



# SMART ENFORCEMENT AND COMPLIANCE IN FSM

Strategies to achieve health and  
environmental outcomes

*Joanne Chong, Janina Murta, Antoinette Kome, Prof Juliet Willetts*

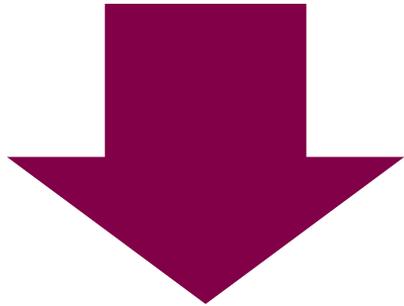


# KEY MESSAGES

- Setting **regulations and standards** for safe management of faecal sludge and liquid effluent is critical, however **ensuring their enforcement** and compliance is difficult
- Current approaches have **limitations**, and may be **considered late** when planning FSM solutions
- There are **many approaches to enforcement and regulation** which could be drawn upon
- Using these approaches through **combinations of instruments** holds promise to be **'smarter'** in our approach to achieving health and environmental outcomes



# CURRENT APPROACHES TO REGULATION, ENFORCEMENT AND COMPLIANCE MEET MANY CHALLENGES...



Limited institutional capacities for enforcement or limited legitimacy, politicians unwilling to pay the price of enforcing rules on individuals, public versus individual benefits etc.

How to develop cost-effective, 'smart' strategies?

Current efforts: command-control regulation, awareness raising and market-based incentives



# METHODS

**Review** regulatory and enforcement approaches used within and beyond the urban sanitation sector

**Semi-structured interviews** to develop examples and case studies that illustrate key regulatory concepts and potential for 'smart' approaches to enforcement and compliance

**Sector engagement** through online D-group, Learning event, and Stockholm World Water Week Workshop in 2016

**Develop a learning paper** to stimulate debate and further thinking in the sector (to be released shortly)

This presentation covers some key strategies that could support a 'smarter' approach to enforcement and compliance

# REGULATORY CONCEPTS AND APPROACHES

These include:

1. Responsive regulation
2. Identifying and leveraging compliance motivations
3. Networked regulation
4. Risk-based regulation

Combining instruments:

voluntary; command and control regulation; self-regulation; and market-based instruments

