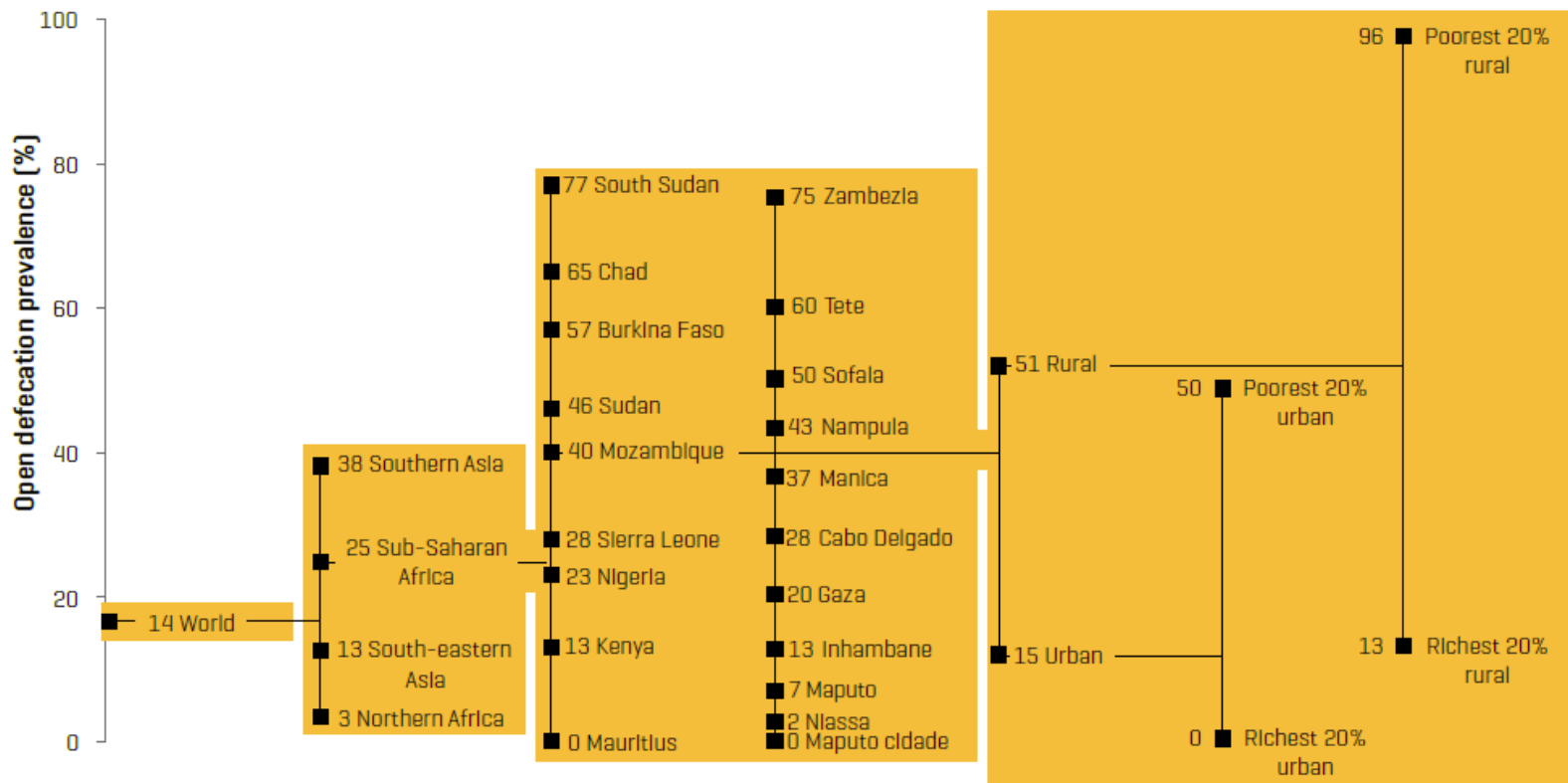


# Oversigt

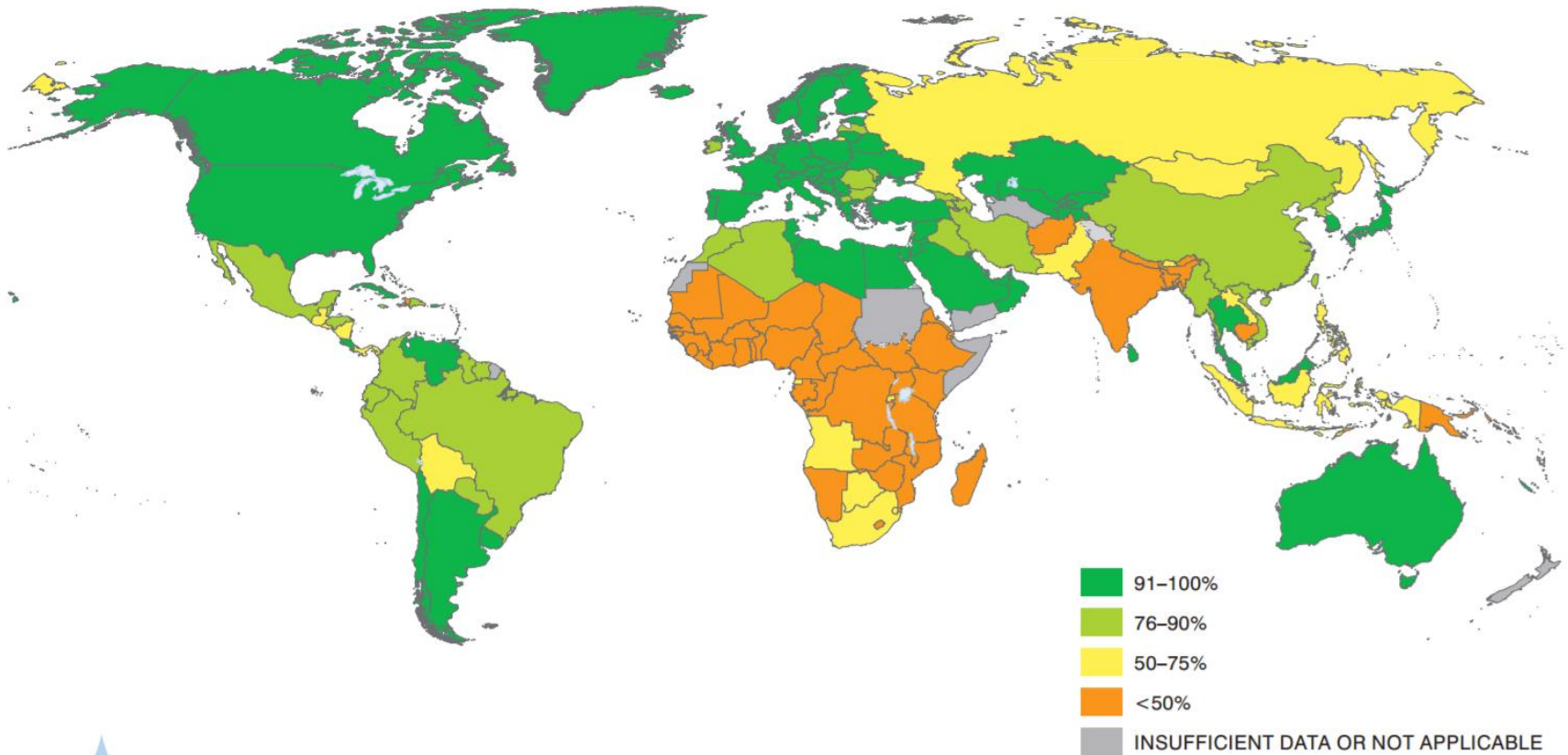
- Sanitet i Ulande – status
- Hvorfor er det så svært?
- Hvad kan man gøre?



