

Communication, environment and behaviour

A scoping study on the links between public communication,
environment policy implementation and behavioural science



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About the EEA, Eionet and the study

The European Environment Agency (EEA) is an agency of the European Union, tasked to provide timely and relevant information on Europe's environment to policymakers and the public. To carry out its work, the EEA cooperates closely with its European Environment Information and Observation Network (Eionet), which brings together public institutions and their experts around a wide range of environmental topics (including communications) from its 33 member countries and 6 cooperating countries.

This study is developed in collaboration with the communication experts (National Reference Centres for Communication) in Eionet. Thanks to its network, the EEA is in a unique position to bring together country-based communication practices and challenges, observe commonalities and differences, relate communication theory and practices to EU-level policies, and share its findings extensively through its network and other stakeholders. The study draws on a non-exhaustive list of around a hundred publications by universities, research institutes, the OECD, EU bodies, and other sources. The literature was identified through online search, cross-references, and suggestions by Eionet partners.

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Contents

Introduction: Communication can enhance policy implementation	3
Public policy communication	4
Paradigm of change: the individual or the system?	4
Outline of the study	4
Chapter 1: Environmental policies and communication	7
Environmental information as an enabler for change	7
Environmental policies and targets in Europe	8
Legal and economic tools	9
Policy and behaviour change	9
Communication as a policy tool	10
Public trust at stake	11
Communication enables public participation and engagement	11
Integrating communications in policy	12
Chapter 2: Tools for better communication	15
Nudging	15
Social marketing	16
Social innovation	18
Social media	19
Public participation	21
Ecolabelling	21
Citizen science	23
Chapter 3: What does behavioural science say?	27
How do we decide?	27
Knowledge does not always lead to behaviour change	29
Context- and audience-specific messages	30
Applying behavioural science to environmental policy	30
Mixture of policy tools	32
Defining boundaries	32
Recommendations	34
Recommended further reading	37
References	38



Introduction: Communication can enhance policy implementation

Our day-to-day consumption choices have direct and indirect effects on the environment in the European Union (EU) but also well beyond the EU's borders. To 'live well, within the limits of our planet' as stated in the EU's 7th Environment Action Programme, we need to rethink what we consume and how we produce it in the broader context of the need for a societal transition towards a green, resource-efficient economy. This transition entails changing some of the fundamental elements of our lifestyle and adopting environmentally-friendly behaviours — both as consumers and producers.

Environmental challenges are often systemic and complex. For example, the environmental impacts of food production on the global climate, air and water quality cannot be disconnected from the basic human need for food, production and distribution processes, dietary preferences as well as food waste — all the components of the food system. Communicating this complex and systemic nature of environmental challenges is not always easy. Moreover, although it is constantly improving, the body of scientific knowledge on the environment comes with varying degrees of uncertainty and gaps. Accurate communication of the 'knowns' as well as the 'unknowns' might require a rather technical language, which often makes environmental assessments inaccessible to large segments of the society.

Reflecting this body of environmental knowledge into policy discussions, and more specifically into a series of concrete policy measures, adds to the complexity. Somewhere along the way, the connection between day-to-day decisions and 'the bigger picture' — that our well-being depends on a healthy environment — might get diluted. Most people do not associate their toothpaste with the health of the fish on their plate. But they are connected. Because of their small size, microbeads used in toothpaste pass through wastewater treatment and reach the sea, where fish and other marine animals mistake these tiny plastic pieces for feed. Similarly, our choices of transport and energy source (whether we use fossil fuels or not) are also connected with climate change and its impacts such as increasingly frequent and intense rainfall and droughts.

In the context of environmental policy, a growing number of public communicators in the EU and its Member States are already exploring how communication can further improve policy measures and their implementation.

Public policy communication

Public policy is one of the main forces that can steer and facilitate societal change. To this end, public authorities use a mix of legal, economic, and information tools to tackle environmental degradation and to preserve the environment. These tools have already resulted in some concrete and substantial gains: some aspects of environmental degradation have been halted, and the state of some ecosystems has improved. However, the current rate of our resource consumption requires us to take even more action or change some of our consumption patterns in a more fundamental way. This need for more action or change can be conveyed — in part — through public authorities' efforts to communicate about policy measures and to induce citizens to take action.

This study argues that insights from behavioural sciences combined with recent advances in communications technology offer ample opportunities to improve public policy communication, and thereby to improve the implementation of environmental policy. A streamlined public policy communication can play an even more effective role in supporting societal transition. Better public policy communication can also contribute to transparency, good governance, and institutional legitimacy. In general, behavioural insights should not be perceived as alternatives to existing policy, but as a pool of knowledge which can complement the range of tools used by public authorities to help achieve their policy objectives.

Paradigm of change: the individual or the system?

The focus of this study is mainly on moving the target audience, often defined in terms of individuals or groups of individuals. It is clear that individual behaviour change alone cannot decarbonise the environment, halt biodiversity loss or clean-up our seas. Many studies argue that in terms of environment issues, there is a need for wider social and structural changes that clearly go beyond individual awareness raising (Hargreaves, 2011; Shove, 2007; Shove 2010).

A 'third way' of analysing systems and enablers of change has also been put forth, which focuses on investigating at the level of social practices (Spaargaren, 2011). In this context, Van den Burg points to the increasing availability of, and access to, environmental information, the advances in information and communication technology and the intensification of action oriented social networks across the globe. Van den Burg argues that this allows us to consider citizens as potential agents of change vis-à-vis halting the degradation of the environment (Van den Burg, 2006; Spaargaren and Oosterveer, 2010).

Outline of the study

This study is divided in three parts. In Chapter 1, 'Environmental policies and communication', we explore the context for environmental policy in Europe, looking at the EU's environmental policy and its objectives for a clean and healthy environment. This chapter also introduces the role of communication in

environmental policy, in particular its role in promoting stakeholder engagement and public participation in the formulation and implementation of different pieces of environmental legislation.

In Chapter 2, 'Tools for better communication', we look at a variety of emerging tools and approaches being used by public authorities to communicate public policy messages and change people's behaviour. These approaches are illustrated with practical case studies, which show that a fundamental shift is happening in the world of public policy communications. This shift involves moving away from unilateral dissemination of information towards a participative involvement of citizens and stakeholders.

In Chapter 3, 'What does behavioural science say?', we turn to recent research in behavioural science in order to assess how this research can assist the task of public communication on environmental policy. This chapter argues that a better understanding of what is likely to induce behaviour change (and designing communication efforts with this knowledge in mind) can lead to greater public support and consequently better implementation.





People's March in New York
© John Minchillo, Flickr

Chapter 1: Environmental policies and communication

Public authorities in the European Union are by law required to make environmental information accessible and actively disseminate it. Recent developments in online communication offer ample opportunities for public authorities to engage with the public and foster wider support for environmental policies. Integrating communication in environmental policy processes could improve implementation of legislation and ultimately contribute to facilitating a transition to a resource-efficient, green economy. Used alongside other policy tools, communication can prove to be a very effective — and in many cases, cost-efficient — policy tool.

On 21 September 2014, just days ahead of the UN Climate Summit in New York, around 600 000 people rallied for urgent action on climate change in more than 2 000 locations across the world. The 'People's March' in New York alone mobilised more than 300 000 people for the cause, with 40 000 gathering in London, 30 000 in Melbourne, and 25 000 in Paris. It was the largest public demonstration to-date on environmental and climate issues. The rallies were organised through the social media platform Avaaz, which became instrumental in turning individuals and local organisations into a global stakeholder community to send a signal to 125 heads of state and government.

Online communication tools have changed not only the way we communicate, but also the way we come together to create communities around a common value, concern or cause. In 2013, more than 60 % of EU citizens used the internet every day or almost every day. Among 16–24 year-olds, 94 % were regular internet users, and

almost 90 % of these young internet users participated in social networking. Today, with recent changes in information technology and wide use of social networks, the technical barriers to entry in the public debate have become almost non-existent. Everybody can take part in — and start — a debate in the public sphere. How can public communicators adapt and take part in these developments, and use them to improve the implementation of environmental policies in Europe?

Environmental information as an enabler for change

The Aarhus Convention ⁽¹⁾ upholds the right of everyone to have access to environmental information held by public authorities in signatory countries. Moreover, it requires

⁽¹⁾ The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters is commonly referred to as the Aarhus Convention. It was adopted in 1998 and entered into force in 2001.

the public authorities at national, regional and local levels to 'actively disseminate' environmental information in their possession.

The Aarhus Convention also grants the right of the public to participate in environmental decision-making and requires public authorities to enable this participation. The EU took action to implement the provisions of the Convention in 2003, and two years later it became a party to the Convention. Public participation is also enshrined as a basic principle in the United Nations' 1992 Rio Declaration on Environment and Development.

Public authorities at all levels — local, national, European and global — hold large amounts of environmental knowledge: environmental and climate data, assessments, indicators, projections, maps, etc. Some of these data and assessments are directly linked to environmental legislation and are used for monitoring progress in specific areas, while others help define future policy objectives.