# RESPONSIVE REGULATORY APPROACH



# APPLICATION OF A RESPONSIVE REGULATORY APPROACH

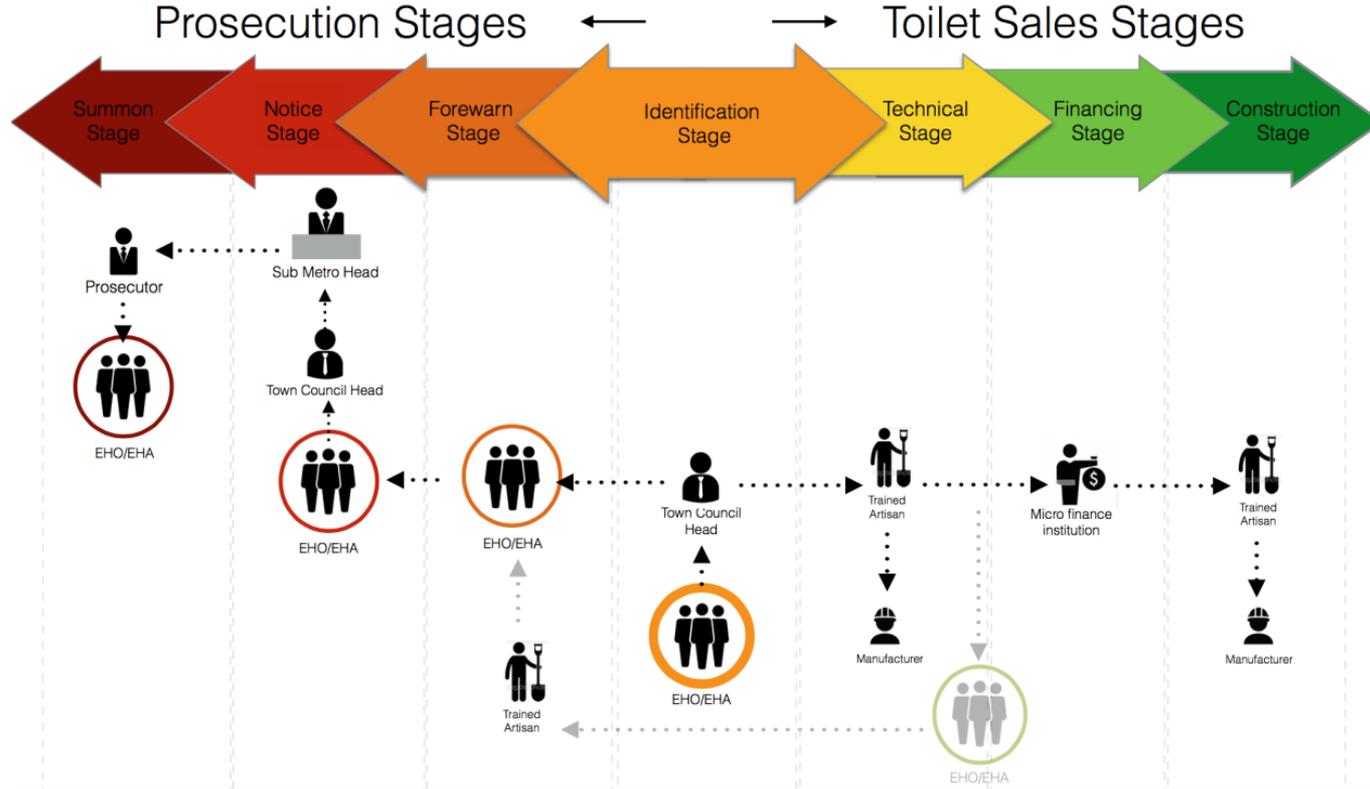
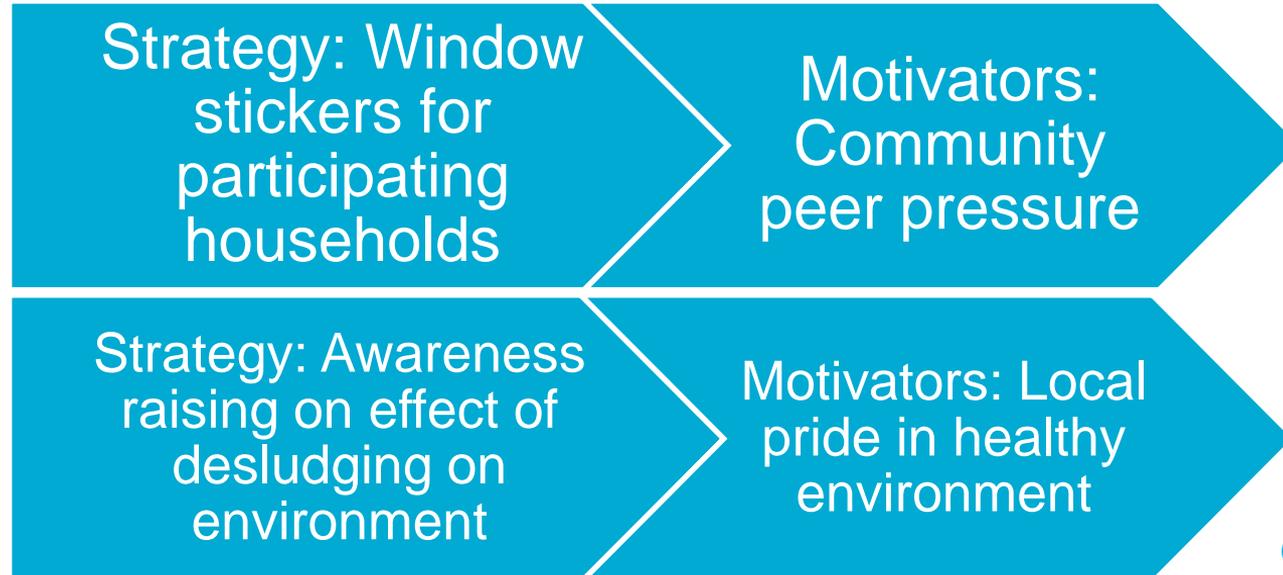


DIAGRAM OF ENFORCEMENT MANAGEMENT MODEL IN KUMASI (SOURCE: WSUP 2016)