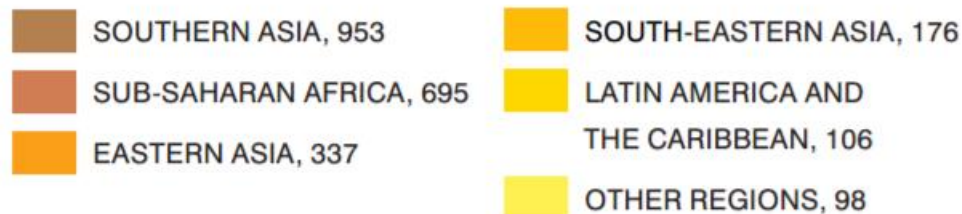
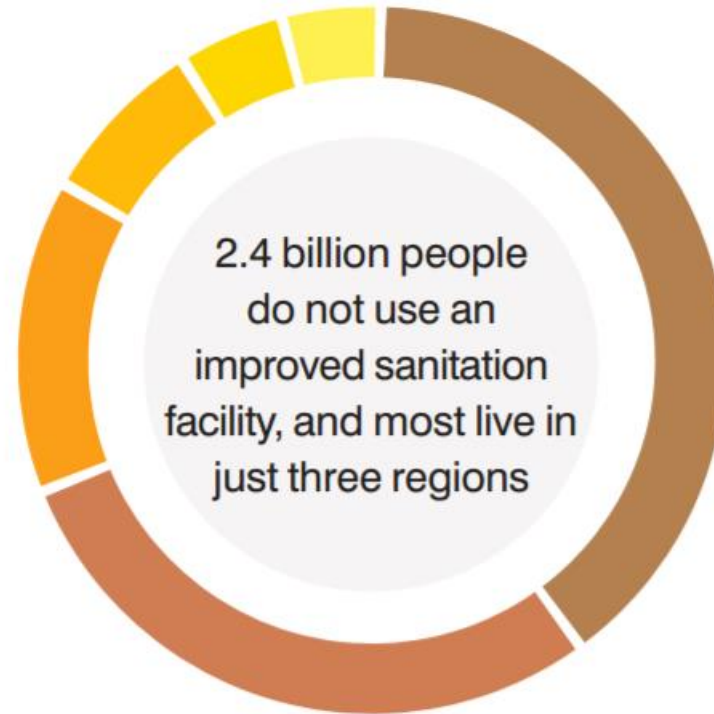
# Hvor mange har intet toilet?



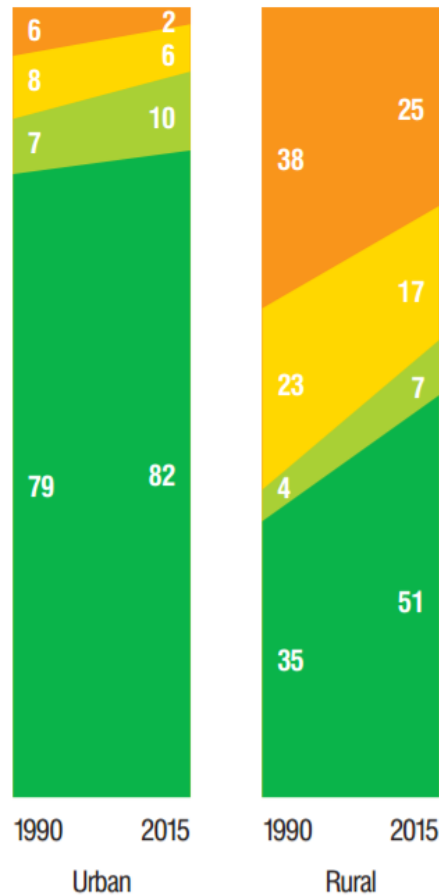
# Dækning med tilstrækkelig sanitet 2015



