Smarter Regulation of Waste in Europe (LIFE13 ENV-UK-000549) LIFE SMART Waste Project

Action B14:

Analysing the situation and problems Mini guide 1

Helping you to make the right decisions in complex environmental situations

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Introduction

The Practical Guide on Designing Interventions to Deal with Waste Crime sets out a method to plan, test and evaluate the use of interventions. It is supported by Mini Guides that provide additional information for:

1. Analysing the situation and defining problems (this Guide)
2. Identifying interventions and delivery partners
3. Modelling solutions using iDepend - Getting Started Guide

This Guide comprises three sections:

A. Analyse/characterise the situation
   o Characterise the business, societal and environmental drivers and influences (see Box 2).
   o Characterise the legal, regulatory and enforcement levers (enablers) and barriers (see Box 2).
   o Gather information and intelligence to understand the vulnerabilities leading to waste crime.
   o Identify threats to people and the environment, and any other concerns, resulting from crime.

B. Define the problems to solve
   o Targets (who) - individuals, groups, organisations carrying out waste crime, and other groups or organisations that can influence criminals/criminal activity, or reduce/eliminate the threats.
   o Objectives (what, where, when) to address vulnerabilities/threats and decide what interventions may be used to help achieve objectives
   o Barriers that need to be removed to achieve objectives (interventions may be used to do this)
   o Summarise findings in a Problem statement.

C. Case Study (Waste Tyres) to demonstrate the approach.

Box 1. Sequence of activities and examples of evidence (shaded columns covered by this guide, unshaded columns covered by Interventions Mini Guide)						
A. Analyse the situation		**B. Define the problems to solve**			**C. Identify interventions**	
1. Drivers, enablers, vulnerabilities and threats		**2. Targets**	**3. Objectives**	**4. Barriers**	**5. Interventions**	**6. Delivery partners and resources**
Economic and social drivers	Threats to people or environment	Individuals	Protect environment	Lack of resources	Intervention 1	Police, Customs etc
Waste Flows	Actual or potential impacts	Groups	Detect crime	Legal blocks	What, where, when?	People
Regulatory and legal enablers and barriers		Companies	Deter criminals	Policy blocks	Who?	Equipment
		Influencers in supply chain, value chain	Disrupt waste flow			Time
					Intervention 2	
					Intervention 3	

A1. Analyse/characterise the situation

The Expert Group should gather and analyse information on the issues which might be leading to, encouraging or attracting waste crime. Consider:

- "What is it about the current situation that is causing or allowing waste crime to take place?
- "What are the vulnerabilities in the whole system that create circumstances favourable to illegal waste activities?"
- Vulnerabilities which cause (or may cause) a waste crime situation to arise and/or "barriers" to making a change to stop the illegal activities.

Good Practice Tips

1. Think beyond the criminal activities and illegal operators by using the assessments of situation, problem and targets to identify strategic problems and the changes needed, for example to remove/change/disrupt a waste flow upstream of the illegal activity.

2. Use "Problem Statements" to describe the circumstances giving rise to the waste crime, set out objectives, targets and potential interventions.

Use the guidance provided in Box 2, below, to help characterise the situation.

Box 2. Characteristics of the situation

The nature of the crime or illegal activity. This should include the public perception of the crime. Some examples might be:
- low risk non-compliance with permit conditions
- non-permitted activities
- deliberate misclassification
- falsification
- failure to comply with enforcement notices

The origins of the problems and the size and scope under consideration.

The degree of environmental harm. This should include the potential as well as actual harm.

Demographics. Consider the demographics of the industry in terms of numbers of companies, and size. Is the type of activity which could at times be illegal their main occupation? (As in a waste management company or water companies) or a "side product" as in a waste producer or chemical company? Do the companies have branded products that customers recognise? Do the companies rely on investment from banks and shareholders?

