

# Green Nudges Playbook

A practical guide to developing and implementing green nudges to reduce single-use coffee cup consumption.



# Green Nudges Playbook

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# i. Background & Context

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## Introduction

**This playbook is a practical guide for policymakers who wish to embed behavioural science insights into policymaking to help citizens live more sustainably.**

It is a **template with general guiding principles** to support policymakers when partnering with businesses to **scope and implement behaviour change initiatives that discourage the consumption of single-use coffee<sup>1</sup> cups**, in favour of reusable alternatives.

Grounded in research and practical experience, this playbook provides practical guidance and will support the Swedish EPA's roadmap for sustainable plastics use. However, it should be noted this is **not** a universal step-by-step manual, as every context is different and will need to be considered separately.

Although the playbook focuses on single-use coffee cups, the principles can be applied to similar products and behaviours, such as plastic water bottles. Equally, whilst the playbook focuses on the Swedish market and policy context, the principles may be considered for other countries with similar purchasing habits and consumption contexts.

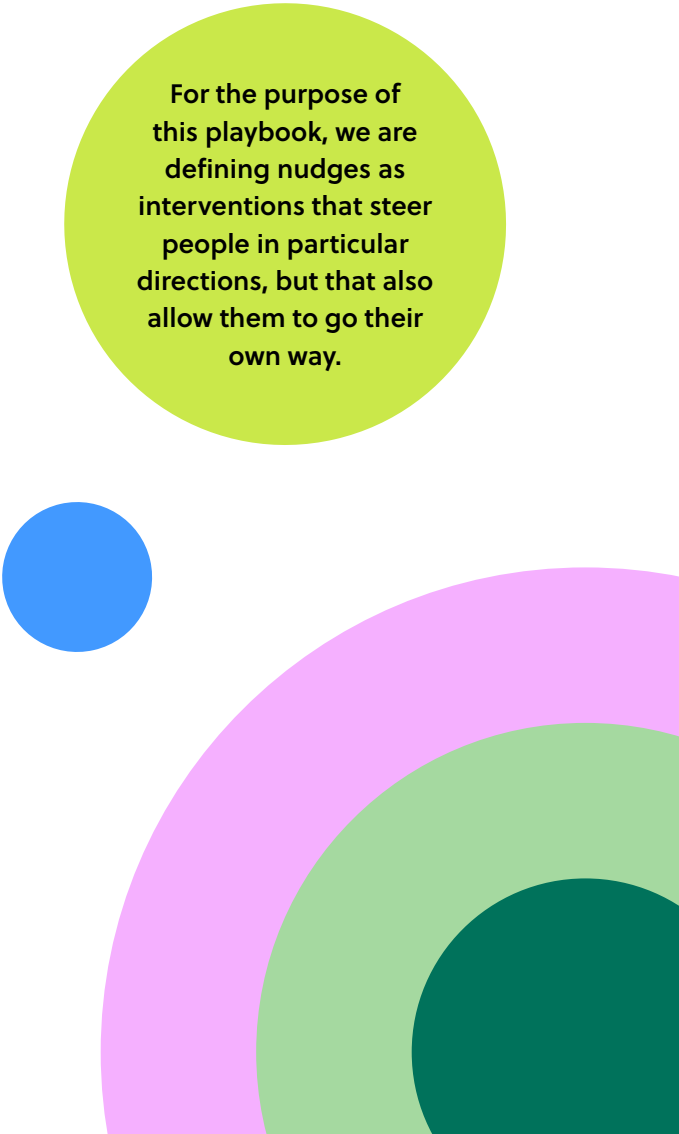
## Policy Context

The time for green nudging is now, as countries around the world take action on plastic pollution. The [EU Single-Use Plastics Directive](#) is tackling the ten single-use plastic items most commonly found on Europe's beaches, banning those where available and affordable alternatives exist.

A staggering [15.6 billion paper cups containing plastic](#) were estimated to be used by the EU-28 in 2015. In Sweden alone, [500-1000 million coffee cups](#) are estimated to be used each year, and their popularity continues to increase across the world. With their market value estimated to reach [US\\$21.2 billion by 2026](#), they are an impactful target of bans and green nudges.

By 2024, Sweden will be banning single-use cups that contain more than 15% plastic, and all businesses providing takeaways must offer a reusable option. However, where bans are not an option, nudges can dictate small alterations to the infrastructure and architecture of society which can allow organisations and governing bodies to nudge individuals into more sustainable behaviours.

Alternatively, nudges can be combined with policy interventions to increase the impact of the desired goal, and reduce the effect of unintended consequences.



**For the purpose of this playbook, we are defining nudges as interventions that steer people in particular directions, but that also allow them to go their own way.**

## ii. Introduction to Green Nudges

### Why do we need green nudges?

**We know that the best intentions do not automatically lead to behaviour. Nobody necessarily wants to act in an unsustainable way.**

However, when we are faced with the rushes and stresses of daily life, good intentions may not always be enough. Therefore, policymakers have an important job when designing successful policies; making desired behaviours easier for citizens to do. In this case, the desired behaviour is switching out single-use cups for reusable alternatives.

Green nudges are the perfect solution. Based on behavioural science, a nudge is an intervention that utilises human nature to assist people in making decisions towards a desired behaviour. This works because the brain desires convenience and has limited cognition, meaning that it automatically takes shortcuts to minimise the effort it needs to put in to reach a decision.

Policymakers and businesses can take advantage of this by changing the environment in which citizens operate, which is known as the choice architecture. It is important to note that green nudges do not restrict citizens from doing something unsustainable or making their own choices, such as a ban might. They simply make it less likely, using a range of techniques.

### Examples of Green Nudges

**Highlight the loss, not the gain.** Losses can be felt more acutely than gains of the same value, across socio-economic groups

**For example...** In Germany, [a non-monetary framework was used to encourage households to reduce energy consumption](#). In the gain incentive, households were told a tree would be planted if they reduced energy usage by 5%.

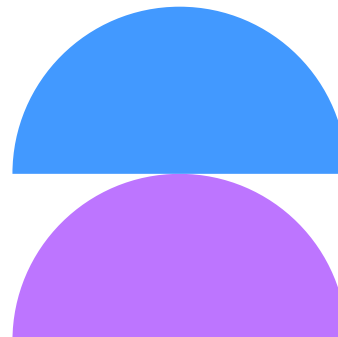
In the loss incentive group, households were told that the tree would not be planted if they did not reach 5%. The gain group reduced energy by an average of 2%, but the loss group were successful in reducing energy by 5%.

**Rewarding or incentivising citizens to use a reusable cup (or disincentivising the use of single-use cups)**

**For example...** In the UK, Starbucks partnered with Hubbub to [trial a 5p charge](#) on any takeaway hot drinks in single use cups. They observed an increase in reusable cup from 2.2% from 5.8% and made the decision to roll it out nationwide.

**Message framing can be a powerful tool to boost nudges, and can be framed both positively or negatively**

**For example...** to influence the use of plastic bags at a supermarket, [message framing nudges were used](#). The study trialled a positive message vs. negative message vs. no sign; each combined with both asking for a bag vs. not asking for a bag. The study found a significant and positive difference between subjects that were exposed to an intervention compared to those in the control conditions.



## Examples of Green Nudges (continued)

**Reframing the context of coffee purchasing so that the default option is no longer to purchase coffee in a single-use cup, but instead in a reusable one**

**For example...** Princeton University's ['Drink Local' program](#) reframed institutional norms such that the new default was to use a reusable bottle, rather than purchase bottled, by providing all incoming students with a free university-branded reusable bottle. 72% of students who kept their bottle reported never purchasing bottled water, compared to 59% of those who did not receive one.