# 2.4 mio mennesker!



# Sanitet i byen og på landet

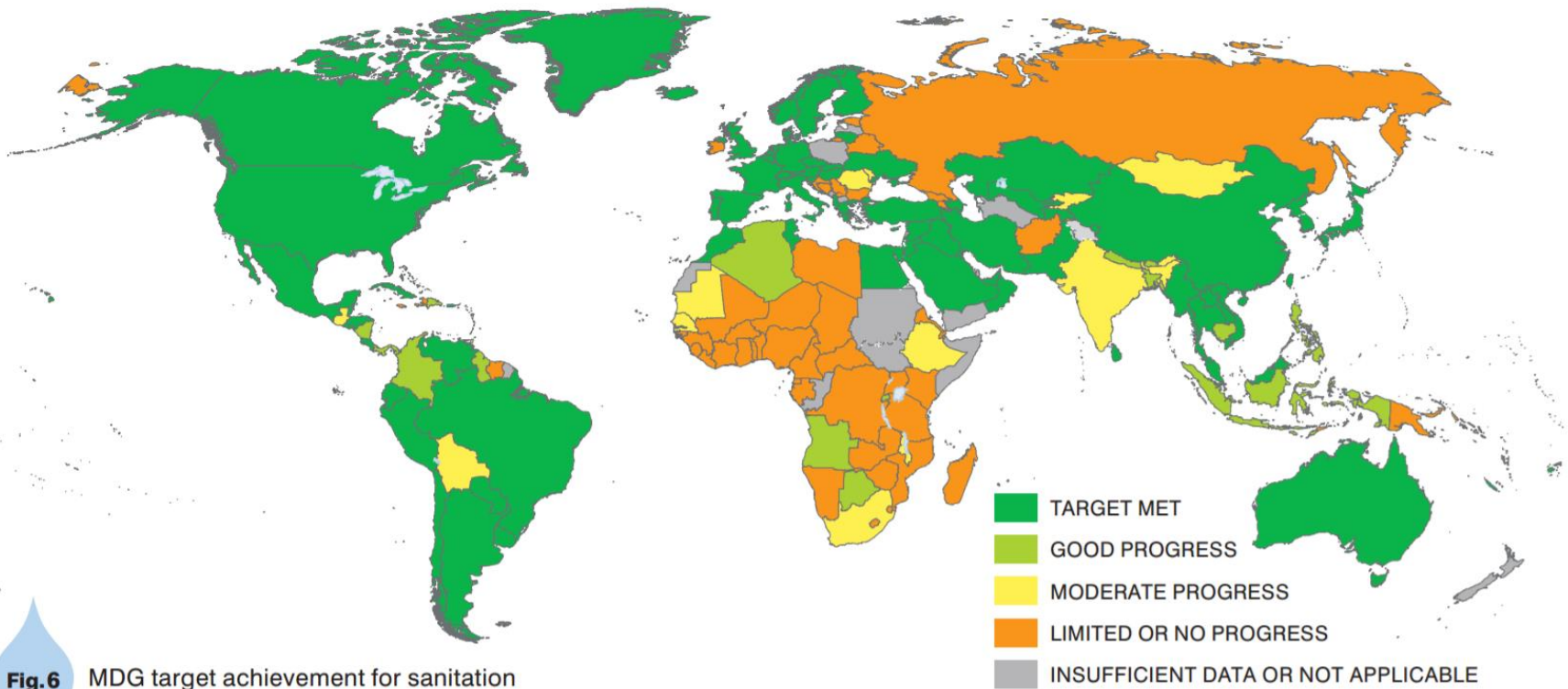


# Hvad har man gjort?

- Vand 10-året, 1980'erne
- MDG 2000-2015
- SDG 2015-2030

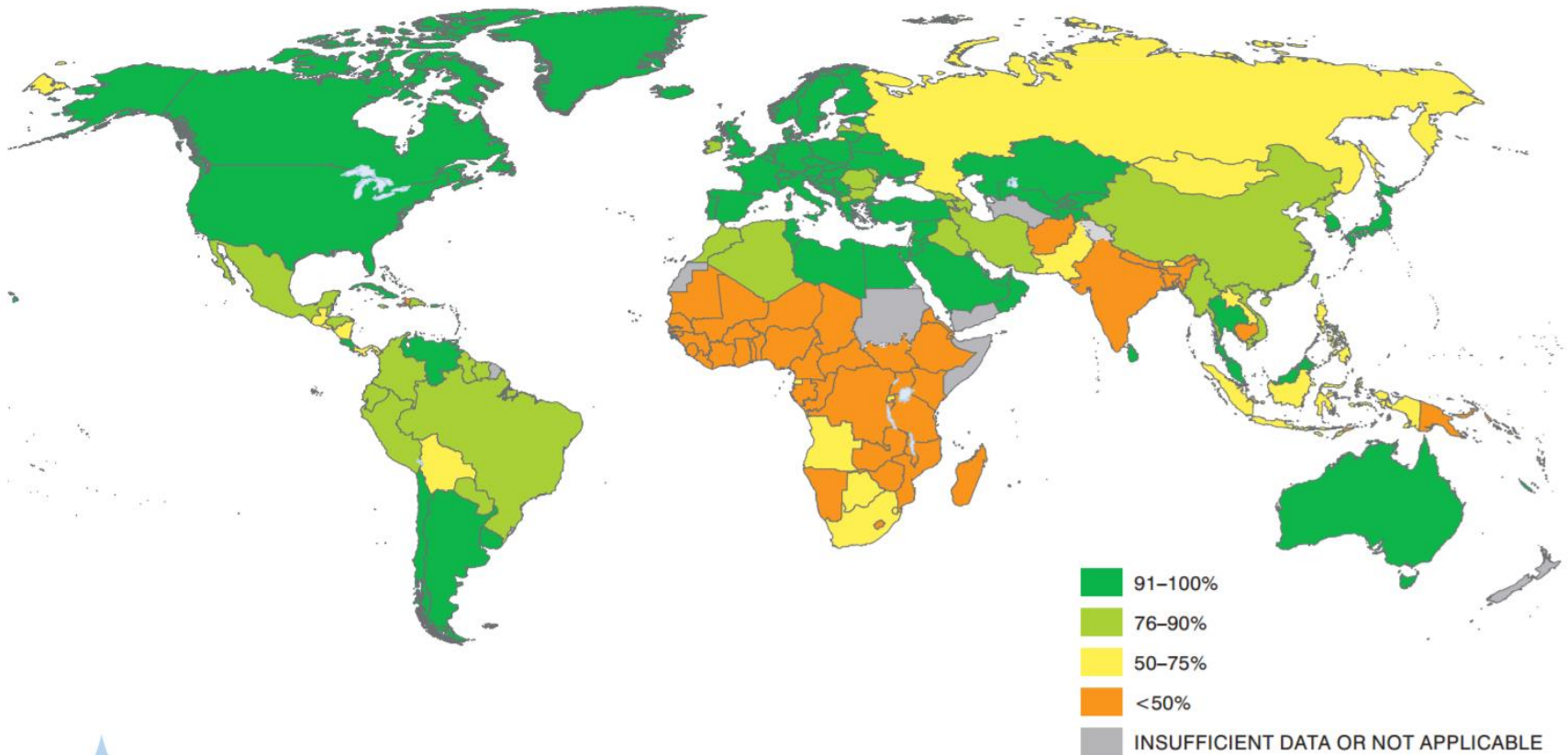


# Status after MDG 2015





# Dækning med tilstrækkelig sanitet 2015



# Hvad er problemet?

- Ikke råd?
- Manglende interesse?
- Manglende oplysning?
- Manglende rimelig adgang?
- Manglede incitament / prioritet?
- Strukturelle problemer / subsidier?

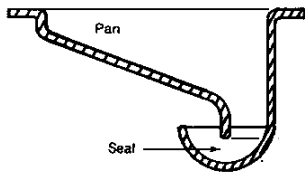


# Types of on-site sanitation



## Ecological Sanitation

Aborloo / Fossa alterna  
Multrum latrine  
Himalaya Dehydration  
Double vault latrine

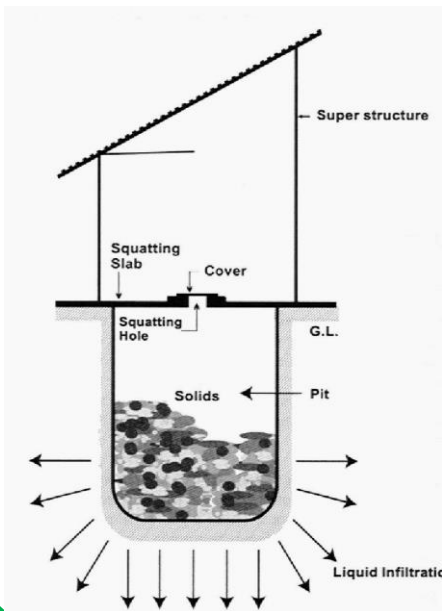


## Water flushed latrines

Pour-flush latrine  
Off-set pour-flush latrine  
Twin off-set pour flush latrine  
Flush-toilets with septic tank

## Shared Sanitation

Shared latrines  
Public latrines



## Simple latrines

Basic pit latrine with wood/mud cover  
Basic pit latrine with concrete/plastic slabs  
VIP latrine  
Off-set pit latrine (e.g. ROEC)  
Raised pit latrine  
Twin pit VIP



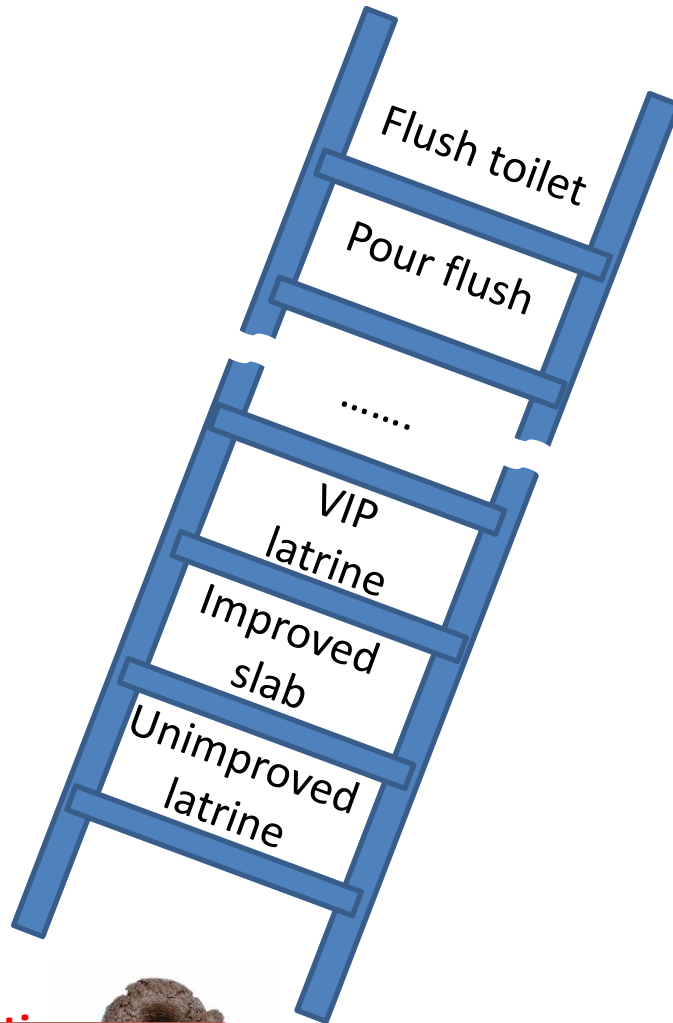
# Fertilizer value in excreta

| Item                           | Content, kg/person/y | Value, USD |
|--------------------------------|----------------------|------------|
| Nitrogen, N                    | 3                    | 3          |
| Phosphorous, P                 | 0.5                  | 2          |
| Micronutrients (Cu, Zn, Mn, B) |                      | 2          |
| Total                          |                      | 7          |

A typical family of 5 may earn 30-40 USD/year by recycling nutrients.



