

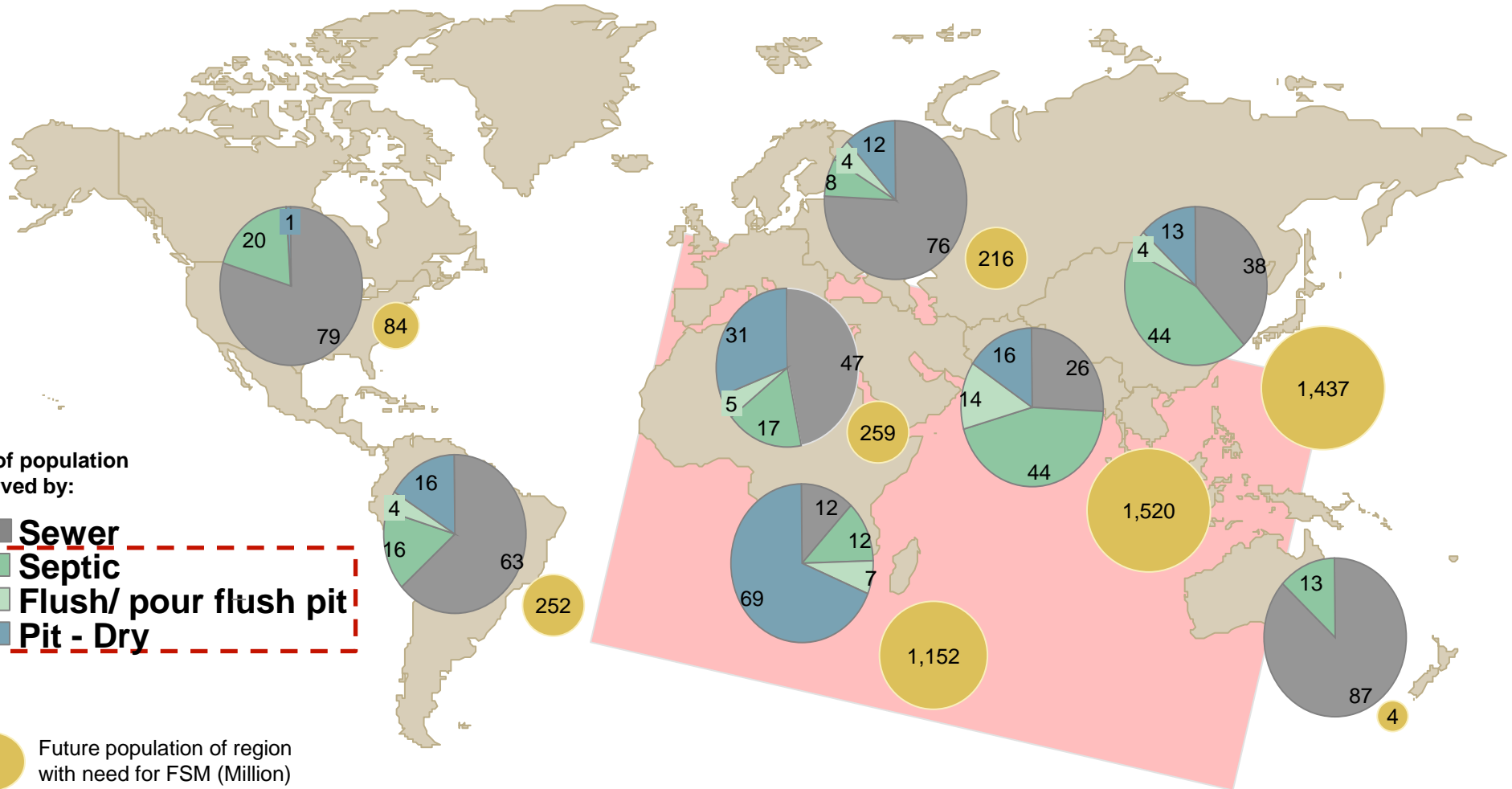
# Innovation and transformative technologies to reinvent the toilet

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, 2013

# If current trends persist, by 2030, FSM may serve majority of sanitation needs, pushing the market to 4.9B people



Note: This analysis assumes that by 2030, the portion of the population that currently defecates in the open or uses open pits/ pits without slabs etc. will be redistributed across sewer, septic, flush/pour flush pit or pit – dry (or equivalent). The population moving to each sanitation category will be proportional to the pre-redistribution share of that category in the 2030 projections  
 Source: UN JMP sanitation data, United Nations, Department of Economic and Social Affairs, Population Division (2011). World Population Prospects: The 2010 Revision, BCG analysis

