



Excreta Disposal

The background features a stylized landscape with green, triangular mountain peaks at the top and bottom. A wide, horizontal band of textured yellow-orange color separates the two mountain ranges. The text is centered within this band.

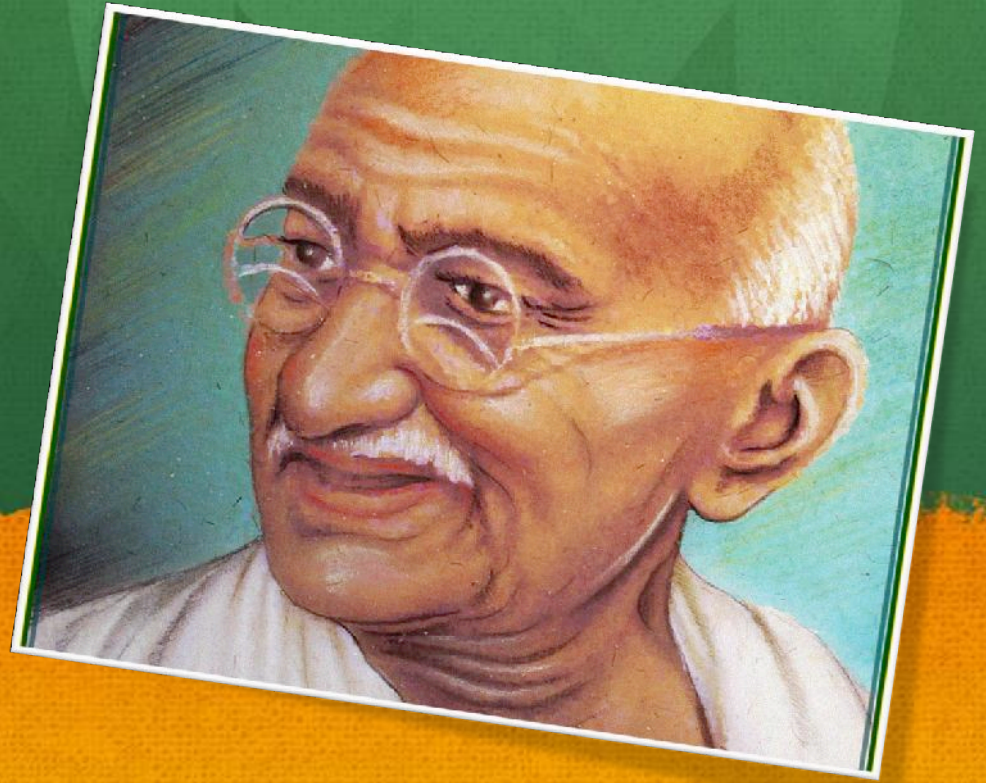
Toilets or Temples?



