LEARNING BRIEF

Exploring smart enforcement within urban sanitation

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To achieve sanitation outcomes, a transformation of urban sanitation service delivery systems – and how they are regulated – is needed. Effective regulation and enforcement can contribute to ensuring stakeholders (end-users, building owners, service providers and service authorities) act in ways that lead to safe and sustainable outcomes across the sanitation service chain. By understanding concepts and strategies around 'smart enforcement,' local governments have potential to bring stakeholders into compliance with the most effective use of (limited) available resources.

At present sanitation coverage is not keeping up with population growth. As a result of limited relevant regulations, effective enforcement, or oversight and coordination, even where people have access to toilets, wastewater and faecal sludge is commonly not safely contained, transported or treated before disposal. In many contexts our strategies to address these situations have been to date too limited. Common approaches mainly rely on raising public awareness through behaviour change communication, or on market and financial incentives to private service providers. Yet effectiveness might increase if complemented by smart enforcement strategies.

This learning brief presents highlights from the learning paper *'Exploring Smart Enforcement within Urban Sanitation'* that introduced readers to basic concepts of smart enforcement with illustrative case studies. The research drew on existing experiences of regulation and enforcement in the urban sanitation sector as well as on regulatory experiences in the fields of waste and environmental protection, from a range of countries. Both the learning brief and learning paper were prepared by SNV Netherlands Development Organisation and the Institute for Sustainable Futures at the University of Technology Sydney, as part of their partnership for research and learning to improve urban sanitation sector knowledge and practice.

Key messages

- **Regulation and enforcement is required to ensure sanitation stakeholders' behaviour is aligned with achieving safe and sustainable urban sanitation.** Current approaches that focus largely on market-based incentives and public awareness raising, have been insufficient in delivering outcomes.
- **Applying 'smart enforcement' concepts can help regulatory authorities to direct their limited resources and efforts for maximum impact.** This involves purposeful design of regulations and enforcement approaches to involve a range of measures that extend beyond top-down penalty mechanisms and bottom-up communication approaches.
- **Monitoring activities and outcomes is critical for establishing the legitimacy of enforcement systems.** This means a credible likelihood of non-compliant activity being detected. Rather than costly monitoring of every activity, a smart approach will use measures like random inspections in combination with complementary forms of monitoring (e.g. citizen reporting).

Smart enforcement refers to developing and enforcing regulations by considering a range of strategies for effective regulation and a mix of enforcement measures. It considers the motivations of and constraints on all regulated stakeholders to identify ways to make it easier for them to comply, rather than necessarily applying strict punitive measures as a first response to non-compliance.

Smart enforcement includes consideration of the following approaches and concepts:

- Separation of roles – avoiding conflicting or competing interests by separating the policy, regulatory and implementation functions of government.
- Enforcement styles – the ways in which regulators interact with regulated organisations or individuals.
- Responsive regulation ("the regulatory pyramid") – recognising that different people have different attitudes towards compliance, and matching the regulatory approach to the attitudes of the target segments.
- Networked regulation / regulatory alliances – local governments collaborating with other stakeholders to implement enforcement activities.
- Evidence-based behavioural change communication.
- Risk-based regulation ("the regulatory matrix") – matching the level of regulatory effort to the risk non-compliance poses to health or the environment.

Key regulatory concepts and approaches

Responsive regulation

A responsive regulation approach takes into account that different groups will have different attitudes towards compliance. Some people (or organisations) are willing to comply, or to try to comply, and any non-compliance is 'unintentional.' Some will not comply if they can avoid doing so, and their non-compliance is 'opportunistic.' Others will be 'intentional' in deliberately deciding not to comply and seek to by-pass regulations.

Figure 1. Example of a regulatory pyramid (adapted from Ayres and Braithwaite (1992) and NSW EPA (2013))

Rather than strict, punitive penalties as a first response for all offenders, responsive regulation first uses cooperative and informative mechanisms (e.g. advisory or warning letters), and escalates to progressively stricter responses (figure 1). This approach could help foster positive relationships while bringing offenders at the low end of the pyramid into compliance with little effort, while targeting resources for the more costly measures (e.g. legal proceedings) for those at the top of the pyramid.