Furthermore, support for a bottled water ban on campus received higher levels of support amongst bottle owners than those who did not receive one. This relationship was mediated by (lower) levels of bottled water consumption, indicating that switching the default encourages behaviour change first and attitudinal change second.

**Providing additional services to encourage reusable cup use**

**For example...** In 2009, Washington University at St. Louis banned the sale of bottled water and observed a 39% decline in sales of bottled drinks in the first six years. However, the success of the program was attributed to the university retrofitting more than 100 existing water fountains and installing more, which meant that students did not simply opt for alternative bottled drinks.

**Creating new social contexts in which using a reusable cup is the norm, and there is clear social proof that others are doing so**

**For example...** More than 300,000 households throughout the USA received a Home Energy Report from their provider, which compared [their energy consumption with that of their neighbours](#).

An emoji conveyed either approval for those consuming below the average (😊) or disapproval for those consuming more (😞). On average, energy consumption decreased by 2.0%, which may not sound like much but is the equivalent saving expected from a short-run price increase of 11-20%.

Similarly... In Sweden, 13,000 households in Partille and Varberg municipalities were provided with the [weight of their neighbours' waste generation](#), while 7,000 were not. On average, the informed households reduced their domestic waste by 8-10% when compared to the non-informed households – primarily due to increased recycling.

Note – it is important to communicate the norm, such as providing feedback for how popular a behaviour is. For example, highlighting that in the UK, [reusable cup sales have increased by 127% at Starbucks in two years](#) – rather than stating they represent 5% of overall sales.

### Why consider supporting green nudging in the policy space?

The benefits are numerous.

- There is no time like the present to support green nudges – [94% of European citizens say that protecting the environment is important to them](#), but can feel overwhelmed or unsure of the best action to take. Nudges can provide a guidance for citizens to take action.
- Behaviour is driven by a range of influences, many of which are conscious but many of which are not. If the continued use of single-use takeaway coffee cups was driven by a lack of knowledge on the negative impacts of plastic pollution, the solution would be to raise awareness about this issue.

However, this is not the problem. Instead, current infrastructure and social norms hinder **motivation** to act. Green nudges operate by increasing motivation, both conscious and unconscious (sometimes called **reflective** and **automatic**).

- Green nudges influence decision-making in a timely manner, at the crucial moment when decisions are made. There is no way that citizens will forget what they are being asked to do if the decision is made at the point of sale in a coffee shop.

- Green nudges are **cost** and **time-effective**. They can deliver significant savings from a small investment.
- Green nudges are based on decades of scientific literature and practical experience, an evidence base that is continuously growing and evolving.
- This 'softer' persuasion method ensures that citizens do not feel obligated to do one thing or another, or feel that their free will is threatened, which can lead to backlash and negative consequences.



### Reconciling green nudges with traditional policy instruments

Green nudges can act as a 'soft' **precursor** to 'hard' regulation or support the implementation of harder measures.

Policy measures such as bans and taxes on single-use coffee cups are completely legitimate levers of behaviour change, however these may be less publicly accepted by citizens and potentially create **unintended consequences** if instituted without first considering citizen behaviour.

They may also have **disproportionate impacts** on consumers with **lower socio-economic status**, **domain knowledge**, and numerical ability.

As a result, "**good nudges**" designed to increase selection of superior options reduce choice disparities, improving choices amongst these groups and promote increased equality.

Sweden (and the wider EU) have a number of progressive policies in play that will see the removal of single-use items from the market, but green nudges can operate in a complementary way, particularly boosting the effect of a ban to products outside of its specification.

Implementing green nudges ahead of larger policy change can bring the population 'on board', helping them to become accustomed to the changes before it is absolutely necessary. The desired behaviour will no longer be new, which increases chances of success and minimises chances of backlash.

Businesses will need to make changes regardless, and those who do so earlier will benefit from a smoother transition and happier customers.

Of course, this is not to say that there is no place for bans and taxes in single-use plastic policy. WRAP's pre-pilot research indicated that 20% of Swedish citizens do not own a reusable coffee cup and are not receptive to doing so.

Green nudges are unlikely to change the behaviour of these citizens, and so to encourage the use of more sustainable alternatives this cohort may require stronger intervention, such as a ban. Such measures have been particularly successful in public health, for example the [UK's indoor smoking ban](#).



**Policy measures may be less publicly accepted by citizens and potentially create unintended consequences without first considering citizen behaviour.**



### Unintended consequences

Policy implementation can be fraught with unintended consequences – often with worse outcomes than if nothing had happened.

Changing behaviour in one aspect could shift the problem elsewhere, or else not address the root cause of the problem.

Building a detailed understanding of citizen behaviour in relation to single-use coffee cups and designing relevant green nudges can help to avert this. For example, we need to ensure that citizens use a **small number of reusable cups repeatedly** for takeaway coffee, rather than **accumulating many cups and never using them**, which is more carbon-intensive.

A [life-cycle assessment conducted in 2014](#) concluded that 20-100 uses of a reusable cup are required to account for the greenhouse gas emissions of a single-use cup, however when other ecosystem quality indicators are considered (such as land occupation), the figure could be more than 1,000 reuses.

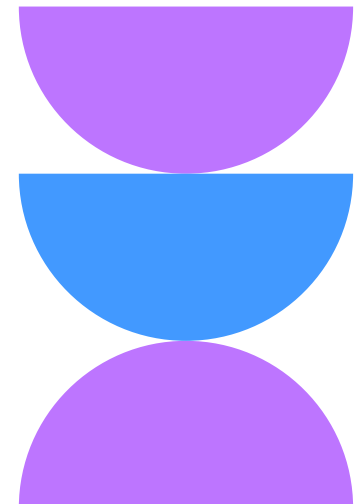
A similar example can be drawn from the UK. A 5p charge for single-use plastic carrier bags was introduced into law in 2015, however according to [research conducted by WRAP in 2020](#), almost one third of citizens have bags at home that they do not use, and one in four continue to purchase single-use bags from the till.

The core barrier was forgetting to bring bags from home; green nudges would certainly address this barrier and support the policy, both as a precursor to ready the population, but also to encourage continued behaviour change **after** policy implementation.

### Key principles

Green nudges can complement traditional policy instruments by making sustainable behaviours easier for citizens to do.

They harness the shortcuts that the brain takes when making decisions, by adapting choice architecture.





# Section 1: Designing a Green Nudging Strategy

## Understanding the target audience(s)

When it comes to green nudging and changing citizen behaviour, the key thing to remember is that context matters, and no one person or place is the same.

What works in one coffee shop may not work in another, and what works for one individual may not work for others. Therefore, the target audience needs to be defined from day one, so that an in-depth understanding of their behaviour can be built.

This should involve identifying the group(s) who would most **benefit** from green nudges, those who are **easy to** reach, and those who would generate **impact** – if green nudges successfully changed their behaviour and they never bought another single-use coffee cup again, would there be a noticeable impact on overall levels of single-use coffee cup purchasing?

The target audience for green nudges can be defined in many ways:

- They may be based upon **demographics** (e.g. everybody living in Stockholm)
- **Social group membership** (e.g. students of Uppsala University)
- **Other educational or professional associations** (e.g. employees of the Swedish Environmental Protection Agency)
- **Product ownership** (e.g. iPhone users)
- **Values and beliefs** (e.g. those with pro-environmental motivations)
- **Current propensity to engage with the target behaviour** (e.g. those who are open to using a reusable coffee cup) and more.



### Case study

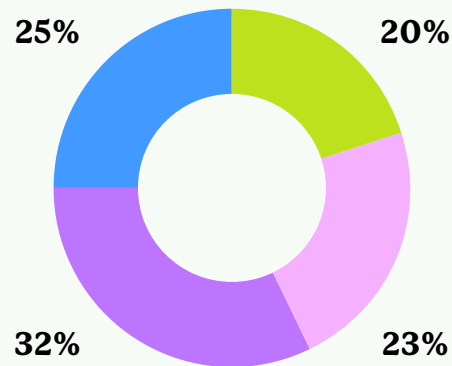
In WRAP's pre-pilot research\*, the target audience was selected based on **reusable coffee cup ownership**: regular users, irregular users and receptive non-users.