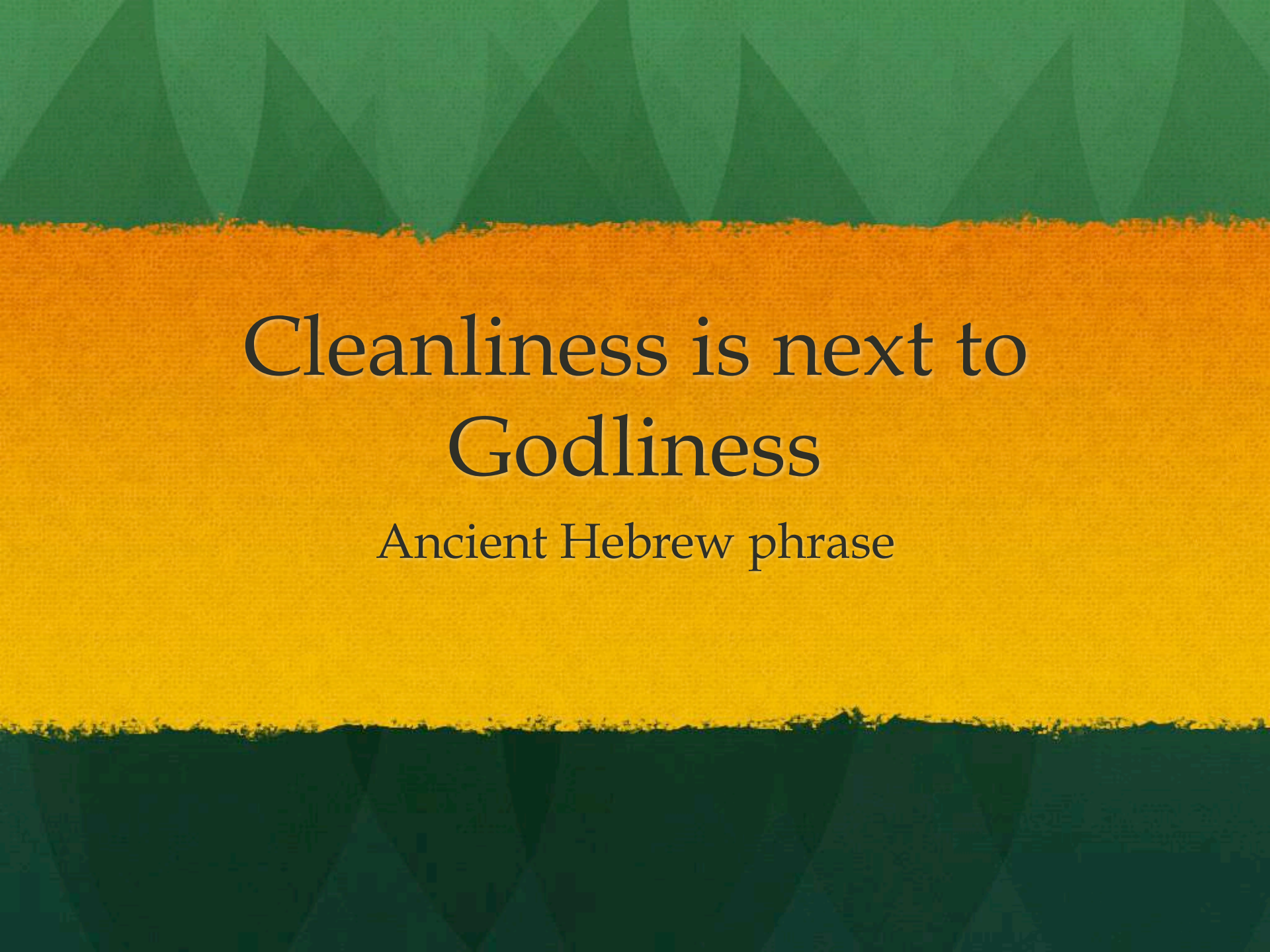
Toilets
are more important than
Temples



Toilets
before Temples



Sanitation is more
important than
Independence



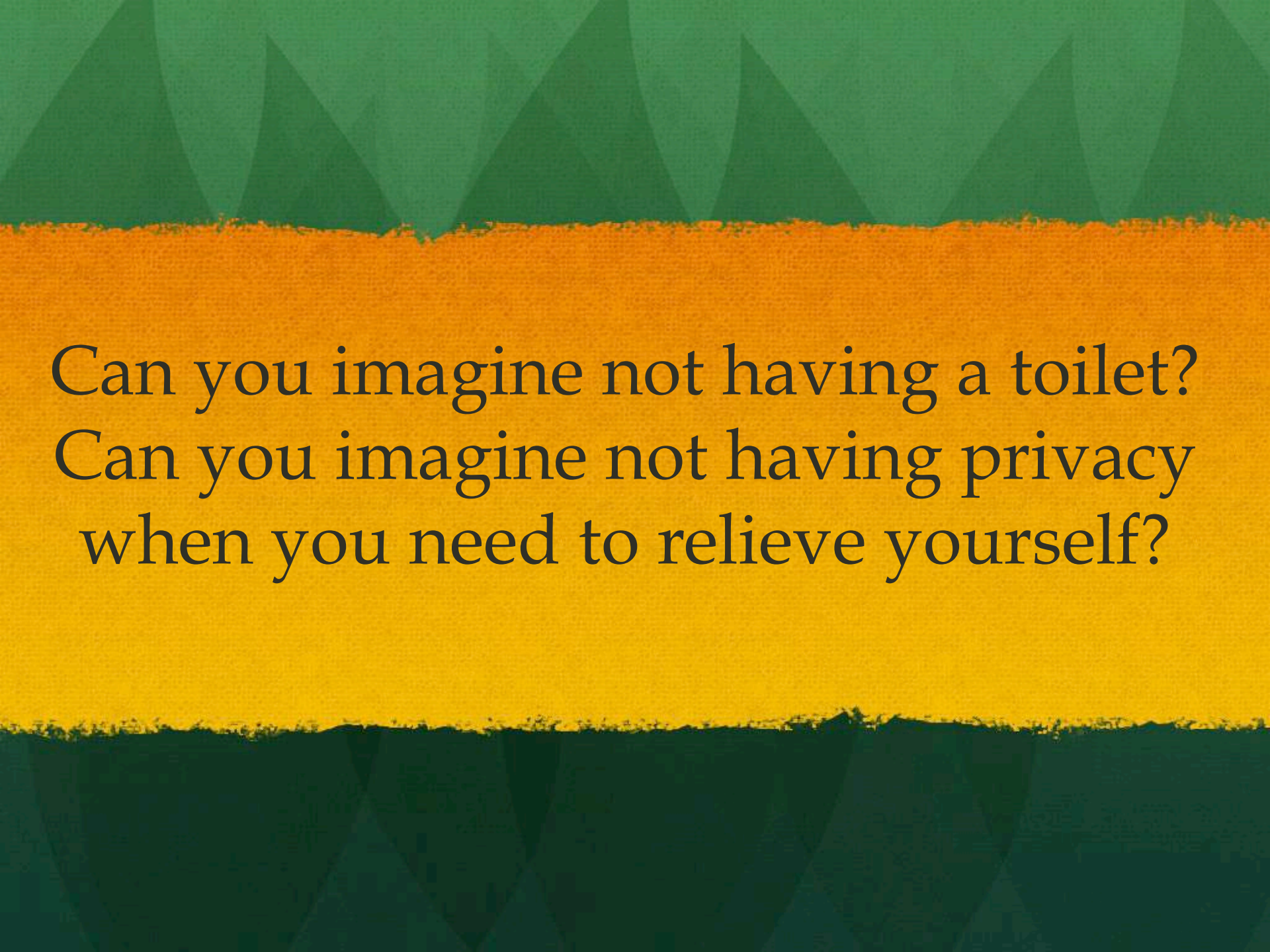
Cleanliness is next to Godliness

Ancient Hebrew phrase



Cleanliness is half the faith


Prophet Muhammad PBUH



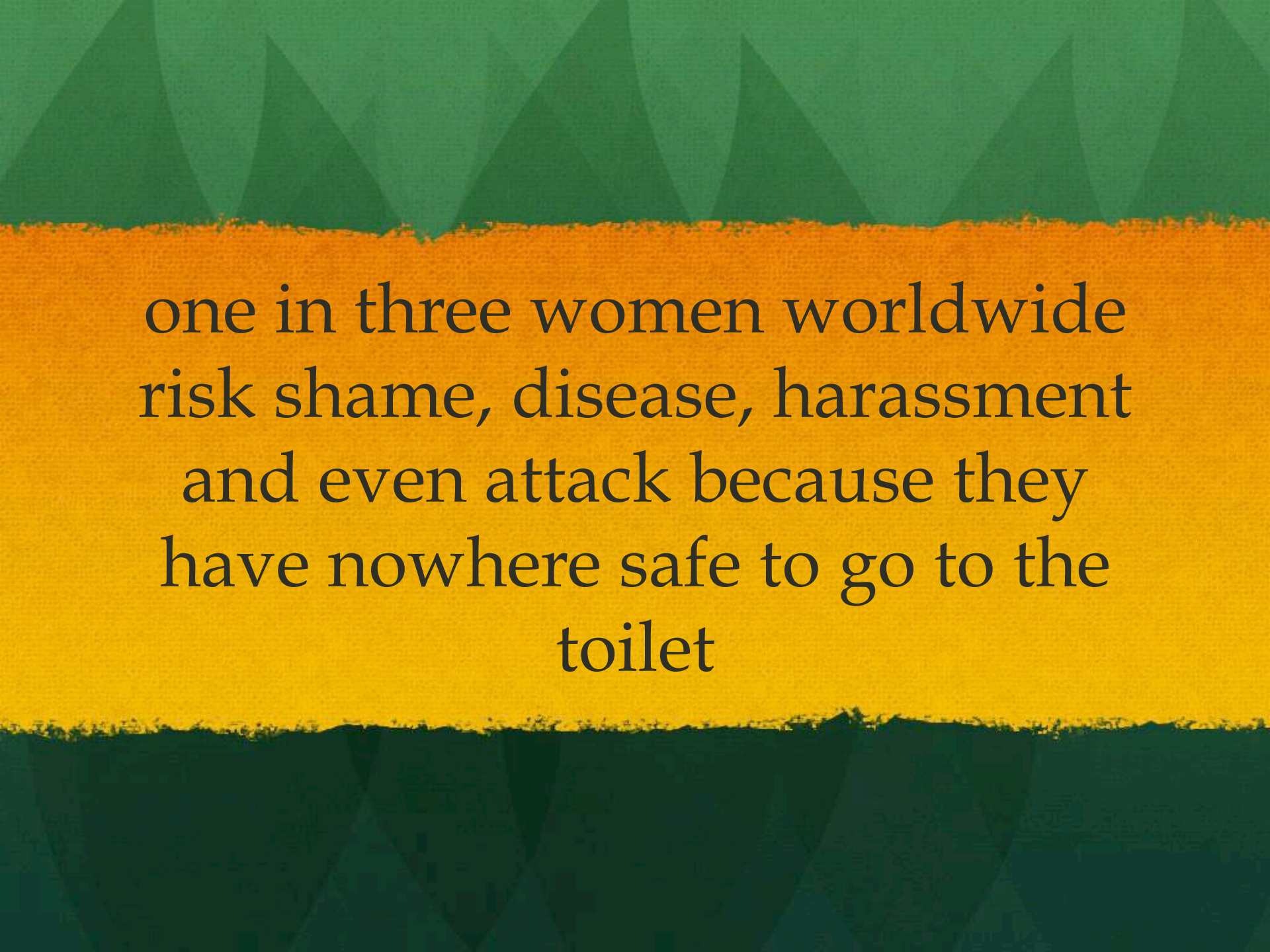
Can you imagine not having a toilet?
Can you imagine not having privacy
when you need to relieve yourself?



2.5 billion people do not
have access to toilets




600 million people in India
defecate in the open



one in three women worldwide
risk shame, disease, harassment
and even attack because they
have nowhere safe to go to the
toilet