The globalisation of environmental challenges is changing the role of national governments in dealing with environmental issues, and non-state actors, including citizens, play an ever more important role in environmental governance. Access to comprehensible information is crucial for these actors to support the identification and implementation of alternative solutions (Van den Burg, 2006). Knowledge enables people to take better-informed decisions. Public participation and access to environmental information thus become elements of transparency and better governance.

Environmental policies and targets in Europe

The European Union and its Member States have put in place a wide range of legislation and targets aimed at protecting the natural environment, mitigating climate change, and building a sustainable future. In the EU, some policy objectives (e.g. that renewable energy should supply 20 % of the EU's energy demand by 2020 or that half of municipal waste be recycled by 2020), are spelled out in specific EU laws. Other objectives are less specific, allowing room for interpretation (e.g. 'living well, within the planet's ecological limits' in the 7th Environment Action Programme). Depending on its type, EU legislation relevant to the environment can either be entered into national legislation directly, or enacted into national law through national legislation that outlines how the country in question will implement and achieve the EU legislation's objectives.

The EU and national authorities monitor their progress towards environmental objectives and targets. The EU is on track to achieve some of its targets, such as on greenhouse gas emission reductions. In other cases, progress is more mixed. For example, biodiversity loss and ecosystem degradation continue, in spite of objectives that both should be curtailed. Some policy areas, in particular those that are linked to the way we produce and consume goods and services, are more difficult to tackle.

Legal and economic tools

Environmental legislation is usually implemented through a series of tools to achieve the objectives set out in the legislation. Some of the tools used most frequently by public authorities are economic, including fiscal tools. These could consist of imposing taxes on environmentally-harmful products; giving tax breaks on green products; or providing subsidies to boost cleaner technologies. Authorities can also use other policy, planning or legal tools, such as urban planning, banning the use of specific substances, or restricting emissions of greenhouse gases.

Such tools often directly or indirectly aim at changing certain behaviour patterns. For example, imposing extra taxes on environmentally-harmful products or services increases their sale price. Depending on the product, higher prices often work as a deterrent for the buyer, resulting in fewer quantities sold and ultimately consumed. This general correlation exists where the actual price makes a difference; i.e. where there are alternatives or where the consumer can do with less or without the product or the service. For some goods, especially those that meet basic needs, consumption levels do not respond to changes in the price. This responsiveness is known as 'price elasticity'. For certain goods and services even given high price elasticity, market mechanisms do not always result in a price that reflects the full environmental costs of the good or service.

“ Evidence from behavioural economics and social psychology can not only help us meet our goals more effectively, it can also help us to achieve them more cheaply, and without intrusive and burdensome regulations. ”

Osborne and Thaler, 2010

A large number of environmental assessments (e.g. EEA Reports No 7/2013 and 10/2013; EEA Brochure No 1/2014; EEA Report SOER 2015) conclude that existing environmental policies need to be implemented better if their objectives are to be achieved. Better implementation was also one of the points stressed in the 7th Environment Action Programme (7EAP). So how can we better implement existing policies? Integrating communications and insights from behavioural research could help.

Policy and behaviour change

Almost all policies, and the relevant measures to implement them, aim to achieve specific outcomes, which might require us to change some of our behaviour patterns. Some measures might target a limited number of well-defined actors with a very specific message, such as telling the operators of large combustion plants to restrict their emissions, or fishermen to limit their catch. Other policies target larger groups of actors (such as car or home owners) with indirect messages such as 'take public transport to work', 'insulate your home for greater energy efficiency', or 'sort your waste'.

Some changes in the behaviour of European citizens have already occurred. For example, Europeans are increasingly recycling a larger share of their municipal waste (EEA Report No 2/2013). However, Europe is still far from attaining a sustainable level of consumption and production (EEA Environmental Indicator Report 2014).

A number of countries have improved their resource productivity and recycling rates while others continue to rely heavily on landfilling.

But policies are not the only factor that can affect behaviour. Behavioural scientists and economists research other factors that also trigger behaviour change. Some of the new perspectives they offer could be used by policymakers in designing environmental policies, and by environmental communicators in designing policy communication activities. Policies and communication activities that have been informed by behavioural science in this way can help to maximise the potential of policy (see Chapter 3 on behavioural science).

The effects that policy has on behaviour are not confined to consumer-level choices. Public policy covering investments, infrastructure projects, bans, and other regulations can also determine production choices, which in turn influence the decisions made by businesses. By the time that consumer goods hit the shelves, a series of choices have already been made. Consumers can only choose from among the options offered.

Communication as a policy tool

Legal and economic tools are not the only ones available to policymakers. Moreover, in some cases, these tools might not be the most suitable and cost-efficient option to achieve a specific objective. Communication is also a policy tool and, in some cases, it can improve the outcomes of legal or economic measures at relatively little cost.

The nature of the policy measure in question plays a key role in determining the communication approach. Some measures are mandated by law, whereas others are voluntary. Communication of voluntary schemes might require a stronger focus on getting citizens on board and encouraging them to adopt greener behaviours (e.g. the European Commission's communication campaign Generation Awake ^(?)), whereas mandatory measures might require a more technical communication.

Irrespective of the nature of the policy measure at hand, public authorities almost always need to inform and communicate with different societal groups. For example, as in the phasing out of incandescent light bulbs in favour of energy-efficient bulbs, the target audience might ultimately consist of large segments of the society (e.g. those in households and businesses making purchasing decisions, as well as those using the service provided by the light bulbs).

Insufficient or misdirected communication of policy measures might result in public disapproval, and consequently, unwillingness to adopt the more environmentally-friendly behaviour. In some instances, the public might even question the legitimacy of the legislation as well as the legislator.

(?) Generation Awake (implemented between 2011 and spring 2015) aimed at encouraging young European consumers and families with small children to use resources sustainably to minimize impacts on the environment.

Public trust at stake

The role of communication should also be explored in the context of the public's interest in environmental issues, and of the public's trust in the ability of public authorities to mitigate the threats. Regarding public interest, the vast majority of Europeans (95 %) attach great importance to a healthy environment and think that protecting the environment is important (Eurobarometer 416). Despite these high levels of interest, seven out of ten Europeans think that their national government is not doing enough to protect the environment, and more than half of European citizens think that the EU is not doing enough either (Eurobarometer 416). Furthermore, almost all Eurobarometers since 2009 have recorded a decline in trust in the European Union, and this level of trust was at a record low with 31 % in 2013, after which it rose to 40 % in spring 2015 (Eurobarometer 80 and 83).

While more than half of Europeans generally feel well-informed about the environment, more than a third think they are badly informed. The demand for more information is higher when it comes to environmental issues that directly affect people and quality of life — for instance information on how chemicals in everyday products affect human health.

The level of knowledge contrasts sharply with expectations from public authorities. According to a Eurobarometer survey from January 2013 (Eurobarometer 360), 75 % of Europeans have not heard of the EU air quality standards. On the other hand, 79 % think that the EU should do more to address air quality problems in Europe.

These surveys point to a need for public authorities to communicate better with broader groups of actors to generate trust, as well as wide public support for — and acceptance of — environmental implementation measures. Public participation (involving in the decision-making process those potentially affected by the policy in question) could also help boost the support for the measures in question.

Communication enables public participation and engagement

The principle of stakeholder consultations is enshrined in the EU treaties as a key tool for transparent and informed policymaking. However, public consultation and participation in environmental decision-making is a two-sided commitment, which requires continuous and regular engagement (and hence communication) between the public authority and the citizen. The reasoning behind public participation is straightforward: if we take part in the decision-making, we are more likely to act in accordance with the decision reached. We are no longer just an 'audience', we become a 'stakeholder'.

The formulation and implementation of public policy is already moving in the direction of greater public participation and engagement. The EU has regular public and stakeholder consultations on legislative proposals.

In some cases, the dialogue and consultation are carried out within the European institutional setting, such as the Committee of the Regions and the Economic and

Social Committee. In other cases, they are carried out externally by organised stakeholders, such as Business Europe, the European Consumers' Organisation, and the International Union for Conservation of Nature.

Many pieces of EU legislation actually require EU Member States to enable public participation in decision-making processes. The EU's Water Framework Directive (WFD) divides public participation into three levels: information supply, consultation, and active involvement. In the context of the WFD, public participation is required in order to raise awareness, and increase acceptance and commitment by promoting a sense of ownership to improve the implementation of the Directive (European Commission, Directorate-General for the Environment, **“Public Participation in Relation to the Water Framework Directive”**, WFD Guidance Documents no. 8).

The EU has also built platforms to engage directly with citizens and to enhance their participation in policymaking and decision-making, including the European Year of Citizens 2013 and the European Citizens' Initiative.

The European Union identified 2013 as the **European Year of Citizens** with the aim to 'encourage dialogue at all levels of government, civil society and business, to explore where you — as citizens — want the EU to be by 2020 — in terms of rights, policies and governance'. A series of activities, including town hall debates with EU commissioners, aimed to bring European policies and policymakers closer to citizens.