These groups are not defined by socio-demographics but by values and attitudes which lend themselves well to being nudged, such as wanting to do their bit for the environment.





Regular users remain in the target audience despite the fact that they are already doing the desired behaviour, as only **39%** use a reusable cup every single time they purchase a hot drink, so there is plenty of room for improvement.

Non-receptive non-users were discounted because they are not pro-environmentally motivated and therefore **nudges may be too soft a measure** to overcome their barriers. Instead, a heavier regulatory approach could be required to change the behaviour of this 20%.

### Citizen Segments: Ownership and use of reusable coffee cups



Base: 1,013 adults aged 18+ in Sweden who regularly drink hot drinks to take away.

-  Do not own and regularly use a reusable coffee cup
-  Own and regularly use a reusable coffee cup
-  Own but do not regularly use a reusable coffee cup
-  Do not own but receptive to using a reusable coffee cup

\* A nationally representative survey of 1,013 Swedish citizens aged 18+ was conducted online during March 2021.

Eligible participants had to consume takeaway hot drinks at a minimum of at least several times a month (prior to the coronavirus pandemic).

The survey explored sociodemographic characteristics, habits relating to single-use plastic, perceptions of barriers and opportunities to using reusable coffee cups, consumption intentions, and propensity to engage with various green nudges.



## Section 1: Designing a Green Nudging Strategy

A similar approach is needed to identify the **target location** for implementation of green nudges.

Understanding this context is crucial because behaviours and associated barriers could differ across locations, meaning that one green nudging strategy may not fit all.

This should involve considering the typical customer profile of businesses, levels of footfall, anything about the location that makes implementation more or less feasible, and any other contextual characteristics that make the green nudges more or less likely to be successful.

### Case study

In WRAP's pre-pilot research, three overarching target locations were identified.

First, **traditional coffee shops** accounted for the majority of takeaway coffee purchases, and coffee is their reason for existing.

Second, **fast food restaurants** are the second most popular location for takeaway coffee purchases, but they also allow access to irregular coffee drinkers who may not have entered the restaurant with coffee on their mind.

Third, **university/workplace** canteens are regularly visited and may be the only close or convenient option for specific groups.

Bakeries were discounted due to low footfall (and therefore limited impact), and self-service machines were discounted due to limited receptivity to reusable cups amongst their core customers.



### Understanding the target behaviour

In order to effectively intervene on citizens' coffee cup behaviour, you need to first understand everything you can about it.

Consider the following three core questions:

What are citizens **currently doing** when it comes to single-use and reusable coffee cups?

What **barriers** are preventing citizens from using reusable coffee cups (or encouraging them to use single-use coffee cups)?

What **enablers** are supporting citizens to use reusable coffee cups (or stopping them from using single-use coffee cups)?

The answers to questions 2 and 3 will determine the overarching green nudge strategy that is developed.

This strategy should aim to get rid of, or support citizens to overcome, any barriers they face, and to increase the impact of existing enablers or introduce new ones.

If you cannot answer these questions sufficiently or there are knowledge gaps, conduct **primary research** to fill them.

This should be conducted with the target audience (e.g. Swedish citizens), or at the very least a population with similar characteristics and context, to avoid developing nudges that address the wrong barriers.

### Case study

A pilot conducted in Gothenburg, Sweden, that used green nudges to try and encourage the use of reusable coffee cups found that many citizens don't actively take their beverage to go and prefer to drink in the café in a relaxed setting.

These citizens did not fit within the target audience for the nudge developed, therefore it is important to understand current behaviours before trying to implement new ones.



## Section 1: Designing a Green Nudging Strategy

Barriers and enablers can be found everywhere and failing to take them all into account could lead to an incomplete green nudging strategy.

**Consider the following points when planning your research:**

What **knowledge** do citizens have that helps or hinders them?

**For example...** "I know that plastic pollution is bad for the planet."

Are there any helpful or unhelpful **social influences** or **pressures**?

**For example...** "I like to be seen drinking from a single-use coffee cup."

Are alternatives to single-use coffee cups **readily available** and **accessible**?

**For example...** "Reusable alternatives are too expensive and they don't work so well."

Do citizens find themselves in helpful or unhelpful **situations**?

**For example...** "There are places where it doesn't feel appropriate to drink from a reusable coffee cup."

Do citizens hold helpful or unhelpful **attitudes** or **beliefs**?

**For example...** "One cup won't make a difference."

Do citizens have any helpful or unhelpful **habits**?

**For example...** "It is just a habit now to pack my reusable cup in the morning with my purse and keys."

Do citizens have any competing **goals**?

**For example...** "Single-use coffee cups feel more hygienic to me."

Do citizens have any helpful or unhelpful senses of **responsibility** or **identity**?

**For example...** "It is the government's job to clean up the environment, not mine."

### Case study

In WRAP's pre-pilot research, a range of barriers and enablers were identified that differed between current and future reusable cup users.

When conducting pre-pilot research, ensure that a **large enough sample size** is recruited in order to lend sufficient power to the findings and guarantee that the barriers identified are representative of the wider target audience.

The most appropriate sample size will depend upon the specifics of the green nudges' target audience, and the testing methodology.

### Owners

vs.

### Future users

#### Top 3 reasons

**40%** It's convenience

**31%** It's a good way for me to do my bit for the environment

**27%** It was given as a gift from friends/family

#### Top 3 reasons

**68%** It's a good way for me to do my bit for the environment

**31%** It's convenience

**27%** To get financial incentive

#### Top 3 barriers

**37%** Difficult to remember/get into the habit

**24%** Difficult to carry around

**18%** I like drinking from a takeaway cup

#### Top 3 barriers

**24%** It's not really a thing in the places where I buy my drinks

**22%** The cost

**19%** It was given as a gift from friends/family

### Designing solutions

Ultimately, the green nudges that will work best at encouraging citizens to switch to reusable coffee cups will be those that were developed based on an **understanding of the barriers**.

However, a good general principle is to design nudges which **reward** citizens for using a reusable cup, or make it easier to do so, rather than **inconveniencing** them for not doing so – such as making them ask for a disposable cup or pay an additional fee.

This way, long-term behaviour change is encouraged since citizens are making the switch **because they want to**, not because they feel coerced, or that they have to in order to avoid negative consequences. If this were the case, they would simply revert back to using single-use coffee cups when the inconvenience was removed.

#### Case study

WRAP's pre-pilot research with Swedish citizens revealed that an effective overarching green nudging strategy must make reusable coffee cups more **available, cost-effective, convenient** and **attractive** than single-use alternatives.

The strategy must support **habit formation** by prompting and reminding citizens about reusable cups, and the switch can also be supported by highlighting the **environmental benefits**.

When designing specific solutions, there are a number of **behavioural models and frameworks** that simplify the large evidence base into usable techniques that policymakers can apply to discourage citizens from using single-use coffee cups (indeed, many frameworks were created with policymakers in mind).

Rather than go through each, here we outline common techniques that crop up throughout and have a proven track record of success.

As long as solutions are based on **overcoming the barriers that exist**, using models is not necessary.

For more information on behaviour change models and frameworks, please see the following resources:

- [EAST](#)
- [MINDSPACE](#)
- [COM-B & the behaviour change wheel](#)
- [ISM](#)
- [Octalysis \(for gamification\)](#)
- [Theoretical Domains Framework](#)

## Designing solutions – strategies



### Use credible and relatable messengers.

We are more likely to believe and follow orders from someone we deem credible or relate to. This can include celebrities or social media influencers, people we might look up to.



