

Policy Briefing

Adopting a Strategic Approach to Tackling Litter

Summary

- Litter is a serious problem that causes significant environmental and social impacts.
- Littering is not new, but plastic litter is a serious concern because of its abundance and longevity.
- Measures to tackle litter have been in place for many years, yet people and organisations still litter. Action is needed by institutions at EU, national and local level. Current strategies and plans to deal with litter are of limited scope due to the limited competences of the organisations involved. Further, the measures adopted are often limited in their implementation.
- This briefing proposes a hierarchical approach to tackling litter – firstly implementing a suite of measures to prevent or reduce it; secondly measures to remove it; thirdly measures to reduce the harm/impact of the litter that remains, such as ensuring use of material which are not long-lasting in the environment.
- This integrates with the waste hierarchy and recognises the real-world problem that litter is waste over which no one has control, and which is not addressed by the waste hierarchy.

Introduction

Littering is the deliberate or accidental depositing of waste into the ambient environment. It may be done by individuals, e.g. throwing packaging onto a beach. It may be done by business, e.g. fly tipping waste into a woodland. Litter is not a new phenomenon. Indeed, humans have discarded items since the earliest times. What is new is the materials being discarded, the scale at which they are discarded and how long they remain present in the environment.



Litter plagues the environment – the ocean, beaches, rivers, forests. It plagues our streets. It is a nuisance, but, more than that, it causes serious harm. The physical presence of litter can kill organisms (through, for example, trapping or smothering marine wildlife). The degradation of plastics to microplastics can lead to internal harm for animals and humans. Further, litter can contain toxic substances that leach into the environment affecting biodiversity and human health through exposure and ingestion. Litter also causes huge economic^{1, 2} and social³ costs. The Clean Europe Network estimates that road litter alone in Europe costs around €1 billion per year to clean.

The principal concern today is plastics, due to their abundance, pervasiveness, and persistence. A plastic bag is a problem long after a paper bag has disintegrated. Plastics are also cheap, and a throwaway culture has developed. Together with rising populations, this means that the problems of littering are on a scale not seen before. Action, therefore, is needed.



Measures to tackle litter are some of the oldest environmental or health policies adopted by societies. In post-war Europe, littering was illegal in one way or another in most EU countries, long before the first EEC (EU) environmental law was adopted in the 1970s. More recent EU law has sought to tackle litter in different ways. However, it is not comprehensive in its approach. Some measures affect individual products (e.g. single use plastics) or establish general target setting (e.g. the Marine Strategy Framework Directive).

More could be done at EU level, but also many actions are needed at the national or local level as they must be tailored made to local situations and communities . However, studies on plans and strategies to tackle litter have found that these are constrained by the boundaries (geographical and political) of the authorities producing those plans and, therefore, do not include the full range of possible interventions which would tackle litter effectively.

This briefing proposes a more strategic approach to tackling litter. It proposes a hierarchy of actions ranging from measures affecting the nature of the products we consume to how to address the behaviour of materials that find their way into the open environment. To do this requires action at all governance levels. This will reduce litter and the harm that remaining litter causes. However, this briefing is based on the assumption that if there were an easy solution or a quick fix, it would have been adopted after decades of attempts to tackle litter.

A Strategic Approach to Tackling Litter

It is clear, therefore, that wider joined-up thinking is needed to address the serious problem of litter. Action by EU law makers or local administrations alone will not be sufficient. Proper strategic and integrated thinking is needed – identifying different measures which together can reduce the problem.

The approach set out in this briefing is, at one level, straightforward. It is based around a hierarchy of three elements:

- Prevent and reduce – all policies and actions to stop litter entering the environment in the first place.
- Remove – where littering occurs, policies and actions should be adopted to remove it.
- Reduce impacts – where removal is not possible, policies should be adopted to lessen the impact on the products and materials entering the environment.

The difference to any “strategy” to tackle litter that currently exists is that this encompasses necessary actions that are beyond the competencies of individual administrations that are currently developing such strategies (EU, national or local level).

The approach mirrors the well-known waste hierarchy (more on this below) in that its first aims are to reduce or prevent litter. However, where littering occurs, the approach should be first to have measures to try to remove it from the environment and, if that is not possible, adopt measures to reduce its impact in the environment as far as possible. This represents thinking beyond that of the waste hierarchy. The waste hierarchy concerns material over which we have some form of control (which we can recycle or dispose of, etc.). A strategic approach to litter recognises that litter is a loss of control over materials, but measures can still be adopted to influence the impacts of this uncontrolled material.