WORLD TOILET DAY
19 NOVEMBER

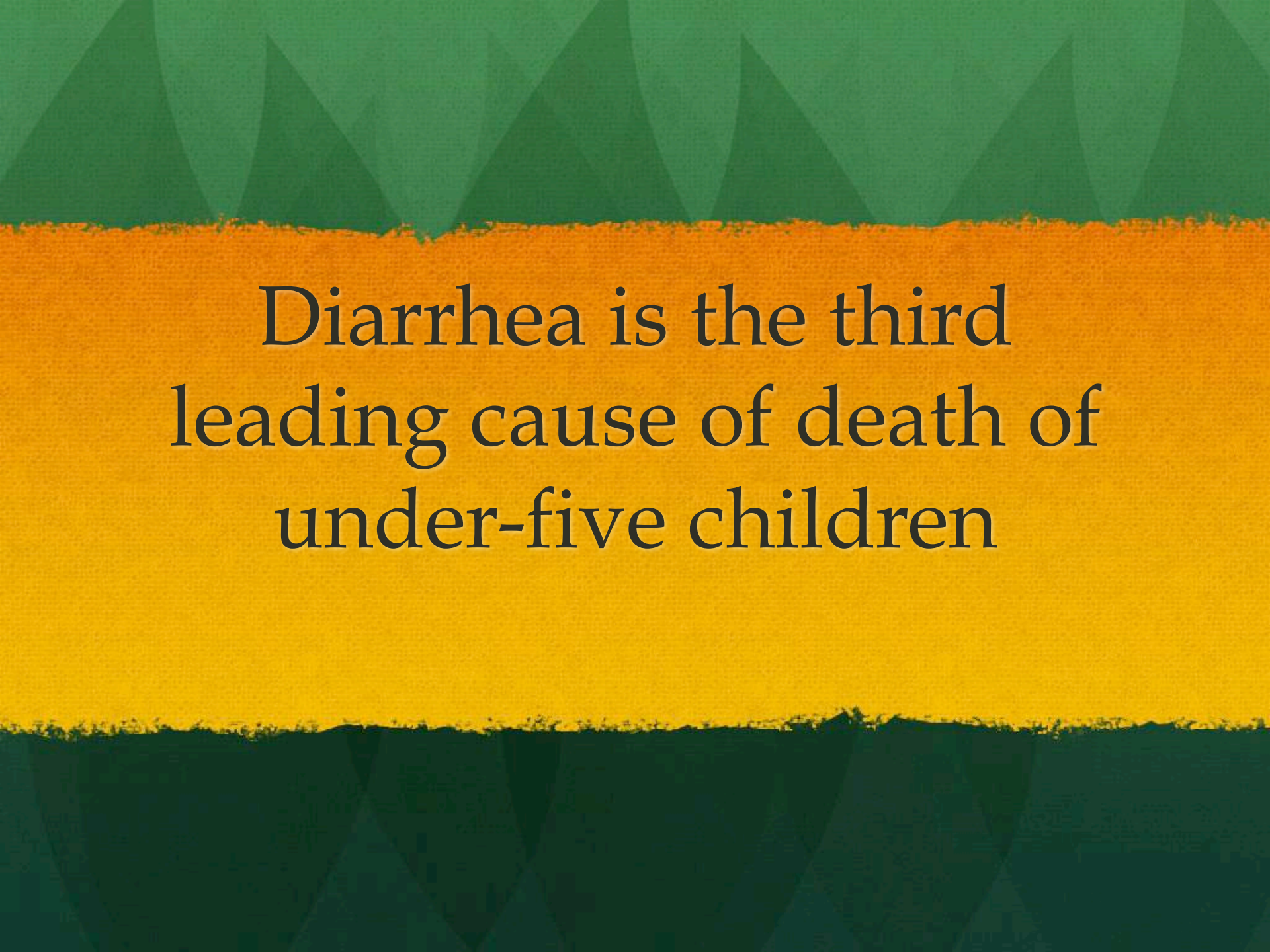


“We must break the taboos
and make sanitation for all
a global development
priority.”