Responsive regulation for access to toilets in Ghana

With support from Water and Sanitation for the Urban Poor (WSUP), the Kumasi Metropolitan Assembly and the Ga West Municipal Assembly in Ghana are developing capacity and implementing a 'smart regulation' strategy for enforcing existing by-laws that require all houses to have access to a toilet. The initiative is being applied to low-income communities in compound housing by encouraging tenants to be active in the process of acquiring toilets while holding landlords, as property owners, responsible for compliance with by-laws.

The process begins with an inspection of the compound by an environmental health officer (EHO), to check if the compound has a safe toilet for use by residents. If there is no safe toilet, the EHO interacts with the compound's landlord and tenants to inform them of by-laws and to offer them support for getting a toilet. If reception to the offer is positive, technical and financial support and advice is provided so toilet construction can take place.

Landlords who are not receptive to having a toilet installed will be progressively warned, given a notice, and finally prosecuted if they remain non-compliant.

Source: WSUP Pers. comm. 2016

Separation of roles

It is important that the people working on regulatory matters do not have conflicting interests or competing roles – particularly the roles of service provision and of regulation and oversight of service provision. Separation of roles of policy makers, regulators and implementers (or service providers) is one such approach to avoid conflict of interest.

Separation of roles is an important and often challenging issue for urban sanitation. Municipalities often have responsibility for both service provision and regulatory/oversight functions. Due to resource constraints and other challenges, roles are not kept adequately separate in practice and conflicting interests may arise.

Identifying and leveraging compliance motivations

Enforcement strategies can be informed by experience and concepts from behavioural change communication (BCC) from the WASH and broader health sectors, which uses an in-depth understanding of people's behaviour to design persuasive communication.

Evidence-based BCC begins with formative research that investigates and analyses the motivations underlying the practices of individuals in target groups – i.e. what motivates them to engage in some behaviours and not others, or why some organisations (or individuals) comply and others do not. The research insights form the basis for development of key messages for targeted groups. Factors that influence behaviour can include knowledge, skills, social norms, values, priorities, fears and abilities. A communication campaign, usefully be informed by behavioural determinants, could be a part of a broader package of interventions or measures for shifting the balance in favour of compliance.

Leveraging behavioural motivations for desludging in the Philippines

An understanding of community pride and peer pressure as motivations was used in Marikina City, Philippines to promote voluntary participation in a desludging program. Window stickers were provided for display by households participating in the desludging program, to engender a sense of pride and exert peer-pressure. This was combined with an awareness raising campaign that tapped into pride for healthy, clean waterways, and emphasised links between desludging and local environmental conditions.

The program also sought to understand and address barriers to participation in the local context, which led to the realisation that difficulties in accessing or removing septic tank lids was a key barrier. This was addressed through information to households about which private service providers could do this for a small fee.

Source: Robbins et al. (2012) and interviews with stakeholders

Risk-based regulation

A risk-based approach to regulation is one where regulatory efforts and resources spent by a regulatory authority are proportionate to the risk of harm posed by non-compliance – namely the risk to public health and the environment. The estimated level of risk is expressed as:

risk = likelihood * consequence of non-compliance

Potential activities/behaviours to regulate can be mapped on a "likelihood-consequence" matrix such as shown in figure 2. It may be used to estimate relative risks among different activities to be regulated (such as containment, emptying, transport and disposal) to determine where non-compliance leads to greatest risks, for prioritising regulatory efforts.