# Sanitation Ladder



~~Open defecation~~

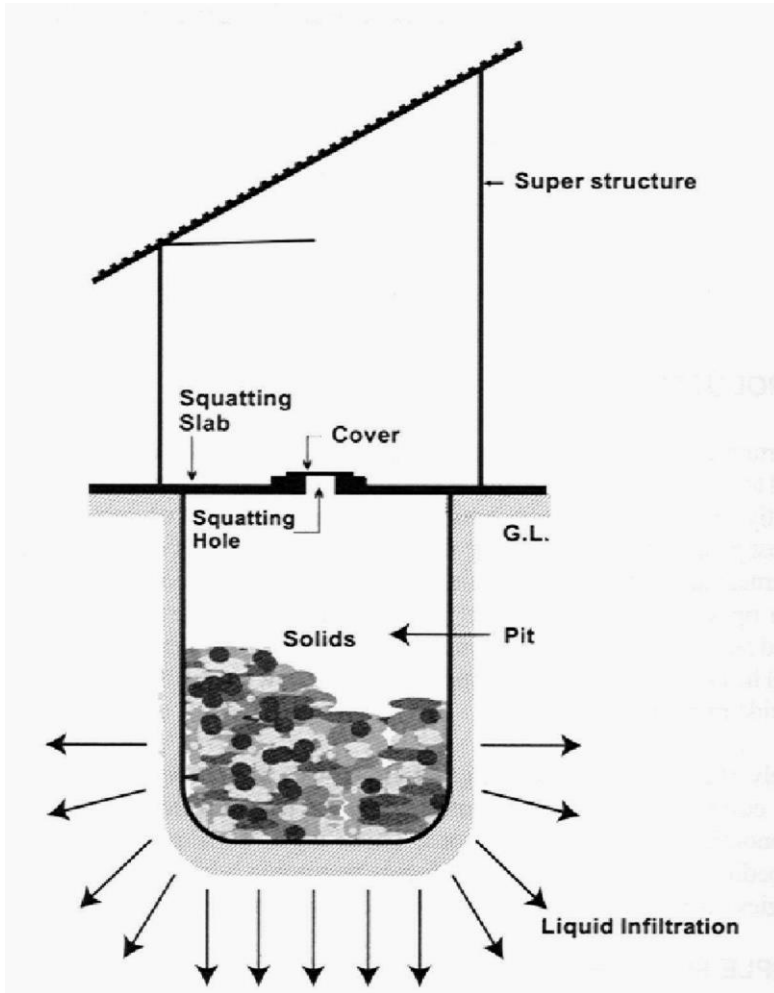


# Unimproved pit latrine





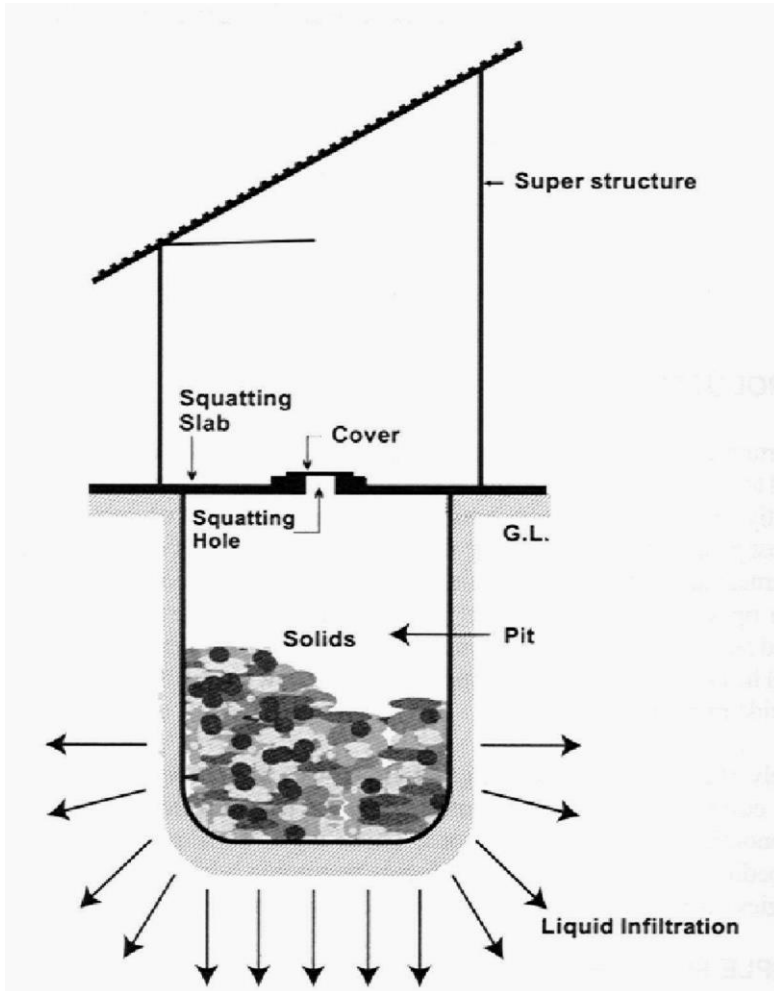
# Improved pit latrine



Slab with lid



# Improved pit latrine

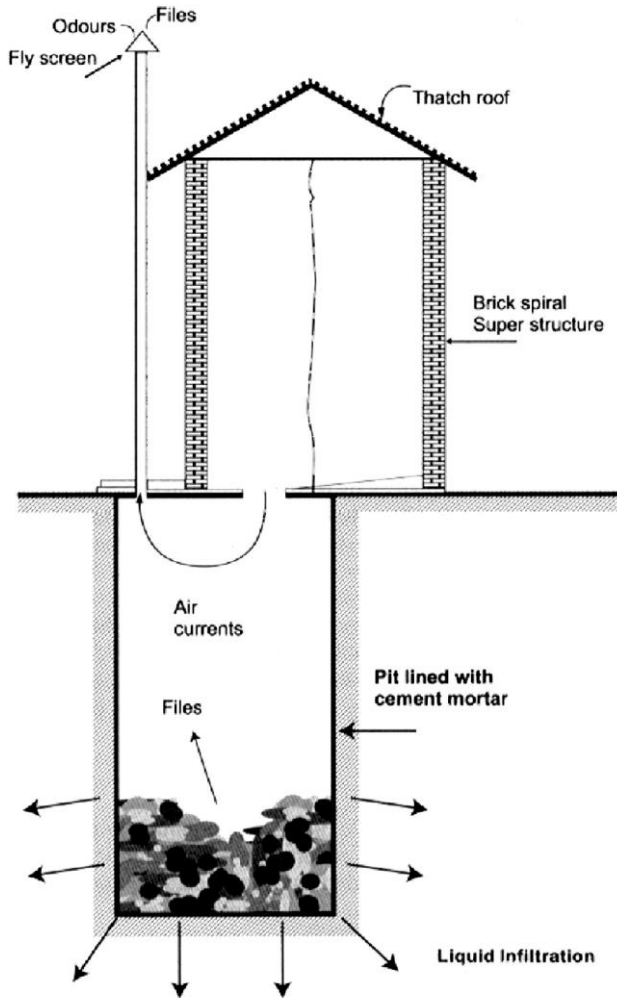


Dome shaped, no iron bars



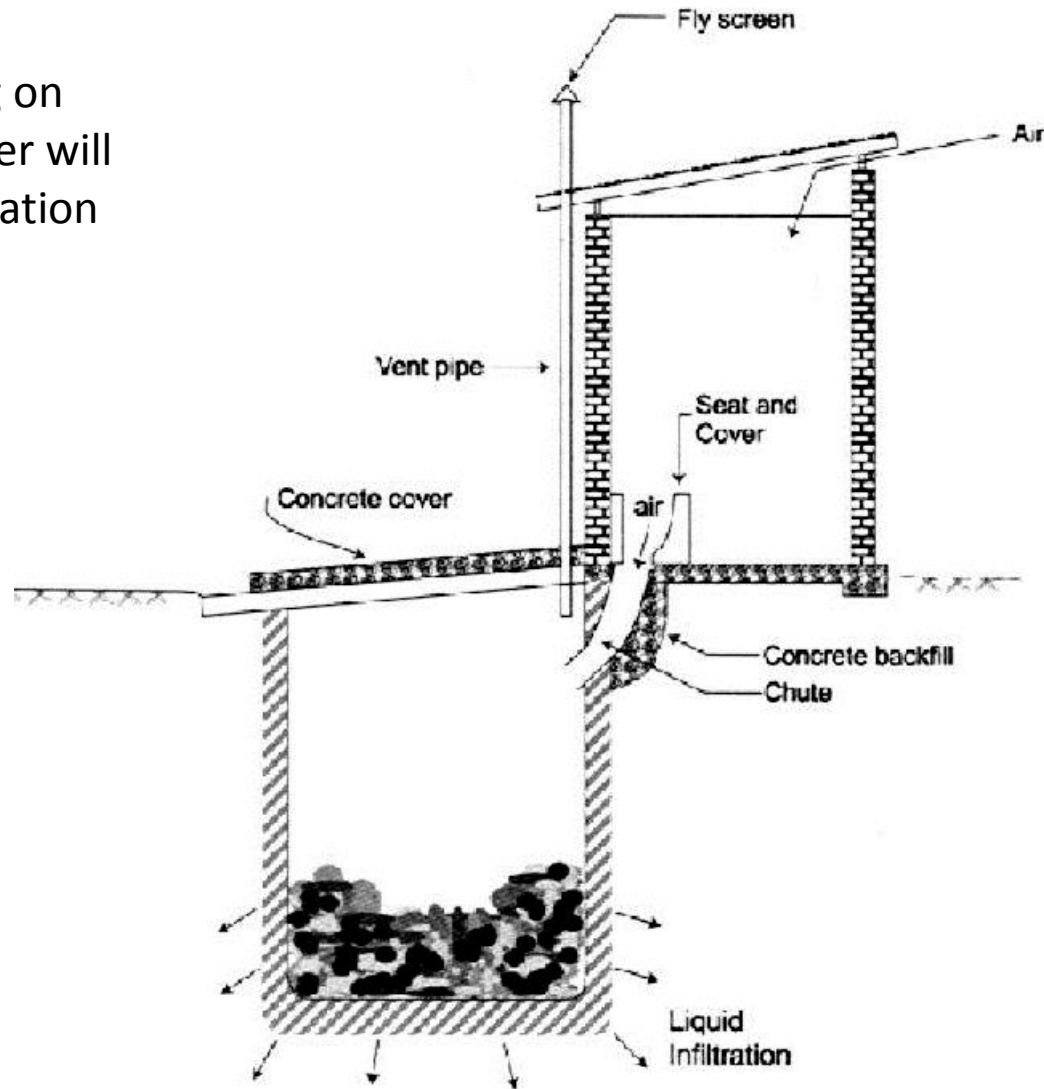


# VIP latrine



# Reed odourless earth closet (ROEC)

Solar heating on concrete cover will assist dehydration and air flow

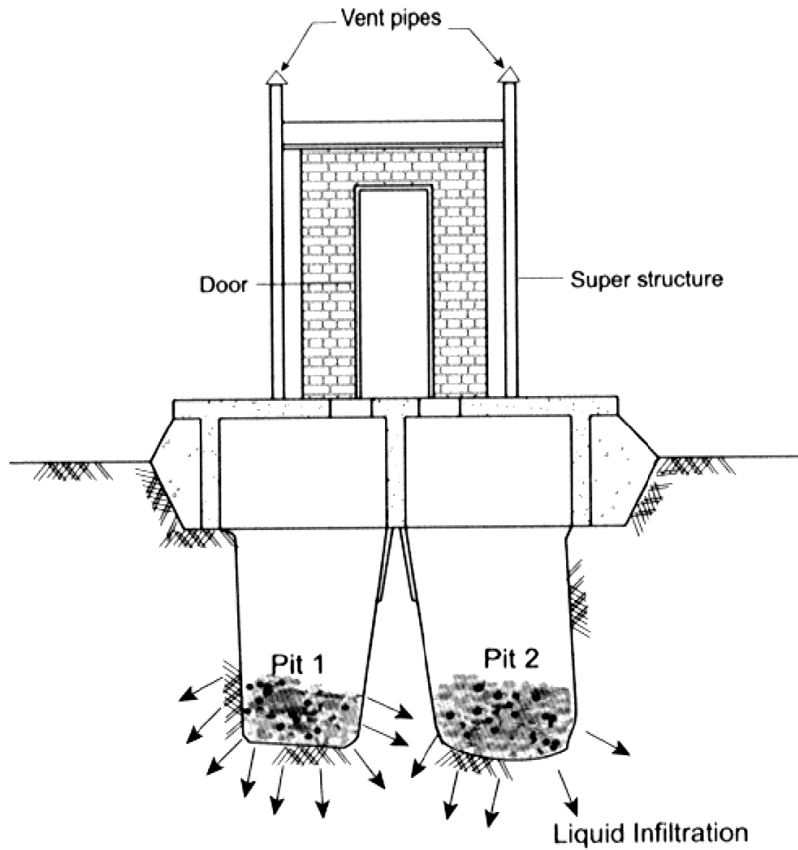