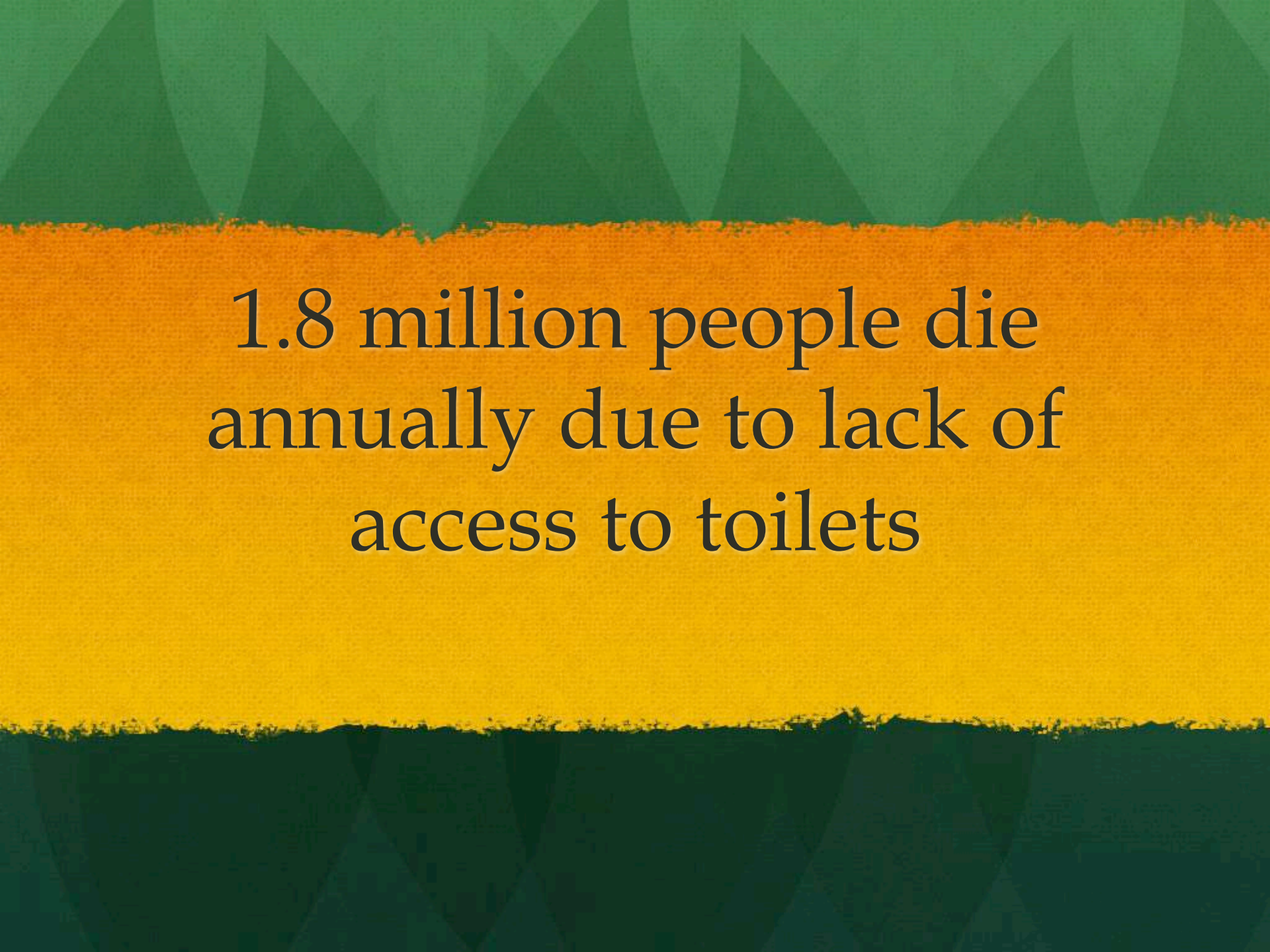
Ban Ki Moon

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Sanitation



Diarrhea is the third
leading cause of death of
under-five children



1.8 million people die
annually due to lack of
access to toilets

Sanitation Barrier



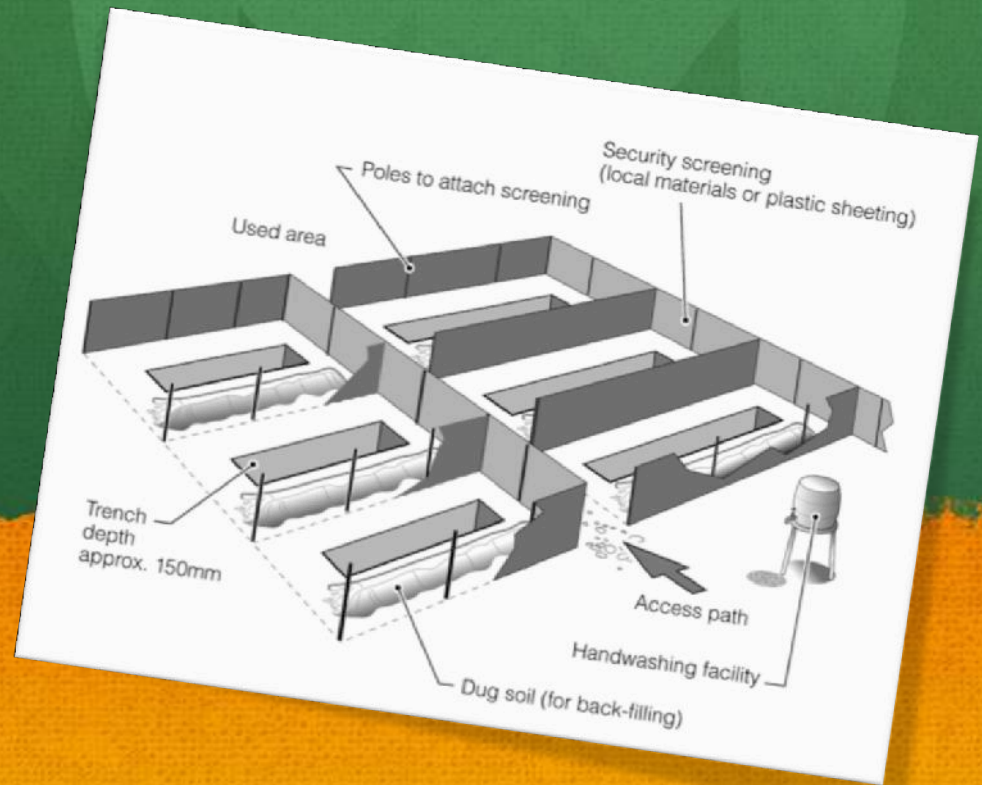
interruption of transmission of the disease agent from the reservoir to the new host

segregation of excreta and wastes, protection of water supply, protection of food and drinks, control of flies and the practice of personal hygiene.