Market Conditions. In particular, with respect to waste flows and their proper costs and costs avoided (e.g. landfill tax) by deliberate or careless illegal activities. Are there payments for waste of systems of producer responsibility and fee-free waste collections, removing the exchange of money at point of collection which dis-incentivising illegal activity. Some aspects might be:

- Competitive local market conditions
- Changes in gate fees for supply and capacity of wastes
- Changes in landfill tax.

Waste flows and financial exchanges at each stage. This is obviously particularly important to understand with regard to waste crime situations. A value chain analysis might be useful to identify who is making money at which stages and where the target fits into that chain.

Regulatory Framework. At this point you might also want to consider the existing regulatory framework including the offences and penalties available: How "fit" is it to allow regulators to achieve their aims? The "Table of 11"[1] provides a rigorous process for considering the existing regulatory framework. You should also ask are there any currently underused regulatory powers (e.g. duty of care) that could be applied.

Society: The needs of society / environment and the tools, information and processes required to fulfil those needs. If you have used this approach to characterise the target then it might be sensible to do so for the wider society / environment.

Technologies: Technology is sometimes contrasted to behaviour, in that techno-fixes are presented as ruling out the need for individuals to change their behaviour. However, individuals and technologies interact, and this can influence the effectiveness of a technology in terms of its desired impact (e.g. smart meters and how they are used in practice). This interaction also enables new practices, and the meanings of these practices, to spring up and take hold quickly

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[1] Van der Schraaf, A.A. and Roessen A., (2014) Incentive framework to comply with regulations. . *OECD conference on Economic Aspects of Environmental Compliance Assurance.* Paris.

Box 2. Characteristics of the situation
(e.g. tweeting). Time & Schedules: Time is a finite resource that gets used in the course of carrying out everyday activities. Like money, it is a scarce resource that people have to allocate across competing demands. Changes in schedules (e.g. set by formal institutions) can often result in changes in individuals' practices, for instance, school hours and commuting habits. Infrastructure: Hard infrastructure relates to the firm boundaries to people's behavioural choices presented by the environments in which they live (for example, without a bus service, there will be no chance of bus use). Such factors can often prevent even motivated people from undertaking the behaviour in question. Objects: Many behaviours (e.g. cycling to work) involve the use of objects (e.g. a bike, cycle racks at work), and the lack of necessary objects can stop a practice from being undertaken. As with technologies, objects and individual users interact, such that sometimes the object can 'act back' on its owner and heavily influence how much time an individual spends on which practices (e.g. waste in the home 'acts back' on the householder who spends time cleaning and sorting recycling for collection).

B. Define the problems to be solved

B2. Identify targets

In this step, you identify who might be the "**target**" of any interventions.

There is a Case Study demonstration of this step at section C3.

Good Practice Tip

Try to avoid only identifying the "obvious" targets such as non-compliant or criminal operators rather than also including the higher level and more strategic targets.

You should bear in mind not just "who is undertaking illegal waste activities" but also who is providing the waste, who is creating incentives for the activity, who is providing the tools and equipment etc. You also need to consider the end users of waste (or recycled/ reclaimed materials) and consider the policy makers and lawmakers who might be able to remove some of the vulnerabilities you have identified in step 1.

Ask yourselves, why choose the target you have and who else might you have targeted? What behaviour of the target do you want to change? And will that allow you to achieve your objectives?

These are some examples of targets.

- the illegal operator
- licenced landfill site
- licenced waste management company
- waste producer
- end user of waste (or recycled/ reclaimed materials)
- shipping or transport companies
- trade bodies
- governments,
- policy makers
- EU regulators

Box 5 provides help on analysing the attributes of the targets. This will help you to select the appropriate interventions, and who is best to deliver them.