IT'S ABOUT EUROPE
IT'S ABOUT YOU
Join the debate



www.europa.eu/citizens-2014

Available since 1 April 2012, the **European Citizens' Initiative** allows EU citizens to participate directly in the development of EU policies. By collecting one million signatures from several EU Member States, citizens can directly ask the European Commission to make a legislative proposal. Some of the initiatives submitted to-date deal with environmental issues, including the Right2Water initiative, which was the first one to be processed (www.right2water.eu).



European Citizens' Initiative

Integrating communications in policy

The EEA has analysed eight concrete cases where the public participation requirements outlined by the Water Framework Directive have been implemented. The findings are summarised in an EEA report entitled 'Public participation: contributing to better water management'. According to the report for public participation to be successful, the

institutional set-up and processes need to be clear and transparent to all participants. A common understanding of responsibilities is also important, including an understanding of the institutions responsible for specific economic activities or geographical areas (EEA Report No 3/2014).

Public authorities are responsible for setting up the structure facilitating public participation. They are expected to be transparent, involve the public, and listen. Communication activities are often the public's first interaction point with public authorities in the public participation dialogue.

Designing effective communications implies integrating communications in every stage of the policy process. A better understanding of the target audience helps in designing policy measures tailored to recognise and address their concerns, as well as their behaviour patterns. This can be achieved by moving from unilateral information provision to a dialogue. Based on the case studies, the report concludes that greater dialogue and engagement with the public right from the start can in turn generate wider support and acceptance during implementation phases later on.

Some countries are already integrating behaviour research in their policy processes with positive outcomes. For example, in the United Kingdom, trials using personalised feedback on energy use and neighbourhood comparative consumption schemes have had a positive impact on energy-saving behaviour (BIT, 2011). The Swedish Environmental Protection Agency has carried out similar trials, which have led to 2 to 20 % savings

in energy consumption (Mont et al., 2014). Research conducted by OECD also confirms positive results from behaviourally inspired approaches and continuous dialogue in areas such as pension schemes, organ donation, tax and fine collection, but also underlines that more research is needed to resolutely conclude from specific trials (Lunn, 2014).

It is clear that public communication alone cannot bring about the necessary transition to sustainability and is not always the most appropriate tool to use. However, when used alongside other policy tools (such as taxes, subsidies, or regulations), communication can be a very effective and cost-efficient policy tool that can boost public support and result in better implementation of environmental legislation.



Public debate at the European Parliament tent at Folkemødet
— The People's Festival — Bornholm, Denmark, June 2015
© European Parliament in Denmark

Chapter 2: Tools for better communication

A better understanding of what makes us behave the way we do allows us to design innovative approaches to communicate and engage with the public. This chapter gives an overview of some emerging tools and approaches⁽³⁾, which might prove useful if integrated into public policy communication. The selected tools build to some extent on behavioural science insights and are illustrated by examples provided by communicators in environmental protection agencies across Europe.

Nudging

'Nudging' is an umbrella term for attempts to influence the choices of people in a predictable way without limiting the set of choices available to them. A nudge is like a gentle push to encourage certain behaviour. The voluntary element is essential, and there are no sanctions if behaviour is not changed. Examples of green nudges include slightly smaller plate sizes or trayless cafeterias to reduce food waste. In open-buffet restaurants, smaller plates lead to smaller servings. Guests have the option to go back to the buffet for more food, but smaller plates tend to reduce the possibility of taking more food than one can eat, resulting in less food waste. Smaller portion sizes also tend to reduce the total amount of food consumed. Perceptions can also differ. The same amount of food served on two smaller plates is more likely to be perceived as overeating.

Nudging recognises that people are not rational beings, but rather beings with inertia to change, cognitive flaws, and bounded willpower. It also recognises that people operate under the influence of biases and heuristics (rules of thumb strategies that help people make quick decisions, but which may not always lead to the best decision). The term 'nudge' in a behaviour-change context is relatively new, introduced by Sunstein and Thaler in 2008.

Nudging consists of making a choice attractive and easy by making small changes to the setting in which people make their decisions and conduct their actions. Nudges are non-guilt inducing and often based on simple visual designs or words, like painting shoeprints on the pavement leading to garbage cans and placing informative thank-you cards in hotel rooms for guests' efforts to save water. 'Subtle alterations aimed at encouraging more desirable behaviour without coercing the individual are known as nudges' (Ipsos MORI, 2012). Nudges can be used for all segments of the population and in all policy areas, but they seem to work best for limited shifts in specific behaviours.

⁽³⁾ The classification of the selected tools and approaches may vary. For instance, some scholars see nudging as a subset of social marketing and others use the term 'distributed dialogue' rather than social innovation.

Nudges aim at instilling new norms of behaviour without requiring mental energy or time from people. They target people's emotions and not their values and attitudes — following the assumption that appealing to emotions is a more effective form of communication than cognitive communication. Nudges can disassociate 'environmental action' from 'effort'.

In some policy areas, nudging can offer a low-cost alternative to more common policy tools, such as bans, fines, and traditional information campaigns. And public authorities are using 'green nudges' or 'ecological nudges' more and more to complement traditional tools for instance in the area of energy use.

Studies from the United States have shown that responsiveness to green nudges varies according to people's levels of altruism as well as their general support for the ecological cause. Another voice of concern points to the probability that nudges only shift people's behaviour as long as the nudge exists (Centre d'Analyse Stratégique, 2011).

Social marketing

Compared to traditional marketing aimed at selling products and benefitting the marketer, social marketing aims to sell ideas, attitudes (e.g. 'cycling to school is cool') and behaviours benefitting the target audience and the wider public. Social marketing broadly consists of applying marketing practices to campaigns

aimed at changing behaviour for the benefit of the individual and the society by introducing 'competitive offers'. A competitive offer means offering an alternative product or routine, which ultimately leads to change in attitude and/or behaviour. 'Behavioural change is achieved through the creation, communication and delivery of a competitive social marketing offer that induces voluntary change in the targeted audience, and which result in benefit to the social change campaign's recipients and the broader society at large' (Dann, 2009).

Audience segmentation — targeting a campaign to a specific segment within a community — is essential in social marketing. It enables the campaigners to develop tailor-made messages, information packages, and incentives.

Direct and personal contact with people (e.g. holding town-hall debates and presentations) is also essential and is part of a deliberate engagement approach to encourage the target group to take up new actions. Direct engagement helps the audience understand the need for change and act on it. Asking individuals to commit themselves to reaching a certain goal is another technique of social marketing.

Similar to many other tools, the success of social marketing depends on whether the target groups agree to the end-objective and see a benefit to themselves among the alternatives offered. It seems to work best at local and community levels in particular. Social marketing campaigns identify the target groups and the barriers to the desired behaviour. They then create a detailed plan of

Case study

A yellow fish and water

Oil and other toxic substances in rivers and streams affect water quality and harm animals and ecosystems. To induce people to take better care of water resources, the Environment Agency of England and Wales introduced a yellow fish as the main character of its awareness campaign. Keep Wales Tidy launched the Yellow Fish Campaign in Wales in 2012, signing up ten local authorities in the first year. Citizen volunteers of all ages paint the fish next to drains and gullies as a reminder of the damage caused by pouring oils, solvents, chemicals, varnishes etc. into them. The campaign has succeeded in raising awareness that street drains carry rainwater to the nearest stream without any treatment.

Reference: Natural Resources Wales, Local authority services and the water environment. Advice note on the Water Framework Directive.



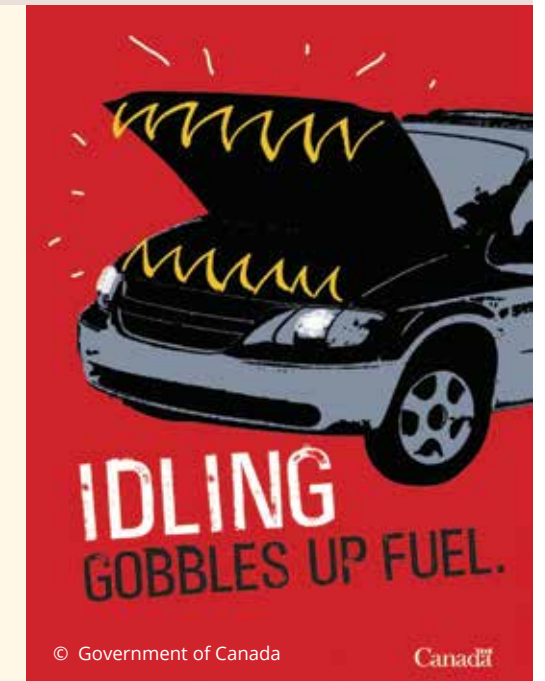
© Keep Wales Tidy

Case study

Welcome to the Idle-Free Zone

To reduce energy consumption in the transport sector, the Government of Canada decided to tackle what was identified as one of the main contributors: unnecessary idling — keeping vehicle engines on to warm up or cool down their vehicle, to wait for other passengers, etc. To this end, the government developed its own communication campaign, and encouraged citizens to run their own public education and awareness campaigns in their communities. The government's campaign tools included some fast facts and myths, FAQs, an idling impact calculator, and a personal five-step action plan.