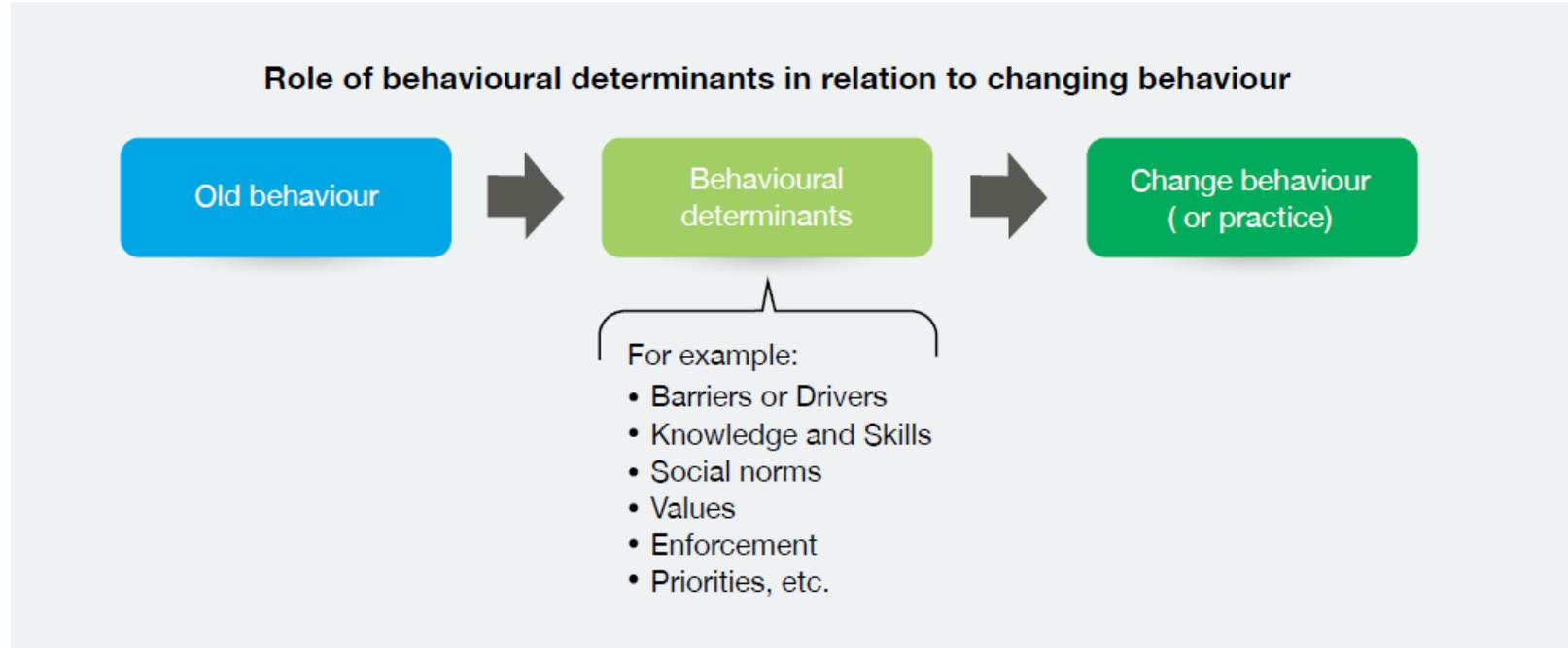
# IDENTIFYING AND LEVERAGING COMPLIANCE MOTIVATIONS

Seek to understand **individual and/or organisational motivators**, including through **formative research**, to develop specific compliances strategies that respond to these.