Box 5. Attributes of targets. You have to think about each one of the following:	
INDIVIDUAL – factors that shape behaviour	SOCIAL – factors that shape behaviour
Values, Beliefs, Attitudes: The basic elements of an individual's motivational system, moving from the most abstract and broad based values (e.g. pursuit of wealth or power), through beliefs or more particular worldviews (e.g. that we should preserve the environment for future generations) to attitudes, which are individual's views on specific things such as objects, activities or other people (e.g. I should not have to pay more for sustainable products).	**Opinion Leaders**: Opinion leaders can be thought of as individuals who have a strong influence over others, for instance in shaping social norms. In social networks, these people could be network nodes, who connect together numerous others. In everyday life, examples could include faith leaders or celebrities.
Costs & Benefits: The cost/benefit calculation is the basic method of decision making, in which the	**Institutions**: Institutions influence how groups of individuals behave when they are engaging in particular activities or interacting with other people. Institutions can be formal (such as the legal system) or more informal (such as family life). In either, shared expectations about how members should behave are

Box 5. Attributes of targets. You have to think about each one of the following:

perceived benefits (or 'utility') of acting are weighed against the perceived costs of doing so, including non-monetary costs such as time (e.g. Deciding whether the extra time spent walking to work is worth the health and environmental benefits). However, recent research has shown that much of this decision making is based on mental shortcuts, which can introduce errors, rather than effortful calculations.

Emotions: How people feel about something – their emotional response – is one aspect in their behavioural decision making (e.g. fear, virtuousness or apathy). Some theories contrast 'hot' evaluations, based on emotions, with 'cold' evaluations, based on attitudes and rational choice.

Needs: What are the needs of the target? Is it for example to make easy money, or is it to run a long term profitable and responsible waste business?

Tools / Information /Support. What are tools, information and support needed to satisfy the targets' needs? For example knowledge of waste arisings, transport and machinery and people prepared to supply waste and provide land or property to dispose or store it.

Skills: Skills are the things a person needs to know in order to carry out a behaviour. These include both procedural knowledge ('know how') and factual knowledge ('know what') (e.g. fuel efficient driving techniques).

Habit: Habits are those behaviours which are undertaken automatically and frequently, with little conscious thought, and usually in the same time or place. These can also be understood as routines (e.g. commuting by car or using the tumble drier even in good weather).

Governance: This is most relevant where the target is a company. Issues to consider are: can the company identify and manage its risks? Is it in control? Can it make the right judgement and decisions and balance its legal, operational other issues. Internal communication is an important aspect of governance in larger organisations. If internal communications are poor then environmental behaviour of employees may be poor even with the best company values.

Other Illegal Non-Waste Activities of the target.
Is there evidence or suspicion that the target may be infringing other regulations such as tax, vehicle, health and safety, planning law etc?

transmitted (e.g. eating together as desirable). Shared understandings may also take shape as explicit rules and regulations.

Norms: People's perception of how other people (especially 'significant' others) would view their behaviour. In turn these perceptions have a strong influence on the behavioural decisions that people make (e.g. people being aware that they are not supposed to fly for domestic trips, but observing family, friends and others doing it).

Roles & Identity: Roles relate to a person's different repertoires of behaviours and attitudes, based on the role they are fulfilling at the time (e.g. mother, employee, football supporter etc.). The related concept of identity is a person's innate sense of who they are (e.g. being a good person or identifying as a 'green').

Tastes: Tastes can be understood as preferences through which people signal their belonging to particular social groups (e.g. kinds of music listened to, or table manners). These preferences are collectively developed, and are based on shared understandings of appropriate and desirable conduct.

Meanings: Meanings are culturally constructed understandings of daily life which can include images, ideas, metaphors, and associations. These meanings effectively set the frame for a behaviour or practice, and in so doing influence how it is undertaken, and how it is understood (e.g. smoking in popular culture used to mean sophistication and glamour, but now is more likely to mean an unhealthy lifestyle).

Networks & Relationships: Connections between individuals, which people identify and draw upon in identifying and carrying out possible courses of action (this is sometimes called 'social capital'). In aggregate, social networks can help to explain how ideas, innovations and behaviours can spread e.g. growing your own food.