### Reward or incentivise reusable coffee cup use.

We are more motivated to change our behaviour if promised something positive in return. This reward does not need to be financial\*, but could instead be the promise of an emotional payoff, or could satisfy a number of intrinsic motivators as identified in your research.



### Stimulate helpful social norms by illustrating other peoples' reusable coffee cup use.

We behave in ways that we think others will approve of and are more likely to do something when we see evidence that others have also done it.



### Switch all defaults in favour of reusable coffee cups.

We go with the flow of pre-set options as these indicate what is normal and going against them requires more effort.



### Boost the saliency of reusable coffee cups.

We pay more attention to, recall, and believe information that is particularly bold, noticeable and novel.



### Frame the nudge messaging to highlight social norms.

We like to fit in with the crowd, so framing a message to highlight the popularity of a behaviour will be more powerful.



### Encourage commitments to reusable coffee cup use.

We are more likely to follow through on something after committing to do so (publicly or otherwise).

\* Indeed, satisfying citizens' intrinsic motivators (for example, a desire for convenience or to act pro-environmentally) over their extrinsic motivators (for example, saving money) may lead to sustained behaviour change in the long-term. Using monetary rewards creates the risk that citizens simply revert back to using disposable coffee cups if the financial incentive (or disincentive) is removed. That said, it may still be a useful hook to engage those for whom cost is a barrier, who can then develop secondary, more intrinsic motivations.



## Designing solutions – strategies (continued)



**Encourage the formation of new habits that encourage reusable coffee cup use.**

Habit formation is easier during periods of transition but once formed, they are difficult to break.



**Provide feedback on single-use coffee cup consumption.**

Feedback helps to change behaviour by making it visible and concrete.



**Provide services that make it easier to use a reusable coffee cup.**

The easier a behaviour is and the less friction encountered, the more likely we are to do it.



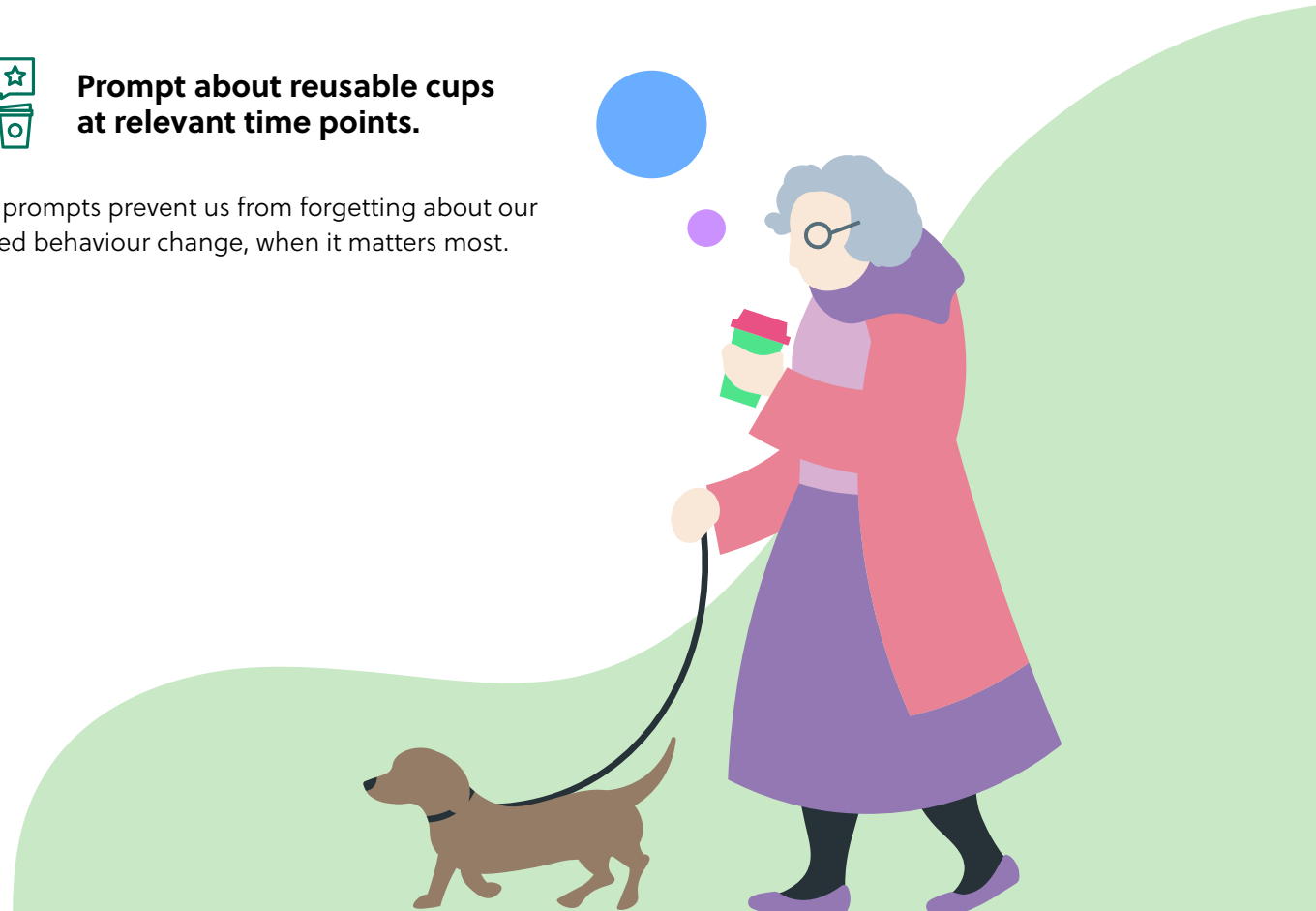
**Personalise any offers.**

Personalisation stimulates behaviour change as we feel more invested in the process.



**Prompt about reusable cups at relevant time points.**

Timely prompts prevent us from forgetting about our intended behaviour change, when it matters most.



### Case study

A number of green nudges were tested in WRAP's pre-pilot research with Swedish citizens, which could be implemented as part of a pilot. However, it is worth noting that testing well with citizens in an online environment does not mean that they would work perfectly in situ.

Equally, those that did not test well online may be effective when placed in the correct context. **Testing is crucial.**

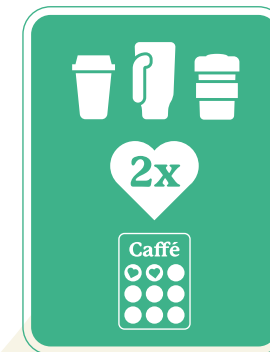
The nudges are presented in descending order of perceived effectiveness by Swedish citizens. The percentages in brackets indicate the proportion of citizens who scored each nudge as effective (7-10 out of 10) in encouraging people that they know to use a reusable cup.

In general, each green nudge was deemed to be more effective by receptive non-users, followed by regular users and then irregular users, though there was some variation across.

### Rewarding nudges:

- Double loyalty stamps/reward given when a reusable cup is used **(58%)**
- Discount on a new reusable cup when an old one is returned at the end of its life **(55%)**
- Free 'refresh' service where reusable cups can be cleaned **(54%)**
- 2 krona discount on hot drinks when a reusable cup is used **(53%)**
- Reusable cups have a scannable code which is linked to an app which allows customers to pre-pay or top up drinks to speed up purchases **(49%)\***

- Purchasing a reusable cup gives citizens VIP access to loyalty schemes with offers and discounts **(48%)**
- Self-service machines have an integrated sink, so that the previous drink can be poured out, and a 'rinse' button that dispenses hot water to clean the cup **(47%)**
- New reusable cups come pre-loaded with free drinks, via a physical stamp card or a chip in the cup itself **(44%)**
- Citywide initiatives to support reusable cups, where cups are city-branded and eligible for discounts across participating stores **(43%)**



\* This is similar to an ongoing trial being conducted by [Costa Coffee in Glasgow](#) (UK), in which a 'BURT' cup (borrow, use, reuse, take back) is linked to customer accounts via QR codes and blockchain technology.