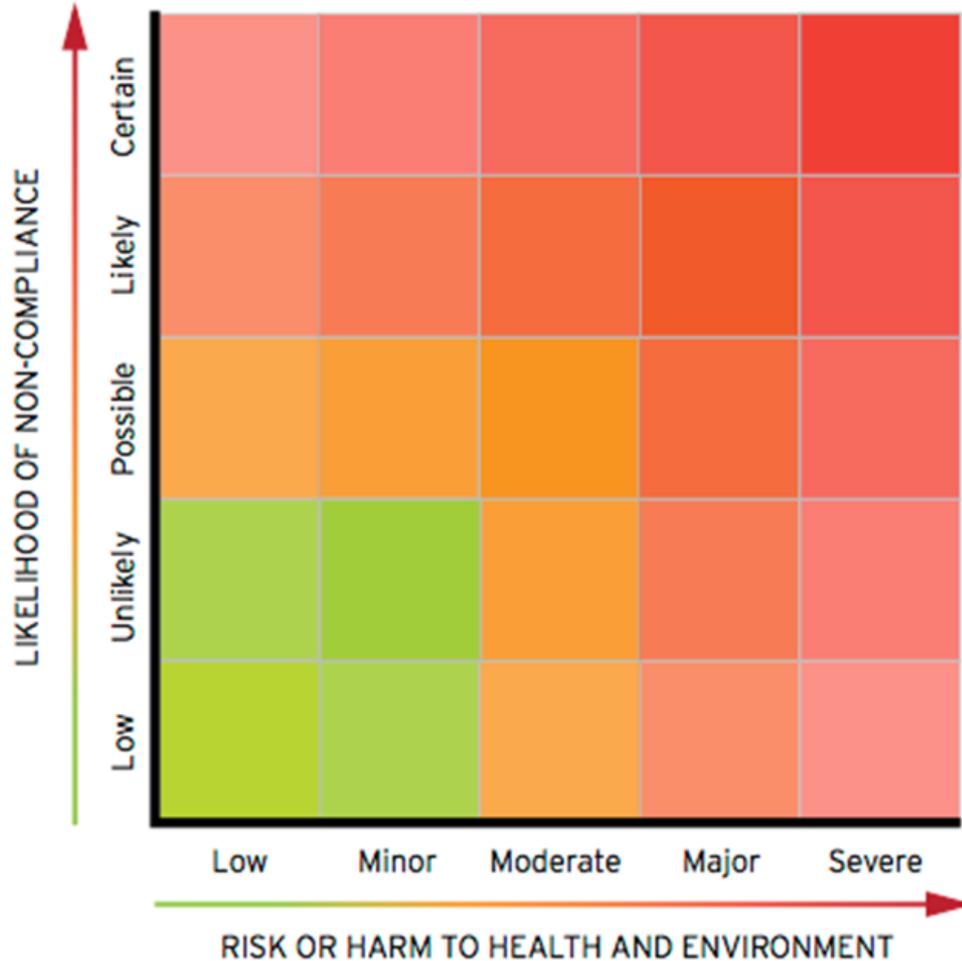
Source: Marikina City, Philippines, (Robbins 2012)

# IDENTIFYING AND LEVERAGING COMPLIANCE MOTIVATIONS – EVIDENCE-BASED BEHAVIOUR CHANGE COMMUNICATION THROUGH FORMATIVE RESEARCH



Source: SNV, BCC Guidelines, 2016

EXAMPLE OF A RISK MATRIX (ADAPTED FROM EPA NSW)  
EPA's approach to targeted enforcement



# APPLICATION OF RISK- BASED THINKING

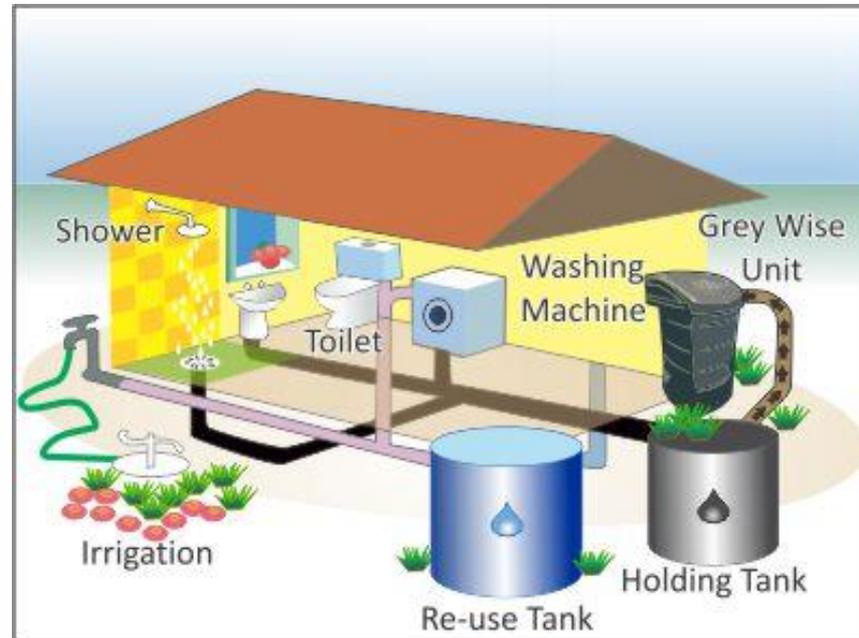
# APPLICATION OF RISK-BASED THINKING – GREYWATER MANAGEMENT IN AUSTRALIA

NSW GUIDELINES FOR  
GREYWATER REUSE IN SEWERED,  
SINGLE HOUSEHOLD RESIDENTIAL PREMISES



// MAY 2008

Water for Life  
NSW GOVERNMENT



Recycle your water inside and out

Source: NSW Government (2008)

# APPLICATION OF RISK-BASED THINKING – URBAN SANITATION

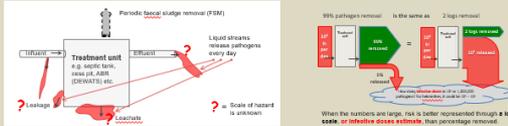
## Achieving safe management: A case for strengthening the attention to liquid streams in on-site and local sanitation

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### The situation unseen

Liquid streams (effluent, leachate, untreated sewage) from on-site and reformatted water-based sanitation systems can pose a significant health hazard, but have received little attention. Faecal sludge management (FSM) has not been essential, yet reaching 'safer' management sanitation requires making pathogens hazardous visible in all discharges, and assessing all local exposure paths.



