



# Development Impact Bonds for Faecal Sludge Management: Opportunities for Innovation and Scale?

**Rob Mills & Gopi Shah**

**Social Finance & USAID**



# DOES TRADITIONAL NETWORKED FSM MAXIMISE HEALTH OUTCOMES?

- Traditional **networked sanitation is high cost** – both to maintain current systems and to expand into the ‘new urban margin’
- Focus on conventional sewage and sanitation tends to **benefit those in existing urban centers**
- A solution is needed for areas outside networked sanitation – to address abandoned pits or illegal dumping which has detrimental health impacts
- A 5m<sup>3</sup> truck load of FS dumped into the environment is the equivalent of **5000 people practicing open defecation**



**SAFELY COLLECTING AND TREATING FS IS AN IMPORTANT PUBLIC HEALTH OBJECTIVE**



# WHAT IS THE CHALLENGE?

## (1) Financing Problem

Fecal Sludge Treatment plants are expensive (**high capex** investment needed)



- Current networked sanitation is expensive and slow to extend
- Conventional FSM plants are operating at full capacity

**▶ NON NETWORKED SANITATION PROVIDES A SOLUTION BUT A SUSTAINABLE MODEL THAT IS PROFIT GENERATING IS NEEDED**



# ADDRESSING THIS CHALLENGE?

- Fund FS treatments that use **fecal sludge to generate revenues**
- Allows the operator **to make a profit by safely treating sludge**
- Technologies exist that turns FS into the following:



**ELECTRICITY**



**DISTILLED  
WATER**



**ASH**

▶ **FOR THE FIRST TIME FECAL SLUDGE IS A SOURCE OF PROFIT,  
NOT JUST A COST**



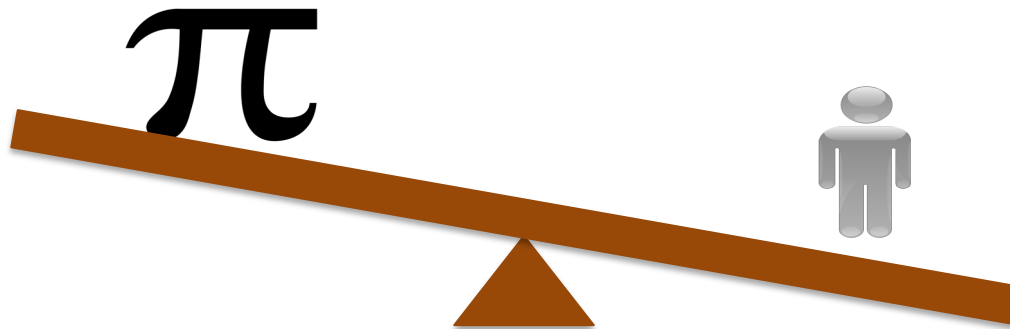
# EXAMPLE: OMNI-PROCESSOR



# BUT WE HAVE AN INCENTIVES PROBLEM THAT UNDERMINES HEALTH OUTCOMES

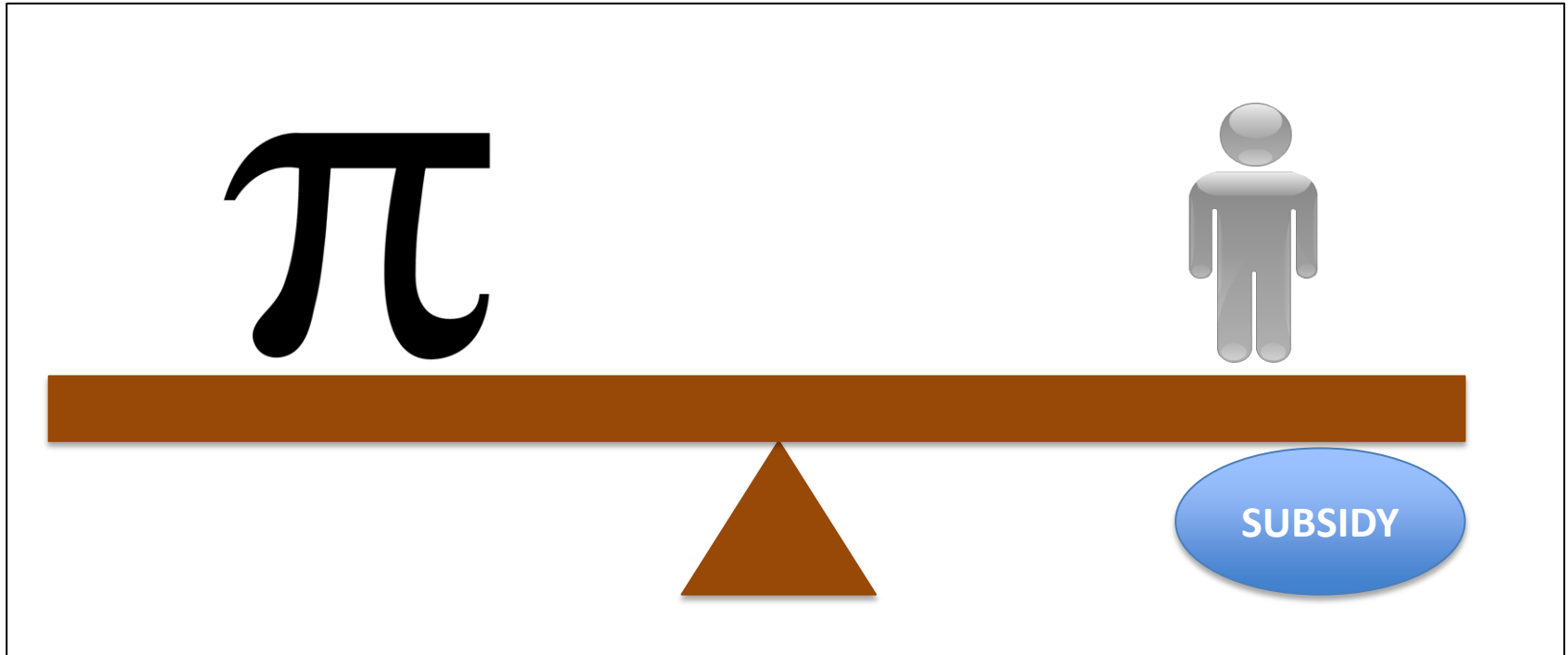
## (2) Incentives Problem

- Poorer households **cannot afford** collection and tipping fees
- Currently only 'commercial' sludge (i.e. those households who can pay for collection) is safely treated
- Incentives are needed to collect 'social' sludge from poorer household (lower WTP) – health impact



▶ WE NEED TO FIND A WAY TO BALANCE COMMERCIAL OPERATIONS OF AN ENTERPRISE AND SOCIAL VALUE FROM SOCIAL SLUDGE COLLECTION

# HOW CAN WE COLLECT MORE 'SOCIAL' SLUDGE?



▶ **SUBSIDISING FS COLLECTION ALIGNS INCENTIVES.**

▶ **MORE FS IS BROUGHT TO THE PLANT AND TREATED, SO THE OP DOES NOT HAVE TO USE OTHER BIOMASS TO REACH CAPACITY (PROFITABILITY)**

# AN IMPACT BOND CAN BALANCE PROFITS AND SOCIAL IMPACT

An impact bond can be used to close the **financing gap** in poorer households willingness to pay for collection and treatment of FS:

- (1) Social investors fund collection social sludge collection on an outcomes basis
- (2) The social enterprise treats more FS from HH that were previously dumping-(leading to better plant utilization)
- (3) Investors make a return if outcomes i.e. amount of FS collected meet pre-agreed targets

**▶ AN IMPACT BOND CAN ACCELERATE THE MARKET SCALE-UP OF FSM SOLUTIONS TO NEW LOCATIONS BY MINIMISING THE NEED FOR ON-GOING GRANT FINANCING**





# KEY TAKEAWAYS

- Future for the 'new urban margin' = Non-networked Urban Sanitation
- Technology exists that turns the economics of FSM on its head
- BUT we have to find a way to deal with social sludge
- Impact Bonds are one way to structure project. They:
  - Integrate infrastructure project finance and a conventional aid program
  - Allow a balance between profitable operations for a social enterprise and high impact social sludge collection



# ABOUT SOCIAL FINANCE

- Social Finance is a pioneering non-profit organisation that designed and launched the first Social Impact Bond (SIB), in which risk capital is used to provide the working capital for outcomes-based contracts
- We have launched 11 SIBs in the United Kingdom and are helping to develop Impact Bonds in a range of countries in Africa and the Middle East
- We established a Working Group with the Centre for Global Development in 2012 to explore the potential of Development Impact Bonds (DIBs) that apply the Impact Bond model in developing countries