### Inconveniencing nudges:

Even though inconveniencing nudges are not recommended for implementation by themselves, as they risk alienating customers and putting them off altogether, they may be effective when paired with rewarding nudges.

- The barista/server always asks customers if they want their drink in a reusable cup **(51%)**

Despite being somewhat inconveniencing, this nudge tested well, in the top five.

- 2 krona surcharge on hot drinks when a single-use cup is used **(36%)\***
- Disposable cups come without a lid, although customers can still request one **(34%)**
- Disposable cups are no longer branded **(31%)**

\* This is very similar to a [trial conducted in the UK by Starbucks and Hubbub](#), in which a 5 pence surcharge increased reusable cup usage from 2.2% to 5.8%.

### Cross-cultural differences

It is recognised that green nudges may be best placed to change the behaviour of citizens in more developed countries, where there is more comprehensive infrastructure in place.

This does not mean that green nudges are out of the question; indeed, nudging and behavioural science have been extensively applied in the context of international development (for example, in encouraging [childhood immunisation in Tanzania](#), [school attendance in Morocco](#) and [improved sanitation improvements in New Delhi slums](#)).

However, **primary research to understand the audience and their barriers to using reusable coffee cups** is always recommended.

### Key principles

There are a variety of green nudging strategies available for policymakers and businesses to choose from, but they should be developed and selected based on how well they address the barriers to using a reusable cup that are faced by the target population. Positive, rewarding nudges are preferable to negative, inconveniencing nudges, although there is the potential that they could work well in conjunction with each other.

### Case study:

#### Chalmers Industriteknik

A pilot carried out by Chalmers Industriteknik looked into the use of green nudges to encourage adoption of reusable cup usage.

This pilot built upon previous investigations into green nudges, including WRAP's pre-pilot survey on the use of green nudges to reduce consumption of disposable coffee cups in Sweden; and a report by the Swedish Environmental Protection Agency on tackling plastic litter using nudge strategy to reduce consumption of disposable cups.

As a result of the two reports, three nudges were suggested:

1. A soft default meaning that single-use disposable cups will no longer be the default option. This was tweaked to barista's always asking if the customer wanted their drink in a reusable cup, with a surcharge being placed on disposable cups.

2. Giving consumers who bring their own reusable cup more convenience by opening an "express lane" for them. This would be boosted by removing branding from single use cups as well as having lids be something the customer must ask for.
3. Tying loyalty programs and pre-paid servings to the use of a refillable cup. A QR code was proposed to be added to the reusable mugs to ease this.

Following discussions with partnered cafes, a revised version of nudge one was put forward consisting of:

- A discount of five kronor for anyone buying a beverage to go using a reusable cup.
- Posters clearly presenting the nudge at each register (see picture below) and entry.
- The possibility to buy a high-quality reusable cup at a discount (small size at 49 kronor instead of 85, large size at 69 instead of 120).

Data was collected during 6 weeks, from 4 April-15 May in two cafes. Three locations were assessed, and data covered 4 products: large and medium espresso with milk and large and medium filter coffee.

## Outcome

One location showed a dramatic increase in sales of reusable coffee cups. This was put down to the smaller size of the cafe and typical behaviour of the regular loyal customers buying takeaway coffee routinely. Moreover, staff commitment and enthusiasm helped to convince customers to try the scheme.

However, the study found that financial incentives that reward consumers for using a reusable cup did not have a great impact on consumer purchasing behaviour. Originally, the nudge was to provide a financial dis-incentive for the undesired behaviour, but business owners are not willing to punish customers in this way. That being said, the communications potential behind nudges can help push the agenda into consumers' minds, particularly when staff and business are also engaged.

Finally, it is important to note that follow up research should be done to look at long term uptake of reusable cups and success of the interventions. WRAP's pre-pilot research demonstrated that many citizens own reusable cups, but it is the ability to build a new routine with the cup and create sustainable habits which will demonstrate the real impact of green nudges, and what additional measures need to be put into place to assist consumers in the transition to reusable cups.

## Section 2: Designing an Implementation Plan

### Feasibility and risks

Once the green nudging strategy has been developed, the next step is to put together an **implementation plan**. This will involve discussions with potential partner coffee businesses and considering any risks and how to mitigate them.

If a green nudge is **feasible**, this means that it is **easy** and **convenient** to implement, in a context that is conducive.

The exact characteristics of a feasible green nudge will differ from location to location, but it should always be **affordable**, possible to implement in a **timely** manner, and be within the ability of the pilot business to manage.

When considering feasibility, it is **crucial to think about the context**. The perfect green nudging solution will not be one-size-fits-all, and the package of nudges must be appropriate for each businesses' customer base and local context to ensure that there is no negative impact on customer satisfaction or return.

### Example of an implementation plan:



#### Digital Loyalty Scheme

A digital loyalty scheme is developed that links rewards and discounts to the use of reusable coffee cups.

To access the loyalty scheme, customers must purchase a special reusable cup which contains a microchip and QR code, and is linked to a mobile app. Customers can use the app to pre-order drinks and redeem points for each use of their reusable cup, which can be scanned at the till by baristas.



#### Feasible for a national coffee shop chain.

Larger businesses are more likely to have adequate financial, human and digital resources to develop and implement this offering. Having a large customer base, spread across multiple locations (at a city and national level) means that potential take-up is high, and therefore so is return on investment.



#### Not feasible for an independent coffee shop.

Smaller businesses with no 'head office' may be limited to staff on the ground whose time is solely dedicated to the day-to-day operations, and therefore lack the resources to pull this off.

#### However, all hope is not lost.

Green nudges can always be pared back to fit the context. Here, the strategy at the heart of the nudge is to reward citizens for using a reusable cup and incentivise them to do so again, which can easily be achieved with simpler means.

**For example...** Customers could receive double stamps on a loyalty card, or receive a discount when they use a reusable cup.

## Section 2: Designing an Implementation Plan

Think about the **risks** from the very beginning. Doing this means that they can be avoided and mitigated early on, before resources, time and money have been invested.

It is natural to believe that any green nudge strategy that you have developed yourself will be perfect and risk-free (this is in fact known as the [Ikea effect](#)).

However, to overcome any potential bias, try to think about the green nudges from someone else's perspective.

### Consider the following questions:

Could the green nudges have any side effects or unintended consequences?

**For example...** Could they alienate those who do not participate?

Could the green nudges be misinterpreted in any way?

**For example...** Could participating businesses be accused of greenwashing, or deflecting all responsibility onto the citizen?

Could the green nudges lead to behavioural spill-over? In other words, could a reduction in single-use coffee cup use trigger unsustainable behaviour elsewhere?

**For example...** Could it lead to reusable cups being treated as disposable?

A [bottled water ban at the University of Vermont](#) prompted students not to bring a reusable bottle, but instead to switch to alternative bottled drinks, consequently increasing their sugar and caloric intake and having little impact on levels of plastic bottles disposed of.

Could the green nudges be inappropriately targeting one group over another (or interpreted to be)?

**For example...** Do they disproportionately target lower income citizens via the implementation context?

Could the green nudges put anyone at a disadvantage?

**For example...** Does it require financial investment that not all citizens would be able to provide?

Are the green nudges accessible and inclusive for all citizens?

**For example...** Is engagement with the green nudges equally easy for citizens with and without any disabilities?

Are the green nudges accessible for all businesses?