References: Government of Canada www.nrcan.gc.ca/energy/efficiency/communities-infrastructure/transportation/idling/4397. More on community-based social marketing: www.cbsm.com.



© Government of Canada

Canada

interventions they intend to carry out. Personal contact and feedback about progress between the organisers of the campaign and the target audiences motivates target audiences to continue with the desired behaviour.

Social marketing can also be used in communities that do not yet see a need for pro-environment behaviour. When deliberately engaged, people take ownership of the change process, for example taking responsibility to reduce greenhouse gas emissions. Arguably, this makes a long-lasting behaviour change more likely and can build legitimacy and support for legislation (Haq et al., 2013).

At the same time, social marketing campaigns require substantial effort and time to prepare and implement. Critics also argue that segmentation within a small community can actually deepen the differences among individuals and affect the 'social glue' negatively (Haq et al., 2013).

Social innovation

An EU research project (4) defines social innovations as 'new solutions (products, services, models, markets, processes etc.) that simultaneously meet a social need more effectively than existing solutions, and lead to new or improved capabilities and relationships and better use of assets and resources' (Davies and Simon, 2013). Examples include car-sharing schemes, organic gardening cooperatives and community composting schemes.

Social innovation foresees citizen involvement and empowerment (BEPA, 2010). Social innovation projects can be initiated by different societal agents, including community groups and networks, as well as public and private entities.

According to the European Commission (University of the West of England, 2014), the success of a social innovation project depends on several factors, including the existence of a core leader or group, ability to adapt to changing socio-economic and environmental conditions, a well-coordinated plan of stakeholder engagement, and availability of support from local government.

Compared to traditional policy formulation processes, social innovation can bring about higher levels of public trust and shifts towards new social norms. One of its strengths consists of 'reframing'. Reframing implies shifting focus, for example seeing a wetland area as a social asset instead of an environmental problem. Social and environmental challenges can be reframed as opportunities, allowing for new solutions and ideas to emerge.

Given its focus on participatory processes, social innovation tends to be initiated at local level. However, some could be relevant and applied at global scale, e.g. zero-carbon housing developments. Some social innovation initiatives have also led to 'sharing economies' where different types of items (tools, clothes, books, etc.) can be shared within a neighbourhood or a community.

Although local government support often gives a boost to social innovation projects,

those projects that are structurally self-reliant and independent from public authorities (e.g. for their management and funding) tend to be more effective. However, remaining independent is often a challenge, especially in cases where a wide range of stakeholders, including public authorities and private companies, get involved in the project.

Case study

Social innovation for the benefit of the environment and vulnerable citizens

Honey bees are vital for the pollination of a wide variety of fruits and vegetables. City Bees, a Copenhagen-based social enterprise, addresses both an environmental problem (the decline in bee populations) and a social problem (unemployment for homeless and other less privileged people). City Bees train homeless people as beekeepers, and establish bee hives on the roof tops of their project partners. Their objective is clear: to boost urban bee populations, to make the city more fertile and healthier, to create opportunities for less privileged groups, and to stimulate new contacts between different social groups.

References: Center for Socialøkonomi, 2014. *Innovative Socialøkonomiske Forretningsmodeller - Hvordan kan de skabes, udvikles og styrkes?* www.bybi.dk; www.honeyhaven.org.



At EU level, social innovation is increasingly seen as part of the overall innovation agenda. The EU support for social innovation research and actions initiated under the Seventh Research Framework Programme continues under Horizon2020 (EC, 2014).

Social media

Andreas Kaplan and Michael Haenlein define social media as 'a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content' (Kaplan and Haenlein, 2010).

Social media create highly interactive platforms through which individuals and communities share, co-create and discuss information, ideas and opinions. Social media differ from traditional media especially in terms of reach, frequency, usability, proximity and immediacy. They allow real-time and direct conversation between organisations, communities, and individuals. The language used on social media also tends to be more direct and accessible, which is another factor contributing to its appeal to wide groups, and to young people in particular.

Given their accessibility and timeliness, social media have become a powerful tool to create networks and virtual communities, and to reinforce a sense of belonging and identity that crosses traditional boundaries of nationality and borders. As such, they are also a strong facilitator of social innovation.

(4) Theoretical, Empirical and Policy Foundations for Social Innovation in Europe (TEPSIE).

An increasing number of public authorities in Europe are active on social media, with the aim of prompting dialogue with people where they are: Facebook, Twitter, YouTube, blogs, podcasts, online forums and wikis. Social media can be an efficient and cost-effective tool for public institutions to communicate with their audiences.

However, the fact that social media makes it easy to access wide audiences does not mean that it makes it easy to motivate and mobilise these same audiences. Reach does not equate to influence.

Public participation

Public participation consists of involving those potentially affected by a decision to be part of the decision-making process. It is a means for citizens and organised stakeholder groups to influence policy and is intended to lead to more sustainable and acceptable decisions. Public participation has been applied with good results in many different sectors, including health, environment, transport, energy, and urban planning. It requires good planning, well-defined communication channels, and commitment. Various tools, many of which are linked to communication, can be used to implement public participation processes. They include large-scale consultations, surveys, public meetings, workshops, open houses, online discussion forums, polling, citizens' advisory committees, and many more.

can be a mutually beneficial process for all involved, benefitting both policymakers and citizens. 'Social participation and decision-making participation are closely related and important for the design of our communities and our democracy' (Fiack et al., 2013).

Societal transition towards sustainability requires citizens' engagement and participation. Public participation allows governments to adopt policies and enact laws that are relevant to communities and thereby stand a greater chance of being accepted (Fiack et al., 2013). Greater acceptance by relevant communities would in turn imply a greater chance of being implemented.

Case studies from England and Germany reveal that the potential of public participation is not fully recognised and exploited (Fiack et al., 2013), partly because politicians as well as public sector employees are not well equipped to carry out public participation processes. Moreover, social groups might struggle to articulate their views at the right time and in an appropriate form. This requires public participation processes to be designed to accommodate all relevant societal groups.

Public participation is frequently associated with emerging concepts such as open government, collaborative governance, deliberative democracy and citizen engagement (Black et al., 2014). Ultimately public participation aims at improving governance. According to Bert Enserik of Delft University, processes for public participation have to be cooperative, and respectful of the interests, culture, and values of the community. They should also be well adapted to the context, informative, educative, inclusive, equitable, and accountable (Enserik et al., 2009).

Given its close correlation with democracy, greater public participation can help restore and boost public trust in government. It

Ecolabelling

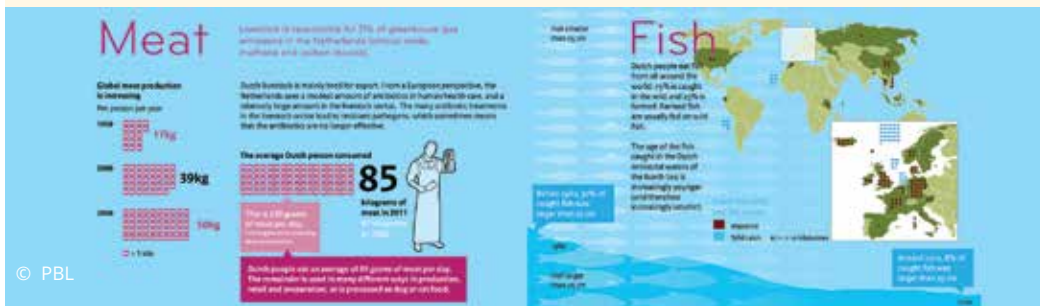
Ecolabelling is a voluntary method of environmental labelling. The International Organisation for Standardisation (ISO) classifies ecolabelling as a voluntary programme that authorises 'the use of environmental labels on products indicating overall environmental preferability of a product within a particular product category

Case studies

More visual and digital storytelling

Since 2012, the PBL Netherlands Environmental Assessment Agency (PBL) has produced several studies making use of visual communication and digital storytelling tools, such as infographics, one-pagers, and interactive websites supporting — or even replacing — paper reports. Their 'The Netherlands in 21 infographics' publication presented facts and figures on food, energy and transport in a novel way, and with this publication the PBL won the 'Dutch Infographic Award 2013'. The PBL's first completely digital report 'Biomassa' uses interactive data visualisations to present complex and differing scientific insights about the potential of biomass for the Netherlands. The infographics and digital reports were purposely designed to be easy to share and consume online, on social media in particular, which made the messages widely spread across the Netherlands.

References: <http://www.pbl.nl/en/publications/the-netherlands-in-21-infographics>.



Community steers environmental improvements on social media

The Eco Llynfi project, supported by the Bridgend County Borough Council, aims to give increased responsibility to environmental groups in environmental management and protection in the Llynfi valley in the UK. The project group used social media, especially the Eco Llynfi blog and Twitter, as the main tools to enhance community engagement. To facilitate this community engagement, training sessions were held for citizens on how to blog and tweet. These social media channels enable two-way communication, not only keeping citizens up-to-date but also allowing them to share views and propose activities, such as events to plant trees and wild flowers.