# Raised pit latrine (with chute)





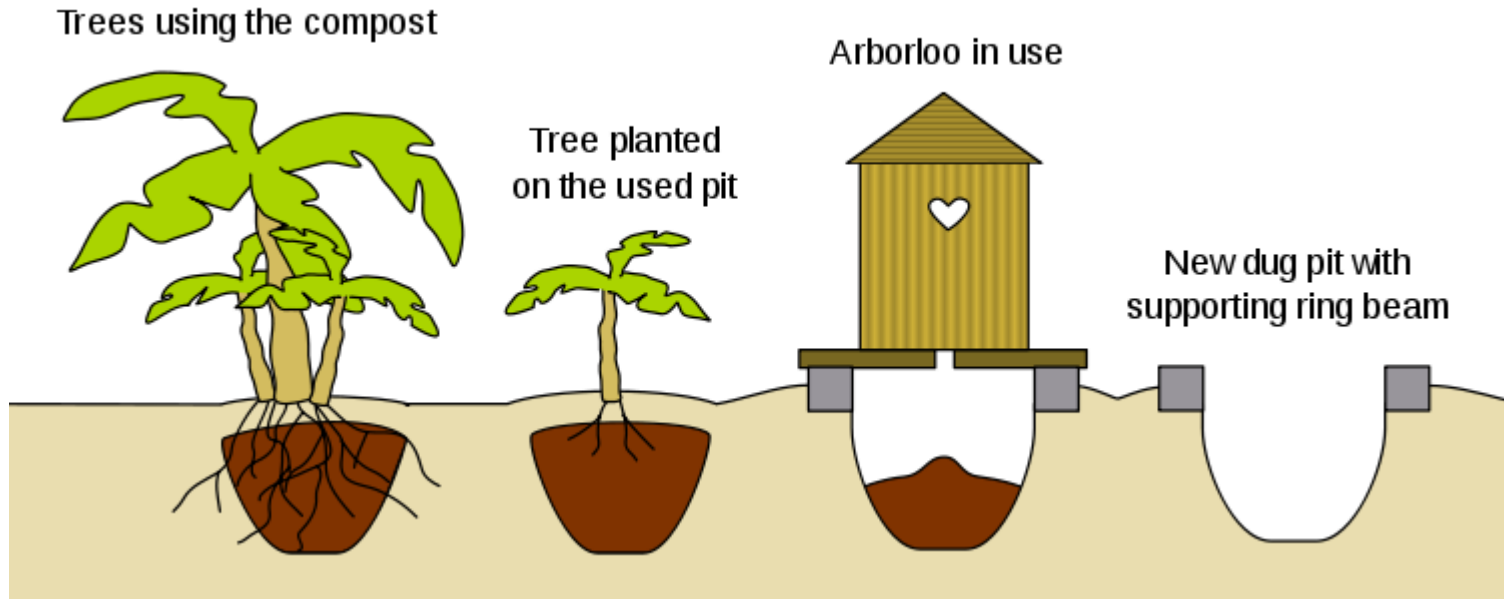
# Twin VIP latrine



Rule for construction of VIP:  
One pit  
One squat hole  
One ventilation



# Arborloo latrine

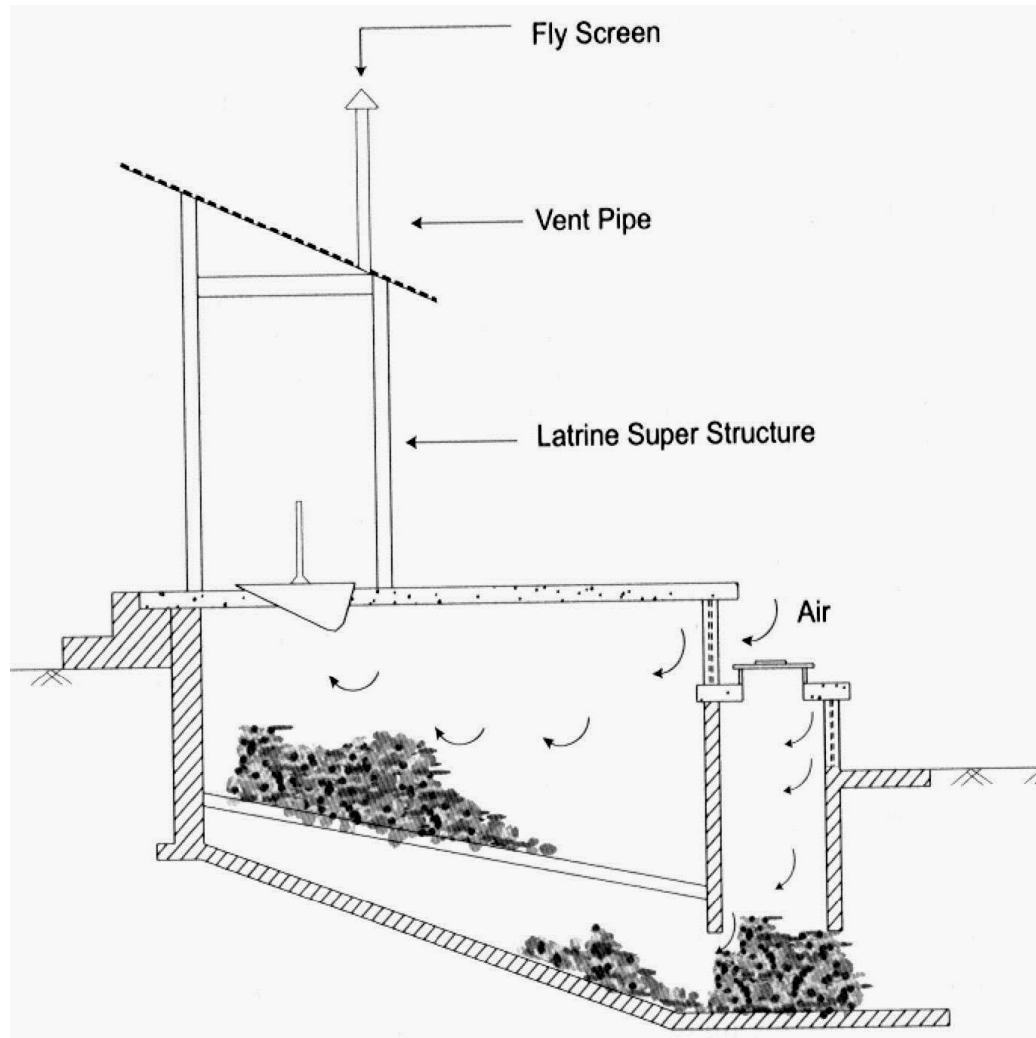


Every 6-12 months a new pit is dug and superstructure moved. The used pit is covered with soil and a tree is planted (after a resting period, 3 months). Pit is unlined, supporting ring is reused. Superstructure may be moveable or new cheap construction.