### Introducing the Pathogen Hazard Diagram

We need a tool to help us identify which intended and unintended discharges from wastewater treatment systems are likely to contain hazardous levels of pathogens, which, if exposed to people, could represent a significant public health risk.

We have very little reliable location-specific pathogen data, because measuring and monitoring pathogens is still complex, expensive and technically difficult.

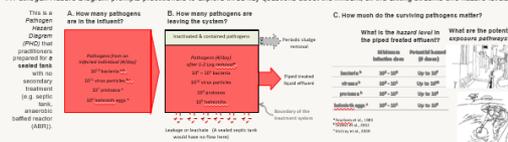
The Pathogen Hazard Diagram is offered as a simple thinking tool that relies on first principles and best available data to identify and assess hazard to society.

Use of the tool draws attention to:

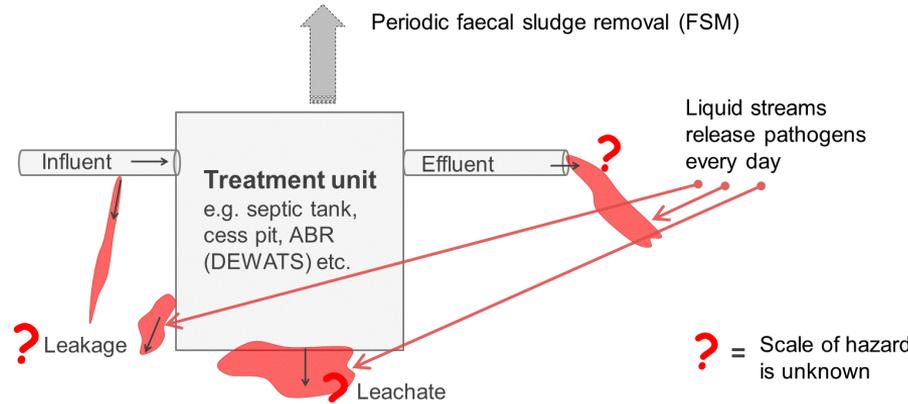
- What different sewage treatment technologies are able to achieve in reducing/hazardous pathogens.
- What pathogen levels might remain in planned and unplanned discharges from the treatment system.
- What is the potential hazard of these pathogens in terms of infective doses.
- Where these pathogens go in the environment.



A Pathogen Hazard Diagram prompts practitioners to explore three key questions about the influent, all the exiting streams and hazard levels:



### What might this mean in practice?



Are our efforts to reduce public health risk in the right place?

# REGULATORY NETWORKS AND ALLIANCES

The **literature notes challenges** to applying either conventional top-down or responsive regulatory models in developing country contexts (Braithwaite 2006, Rooij and McAllister 2014).

Government authorities **may lack the necessary capacity** (in resources, technical expertise and information) and **independence**.

**Capacity and expertise from third-party, non-state actors**, especially NGOs, **can create networks** that promote regulatory compliance

Third-party roles can include:

- focus on transparency (“naming and shaming” offenders)
- recognising strong compliance with awards or publicity
- establishing standards

# COMBINING APPROACHES AND INSTRUMENTS

Instrument category and description	Potential advantages	Potential disadvantages
Voluntary approaches – including information, education and awards	Non-coercive	Can have low impact.

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<b>Command and control regulation</b> (the “regulatory approach”) – set rules and laws, and enforce non-compliance with penalties	Clarity about expectations and outcomes but only if enforced.	Enforcement requirements high. Lacks flexibility. Coercive.

# BANDUNG CASE – TARGETING EFFORTS AND COMBINING INSTRUMENTS



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# CONCLUSIONS

- Regulatory approaches are not limited to command-control mechanisms, and can include responsive regulation, evidence-based behaviour change communication, risk-based regulation and networked regulation.
- Different instruments can be drawn upon, including voluntary, market-based, self-regulation, co-regulation and command-control regulation.

**A 'smart' approach draws on these regulatory concepts and combines different instruments to support compliance in the most cost-effective way**

# THANK YOU

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ISF-UTS & SNV (2017) Exploring smart enforcement within urban sanitation.  
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