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Latrines

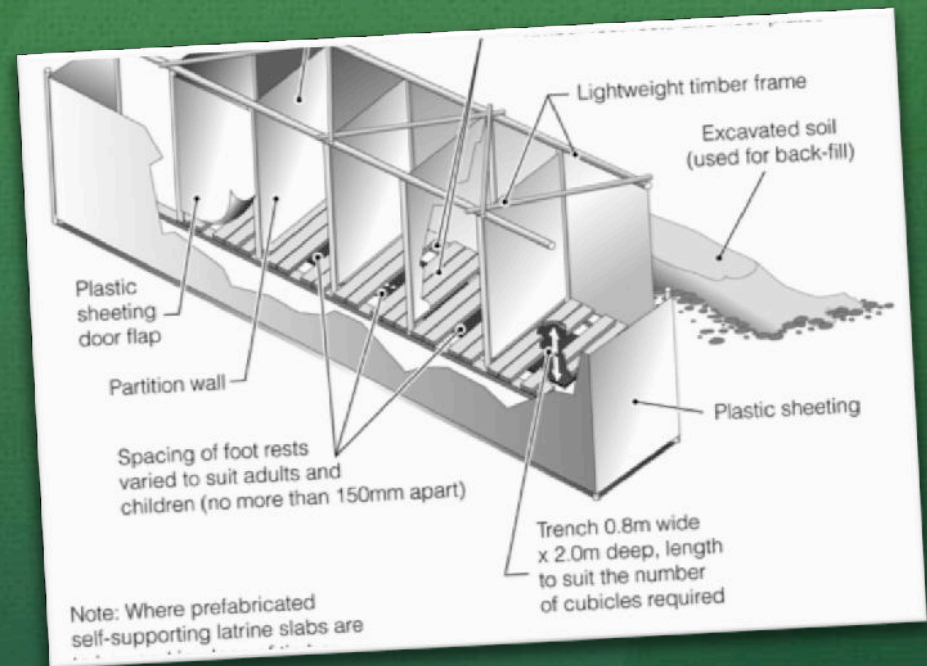
Shallow Trench Latrine



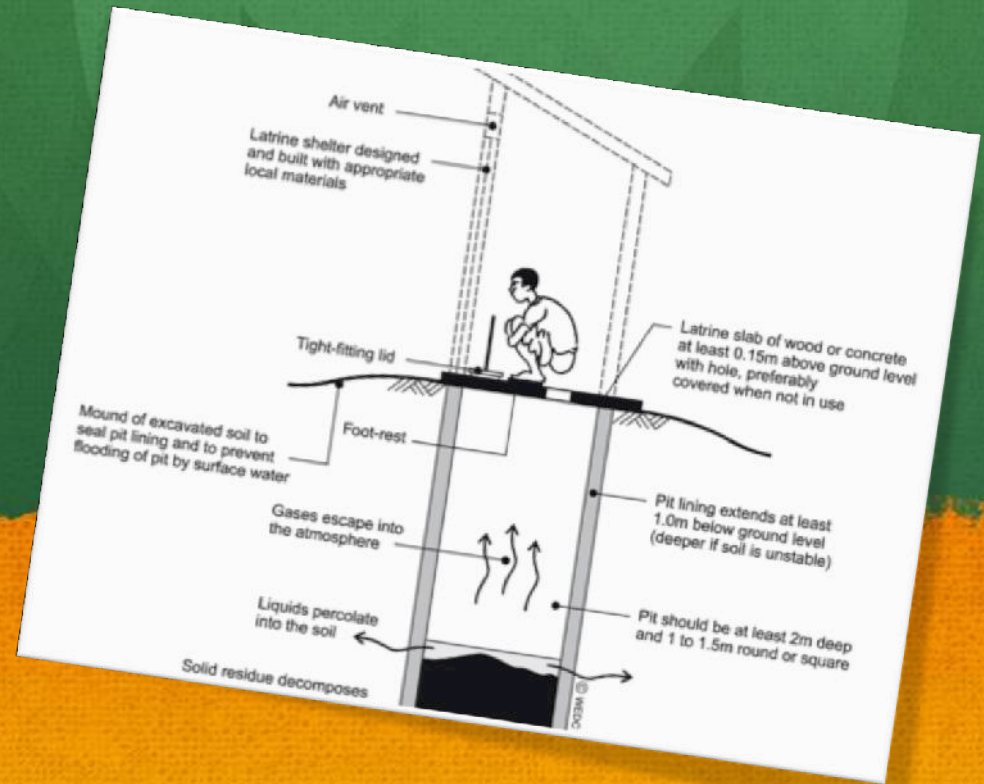
- Trenches **1 foot** x 1 foot x 4 meters in length
- Advantage – rapid to implement, feces are covered with soil hence no flies
- Constraints- limited privacy, short-life and space required

Deep trench latrine

- Short-term immediate solution for displaced people or camps of longer duration
- 1 meter wide x 2 meter deep
- 100 people can use for few months
- Advantage- cheap, quick to construct, no water required
- Constraints- unsuitable where water table is high, unstable soil or rocky ground
- Odor problem

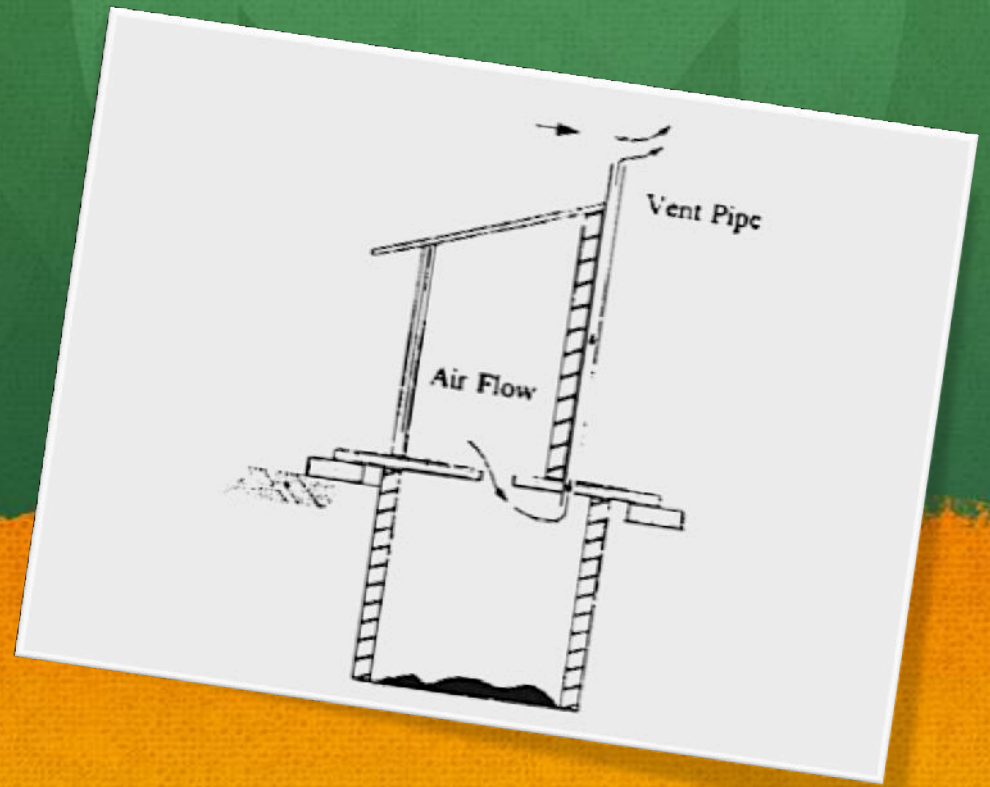


Simple pit latrine



- **3 meters deep** x 75 cm
- Undergoes anaerobic digestion
- Lasts 5 years for a family of 5
- Advantages – cheap, quick, no water required
- Constraints- same as deep trench latrine