# Use of toilet today can be life threatening



# Reinvent the toilet for whom? At what cost?



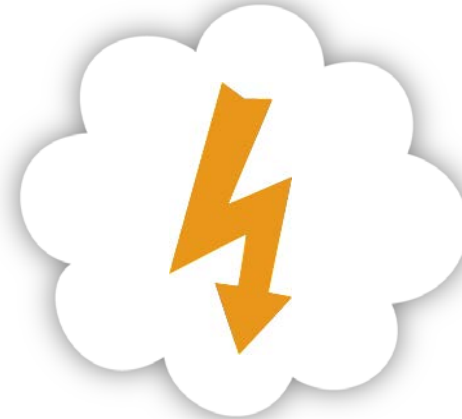
# Reinventing the Toilet – Innovations can save billions of lives by turning human waste into...



**Pure Water**



**Safe Fertilizer**



**Electricity**



**Heat**



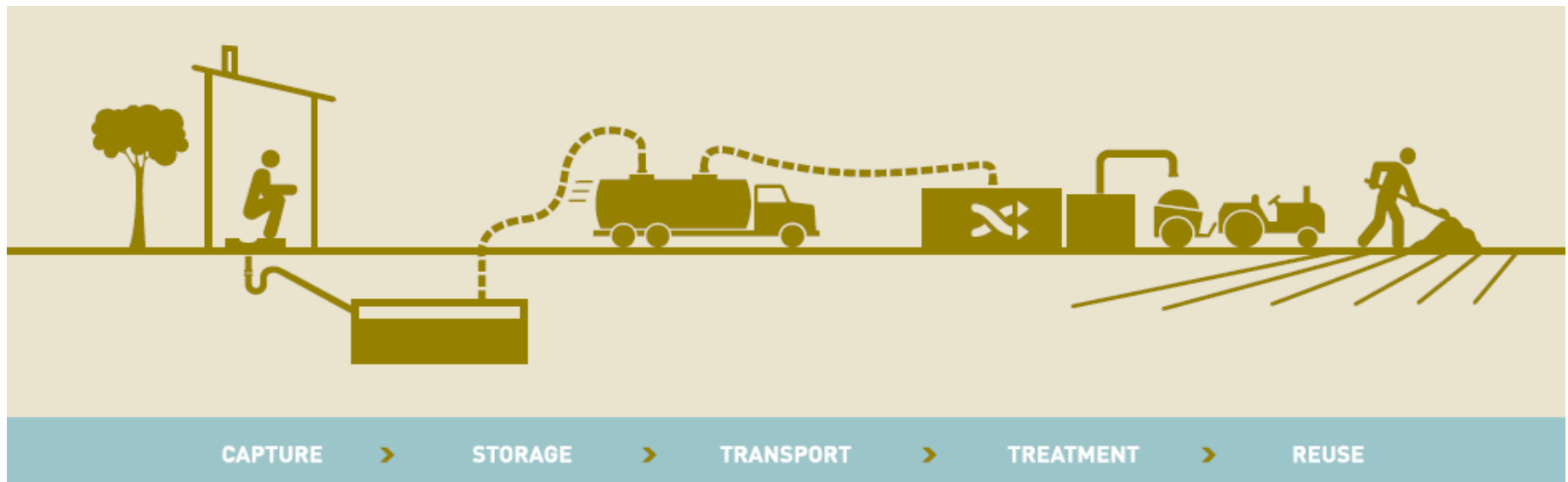
**Fuel**



**Salt**

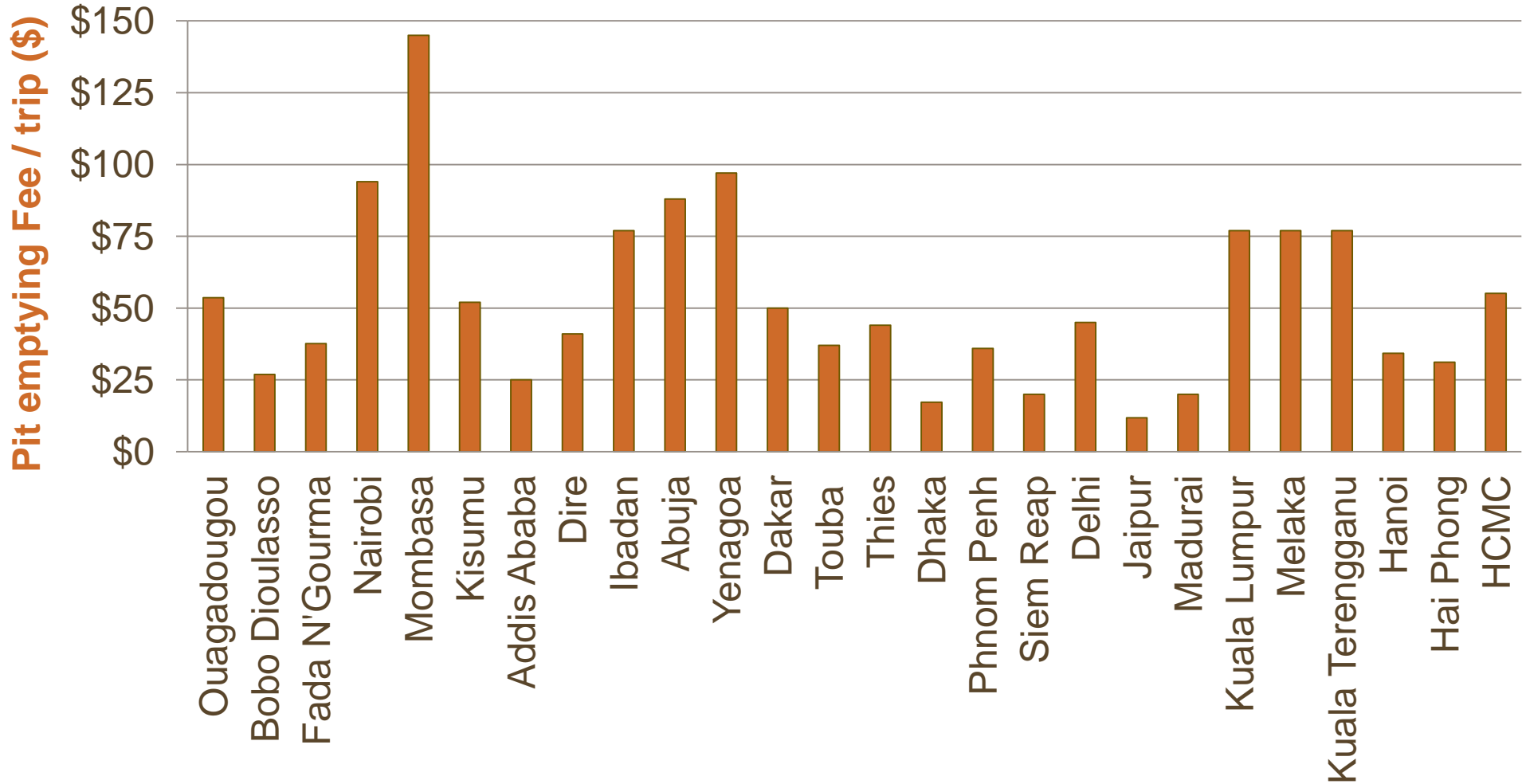
## The value chain

Access to sustainable sanitation is achieved by products and services delivered along the entire value chain at scale. **Technologies and services** meet users' preferences and national requirements.



# Pit emptying fee paid by households

(Ref. BMGF landscape study FSM business in 30 cities in Africa & Asia)



# Key Challenges

- **Lack of investment in FS emptying and processing business,**
- **Services provision not regulated**
- **Limited performance of existing technologies, (emptying, transportation, resource/energy recovery)**
- **Due to high emptying frequency, poor households on latrine pay higher fee**
- **Inefficient customer sourcing strategy**
- **Manual emptying is highly competitive by charging lower fee and offering partial service**



# Investment opportunities in FSM – What can you do?

- **Government to create competitive business environment to promote innovative technologies that suppress spread of pathogen in in the environment – support initiative to reinvent the toilet.**
- **1 septage truck dumping in the open = 5000 open defecation. Dumping of pathogenic waste into the environment should not be tolerated anymore in this 21<sup>st</sup> century – both from a standpoint of government enforcement but more importantly from public perception.**
- **Integrate FSM into current utilities services**
- **Local / National government should regulate FSM**
- **Develop and enforce service standards for onsite sanitation solution**
- **Promote resource recovery (water, energy, fertilizer) from non-pipe toilets (sanitation) solutions.**