**Fossa alterna** (alternating pits) are pits used one year each and emptied after 12 months decomposition /composting.



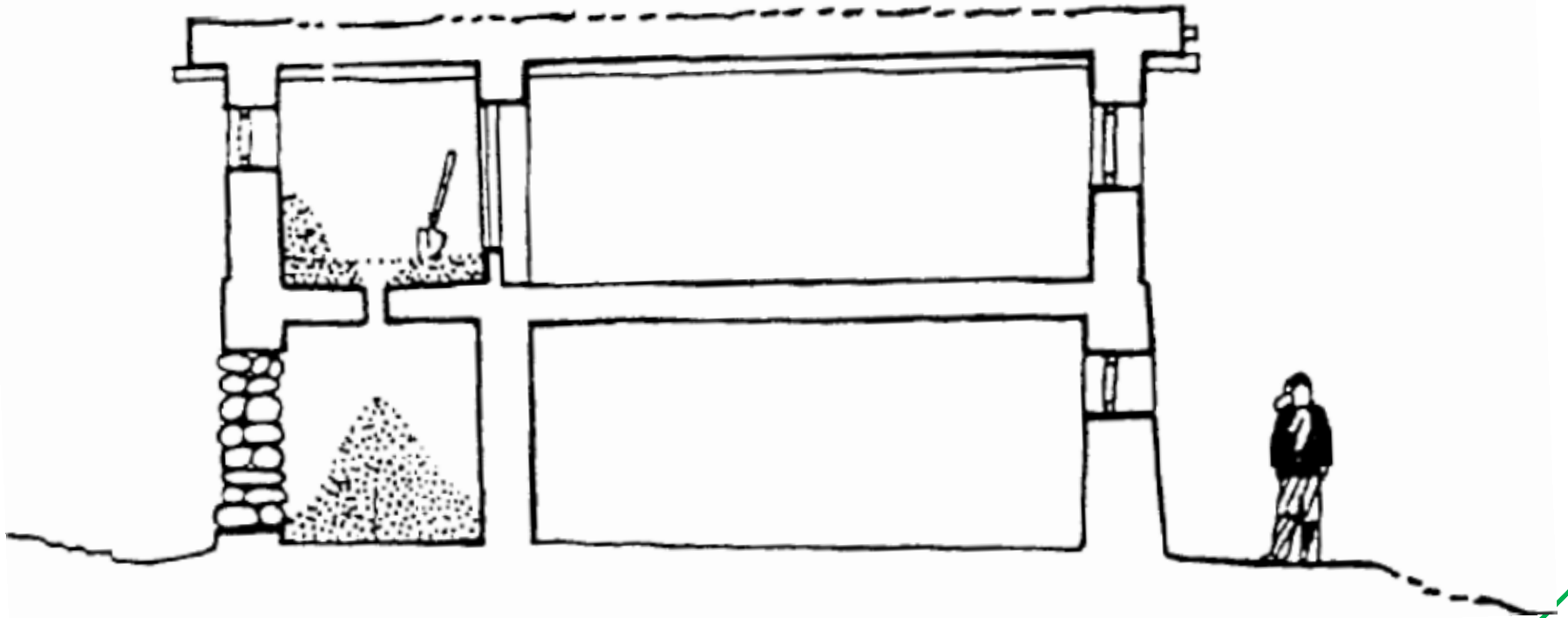
# Multrum latrine



Need addition of other materials to assist composting, and urine separation to keep the compost relative dry.