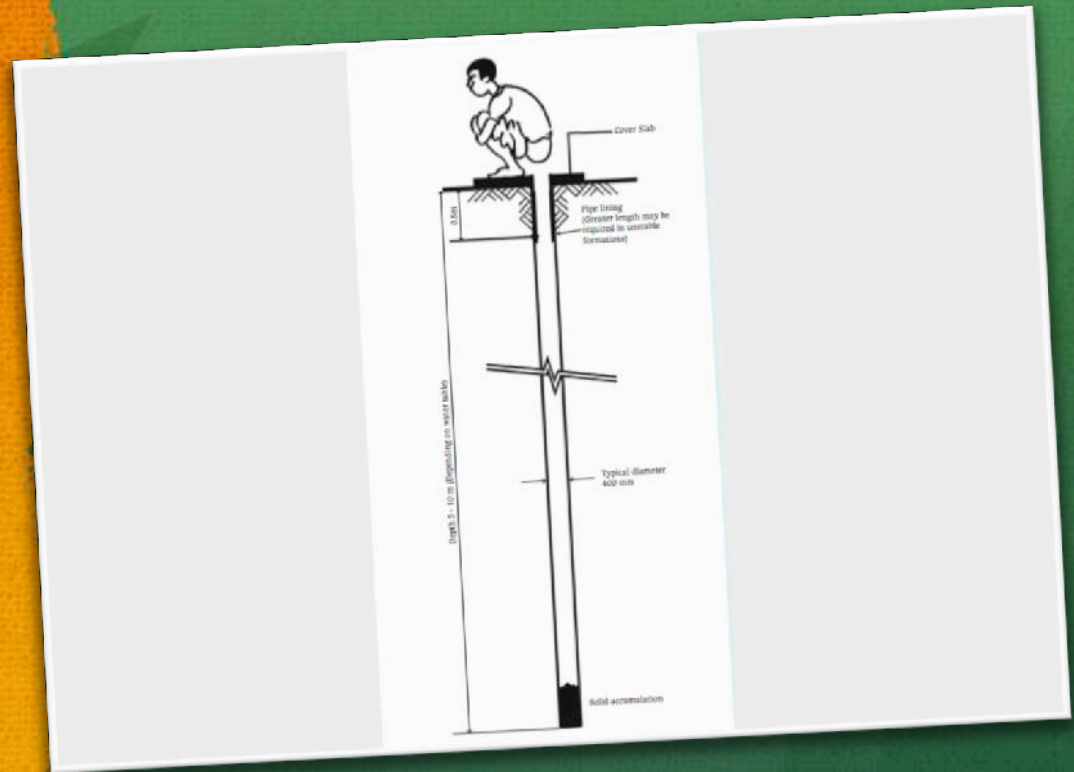
Ventilated Improvised Pit latrine



- Vent pipe is incorporated
- Advantage- reduced odor and flies (since latrine is kept dark)
- Constraint- difficult, expensive, time-consuming

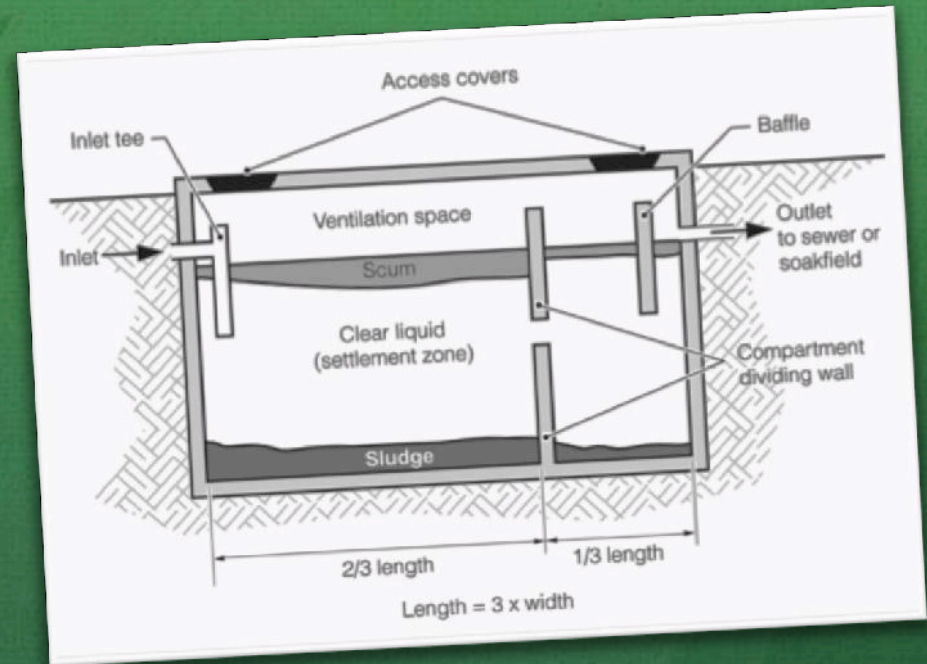
Borehole latrine

- Useful when large numbers of latrines are required quickly, where pits are difficult to excavate
- 40 cm x 5-10 m deep
- Undergoes anaerobic digestion
- Advantage- quick, suitable in hard ground
- Constraints- drilling equipment required, increases risk of ground water pollution
- Short life span-lasts a family of 5 for 2 years



Septic tank

- Where volume of wastewater is too large for pit-latrines, but sewerage is unfavorable
- Cheaper, quicker and easier to construct and maintain than sewerage system
- Anaerobic digestion in septic tank and aerobic digestion of effluent in trenches
- Methane gas is released.