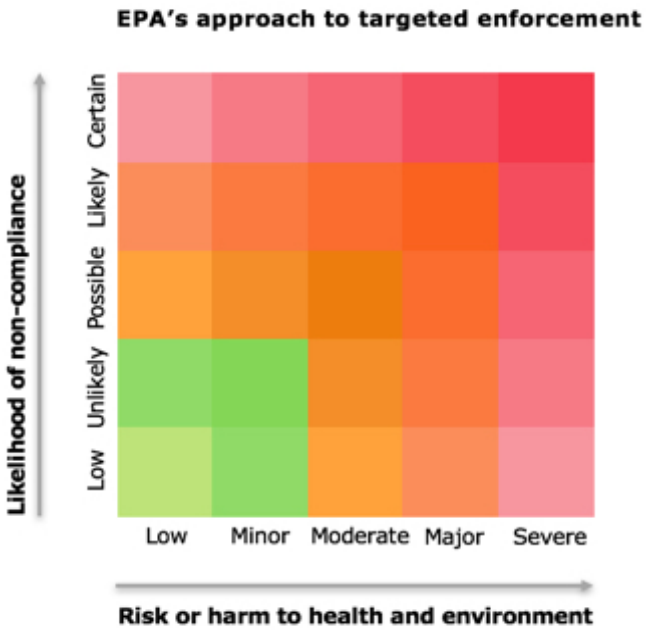

Figure 2. Example of a risk matrix

Risk-based regulation of grey-water reuse in Australia

In Australia, drought and water security concerns have resulted in great interest in recycling wastewater, including reuse of *'greywater'*, which is water from taps and showers, within the home, on gardens, or in parks and sportsgrounds.

State governments generally apply a risk-based approach to regulating greywater use, in order to manage public health risks. Where a higher risk to public health from poor water quality is expected – based on the likelihood of exposure – stricter rules and requirements apply.

In the State of New South Wales, regulations for different risk levels include the following measures:

- *Lower risk* – Manual collection of greywater for immediate use outside on gardens is considered low risk. The government provides information about the risks of storage, but no specific rules apply.
- *Medium risk* – Installing a greywater diversion system (e.g. from a multi-unit building into a storage tank for future reuse) is considered to pose some risks. Local government regulations generally require council approval for greywater diversion.
- *High risk* – Drinking greywater is considered high risk, and systems which enable this to happen are banned for individual households. Recycled water systems that treat and reuse greywater or sewage (e.g. in toilets, washing machines, showers and for irrigation) are subject to stringent regulatory requirements (inspections, audits, reporting, both pre- and post-commissioning) to protect health and the environment, and these in turn require considerable government resources to administer.

Source: NSW Government (2008)

Regulatory instruments

There are many different instruments to influence people's actions for achieving regulatory and policy outcomes – each type with its advantages and disadvantages. One useful way to categorise instruments is:

- Voluntary approaches – e.g. information, education, awards.
- Market-based or economic instruments – e.g. subsidies, taxes, tax waivers, trading schemes.
- Self-regulation – e.g. a code of conduct or accreditation scheme established by industry.
- Command and control regulation – e.g. set rules and laws enforced with penalties for non-compliance.

Effective enforcement strategies often include combining several instruments so that together they are the best option in terms of cost and effort. This approach may include 'networked regulation' and alliances where the regulator draws on capacity and expertise from third-party actors, who may be other regulators or non-state actors.

Combining regulatory instruments to enforce desludging in Indonesia

The city of Solo water service provider (PDAM) is developing an innovative smart enforcement approach to address illegal dumping of sludge into local rivers, as well as low household demand for desludging services, with assistance from USAID and IU-WASH.

A program for regular scheduled desludging by contracted private emptiers has been set up, for sludge to be discharged at the sludge treatment plant. The service is paid for by households through a compulsory desludging levy in residential water bills. An awareness campaign was targeted at households to encourage utilisation of the regular desludging service. The 'e-census' mobile phone based data collection system will allow the PDAM to gather data about household systems that will help identify households with inadequate on-site systems, so a program can be developed to bring them into compliance.

To ensure scheduled emptying and safe disposal takes place, private emptying service providers receive payment only after they provide evidence that a service was completed. This is enabled by a bar coding system, where the emptier must scan the bar code at the householder's property and at the sludge treatment plant using their mobile phone.