Influence of customers, local community, pressure groups etc: Are the activities of the target visible to people or groups nearby who may be able to exert pressure on the target directly or via the media, elected representatives or regulators?

B3. Setting objectives

➢ Having articulated what is wrong in your analysis, you should set objectives to improve or change the situation, for example to remove threats, or to eliminate or 'squeeze' vulnerabilities.

➢ In some cases, you may have been given objectives.

➢ The interventions that you develop should help to achieve your objectives. You should think about what behaviour of the target you want to change, and then what will happen as result and what outcomes that might result in.

➢ You may start with a broad outcome based objective and drill down into what has to happen to realise that outcome. You need to think through the chain of events, sometimes called a logic map[2] and you can further develop your logic map as your knowledge of the other aspects grows.

➢ A demonstration on how this step might apply to a case study is shown in section C3, below.

Box 6. Examples of Objectives

- To stop an activity
- To bring an operator into compliance
- To restore or remediate
- To punish
- To deter others from getting involved in illegal activities
- To remove the incentive for illegal activity
- To achieve an environmental aim.
- To improve compliance generally for particular sectors, waste flows etc.

Good Practice Tips

1. Use the "S.M.A.R.T." approach:

Your objectives should be <u>Specific</u> and <u>Time</u> bound as possible in terms of the who what where and when. For example: "*Stop waste management company x involvement in illegal waste activities within 6 months, but allow them to continue operating their legal waste operations*". They should also be Measurable, Achievable and Realistic in the light of your analysis.

2. Provide "Problem Statements"

Before you start building a solution - including possible interventions - you should provide a clear statement of the problem in terms of the situation, vulnerabilities/threats, objectives and targets. Doing this you will also help you to:

- review your objectives so that they are SMART.
- decide whether you need to gather more information, before moving on to Stage 2.

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[2] Hills D. (2010). Logic mapping: hints and tips for better transport evaluations.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3817/logicmapping.pdf

C. CASE STUDY: EXAMPLES OF HOW EACH STEP MIGHT APPLY TO WASTE TYRES

C1. Situation Analysis

Society
- They have a need for a clean environment and low crime rates
- They do not have any tools or information themselves to do anything about fulfilling those needs and the only support to they have is SEPA and the police.
- They do not have any processes to fulfil their needs.

Material
- Waste tyres cannot be landfilled
- There are exemptions for storing less than 1000.
- There is not a reliable, consistent, nor big enough market for re-use and recycling.
- Waste tyres are highly flammable

Demographics
- The bulk of waste tyres come from a small number of large waste tyre dealers
- The legitimate waste management companies are large and few in number
- The number of potential sites and landowners for storing waste tyres is massive

The nature of the crime is not exactly clear, but let's assume it is:
- Illegal stockpiling
- Fires
- Fly tipping
- Sham re-use and recycling

C2. Defining Problems

Development of specific problem, or concerns, that you need to act upon.	
What is wrong?	**What might we need to act on?**
There are exemptions for storing less than 1000 and there are lots of small stockpiles	Remove the exemption
When demand for waste tyres falls the benefits of illegal activity (fire) outweigh the costs. And there is not a reliable, consistent, nor big enough market for re-use and recycling.	Increase demand
The criminals need transport, land and property to carry out waste crime and other crimes: tax avoidance, vehicle planning etc.	Joint operations with police, LAs, HMRC etc.to identify their activities, movements, transactions etc.
There is a financial incentive for tyre dealers to use cheapest waste disposers	Move payments up the chain: producer responsibility schemes or tax
Once tyres have left tyre dealers' premises their source cannot be traced.	Promote use of technology to trace tyres. Smart water, UV markings etc.
There are considerable rules and regulations around waste activity, in particular duty of care, but that is rarely enforced.	Increase fear of being caught, make example of someone, email all waste dealers.
Society want a clean environment and low	Provide society with process, tools & support for

Development of specific problem, or concerns, that you need to act upon.	
What is wrong?	**What might we need to act on?**
crime rates, but have no tools or support to deal with waste tyre crime.	them to help stop illegal waste tyre activity