Reference: Natural Resources Wales, *Local authority services and the water environment. Advice note on the Water Framework Directive*.

Case studies

Citizens speak up before laws are passed

Before any new legislation is passed in Greece, the government engages with the citizens in a public consultation to improve the implementation of the legislation. Almost all draft legislation and policy initiatives by the government are posted in a blog-like platform before their submission to parliament. Citizens and organisations can post their comments, suggestions and criticisms on each initiative or item of legislation. In the case of environmental legislation, the ministry of environment supports the consultation process with targeted communication campaigns about the upcoming legislation. For example, the campaign on recycling was featured in mass media, social media, and public spaces (including screens at metro platforms), and brought citizens together in workshops and interactive educational games.

References: www.opengov.gr.

Open Science at EFSA: Giving society a greater stake

The European Food Safety Authority (EFSA) has been exploring how it could better meet society's expectations as the scientific risk assessor for the EU's food safety system. EFSA also aims to transform itself into a more open and transparent organisation. Before drafting a policy document that will underpin the transformation process, EFSA launched an open consultation to collect input from interested parties and to understand the implications that increased openness and transparency could have for the Authority's organisational set-up.

References: www.efsa.europa.eu/en/consultations/call/140717.htm.

based on life cycle considerations' (Global Ecolabelling Network, 2004). Ecolabelling is a commonly used instrument for promoting sustainable consumption (www.ecolabel.eu).

Labelling schemes in general aim to enable consumers to make an informed choice between various products and services. Labelling can serve as a platform for communication between consumers and producers. Consumers' preferences can be a market signal, demanding improvements in the production and supply chain (Danish Environmental Protection Agency).

There are both official and private labelling schemes. Official schemes (e.g. the European Ecolabel, the German Blue Angel and the Nordic Swan) have formal environmental standards, and licenses are awarded by independent third-party organisations to guarantee impartiality, control, and credibility. A number of large private retailers, including Tesco, Wal-Mart and Arla Foods, have introduced their own ecolabelling, covering standards such as nutritional content or the amount of greenhouse gas emissions used in creating a product. These private ecolabels are not part of a third-party verification scheme.

Ecolabelling raises several issues of concern, mainly linked to building and maintaining consumers' confidence in ecolabels. The large number of both official and non-official ecolabels can undermine the credibility of ecolabelling. Some brands might be tempted to boost the image of their products with unproven claims such as 'recyclable', 'eco-friendly' or 'low energy'.

To address such 'greenwashing' concerns and to boost confidence in ecolabelling in Europe, the EU introduced a Regulation on the EU Ecolabel in 2009 to strengthen the criteria for awarding the label (Regulation (EC) No 66/2010). From a behavioural research point of view, there are still untapped opportunities with regard to labelling of appliances and buildings. Arguably, redesigning labels and energy performance certificates to contain clearer and more salient information could further improve the effectiveness of labelling with up to 5 % for consumers buying appliances (Mont et al., 2014).

Although the market share of ecolabelled goods is increasing, it still represents a small share. Moreover, the schemes are dependent on commitment from industry, and some phases of the life cycle are difficult to control (Danish Environmental Protection Agency).

Case study

European Ecolabel

The European Ecolabel, launched in 1992, is an official ecological certification valid throughout the European Union. It covers product categories such as tourist accommodations, soaps and shampoos, paper, textile products, television sets, paints, etc. Each EU Member State has designated a national organisation implementing the scheme at national level.

In the EU, the European Ecolabel is an integral part of the sustainable production and consumption policy (EC Regulation 66/2010). As stated in the EU Ecolabel brochure: 'When you see the EU Ecolabel logo on a product, it means less waste, less pollution and products that are better for the planet' (www.ecolabel.eu).

Citizen science

The definition of the term 'citizen science' has ranged from local knowledge to citizen involvement in the last four decades. In practice, the term 'citizen science' is used to refer to a diverse range of projects with widely different aims and objectives, and different approaches to working with volunteers (University of the West of England, 2013). The European Citizen Science Association (ECSA) defines citizen science as 'organised research where the balance between scientific, educational, societal and policy goals varies across projects'.

Citizen science aims first and foremost to gather data and information in order to improve scientific knowledge about a specific topic. Citizen science may consist of projects engaging just a handful of participants in one particular research area or many thousands of people across several continents. It includes activities that go under other names such as 'community science' and 'volunteer monitoring'. The different terms reflect the various types of citizen involvement in the scientific process, ranging from collecting samples, to analysing new information, to drawing conclusions and defining actions. Irrespective of the level of knowledge and skills required, all citizen science projects involve increasing citizens' awareness and understanding of a topic and engaging them to take action.

Citizen science has two key advantages. The first is its low cost. New technologies, such as mobile apps, are breaking down the barriers to participate in the creation of scientific knowledge by lay people, allowing

Case studies

Citizens scientists across Europe

Slovakia

Enviróza is an educational programme in the form of an outdoor game for primary and secondary school students in Slovakia. In the game, students and their teachers search for environmental burdens in their region using geographic coordinates and maps, and then report their findings online. Data submitted by schools are used by experts in the Slovak Environment Agency to update the country's national Information System of Environmental Burdens.

References: www.enviroza.sk.

Estonia

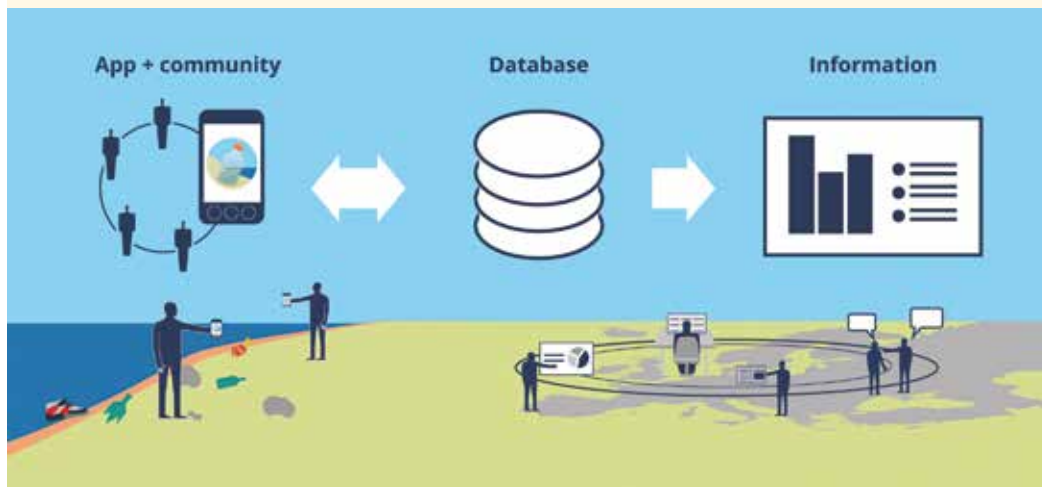
The Estonian Nature Observation Database also aims to broaden its knowledge base on the state of different species in the country. Citizens can submit observations of species they recognise, or submit photographs if they cannot identify the species. Submissions are then verified by experts and displayed on a map (UTM grid 10 x 10 km) accessible to everyone. After inspection, observations of protected species get incorporated in the Estonian environmental register.

References: <http://loodus.keskkonnainfo.ee>.

Marine LitterWatch

The European Environment Agency has developed Marine LitterWatch (MLW) in order to fill data gaps related to marine litter and to raise awareness about the issue. MLW is a mobile phone app that allows interested citizens and communities to upload information on the types of litter they see on beaches. With these data, MLW aims to support official monitoring for the Marine Strategy Framework Directive.

References: http://www.eea.europa.eu/themes/coast_sea/marine-litterwatch.



scientists to have access to large pools of data that they would ordinarily be unable to create. The second is the ability of citizen science to engage ordinary people in the process of understanding their environment. This can help to improve acceptance and implementation of environmental policy based on that science. In some cases, the data collected by citizens (e.g. airport noise levels) can empower them to challenge official measurements and ask the government to take action.

However, there are also concerns linked to citizen science. A major concern is data quality. Large numbers of people gathering data creates a risk that the data gathered may not always be of high quality. A second concern is how resource-intensive citizen science can be. Although citizen science presents opportunities for cheap sharing of information by new technology, it also requires considerable resources to manage and prioritise this work.



Chapter 3: What does behavioural science say?

Understanding what is likely to induce behaviour change, and designing communication efforts with this knowledge in mind, can lead to better policy implementation and help increase public support of environmental policy. This chapter aims to give an overview of some recent insights from behavioural science, and show how they might be useful for policy and environmental communication.