Source: IU WASH Pers. comm. 2016

Combining regulatory forces to achieve compliant septic tank construction in Bangladesh

Specifications for the design and construction of septic tanks are set by the Bangladesh National Building Code, but inadequately enforced by local regulatory agencies. In the city of Khulna, while the Khulna Development Authority (KDA) is responsible for approval of new building construction, it has limited resources and capacity to do so, and does not have designated roles or guidelines for checking compliance. Building approvals are often granted without detailed septic tank design drawings, and inspections are rarely conducted at any stage of construction. While the Building Code requires a licenced plumber to issue a completion certificate for the sanitary system, there is no system in place for completion or occupancy certification, or even for licencing and certifying plumbers.

SNV is supporting the KDA with developing an enforcement process in collaboration with the Khulna City Corporation (KCC) which has responsibility for waste management including ongoing performance of sanitary systems.

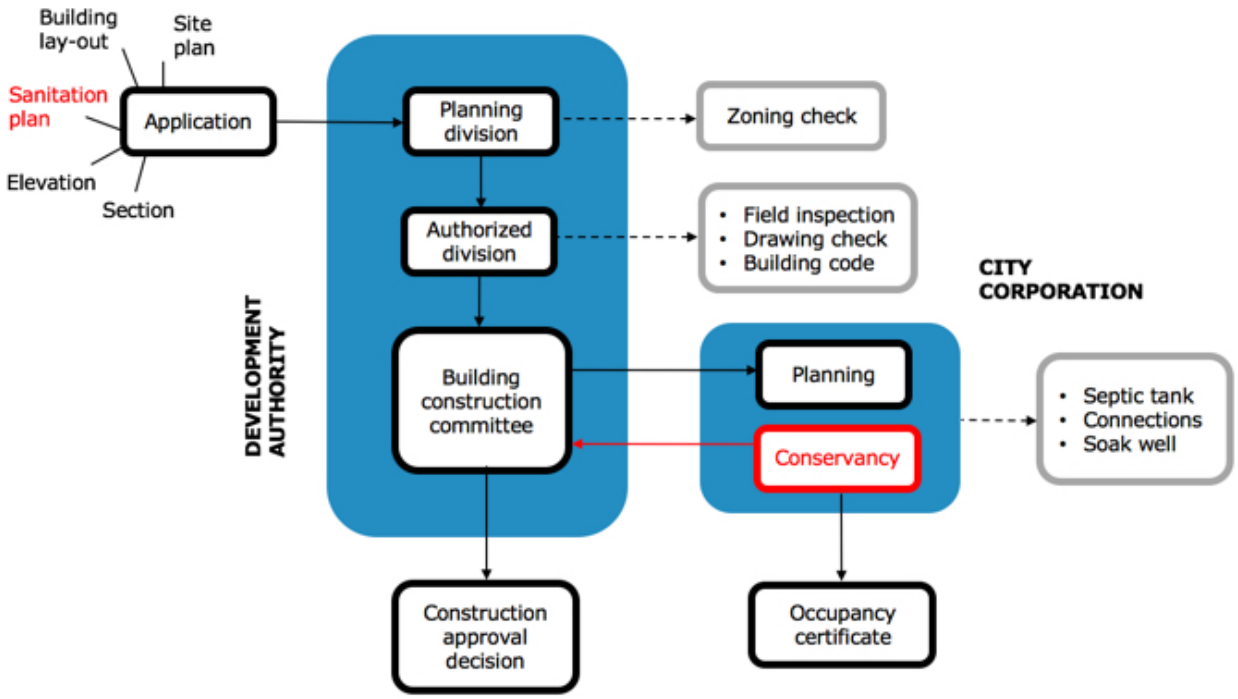

Figure 3. Key steps of an effective enforcement strategy

Under the joint KDA-KCC arrangement, KDA would provide revised guidelines for building construction approvals with clear guidance for septic tank design plans in the application. The KDA would also conduct inspections to ensure that construction is consistent with the guidelines and development application, including 'plinth level inspection' of the septic tank.

In addition, KCC would issue an 'occupancy certificate' after ensuring that the building's sanitary system met the appropriate standards. This 'occupancy certificate' should act as a key to obtaining a holding number, a utility connection and approval to receive other municipal services.