Therefore, an important aspect of this strategic approach is that it accounts for real world non-implementation of policies. As noted earlier, littering is nothing new and this strategy assumes that people, businesses and criminals will continue to break the law (in addition to accidental release of material into the environment). To assume that measures to prevent littering will solve the problem by themselves would be dangerously naïve and would assume a radical change in human behaviour. It is essential, therefore, that measures are adopted that account for continued littering and so aim to reduce its impact.

This approach is illustrated by the table below (Table 1). The three tiers of the hierarchy are illustrated by examples of the types of interventions or actions that might be adopted for that level. These examples are not meant to be comprehensive. Some are well established types of measures and new types of interventions could always arise. Some may not be appropriate in some circumstances.

Table 1 The Hierarchy of Actions to Tackle Litter with Examples

Hierarchy	Examples of Actions
Prevent/Reduce litter and its harm	Market intervention to reduce litter
	Public information
	Ban use of specific products or materials
	Improved waste collection, litter bins, etc.
	Improved enforcement on dumping, littering
	Port waste reception facilities
	Deposit return schemes
Remove litter from the environment	Street cleaning
	Litter collection from beaches, nature areas
	Fishing for litter
	Collection systems in rivers, estuaries
Reduce impacts of litter	Change materials of littered products to cause lower impacts

It is critical, however, that these interventions are developed in a joined-up way. Measures adopted by EU, national or local institutions may each deliver specific outcomes, but gaps and inconsistencies will remain. The essential outcome should be to design the most effective suite of policies at all levels in a strategic way to prevent/reduce litter as far as possible, take action to remove as much as possible the litter that does occur and, finally, reduce the impacts of what remains. The precise suite of effective policies will vary for different countries and areas (e.g. coastal, inland, urban, rural) and potentially for different products, materials, etc.

The need for actions lower in the hierarchy will depend on the effectiveness of actions higher in the hierarchy. If one can be confident that interventions will prevent littering (of a particular product for example), then there is no need to worry about collecting the litter or worrying about how its composition affects its impact on the environment. The most obvious example of such an intervention would be a ban (as with the Single Use Plastics Directive). Conversely, if such interventions are not fully effective, then other interventions lower in the hierarchy may be needed.

Interaction with the Waste Hierarchy



The waste hierarchy has been the cornerstone of EU policy since its inclusion in the Waste Framework Directive. The hierarchy of objectives is to reduce waste, reuse waste, recycle waste, recover (energy from waste) and, finally, landfill. Every effort (on product design, materials, management) should aim to implement it. However, it is important to stress that the hierarchy concerns the management of materials over which there is control (as products, as waste).

Litter is not the bottom of the hierarchy, it is a failure of basic waste management. Litter is uncontrolled waste. If this material stays in the environment it is lost to the circular economy and lost to management under the hierarchy to minimise environmental impacts. The waste hierarchy is about the choices institutions make over the materials and waste society controls. Litter is waste that is no longer controlled.

The different interventions within a litter strategy hierarchy link perfectly into the waste hierarchy. Some prevention measures for litter are prevention measures under the waste hierarchy. However, many concern the retention of end-of-life materials as reused products, recycled materials or general controlled waste (which would be managed according to the principles of the waste hierarchy). Similarly, interventions to remove litter concern waste that has become uncontrolled, but capturing it again enables uncontrolled waste to be controlled and, therefore, recycled, recovered or disposed of as appropriate. The littering measures concerned with reducing impacts of litter that has entered the environment target fully uncontrolled waste which, by definition, cannot be subject to an action in the waste hierarchy.

The Need for Action Across Governance Levels

A particular challenge in implementing a strategic approach to littering is that, in the EU, no single governance level is able to take all of the necessary measures to deliver a strategy. Action is needed at EU, national and local level. Some measures are best (and may only be) undertaken at EU level – such as some product policies affecting what is available on the EU single market. Some measures would be largely national in character (e.g. some charges or taxes to influence behaviour). Others are local (e.g. decisions on street cleaning, provision of waste collection facilities). A recent study⁶ interviewing policy makers from 27 European countries concluded that “Bottom-up public initiatives (e.g. litter campaigns) are not considered sufficient to address marine litter problems without a top-down national policy framework to regulate this common resource problem”. Intervention is needed by different actors.