'Behavioural science' embodies a wide range of scientific disciplines and draws on research from cognitive and social psychology, neurosciences, economics, and other social sciences. Behavioural science contains a pool of knowledge about how to inspire people to change behaviour. There are now numerous research projects and practical case studies that highlight the benefits of integrating behavioural insights into communication activities in order to improve the efficiency of public policy (Dolan et al., 2010; Pollitt and Shaorshadze, 2011; van Bavel et al., 2013).

Insights from behavioural science are increasingly being used in public policy design, implementation and evaluation. The United States, Canada, Australia and Germany have created distinct units attached to their administrations with the objective of transforming behavioural science and nudging into public policy. In the United Kingdom, the Behavioural Insights Team used to be an integrated part of the Government, but is now a social purpose company independent of the UK Government.

Part of this interest in behavioural science comes from a recognition that it could enhance the effectiveness of policy in times of reduced budgets. Dolan et al. argue that the impact of 'the money government spends trying to change behaviour will be maximised if it draws on evidence of how people actually behave' (Dolan et al., 2010).

How do we decide?

The neoclassical economic model describes decision-making as rational and conscious. This model is being contested by many. Critics argue that the neoclassical model should be revised because:

- other people's behaviour matters
- habits are important
- people are motivated to do the right thing (in many cases money is actually de-motivating);
- people's self-expectations influence how they behave
- people are loss-averse
- people are bad at computation
- people need to feel involved and effective to make a change (Dawnay and Shah, 2005).

According to behavioural science, people have 'bounded' — or limited — rationality, bounded willpower and bounded selfishness. In other words, compared to the neoclassical economic model, people are less rational and less self-centred. However, their deviation from rational behaviour is done in predictable and systematic ways.

According to Daniel Kahneman, a leading scientist in research on cognitive biases, people use two different methods to make decisions: (i) a quick, automatic, unconscious and intuitive method and (ii) a slow, reflection-based, conscious and controlled method. The former is based on habits and experiences, and is likely to ignore or undervalue information that goes against one's values (and ideas). It often leads to people taking decisions without focus on long-term perspectives (Kahneman, 2011).

Most actions are based on the former 'unconscious' method of decision-making. Yet, people identify themselves mostly with the reflection-based method, namely as beings who objectively evaluate available information before making decisions. People generally think that their decisions and actions are more rational than they actually are.

Behavioural science also acknowledges that people are heavily influenced by judgement heuristics, i.e. rule-of-thumb strategies that allow people to make decisions quickly and

efficiently. Arguably, heuristics can lead to biases as people do not take time to consider new information and alternative points of view (Thaler and Mullainathan, 2008; University of the West of England, 2012).

Behavioural researchers have identified other important characteristics of behaviour, one of which concerns the importance of social context: when unsure about what to do in a certain situation, people are inclined to do what others do to obtain social acceptance, a phenomenon known as 'herding'. Behavioural research also highlights the risk-averse nature of most people: they will rather act to avoid losing what they already have than act to gain something new (Southgate, 2005; The Government Communication Network, 2009).

According to the Policy Studies Institute, emotions are central to decision-making: 'To influence behaviour, the cognitive system must operate via the affective system' (McGeevor, 2009). This

argument is supported by theories arguing that the clue to enabling behaviour change is to address fundamental human needs such as appreciation, self-realisation, identity, and the need to belong. Accordingly, the more that such basic human needs are addressed in a communication effort, the greater the chances that communication will change people's behaviour. In this context, the target audience's opinion about the 'sender' of a piece of information is important for how people perceive the information (Dolan et al., 2010).

“Behavioural economics recognises the limits of human rationality, with 'rationality' being defined by the mainstream economic sense of the word, and comprises a number of observations appertaining to human decision-making that do not sit well with the neoclassical orthodoxy.”
Oliver, 2012

In addition to more general studies on people's and citizens behaviour, there are specific studies analysing consumer behaviour. McGeevor, using a consumer's perspective, sums up a number of behavioural biases. According to McGeevor, consumers...

- rarely weigh up all the costs and benefits of choices;
- use mental short-cuts to help speed up decision-making;
- respond more to losses than gains;
- value products much more once they own them;
- place a greater value on the immediate future;
- can be overwhelmed by excessive choice;
- are heavily influenced by other people; and
- use products to make a statement about themselves' (McGeevor, 2012).

Knowledge does not always lead to behaviour change

It is tempting to assume that if people have sufficient information on a given subject, they will take the decision to change their behaviour. This is not necessarily the case. Behavioural science has shown that the role of information in behaviour change can often be overestimated. Information itself will not automatically change people's behaviour (Kollmuss and Agyeman, 2002).

However, communication activities can be designed to enhance the chances of people 'doing the right thing' using insights from behavioural science. According to the UK Government Communication Network, 'behaviour change' and 'doing the right thing'

may entail the following:

- start to adopt a new behaviour
- stop doing a certain behaviour
- prevent the adoption of a negative behaviour; or
- change or modify an existing behaviour (The Government Communication Network, 2009).

One line of thinking within behavioural science is to shift the focus of attention away from facts and information towards changing the context within which people act. It is called 'choice architecture' or 'framing' and is about influencing people merely by how choices are presented (Defra, 2013). Placing healthy food in an attractive way and in front of not so healthy food can influence what people eat. Such framing can make it more likely that people take the decisions, which they would like to make but often fail to do (Oliver, 2012).

Research also confirms the power of defaults, which are options that are pre-selected. A default option is when the photocopier automatically prints on both sides of the paper or when mobile phones come with an already enabled security password. Defaults are less controversial than rules and bans. And defaults often work well even when people know they are being 'defaulted' (Reisch, 2014). Avoiding choice overload and making the default option the optimal choice are important to bear in mind.

Many communication efforts focus on the information-knowledge step, but to attain the desired outcome, communication aimed at changing attitudes and behaviour might

prove more effective (James, 2010). According to the European Commission's Joint Research Centre, efforts to change behaviour should also focus on the behaviour itself (van Bavel et al., 2013). As Kollmuss and Agyemann argue, 'If we want to establish a new behaviour, we have to practise it. We might be perfectly willing to change our behaviour but still not do so because we do not persist long enough in practising the new behaviour until it has become a habit' (Kollmuss and Agyeman, 2002).

Context- and audience-specific messages

How do communication campaigns influence long-term behaviour, if at all? And can the results of real-life trials in certain communities be applied to other places and sectors? Many researchers stress the need for more examination of short- and long-term behaviour changes brought about by communication campaigns or nudges (The Economist, 2012).

Clearly, what works in one context is not necessarily easily reproduced in another setting, hence researchers and practitioners must be very specific about stating not only 'what works', but rather 'what works for whom in which context'. Behaviour always happens in a specific context. A person's behaviour can greatly differ depending on the social and physical context (Ipsos MORI, 2013).

Using marketing techniques such as audience segmentation in designing communication strategies might help policy practitioners to tailor their messages to

their audiences. In the context of public communication on the environment, Defra (the United Kingdom's ministry of food, environment and rural affairs) has developed an environmental segmentation model, which allows for specific targeting of communication messages to different groups.

The Defra model comprises seven clusters of audiences, each sharing a distinct set of attitudes and beliefs (Defra, 2008a). Defra has also carried out audience segmentation work covering farmers (Defra, 2008b).

Applying behavioural science to environmental policy

Many studies see a clear advantage in incorporating insights from behavioural sciences to environmental communication and communication about climate change issues (OECD, 2012; Pollit and Shaorshadze, 2011; UNEP/Futerra, 2005; Centre d'Analyse Stratégique, 2011). These insights can help identify the factors that both prevent and enable people to adopt green behaviour.

The OECD argues that environmental policy — more than any other policy area — may be a particularly suitable field to apply the insights of behavioural science. It argues that 'insights from behavioural economics are likely to benefit particularly environmental policy because many of the "choices" that have significant environmental implications are the outcome of a complex set of motivations. Indeed, environmental related decisions often require careful consideration between external, internal and social factors' (OECD, 2012).

In this regard, some literature underlines that 'the motivation to protect or improve the environment is rarely the primary motivation for people's pro-environmental behaviours, but may run concurrently. Many "environmental behaviours" observed turn out to be motivated by desires to save money, promote health, be seen favourably by others, or by a sense of justice' (Umpfenbach, 2014).

A person who has changed his or her behaviour in one aspect is likely to make a broader range of changes, a phenomenon known as the 'spill-over effect'. When the city of Stockholm, Sweden, introduced congestion charges, the number of people commuting by car dropped only slightly. Nevertheless, after the introduction of congestion charges, half of the people surveyed had adopted greener behaviour in other areas — using heating and water more sparingly, switching off lights when not in use, etc. According to Kaida, such positive spill-over effects might be linked to other environmental information campaigns that raise general awareness levels, not only those campaigns targeting drivers (Kaida, 2014).

Some explanation for the spill-over effect might be found in the theory of 'cognitive consistency', which stipulates that people have a strong inclination to ensure consistency between what they say and what they do. However, there are many critics of this theory. A report by the Ecologic Institute in Berlin concludes that 'a study in the UK found no correlations between a person undertaking a green behaviour and undertaking another, or correlations were very weak' (Umpfenbach, 2014).