**For example...** Are the costs needed to implement equally affordable for SMEs and larger corporations? If not, could SMEs be supported?

Could the green nudges invite industry backlash?

**For example...** Could implementation of the green nudges prompt clashes between policymakers and industry partners which threaten the longevity of the nudges?

The [American Beverage Association criticised plans](#) to ban bottled water in a Californian national park, on the grounds that it restricts consumers' freedom to choose.

## External and internal collaboration

### External collaboration

Business partnerships are crucial for successful delivery of green nudges and it is therefore important that strong relationships are established and **maintained** throughout the pilot and beyond.

The business recruitment process must be **fair**, so that all those who wish to participate have the chance to do so.

To make the process as easy as possible, make use of any **existing** recruitment or funding channels (whilst abiding by any competition laws).

This can be undertaken in a number of ways, for example via:

- An open call for collaboration
- Voluntary agreements such as the [European Plastics Pact](#) and [One Planet's Global Tourism Plastic Initiative](#)
- Existing industry partnerships
- Trade bodies

Once recruited, expectations between all teams must be set from the get go. **Businesses need to be involved in the green nudge development process from the very beginning** so that they can inform any conversations about feasibility, but also so that they can take ownership of the project.

Where possible/appropriate, and **to encourage engagement from business, financial reimbursement could be provided for their involvement in developing and trialling nudges**, particularly where profit margins are low such as small hospitality enterprises.

A concrete **delivery plan** should be agreed upon from day one in order to ensure complete alignment and avoid any nasty surprises halfway through the project. This must include clear long-term data capture and monitoring frameworks, and securing resources for the whole pilot period (including financial, human, organisational, digital and comms).

### Tips and pitfalls

- It is particularly important that any green nudges which rely upon **financial mechanisms** (e.g. offering a discount when coffee is sold in a reusable cup) are developed through negotiation with businesses. The balance must be struck between having a tangible impact on behaviour, whilst remaining commercially viable.
- Businesses with existing loyalty schemes or similar green nudges **already in place** may be more reluctant to participate, as the piloted changes could compromise or get in the way of their offerings.
- Nudges can be powerful at encouraging consumer behaviour, but infrastructure support is imperative to driving real change. Infrastructure support such as deposit-return-schemes are just one way infrastructure can support green nudges.
- Infrastructure development can also be supported by encouraging businesses to work together to implement reusable packaging, ensuring that customers can refill their cups across varying locations.

### Internal collaboration

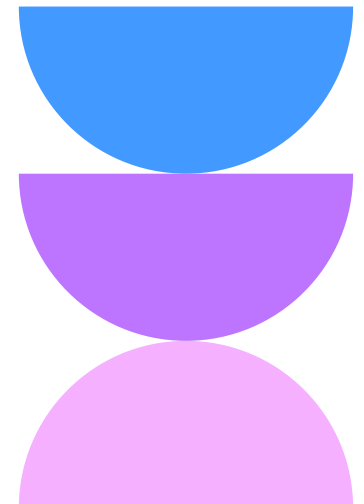
Communication **within businesses** ensures that there is a match between the expectations of those who developed the nudges and those who will actually be delivering them (for example, between the CSR team and local baristas).

Staff on the ground need to be able to explain any changes to customers, and if they cannot, the green nudges are less likely to be effective and the business may receive negative backlash. Furthermore, staff must be motivated to be part of the change and ensuring that they are involved from the start enables them ownership over the green nudges.

Any plans should be shared with colleagues for feedback ahead of implementation, to make sure that nothing has been overlooked.



**Nudges can be powerful at encouraging consumer behaviour, but infrastructure support is imperative to driving real change.**





### Amplifying green nudges

It is not enough to simply implement a range of green nudges and expect citizen behaviour to immediately change. Purchasing takeaway coffee is classically spontaneous. It may not be planned, and therefore may not be thought about until the moment comes.

To improve engagement with green nudges, businesses must consider the **entire customer journey**, getting citizens in the mindset of using a reusable cup before they even step into a coffee shop.

Some green nudges, for example enhanced loyalty schemes, will require **supporting communications** to make sure that citizens know about them and to build engagement. Others, such as offering a discount when coffee is sold in a reusable cup, can be supported by **triggers and prompts** at home and at the point of purchase.

Even though a lack of knowledge does not lie at the heart of the problem, there is a place here for overarching campaigns – the more citizens hear about reusable coffee cups, the more they will become embedded in the brain, and the greater the chance that new habits will be developed.

Amplifying green nudges in this way will also boost their presence in the social environment by creating a social context in which they are discussed amongst friends, as common knowledge, which in turn amplifies them further via **social contagion**.

When developing supporting comms, beware of **limited physical space** in coffee shops, particularly on the counter near payment points. Equally, signage on tables is relatively pointless, as it will not be seen by takeaway customers. Consider exploring alternative routes, for example window or floor stickers.

### Key principles

When planning the implementation of green nudges, consider those which are feasible in the context that you are working in. Develop a risk register with appropriate mitigations, considering what might go wrong or how the nudges might create unwanted side effects, and build solutions into their implementation.



## Section 3: Designing an Evaluation Plan

Evaluation is crucial to a **test-learn-adapt** approach, because it is impossible to scale up a green nudge without knowing **if** and **how** it works.

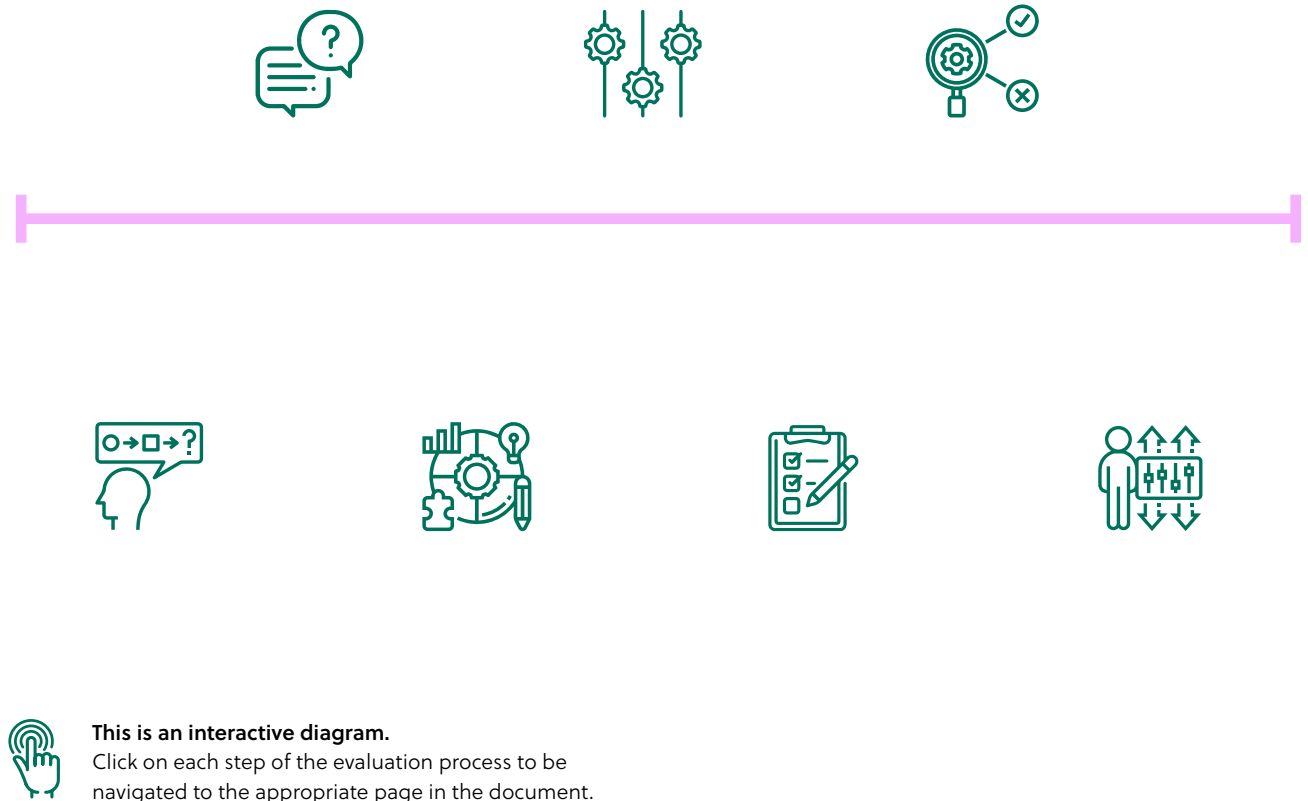
Without evaluation, ineffective nudges could be rolled out and resources wasted, or effective nudges could be consigned to the bin.