C3. Demonstration of Targets

Potential Targets are:
- Tyre dealers (garages)
- Waste Management Companies (who take waste tyres away from garages)
- Landowners where tyres are stored
- Tyre manufacturers
- Tyre recovery Association
- Shipping Companies who export tyres

Assumptions regarding attributes of tyre dealers:

Individual
- Their values, beliefs and attitudes are probably favourable to compliance.
- They do not have the skills to comply with duty of care responsibilities
- The costs of using reputable waste companies to remove tyres is high with no perceived benefits
- They may now be in the habit of using less reputable people to remove waste tyres

Social
- Their roles and identity is focussed on the technical aspects of their job and their customers not on the tyre pile at the back of the garage

Material
- There is no tax or producer responsibility system in UK
- Once tyres have left their premises their source cannot be tracked back
- There are considerable rules and regulations around waste activity, in particular duty of care, but that is rarely enforced.

Drivers and Enablers
- Regulatory drivers are probably not strong enough as there are plenty of laws and penalties but they must assume they will not get caught.
- Economic Drivers (indirect). There are no indirect economic drivers such as shareholder pressure or customer pressure because these groups do not know what happens to tyres once they have left the dealer.
- Economic drivers (direct). There are benefits in paying lower charges for tyre removal.
- Social Drivers. No-one can tell what happens to their tyres so no social pressures.
- Governance. The management may or may not be able to control the actions of its staff. That is something we need to find out. I.e. do the top management know about disposal from individual garages?
- Ethos may or may not be favourable to compliance. We need to find that out.
- Capacity. We assume that they know what to do comply but choose not to
- Fixed characteristics such as size, maturity, location etc. (See above)

Other
- Some companies charge less per tyre than the fee the dealers charge to customers
- They have tools and information and support for removing their waste tyres.

Assumptions regarding attributes of waste management companies

Individual
- Their values, beliefs and attitudes may or may not be favourable to compliance.
- They see that if demand falls the benefits of illegal activity (fire) outweigh the costs
- They have the skills to comply but are not doing so because of above.

Social
- The norms among some individuals they are involved with (some landowners and small tyre dealers?) are to have little or no regard for the law or the environment.
- They have criminals in their networks and relationships

Material
- Waste tyres cannot be landfilled
- There are exemptions for storing less than 1000.
- There is not a reliable, consistent, nor big enough market for re-use and recycling.
- Waste tyres are highly flammable

Drivers and Enablers
- Regulatory Drivers are probably not strong enough as there are plenty of laws and penalties but they must assume they will not get caught.
- Economic Drivers (direct). There is a direct economic incentive not to properly re-use and recycle if they can keep stockpiling
- Economic Drivers (indirect). There are only indirect economic drivers to the reputable companies as the others do not rely on shareholders, customers etc.
- Social Drivers. The smaller less reputable companies have criminals in their networks and relationships and the norms among some of the individuals they are involved with are to have total disregard for the law or the environment
- Governance. We assume the criminals are organised and can control who does what
- Ethos. They have no compliance ethos.
- Capacity. We assume they do not know in detail how to comply
- Fixed characteristics such as size, maturity, location etc.

Other
- They need to make money
- They have the tools and information to remove, transport and store waste tyres and support from some tyre dealers and landowners.
- But the support they need to re-use and recycle is limited and out of their control

C4. Setting objectives

The objective is not stated in case study but some options might be:
  i.   Stop mismanagement of waste tyres
 ii.   Stop environmental harm from waste tyres
iii.   Stop environmental harm from mismanagement of waste
 iv.   Stop the illegal waste tyre waste activities of criminals
  v.   Maximise recovery of metals from waste tyres
 vi.   Maximise legitimate "re-use" of waste tyres.
vii.   Stop the waste management business involvement in illegal waste tyre activities
viii. Deter others from getting involved in waste tyre crime