Mixture of policy tools

A number of studies suggest that communication tools must be backed by other policy instruments as well as new technology, better infrastructure, and appropriate institutional support to ensure green behaviour and long-lasting improvements to the environment (Pollitt and Shaorshadze, 2011; SPREAD/FP7, 2012; University of the West of England, 2012).

Certainly much of the literature reviewed in this study emphasises that the application of behavioural science to public policy is not a cure-all. Policymakers should continue to use traditional policy tools, including taxes, subsidies and communication efforts, but they should enhance these tools with insights from behavioural science (Dolan et al., 2010; Pollitt and Shaorshadze, 2011; Oliver, 2012; van Bavel et al., 2013).

It is likely that the greatest impact of behavioural science is its role in improving the effectiveness and acceptability of existing policy tools. In fact, the European Commission's Directorate General for the Environment suggested that 'behavioural tools' be added to the list of tools available for policymakers (University of the West of England, 2012).

The European Commission's most recent conference ⁽⁵⁾ on behavioural economics concluded that EU policies must be much more efficient and that behavioural insights

can improve policy effectiveness. Earlier EU conferences on behavioural economics highlighted the need for behavioural testing tools — both at EU and national level — to guide policymakers in their design of policies (European Commission, 2008, 2010, 2013).

According to a report from the Joint Research Centre (JRC), the first concrete application of behavioural sciences by the EU was in the Consumer Rights Policy Directive in 2009. In 2012, DG Health & Consumers set up a Framework Contract for the provision of behavioural studies, aimed at facilitating behavioural studies in support of EU policymaking. The JRC report argues that the application of behavioural science is relevant to all EU policy areas that include a behavioural element (van Bavel et al., 2013).

Defining boundaries

There are also voices of caution that warn against applying behavioural science to public policymaking. Critics argue that the use of behavioural sciences by public authorities is a possibility for them to influence people in an unacceptable way (Ipsos MORI, 2013). For example, Dunt defines nudging as side-stepping people's consciousness and influencing them without them knowing it is happening (Dunt, 2014).

Such concerns touch upon the broader question of whether governments should attempt to change behaviour. Many policies are already aimed at influencing behaviour by suggesting alternatives or limiting choices. Despite large regional variations, globally there are as many people who think that the government should get involved in behavioural

interventions as those who think it should not. Many people think that government should indeed stop bad behaviour, just not their own.

The defenders of using behavioural science in public policy counter that all policy seeks to change behaviour in one way or the other, and that charges of paternalism should not dissuade governments. McGeevor argues that 'policy instruments that are uninformed by research from behavioural science are not necessarily less paternalistic, they are simply less likely to be effective' (McGeevor, 2009).

There are also ethical and legal issues to be considered by public authorities. Determining the boundaries of government intervention has never been easy. Ultimately, policymakers must strike a balance between 'including the increasing range of scientific and theoretical insights whilst maintaining a practical approach that is transparent to stakeholders' (University of the West of England, 2012).

⁽⁵⁾ The first was held in 2008 with the title 'How can behavioural economics improve policies affecting consumers?' The 2010 conference was entitled 'Behavioural economics, Should policy-makers care?', and in 2013 a conference was held under the title 'Applying behavioural insights to policy-making'.

Recommendations

It is clear that public communication alone cannot bring about a society-wide transition as outlined in the EU's policy objective of living well within the limits of our planet. But by embracing recent innovations in communication technologies and insights from behavioural science, communication can complement other policy tools and rally support for environmental measures.

This study draws on the experience of the network of communicators in environmental protection agencies across Europe. In numerous discussions, communication practitioners in the EEA's network highlighted some recommendations for consideration when designing policies and communication activities. Some are captured below:

Design and use communication as a policy tool to enhance implementation

Depending on the policy measure in question, communication can boost the public's acceptance and endorsement of it. For effective results, communications thinking should be integrated in policymaking from earliest stages onwards.

Communication cannot replace but can complement other policy tools, such as regulation, bans, taxes and subsidies, to influence behaviour.

Identify and understand your audience; listen

Consumer behaviour studies use market segmentation to target their products and communication efforts. Resources permitting, public authorities could benefit

from some of these audience segmentation practices when designing policy measures and communication campaigns. 'What is in it for me?' is a question for which targeted segments will expect answers. Social media offer new and innovative ways to listen and identify target audiences.

Engage, and be transparent and accessible

Building an institution's 'brand' is an important part of public communication. When an institution encourages and facilitates public participation, it helps to reinforce public trust in that institution and boosts public acceptance of environmental measures. Many policies have already started to integrate public participation into their legislation, e.g. the Water Framework Directive.

Pick the messenger most suited to your message

Depending on the message, public authorities are not necessarily the messenger that is best-suited to generating behaviour change. As mentioned above, people's decisions and attitudes are heavily influenced by their peers and social context.

When it comes to consumption decisions, peers might be much more effective messengers than public authorities, which might be perceived as intrusive. However, in other cases, public authorities might be the most trusted source of information, for example in calculating and disseminating information on greenhouse gas emissions from industrial facilities.

Understand the context, and contextualise your message

Especially in times of economic constraints, the pro-environment discourse might be de-prioritised in favour of the pro-economic discourse. Behaviour and decisions all sit within a context, be it social, political or cultural. Communication cannot be effective without understanding the audience's context.

Social media and the Internet have changed the way and the speed with which we communicate and receive information. It is vital that public communicators respect this new context and the demands it places on their audiences in terms of their time to digest new information.

Design communications to appeal to people's emotions and senses

The 'irrational' and 'impulsive' traits in our decision-making make our behaviour more open to emotional influences. In some cases, art and other creative communication means can change behaviour and mobilise people in more subtle ways than other policy tools.

Keep your message simple and targeted

The message needs to be relevant and easily understood by the target audience. Nudging is built around the concept of making it easier for people to do the 'right' thing, which in environmental communication corresponds to choosing the more sustainable alternative.

Make your communication relevant

The message and the topic communicated should be close in time and space to your audience. It should also be personal and practical. Responses and dialogue should be at the right scale.

Recognise that the positive impacts of actions needed in the short-term are often not visible until much later. This time lag could diminish the sensation of 'urgency', and weaken the incentive to make environmentally-friendly decisions.

Select and reframe 'achievable' objectives

Presenting environmental objectives as unrealistic or unachievable might lead people to ignore or deny the problem altogether. The overall objective of behaviour change — both at individual and societal level — needs to be based on the assumption that 'we can make a difference'.

Foresee and manage risks

In addition to opportunities, the speed of change in the world of online communications can bring a lot of uncertainty and risks for communication professionals, including lack of control of corporate image, unplanned dissemination of information, and privacy and copyright protection issues. It is imperative for communicators to analyse potential risks, and to update and adapt their communication processes accordingly.

Keep up-to-date with new communication trends and tools

Reaching target audiences/stakeholders requires being present and active in the public debate on the platforms of their own choosing. Observe, adopt and be flexible when it comes to choosing tools and identifying stakeholders.



Recommended further reading

Ballard, H., Shirk, J., Phillips, T., Jordan, R., Wilderman, C., McCallie, E., Bonney, R., 2014, *Public Participation in Scientific Research: Converging on effective design strategies*, Cornell Lab of Ornithology.

Joint Research Centre (JRC), European Commission, 2016, *Behavioural insights applied to policy — European Report 2016*.

Pocock, M. J. O., Chapman, D. S., Sheppard, L. J. and Roy, H. E., 2014, *Choosing and using citizen science: A guide to when and how to use citizen science to monitor biodiversity and the environment*, Centre for Ecology and Hydrology, Oxfordshire.

Shafir, E. (ed.), 2012, *The behavioural foundation of public policy*, Princeton University Press.

Sui, D. Z. and Goodchild, M. F., 2013, *Crowdsourcing Geographic Knowledge*, Berlin, Springer.

Thøgersen, J., 2013, *Psychology: Inducing green behaviour*. Nature Climate Change, January 2013, Nature publishing group, Macmillan publishers.