Green nudge evaluation should be planned from the beginning of the process and should not be left until the last minute.

Evaluation can answer the following questions (and more):

- **Impact.** Were the green nudges effective? Why (not)?
- **Mechanisms of action.** Were some components more effective than others?
- **Variation of effects.** Were the green nudges differentially effective for different population groups?
- **Withdrawal & adherence.** Do any effects of the green nudges persist beyond the trial period?
- **Cost-effectiveness.** Is the cost of developing and implementing green nudges worth it?

### Evaluation process

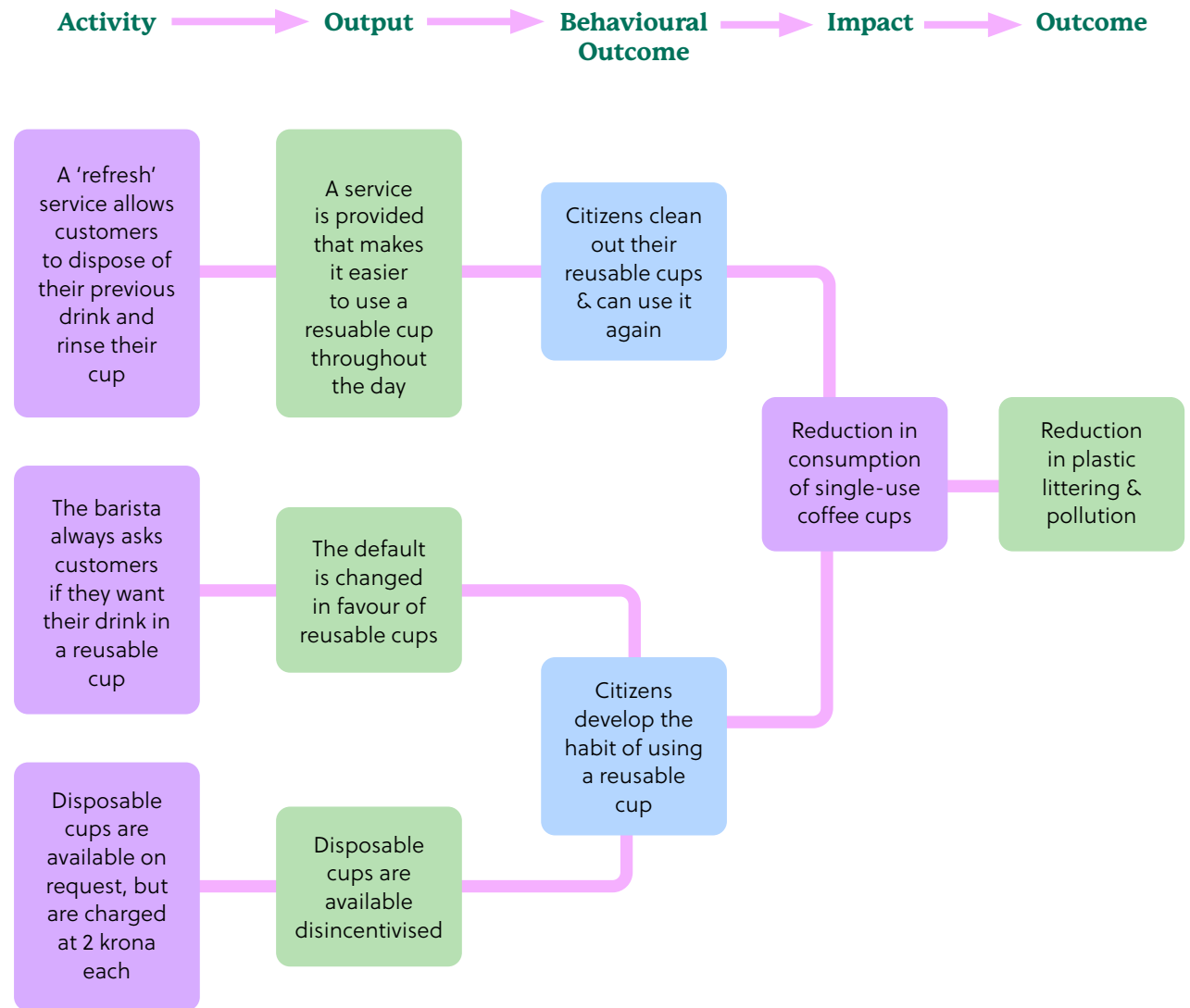


## Map the theory of change in a logic model



The first step is to develop a **theory of change** for the green nudges, which describes the theory behind them; how are the green nudges expected to lead to a reduction in the consumption of single-use takeaway coffee cups?

Mapping this in a **logic model** will clearly signpost what the evaluation should be assessing.



### Define evaluation questions



Develop a list of **evaluation questions**. The specifics of these will depend upon the green nudges that are selected, making sure that they get at the expected mechanisms of behaviour change.

That said, there are some overarching **primary questions** that should remain the same:

- Is there a reduction in the proportion of hot drinks sold in single-use cups?
- Is there any change that is attributable to the green nudge(s)?
- Are there any modifications that could improve the green nudge(s) or avoid potential risks?
- What impact (if any) is there on business income?

**Secondary questions** include:

- How do citizens react to the green nudge(s)?
- What behaviours (if any) result directly from the green nudge(s)?

### Measuring long-term impact

Given that the desired outcome of the green nudges is a **reduction in coffee cup littering**, measuring the long-term impact is difficult.

This is why the evaluation questions are so closely aligned with the green nudges themselves, and how citizens engage with them. Even if a measure of coffee cup litter was obtained, attributing any change to the green nudges would be near impossible, as the data would be too:

1. **Noisy**, as there are too many influencing variables, ranging from waste management practices and attitude shifts to the weather on the day of measurement.
2. **Slow**, as coffee purchase is a daily behaviour, and the outcome measurement could not align with such sensitivity.
3. **Distant**, as the outcome cannot be tied to any one intervention site.

### Select appropriate methodology



Put the logic map to use to select an evaluation methodology that is most appropriate to the green nudges being piloted, the intervention logic, and the nature of their implementation.

There is always a balance to be struck between an evaluation that is as controlled and as rigorous as possible, and one that is feasible to conduct. Select an approach that can answer the evaluation questions, within the pilot context (which may be more restricted than you like).

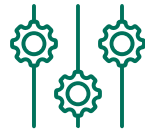
### Case study

During WRAP's pre-pilot research, the evaluation method deemed most appropriate was **pre-and post-intervention measurement** of the proportion of takeaway/ on-the-go hot drinks sold in single-use cups.

Additional KPIs/outcome variables will depend upon which green nudges are selected. Although randomised trials are considered the gold standard, this approach was not deemed appropriate due to the impossibility of controlling so many variables given that the interventions are deployed in the 'real world'.