The role of different governance levels allows for measures to be adopted where most appropriate. There are also potential problems with this. For example, gaps may arise, e.g. lack of local funding may mean that readily identified interventions are not adopted. Further, it may be difficult to determine at what level to make a decision. For example, a decision at EU level to support products of particular design or materials (or oppose them) based on how they perform in waste management (e.g. collection and recycling) is fraught with problems as this varies hugely between Member States (and within them).

Achieving coherence and integration of interventions at different governance levels to deliver the most effective suite of measures to tackle littering is far from easy, but it is necessary.

Biodegradable Materials

One type of intervention to reduce the harm of litter that cannot be removed from the environment is to change the nature of the material, such as ensuring that it degrades more quickly than existing litter. For plastics this may mean substituting plastic for a less harmful material. It might mean substituting a non-biodegradable plastic for a biodegradable one. SEALIVE is exploring different biodegradable plastics – the polymers and specific products made from them, testing how these behave in the environment.

It is particularly useful to look at the effect of the EU Single Use Plastics Directive. This is commonly viewed as an instrument which has banned products. Indeed, it has. It bans items such as plastic cutlery or plastic straws. However, in effect what it does is not to ban cutlery or straws, it bans the use of plastic for those items. Therefore, it is an instrument which promotes material substitution. Today we see food being sold accompanied by wooden forks and drinks with paper straws.



In relation to our proposed strategic approach, therefore, the directive is an instrument that operates at the first and third levels – it prevents the sale of particular products that cause a litter problem.

However, the effect is not necessarily to reduce the number of disposable forks discarded on a beach – rather that the harm those forks cause is much reduced due to the different material they are made from. Of course, additional measures can be adopted to encourage people to dispose of these wooden and paper items more responsibly, but the material substitution recognises that some littering will continue and it is important to reduce the harm that that will cause.

In looking at whether the use of biodegradable materials is a useful intervention to reduce the impact of litter, it is necessary to examine exactly how that litter behaves in the environments in which it occurs. A material may biodegrade in shallow seas or in soils in a woodland. It might not biodegrade in cooler waters in the deep ocean. A decision as to whether using a biodegradable material is beneficial should be based on the net impact and whether another intervention (e.g. a ban) would produce a greater net beneficial impact (including taking a realistic view on likely levels of compliance).

There is considerable resistance in some quarters to accepting that biodegradable plastics are a possible tool in reducing the harm that litter causes. Some of this comes from those who assume that littering can be stopped (without evidence to that effect). However, the use of these materials to tackle litter is being adopted. A good example is in the use of mulches in agriculture. The use of conventional plastic mulches is problematic.



Farmers have problems removing used plastic and this can result in plastic litter entering soils and local water courses. Biodegradable plastics retain the function of the mulch but have lower impacts. Biodegradable plastics are currently not appropriate for material substitution to reduce harm from the impacts of litter in the environment in many environments, but they may be for some. Further, innovation in materials and products may mean what is or is not appropriate today may be different tomorrow.

Recommendations

- Research should be undertaken into the most effective combination of measures to develop comprehensive litter control strategies. This should recognise that effectiveness of measures and choice of measures will vary across Europe.
- EU and national institutions should identify obvious gaps in the suites of measures applied and seek to fill them in an integrated way.
- Particular emphasis is needed on two elements:
 - Determining what are the main causes of failure for litter prevention – behaviour, collection facilities, etc.?
 - Determining what might be done to lessen the impact of types of litter entering the environment, when other measures have failed.

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- ⁴ <https://cleaneuropenetwork.eu/en/facts-and-costs/aup/>
- ⁵ Kalfagianni, A., Altvater, S., Fernandez Bautista, P., Krueger, I., Pavlova, D., Schmidt, S., Smith, L. O., van der Grijp, N. M., & Veiga, J. M. (2015). Best practices for marine litter reduction in the EU. EU FP7 Project CleanSea D5.15.
- ⁶ Sofia Frantzi, Roy Brouwer, Emma Watkins, Pieter van Beukering, Maria Conceição Cunha, Hanna Dijkstra, Sem Duijndam, Hela Jaziri, Ikechukwu Charles Okoli, Mia Pantzar, Ignacio Rada Cotera, Katrin Rehdanz, Karsten Seidel and George Triantaphyllidis 2021. Adoption and diffusion of marine litter clean-up technologies across European seas: Legal, institutional and financial drivers and barriers. *Marine Pollution Bulletin*, 170, September 2021, 112611. <https://doi.org/10.1016/j.marpolbul.2021.112611>

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