Source: SNV Pers. comm. 2016

Monitoring compliance

The robust monitoring of compliance activities and outcomes is important for establishing the legitimacy of the enforcement system – that is, there needs to be a credible likelihood of non-compliant activity being detected. Inspection and gathering information for monitoring can be costly, and monitoring every single activity may not be feasible or necessary. A smart approach to enforcement will consider the likelihood of incompliance to determine random inspections and audits, combined with complementary forms of gathering information such as citizen reporting or self-reporting to provide more information.

Complementary compliance monitoring to encourage safe discharge of faecal sludge in Indonesia

The City of Bandung is using a smart regulation approach to address and monitor illegal dumping of sludge. The City's water service provider (PDAM), who is responsible responsibility for sewerage, allows private emptiers to dispose sludge at sewer manholes on the basis of Memoranda of Understanding (MoUs). The limited number of MoUs (currently 17) are issued only to emptiers who meet minimum standards of business practice, thereby creating an incentive for other emptiers to improve practice to also become eligible to access the city manholes instead of travelling the distance for the remote sludge treatment plant.

The scheme is supported by the police who monitor emptying at manholes and impose fines any unauthorised emptiers accessing the manholes. Surveillance and reporting of illegal dumping elsewhere has also been expanded through the PDAM's campaign encouraging citizen monitoring, where the community is informed how to use smart phones to take photos and report infringements.

Source: IU WASH Pers. comm. 2016

Concluding reflections

In many countries and contexts, the challenges of achieving safe and sustainable urban sanitation outcomes can seem insurmountable. At the forefront of these challenges is how to enforce regulations and standards and ensure compliant behaviour by users (households, businesses, institutions) and service providers. This is particularly complex given the often limited resources available for enforcement, entrenched current practices, and apparent roadblocks posed by institutional, governance and political settings.

There is potential for 'smart enforcement' strategies to be more widely used in the urban sanitation sector. Indeed, many practitioners and governments are innovating in their approaches to motivating, incentivising and enforcing compliance for improving urban sanitation, utilising key regulatory concepts and approaches for 'smart enforcement' to suit their context. Whatever the strategy used, providing information and creating awareness will always be needed to make enforcement work. Information needs to be provided to target audiences about the reasons for the regulation, and how to comply or change behaviour. The authors hope that this summary brief will encourage and inspire readers to explore smart enforcement further as they pursue effective approaches to regulating and enforcing safe and sustainable urban sanitation.

About us

SNV Netherlands Development Organisation

SNV Netherlands Development Organisation (SNV) is a not-for-profit international development organisation with a long-term, local presence in over 30 countries in Asia, Africa and Latin America. SNV's global team of local and international advisors works with local partners to equip communities, businesses and organisations with the tools, knowledge and connections they need to increase their incomes and gain access to basic services – empowering them to break the cycle of poverty and guide their own development.

SNV's Urban Sanitation & Hygiene for Health and Development (USHHD) programme works with municipal governments to develop safe, sustainable city-wide services. The programme integrates insights in WASH governance, investment and finance, behavioural change communication and management of the sanitation service chain. We engage private sector, civil society organisations, users and local authorities to improve public health and development opportunities in their city.

As part of our USHHD programme, we have a long term partnership with the Institute for Sustainable Futures, University of Technology Sydney (ISF-UTS) focused on research and learning to improve practice and contribute to the WASH sector knowledge and evidence.

For further information please visit: www.snv.org

Institute for Sustainable Futures, University of Technology Sydney

The Institute for Sustainable Futures at the University of Technology Sydney (ISF-UTS) works with industry, government and the community to develop sustainable futures through research and consultancy. ISF-UTS seeks to adopt an inter-disciplinary approach to its work and engage partner organisations in a collaborative process emphasizing strategic decision-making.

For further information please visit: www.isf.uts.edu.au

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This learning brief draws on the following learning paper:

ISF-UTS & SNV (2017), Learning paper: *Exploring smart enforcement within urban sanitation.* Prepared by Institute for Sustainable Futures, University of Technology Sydney for SNV Netherlands Development Organisation, by Chong, J., Murta, J., Kome, A., Grant, M., and Willetts, J. Available online at www.snv.org/explore-more and www.uts.edu.au.

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