Baseline measurement before the pilot period & continued monitoring afterwards to understand the longevity of the green nudges' impact, and to indicate where further intervention might be needed.

### Set-up and baseline measurement



A **baseline** measure of the proportion of takeaway/ on-the-go hot drinks sold in single-use cups is needed if any change is to be measured during the pilot. This measurement period should not overlap with national holidays or periods of promotion to ensure baseline data is typical of regular events.

Ideally, it should be no shorter than **six weeks** to allow for any potential random or cyclical variations in coffee purchasing behaviour, but ultimately will depend on the capabilities of partner businesses to participate for this length of time. A baseline measure should be obtained for anything that the evaluation intends to measure. This would be recommended for wholesale data such as inventory levels and frequency of reordering, and other measures specific to the green nudges selected.

Ensure any systems needed to measure ongoing sales and any other KPIs are set up well in advance, with no last-minute panic. Be mindful also that there may be a requirement to report impacts against EU Single-Use Plastics Directive targets, and that variables should align if so.

### Determining the evaluation period

This is where an in-depth understanding of the target population's coffee purchasing habits will come in useful.

If it is known that these citizens purchase takeaway coffee infrequently, for example once per fortnight, a longer baseline and overall evaluation period will be needed to capture sufficient data, than if, for example, takeaway coffee is purchased every single day.

### Seasonality

When setting up the pilot, it is recommended to avoid any major holiday periods such as Christmas. These events can alter patterns of takeaway hot drink consumption, meaning that findings will be skewed and no longer representative of 'normal' life.

## Short, medium, and long-term measurement



### 1. Short-term measurement

- Monitor reduction in single-use coffee cups (and lids) used, and impact on business income.
- Consider any unexpected impacts on behaviour.
- Gather feedback from staff, customers and other stakeholders.

### 2. Medium-term measurement

- Monitor citizen response to the green nudges (for example, have they remained engaged or become annoyed?), and any impacts of brand reputation.
- Has anything else happened as a result of the green nudges?

### 3. Long-term measurement

- Consider whether this green nudge strategy is a useful and impactful way to change behaviour and encourage sustained use of reusable cups for hot drinks. Should the programme be scaled up/implemented more widely?
- Conduct cost-benefit analyses to understand whether it has represented good value for money.
- Identify if the green nudges have benefited both citizens and the pilot businesses.
- Investigate whether data gathered can reliably attribute observed behaviour change to the green nudges.
- Investigate whether any impact persists after the trial period, or if citizens simply go back to their old habits (behavioural drop-off). If so, further intervention with marketing/comms might be required.

Develop short-term questions first, before adding these to medium-term investigations (whilst continuing monitoring of the short-term indicators). Finally, add to these further with long-term follow-ups.

### Process evaluation



Qualitative process evaluations can add another layer of understanding to an overarching green nudge evaluation strategy. The aim here is not to understand whether a green nudge worked or not, but to understand **why** it may or may not have worked as intended, which equips teams with the insight needed to improve them for next time.

It may be the case that one simple tweak is all that is required to improve a green nudge, however given that many are not tested in situ prior to pilots, without process evaluation such nudges may be scrapped altogether. Different barriers may arise, or the same barriers may have varying strengths when tested in context.

#### Process evaluation also shed light on:

- **Mechanisms of action.** How (if at all) are the green nudges changing behaviour? If several are implemented at once, how do the effects disentangle?
- **Fidelity of delivery.** Are the green nudges being delivered as planned? If not, how has this affected outcomes (if at all)?
- **Acceptability.** Are the green nudges acceptable to citizens? Are the green nudges acceptable to those delivering them? Why (not)?
- **Ethicality.** Are the green nudges ethical? Do they change citizens' behaviour in a way that they would be okay with? Are the nudges manipulative, and do they threaten citizens' autonomy/free will? The [FORGOOD framework](#) can help to shape questions around the ethics of green nudges.

#### (Test), Learn, Adapt



The aim of the entire evaluation process is to understand what works, what does not, and why, and to use these learnings to develop the most effective green nudges possible.

This phase should culminate in a set of recommendations detailing whether the green nudges are completely wrong, need some adjustment, or if they are ready to be scaled up and benefit a much wider population.

### Application in other contexts or regions

- Pre-pilot research is very important to **understand local context** that can vary with culture, geography, affluence, social status, demographics etc. as these may all influence the effectiveness of different interventions.
- When applying this research to different contexts or regions, it is important to **first understand the target audience for the nudge**. This should involve identifying the group(s) who would most benefit from green nudges, those who are **easy to reach**, and those who would generate **impact**.
- **Secondly, understand target audience behaviour** – For example, in Gothenburg, many citizens enjoy drinking their coffee inside the café rather than taking it away and are therefore less likely to be moved by certain nudges.
- **Thirdly**, understand present barriers to action. The nudges that will have the best impact will be based off this understanding.

- **Many strategies can be influential, but without these core understandings the impact may be insufficient.** For example...
  - Infrastructure may have a significant influence on the success of pilots alongside culture. Returnable schemes may be more popular in contexts where deposit return schemes are already widely accepted, such as in Germany.
  - Technology can be useful in assisting pilots. In Bristol, [City to Sea is launching a deposit-return pilot](#) where reusable cups can be purchased and then handed back at several different retailers. This scheme will be assisted by the already established [Refill app](#) which customers will use to scan the cup to receive information on where they can return it. However, if the infrastructure for this technology does not already exist, it will not be easily adopted for a trial scheme as was discovered in Gothenburg. Moreover, the [sustainable culture that exists in Bristol](#) will impact the popularity of this scheme compared to different locations.

### Key principles

Ensure that you are measuring the behaviour you are aiming to change as directly as you can, in this case the proportion of takeaway hot drinks sold in single-use vs. reusable cups. Continual monitoring after the pilot can indicate whether long-term behaviour change has been embedded – one of the most important insights. The more learnings are gathered, the more improvements and developments can be made.



# Conclusion

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Transitioning into sustainable societies is a complex and urgent task. Green nudges are one type of behavioural intervention that can be used in conjunction with other actions to support or supplement goals. They are not a silver bullet but can contribute towards achieving the overall intended outcome.

For more information on the role of behavioural science and nudging in public policy:

- [APA - Psychology and global climate change](#)
- [BEIS - Net Zero: Principles for successful behaviour change initiatives](#)
- [BIT - Behavioural Government](#)
- [BIT – EAST: Four simple ways to apply behavioural insights](#)
- [European Commission - The evolution of behaviourally informed policy-making in the EU](#)
- [fG – Mindspace: Influencing behaviour through public policy](#)
- [GCS - The Principles of behaviour change communications](#)
- [PHE \(now health security agency\) - Achieving behaviour change](#)
- [UK House of Lords - Select committee on behaviour change](#)
- [UNEP & BIT - The little book of green nudges](#)
- [UNEP & PBM Sweden – Next steps in tackling plastic](#)
- [litter: A nudging strategy for reducing consumption of single-use disposable cups](#)
- [WCPP - Increasing household waste recycling with behavioural science](#)



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## Disclaimer

This work builds upon [Next steps in tackling plastic litter: A nudging strategy for reducing consumption of single-use disposable cups](#), a report commissioned by the Swedish EPA and written by PBM Sweden. The case studies throughout are based upon [quantitative pre-pilot research undertaken by WRAP in 2021](#) with a representative sample of Swedish citizens.

These two reports and the playbook are the result of the work of the [Sustainable Lifestyles and Education Programme](#) of the One Planet Network. The One Planet network fulfils the commitment of the 10 Year Framework of Programmes on Sustainable Consumption and Production, which is a global commitment to move towards sustainable consumption and production (SCP) and the achievement of Sustainable Development Goal 12 (SDG 12; responsible consumption and production).