References

- BEPA, 2010. *Empowering people, driving change: Social innovation in the European Union*, European Commission.
- BIT, Behavioural Insights Team of the United Kingdom Cabinet Office, 2011, *Behaviour change and energy use*. Cabinet Office Behavioural Insights Team, United Kingdom.
- Black, L. W, Thomas, N. L, Shaffer, T. J., 2014, *The State of Our Field: Introduction to the Special Issue*, Journal of Public Deliberation volume 10.
- Centre d'Analyse Strategique, 2011, *Green nudges: New incentives for ecological behaviour*, Government of France.
- Chater, N., Huck, S., Inderst, R., 2010, *Consumer decision-making in retail investment services: A behavioural economics perspective*, Decision Technology for the European Commission.
- Danish Environmental Protection Agency, www.mst.dk.
- Dann, S., 2009, *Redefining social marketing with contemporary commercial marketing definitions*, Journal of Business Research no. 63.
- Davies, A. and Simon, J., 2013, *Growing social innovation: a literature review*, A deliverable of the project: 'The theoretical, empirical and policy foundations for building social innovation in Europe' (TEPSIE), European Commission — 7th Framework Programme, European Commission, DG Research.
- Dawnay, E. and Shah, H., 2005, *Behavioural economics. Seven principles for policy-makers*, New Economics Foundation.
- Defra, 2008a, *A framework for pro-environmental behaviours*, <https://www.gov.uk/government/publications/a-framework-for-pro-environmental-behaviours>.
- Defra, 2008b, *Understanding behaviours in a farming context*, Defra Agricultural Change and Environment Observatory Discussion Paper, [http://archive.defra.gov.uk/evidence/statistics/foodfarm/enviro/observatory/research/documents/ACEO%20Behaviours%20Discussion%20Paper%20\(new%20links\).pdf](http://archive.defra.gov.uk/evidence/statistics/foodfarm/enviro/observatory/research/documents/ACEO%20Behaviours%20Discussion%20Paper%20(new%20links).pdf).
- Defra, 2013, *Behavioural economics in Defra: Applying theory to practice*, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/223835/pb13986-behavioural-economics-defra.pdf.
- Dolan, P., Hallsworth, M., Halpern, D., King, D., Vlaev, I., 2010, *Influencing behaviour through public policy*. Institute for Government for the Cabinet Office, UK Government.
- Dunt, I., 2014, *Nudge nudge, say no more*, The Guardian 5 February 2014.
- EC Regulation 66/2010. *Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel*.
- Enserik, B., Witterveen, L., Lie, R., 2009, *Performance indicators for public participation*, IAIA Conference Proceedings at 29th Annual Conference of the International Association for Impact Assessment.
- European Commission conferences on behavioural economics, organised by the Health and Consumers Directorate-General in Brussels, in 2008, 2010 and 2013.
- EEA Brochure No 1/2014, *Marine messages*.
- EEA Environmental Indicator Report 2014, *Environmental impacts of production-consumption systems in Europe*.
- EEA Report No 2/2013, *Managing municipal solid waste — a review of achievements in 32 European countries*.
- EEA Report No 7/2013, *Air Implementation Pilot, Lessons learnt from the implementation of air quality legislation at urban level*.
- EEA Report No 10/2013, *Trends and projections in Europe 2013*.
- EEA Report No 3/2014, *Public participation: contributing to better water management, Experiences from eight case studies across Europe*.
- EEA Report (SOER 2015), *The European environment — state and outlook 2015*
- Fiack, S., Wolf, U., Jahraus, H., Schreiber, H. (red.), 2013, *Bürgerbeteiligung im Umwelt- und Gesundheitsschutz*. Umwelt und Mensch Informationsdienst.
- Global Ecolabelling Network, 2004, *Introduction to Ecolabelling*.
- Government Communication Service (United Kingdom), *The Government Communication Service guide to communications and behaviour change*, The 2014 edition, <https://gcn.civilservice.gov.uk/guidance/how-to-guides/behavioural-change>.
- Haq, G., Cambridge, H., Owen, A., 2013, *A targeted social marketing approach for community pro-environmental behavioural change*, The International Journal of Justice and Sustainability, volume 18, issue 10.
- Hargreaves, T., 2011, *Practicing Behaviour Change: Applying Social Practice Theory to Pro-Environmental Change*, Journal of Consumer Culture, volume 11, number 1.
- Ipsos MORI Social Research Institute, 2012, *Acceptable behaviour: Public opinion on behaviour change policy*.
- Ipsos MORI Social Research Institute, 2013, *Understanding society — how do we change behaviour?*
- James, R., 2010, *Promoting sustainable behaviour. A guide to successful communication*, University of California Berkeley, Berkeley bright green office of sustainability
- Kahneman, D., 2011, *Thinking fast and slow*, Farrar Straus & Giroux.
- Kaida, N. and Kaida K., 2014, *Spillover effect of congestion charging on pro-environmental behaviour, Environment, Development and Sustainability, A Multidisciplinary Approach to the Theory and Practice of Sustainable Development*, Springer Netherlands.
- Kaplan, A. M. and Haenlein, M., 2010, *Users of the world, unite! The challenges and opportunities of social media*. Business Horizons, volume 53, issue 1, Elsevier.
- Kollmuss, A. and Agyeman, J., 2002, *Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behaviour?* Environmental Education Research, volume 8, issue 3, Taylor & Francis Group.
- London Economics, 2014, *Study on the impact of the energy label — and potential changes to it — on consumer understanding and purchase decisions*. London Economics for the European Commission.
- Lunn, P., 2014, *Regulatory Policy and Behavioural Economics*. OECD.
- Mair, D., 2014, *Contribution at panel discussion* in The European Nudging Network conference, Roskilde University, June 2014.
- McGeevor, K., 2009, *Designing policy to influence consumers: Consumer behaviour relating to the purchasing of environmentally preferable goods*. A project under the Framework contract for economic analysis ENV.G.1/FRA/2006/0073 — 2nd Policy Studies Institute, United Kingdom.
- Mont, O., Lehner, M., Heiskanen, E., 2014, *Nudging. A tool for sustainable behaviour?* Swedish Environmental Protection Agency.
- OECD, 2012, *Behavioural economics and environmental policy design*.
- Oliver, A., 2012, *Whither behavioural economics policy?* Health and social care blog, London School of Economics.
- Osborne, G. and Thaler, R., 2010, *We can make you behave*, The Guardian, 28 January 2010.

Pollitt, M. G. and Shaorshadze, I., 2011, *The role of behavioural economics in energy and climate policy*. Cambridge working paper in economics, University of Cambridge. ESRC electricity policy research group.

Reisch, L., 2014, *Lecture entitled 'Sustainable by default'* given at The European Nudging Network conference, Roskilde University, June 2014.

Shogren, J., 2012, *Behavioural economics and environmental incentives*, OECD.

Shove, E., 2010, *Beyond the ABC: Climate Change Policy and Theories of Social Change*, Environment and Planning A, volume 42, number 6.

Shove, E., Watson, M., Hand, M., Ingram, J., 2008, *The Design of Everyday Life*, Oxford International Publishers.

Southgate, N., 2005, *Viewpoint: Why behavioural economics should only make market research stronger*. International Journal of Market Research, volume 52, number 2.

Spaargaren, G. and Oosterveer, P., 2010, *Citizen-consumers as agents of change in globalizing modernity: The case of sustainable consumption*, Sustainability Journal, 2010, number 2.

Spaargaren, G., 2011, *Theories of Practice: Agency, technology and culture. Exploring the relevance of practice theories for the governance of sustainable consumption practices in the new world order*, Elsevier, Global Environmental Change, number 21.

SPREAD/FP7, 2012, *The SPREAD sustainable lifestyles 2050 project*, European Commission.

Sunstein C. and Thaler R., 2008. *Nudge. Improving decisions about health, wealth and happiness*, Yale University Press.

Thaler, R. H. and Mullainathan, S., 2008, *How behavioural economics differs from traditional economics*, The Concise Encyclopaedia of Economics, 2nd edition.

The Economist, 2012, *Nudge nudge, think think*, The Economist 24 March 2012.

The Government Communication Network (United Kingdom), 2009, *Communication and behaviour change*.

Umpfenbach, K., 2014, *Influences on consumer behaviour, Policy implications beyond nudging*, Ecologic Institute Berlin.

UNEP/Futerra, 2005, *Communicating Sustainability — How to Produce Effective Public Campaigns*.

University of the West of England, Bristol, 2012, Science Communication Unit, *Science for Environment Policy: Future brief: Green behaviour and the environment*, October 2012, Issue 4, Report produced for the European Commission DG Environment, http://ec.europa.eu/environment/integration/research/newsalert/pdf/FB4_en.pdf.

University of the West of England, Bristol, 2013, Science Communication Unit, *Science for Environment Policy In-depth Report: Environmental Citizen Science*, December 2013, Issue 9, Report produced for the European Commission DG Environment, <http://ec.europa.eu/environment/integration/research/newsalert/pdf/IR9.pdf>.

University of the West of England, Bristol, 2014, *Science for Environment Policy, In-depth report: Social Innovation and the environment*, February 2014, Issue 10, Report produced for the European Commission DG Environment. http://ec.europa.eu/environment/integration/research/newsalert/pdf/IR10_en.pdf.

Van Bavel, R., Hermann, B., Esposito, G., Proestaksi, A., 2013, *Applying behavioural sciences to EU policy making*. Joint Research Centre.

Van den Burg, S., 2006, *Governance through information*, PhD thesis Wageningen University.

Communication, environment and behaviour

In its Multiannual Work Programme 2014–2018, the EEA highlights the need for a transition towards a more sustainable society, fully aligned with the European Union's 7th Environment Action Programme. This study explores — and aims to develop — the role of public communication to improve the implementation of environmental legislation and to contribute to this debate by bringing communications, environment and behaviour closer together. It draws from other EEA work, in particular on consumption and policy evaluation where relevant.

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