# Indoor dehydrating toilet Himalaya

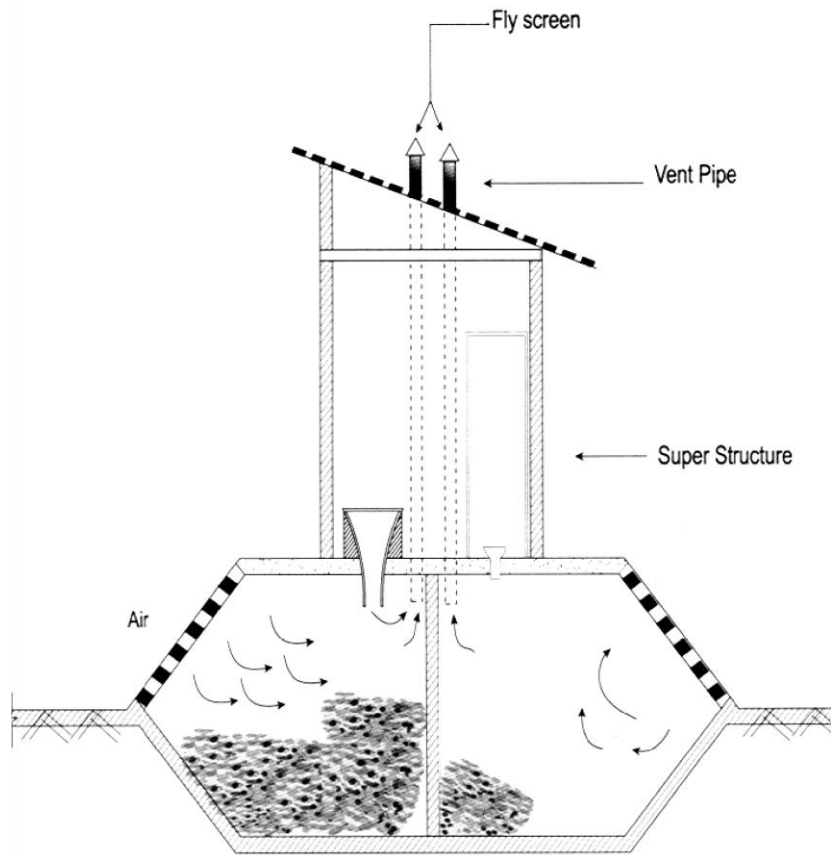


Add soil to dehydrate and reduce smell, no urine separation

Look up on campusnet: Winblad 1998 Ecosan page 38



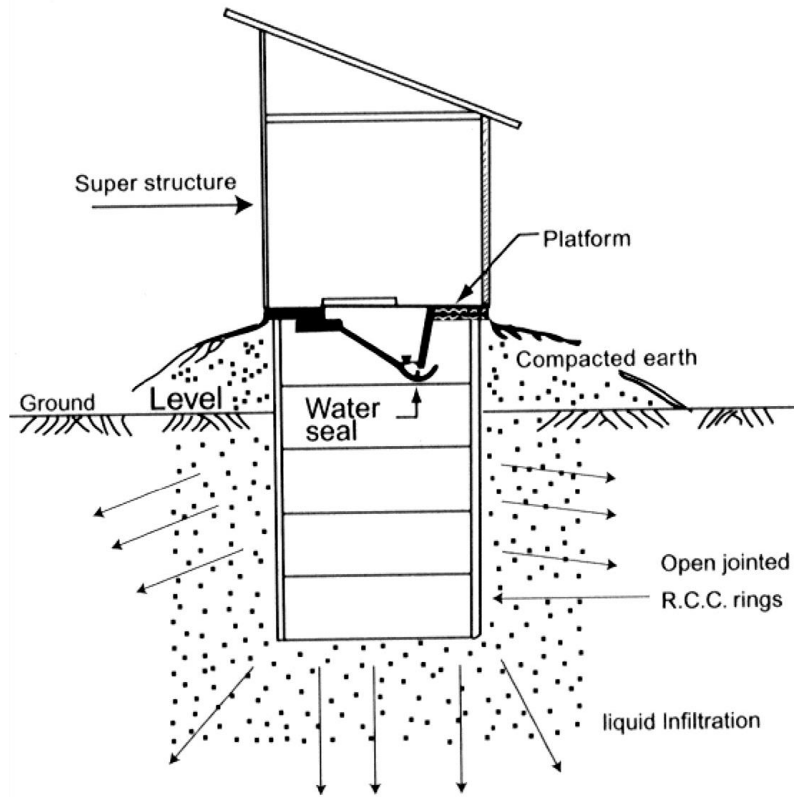
# Double vault compost latrine



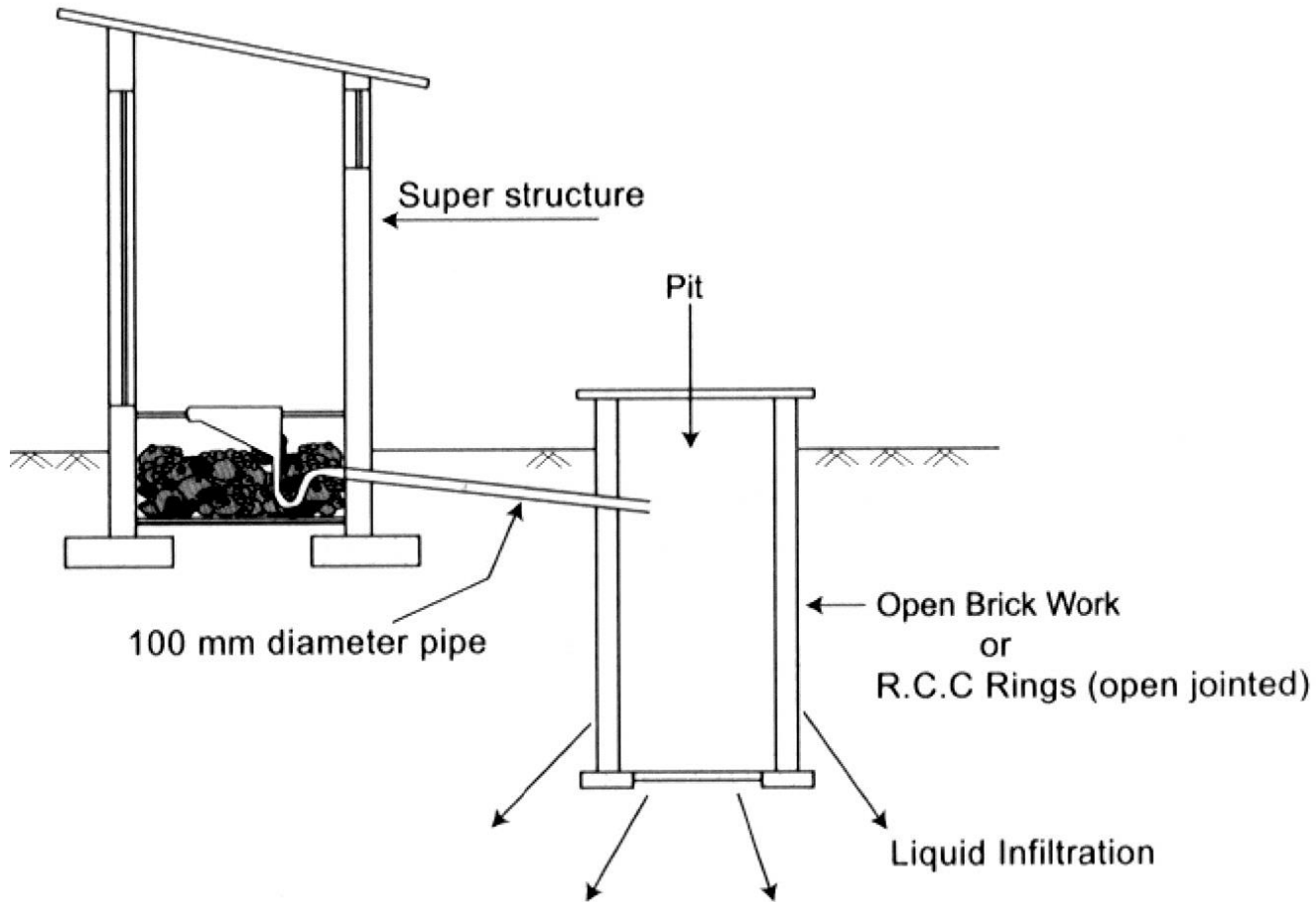
Need addition of other materials to assist composting, and urine separation to keep the compost relative dry.