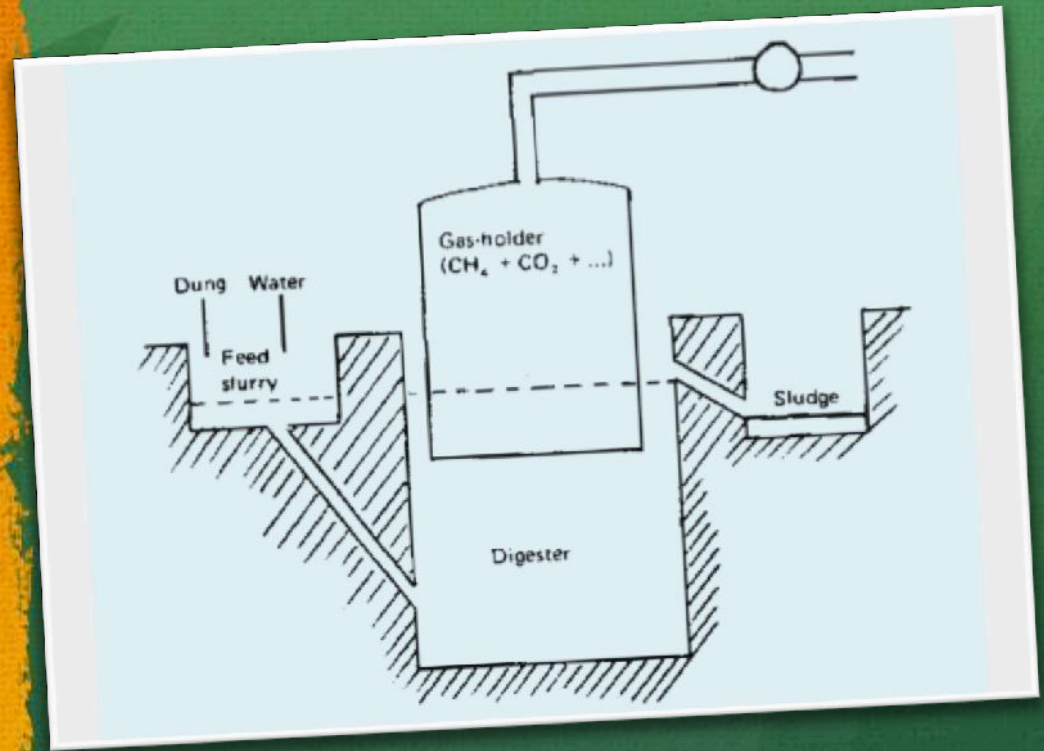


Chemical toilets

- Uses formaldehyde
- Used in aircrafts, trains
- Short term method –useful in disasters
- Advantage- portable, hygienic, decreased odor and can be mobilized rapidly.
- Constraints- high cost, not sustainable, regular servicing is required.

Biogas plant

- It functions on the principle of anaerobic degradation of excreta.
- The gas obtained as a by-product is utilized for cooking.
- The digested substrate may be utilized as fertilizer
- The biogas plant is an example of 'appropriate technology'



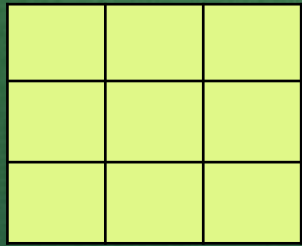
Sewage Treatment Stages

Primary Physical treatment to remove solids

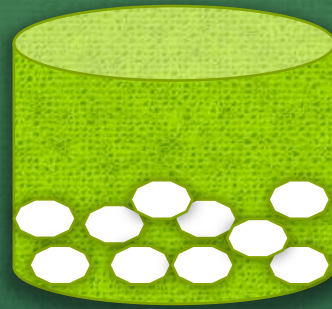
Secondary Biological treatment by aerobic & anerobic bacteria

Tertiary Treatment of effluent & sludge

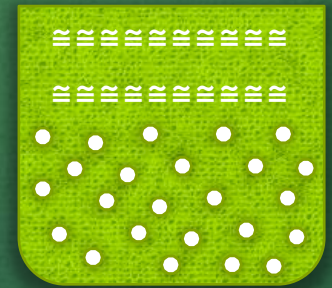
Primary treatment



SCREENING



GRIT REMOVAL

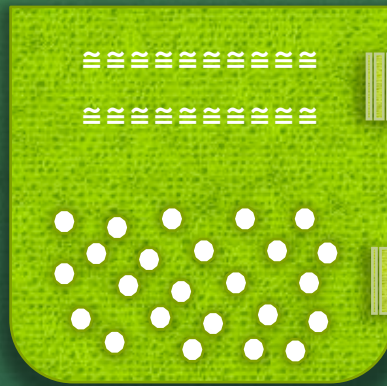


SEDIMENTATION

Secondary treatment



ACTIVATED
SLUDGE
PROCESS



SEDIMENTATION



EFFLUENT
TREATMENT



SLUDGE
DIGESTION



The background features a stylized landscape with green mountain peaks at the top and bottom. A wide, textured band of yellow and orange occupies the middle section, resembling a sunset or a body of water. The text "Toilet Trivia" is centered within this band.

Toilet Trivia

The flushing toilet was
invented by Sir John
Harrington in 1596 for
Queen Elizabeth I.

The average person
spends three whole
years of their life
sitting on the toilet

Women spend 60%
more time in toilet
than men

The toilet handle in a
public restroom can
have up to 40,000
germs per square inch

An average person
uses more than 20,000
sheets of toilet paper
each year

The cost of toilet in
International space
station is \$19 million

SOMETIMES
I FEEL
THAT I
HAVE THE
WORST JOB
IN THE
WORLD!

YA...RIGHT.



T. PECKHAM