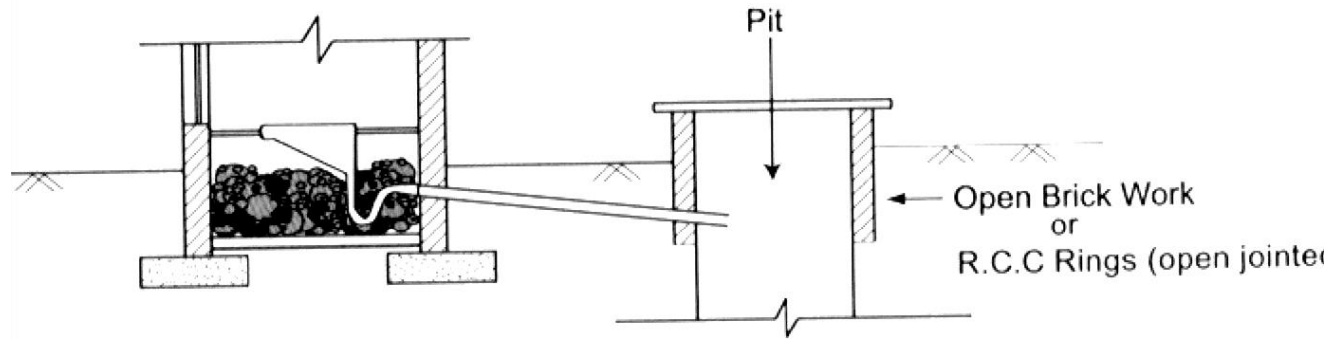
# Pour-flush latrine



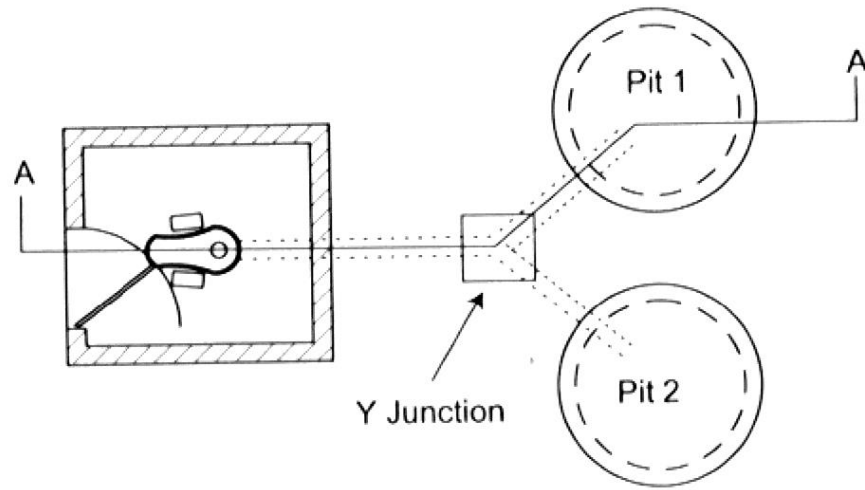
# Off-set pour flush latrine



# Twin off-set pour flush latrine



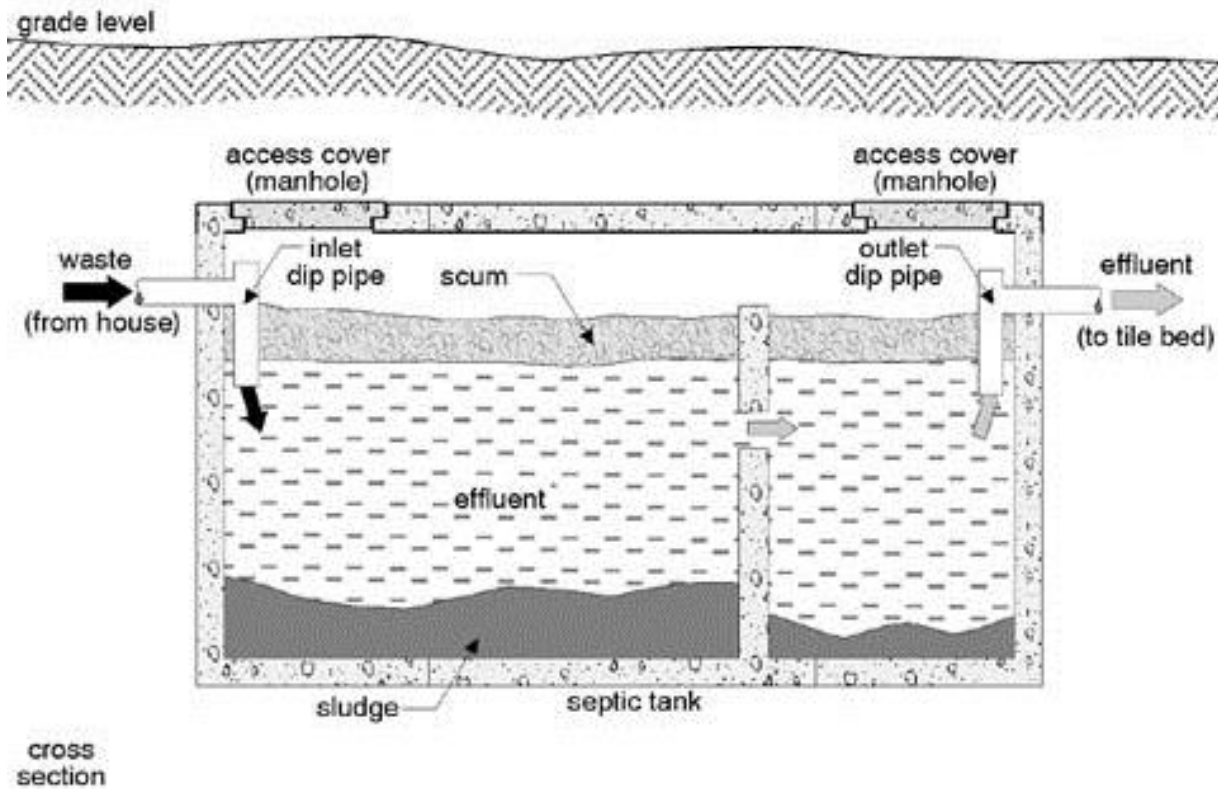
Section A-A



Plan



# Septic tank





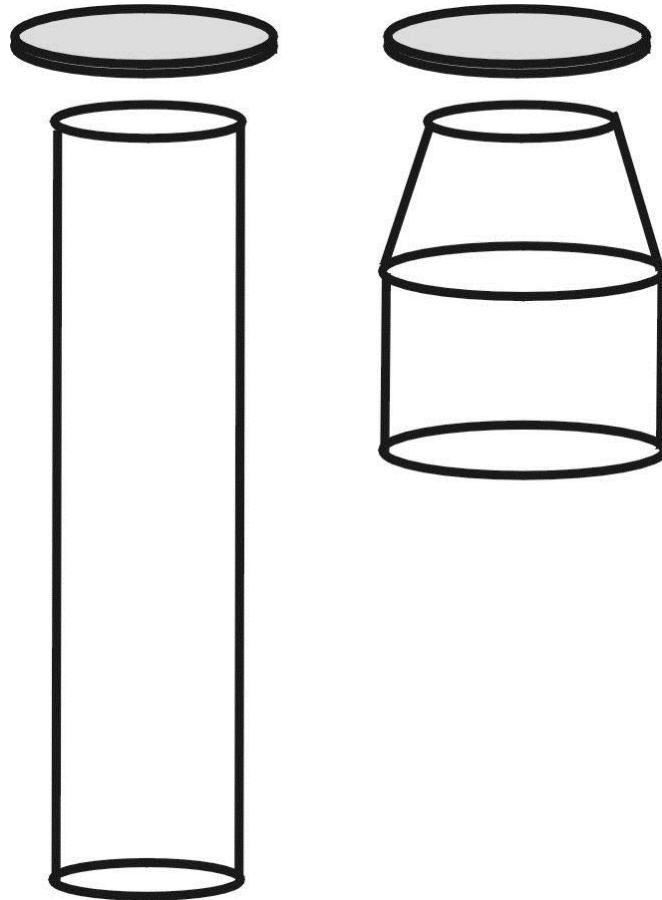
# Public latrines



# Shape of the pit

If Un-lined: Deep narrow to reduce smell and flies and use the soils physics for strength  
4-6m, 90-100 cm Ø

If Lined: Fat bottle-shaped to reduce material costs  
2-2.5m. 150-80 cm Ø



# Installationer er ikke nok

Skole toilet



Sundhedsklinik



# Demand responsive approach

- People should have an informed technology choice
- Holistic approach to water supply and sanitation
- Management at lowest possible level
- Women should play a key role





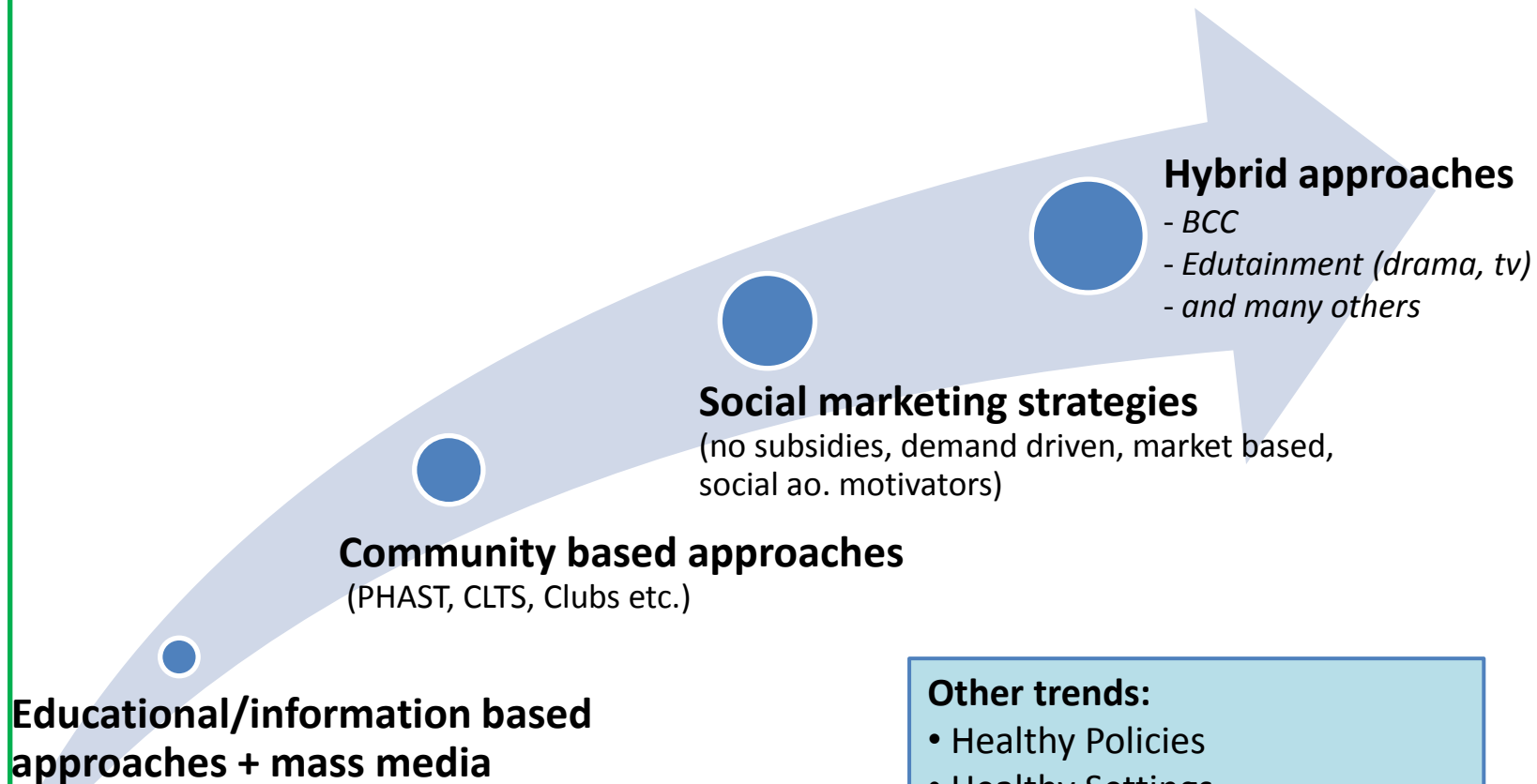
# Hvorfor få et latrin?

## 20 benefits of latrine ownership as perceived by 320 households in rural Benin

- Avoid discomforts of the bush
- Gain prestige from visitors
- Avoid dangers at night
- Avoid snakes
- Reduce flies in compound
- Avoid risk of smelling or seeing feces in bush
- Protect my feces from my enemies
- Have more privacy to defecate
- Keep my house properly clean
- Feel safer
- Save time
- Make my house more comfortable
- Reduce my family's healthcare expenses
- Leave a legacy for my children
- Have more privacy for household affairs
- Make my life more modern
- Feel royal
- Make it easier to defecate because of age or illness
- **For health (spontaneous mention) (no. 19!)**
- Be able to increase my tenants' rent
- *(Jenkins, 1999)*



# Forskellige tilgange



## Other trends:

- Healthy Policies
- Healthy Settings
- Groups at special risk
- Cross-sector approaches
- ICT & m- & e-health



# CLTS, Community Led Total Sanitation

## 3 faser:

- Forberedelse (vælg steder, træning)
- Triggering (uses afsky/væmmelse, skam og chok)
- Opfølgning (gruppepres, opmuntringer, naturlige ledere, støt kvinder)

## Hvad er anderledes i CLTS?

- Negative motivation rettet mod adfærdsændring!
- Ingen tilskud og ingen hardware!
- Åben for lokal innovation

## Hvad er evidensen?

- Meget effektivt til at hæve dækningen med billige latriner
- Effektivt til at skabe Open Defecation Free (ODF) samfund
- Upgradering til bedre sanitet og bæredygtighed er tvivlsom



# Vælg tilgang baseret på:

- Økonomi
- Lokale forhold/normer/kultur
- Fokusér på adfærdsændring – ikke viden!

